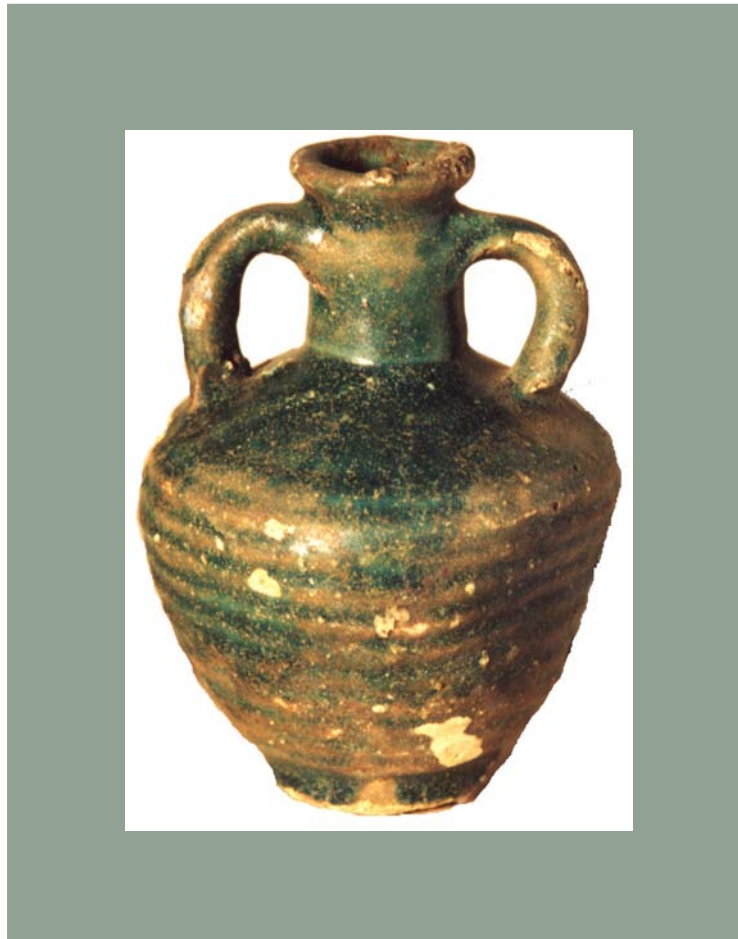


Studies in **G**lobal **A**rchaeology 3



FRONTISPIECE

Blue-green glazed bottle (UM/3) from Unguja Ukuu dated to the 8th century AD. Height 164 mm. Photo G. Hedlund.

Abdurahman Juma

UNGUJA UKUU ON ZANZIBAR

An archaeological study of early urbanism

Doctoral thesis at Uppsala University 2004

ABSTRACT

Juma, A. 2004. Unguja Ukuu on Zanzibar: an archaeological study of early urbanism. *Studies in Global Archaeology* 3. Uppsala, Department of Archaeology and Ancient History, 198 pp., 211 figures, 20 plates, 2 appendices. ISSN 1651-1255, ISBN 91-973212-1-4.

This study describes archaeological excavations carried out at Unguja Ukuu on the main island of Zanzibar, Tanzania. The site has long remained obscure, oral histories do not mention it and no particular group among the living community of the island describes its origin from the site. A stone well at Unguja Ukuu together with several other early monuments of the east African coast that survive on the site have been attributed to the Wadebuli, suspected by early scholars to be people of Arab descent from their colonies in India or elsewhere on the Islands of eastern Indian Ocean.

Surface survey and the drilling of more than 200 cores have defined the lateral extent and the stratigraphy of the site. Unguja Ukuu is a large site (c.16–17 ha) and the study reveals that it is a major center of an African iron-using farming community who occupied it from c. 500 AD. Radiocarbon dating and pottery provide the basis for this chronology.

The study addresses an old controversy whether *some* of the pre-stone built settlements that developed on the east African coast could be indications of urbanization. Knowledge of the functional specialization of the settlement prior to its abandonment c. 900 AD is based on the evidence on the density of craft activity, community engagement in the regional trade with the mainland African continent, as far away as Roman Egypt, and in the interregional trade connected to the Indian Ocean, as well as redistribution of foreign merchandise to other sites and areas in the region. These as well as the location of the site linking the external trade and the mainland resource base indicate that Unguja Ukuu was a key urban centre built of mud and timber structures. This challenges our previous understanding of 8–9th centuries AD as the onset of early urbanism on the east African coast.

The study proposes cycles of urbanism and emphasizes the need to reassess the problem of early urban identity and the use of wide range of criteria to overcome limitations of previous early urban investigations south of the Sahara and beyond.

The results of the investigation given in this study are relevant to the history and archaeology of Zanzibar and the rest of East Africa and make a contribution particularly to extending the known time depth of the early urban tradition often conceived to occur in the late first millennium AD.

Keywords: Cultural complexity, cycles, early urbanism, and urban characterization

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1. BACKGROUND

This archaeological study dealing with development of early urbanism on the east African coast is based on fieldwork carried out at Unguja Ukuu on the main Island of Zanzibar (Fig 1.1). The first chapter reviews information contained in historical and archaeological sources indicating the chronological development of complex settlements.

Section 1 discusses the east African coast (Fig. 1.2) as Zanzibar's broader topographic and cultural area based on information available from recorded observations. This is followed by the second section that gives an archaeological overview of some important early sites on Zanzibar and comments on the chronologies provided by the various visiting missions. Section 3 outlines the wider exchange networks of the western Indian Ocean from antiquity to recent periods highlighting the exchange patterns that contributed to the development of socio-economic complexity in the region and which were important for the affluence of Zanzibar in the past. Section 4 is focused on present day Zanzibar and draws contrasts with the past situation. The final section summarises sources concerning development of settlement complexity.

1.1 The east African coast

The east African coast and the neighbouring interior provide a broader cultural context for Zanzibar and other islands in the region. Recorded observations and the results of archaeological investigations have confirmed that the context facilitated sharing of the traditions of cultural complexity over a large area extending from southern Somalia to Mozambique,

as well as the offshore Islands such as the Comoros and Madagascar.

Classical documents, early Arabic sources, and local chronicles provide written sources for the history of the east African coast. The Graeco-Roman works, the *Periplus of Erythrean Sea* (40–70 AD) Casson (1989) and the *Geography of Ptolemy* edited in the 5th century AD, contain observations on the port-towns, geography, trade, people and some events on the east African coast. There is obviously a danger in accepting secondary sources such as the *Geography of Ptolemy* as literal historical accounts. However, in view of the increasing range of archaeological finds from the east African coast dated from the early centuries AD and before, it is my belief that the moment has come for possible archaeological ramifications of such sources to be taken seriously and accepted as providing useful frames of archaeological argumentation.

Arabic sources consist of early reports by Arab historians and geographers and refer to the situation from the 8th century AD onwards. Despite the obvious chronological gap between the Greco-Roman and Arabic sources, the historical information contained in these accounts assists us to obtain some useful insights into the development of cultural complexity of early coastal communities when viewed critically. It reminds us that the social organization of the local communities was affected by their early involvement in economic and technological activities from a much earlier period. Archaeologists and historians alike rarely connect early and later societies in terms of their urban traditions.

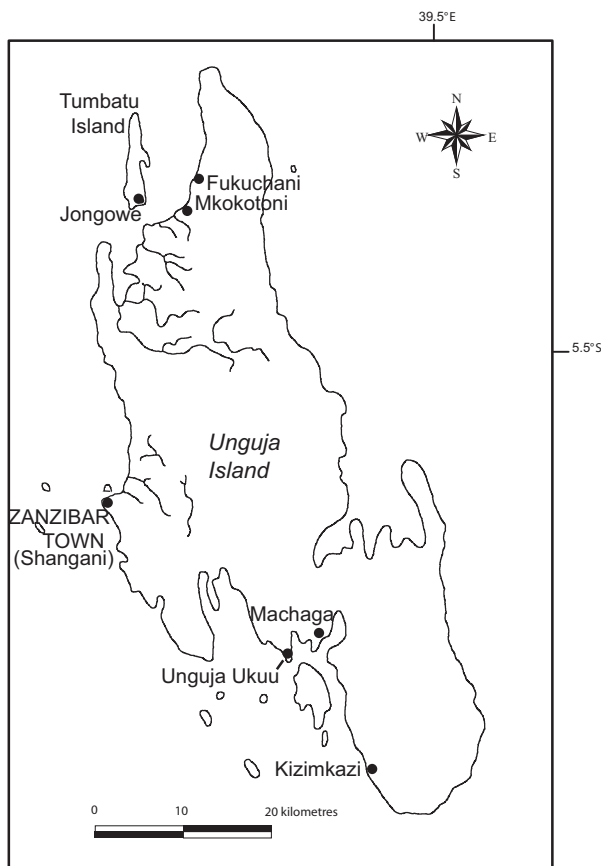


Fig. 1.1. Some early sites on Unguja Island.

Various historical and archaeological studies have proposed chronologies for cultural development of the coastal societies and most deal with a restricted area (see discussion by Sinclair & Håkansson 2000, pp. 467–8). In regard to the onset of urbanism, a general tendency is to emphasize the late first millennium AD onwards on the grounds that archaeological evidence for early developments is lacking (Kirkman 1960; Chittick 1974a, p. 87; Pouwels 1987; Wright 1993, p. 659; Horton 1996, pp. 407–11). Kusimba (1999, pp. 31–41) suggests a long chronology, but his Period II (300–1000 AD) subsumes the period around *c.* 500 AD that is becoming increasingly apparent as marking a significant change in the east African region. The point I wish to emphasize here is that it is possible to match chronological epochs with important innovations that can be regarded as “urban pinnacles”. I will refer to these as Cycles on the broader scale and Horizons for the lesser divisions. The Early Horizon Cycle I refers to the period of antiquity antedating the *Periplus*. The

Later Horizon Cycle I refers to the time of the *Periplus* until around the mid-first millennium AD when Cycle II begins. The Early Horizon Cycle II begins *c.* 500 AD and lasts to the end of the first millennium AD. The Later Horizon Cycle II continues from *c.* 1000 AD to the beginning of the Portuguese period (*c.* 1500 AD).

During the Early Horizon Cycle I, according to the *Periplus*, the market towns of the east African coast traded with foreign merchants from the Ausan state. They named this part of their trading zone, the “Ausanitic coast” perhaps in compliance with the “ancient rite” that also granted them rights to trade and to take wives (Casson 1989, p. 61). It was a dependency of the Sabeen kingdom of “Arabia Felix”. The latter was located in the southwest Arabian mountains north of modern Aden and it prospered throughout the later part of the first millennium BC (van Beek 1969, p. 41). Apparently, the local rulers on the east African coast received orders from the governor of Mapharitis in Arabia. The Ausan merchants channelled considerable surplus wealth to the coffers of their affluent kingdom in southern Arabia. This seemingly repressive situation, in which local settlements on the east African coast were disadvantaged, appears to have ended when the Himyarites succeeded in southern Arabia and incorporated Ausan.

During the Later Horizon Cycle I (from around the time of the *Periplus*), the external trade and coastal polities were no longer closely linked to southern Arabia. There was room for change in the socio-economic patterning and settlement structure. Local settlements might have greatly benefited from regular foreign shipping between the northern section of the Indian Ocean through Hafun (Opone) on the Somali coast and the port city of Rhapta. This in turn would have contributed to the development of other settlements on the east African coast. When the *Geography* appeared, most settlements in east Africa previously mentioned in the *Periplus* had subsequently been transformed into important towns. Ptolemy mentions that “Opone” and “Essina” were “emporium”, “Niki” had become a “metropolis” and “Serapion” emerged as the new center in the northern coast. Rhapta was “the metropolis” in the southern part of the coast and become an emporium that probably implies the capital of a larger king-

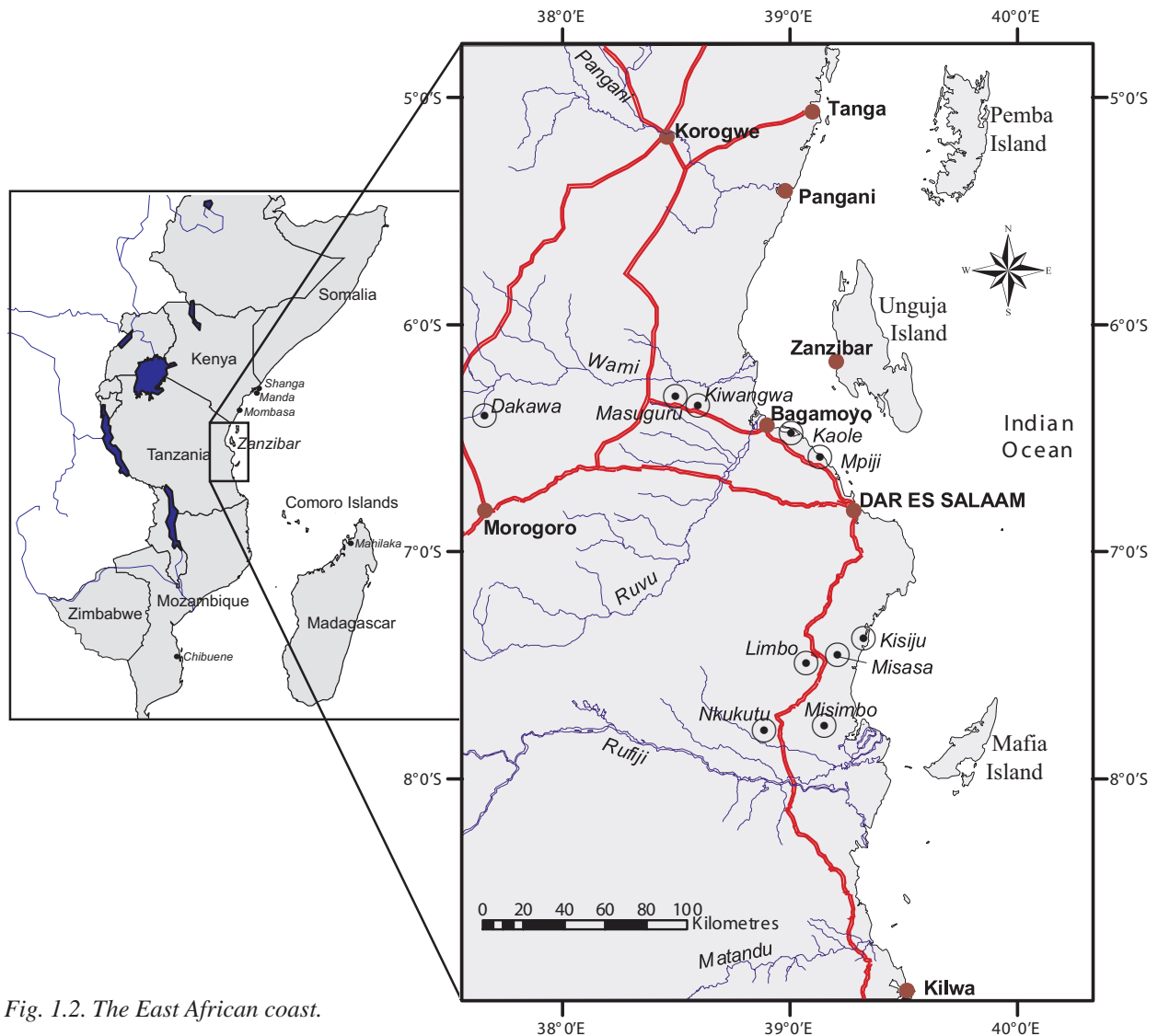


Fig. 1.2. The East African coast.

dom. The market towns appear to have been independent political units, each under the authority of chiefs and with separate access to the hinterland for the supply of strategic ecological resources (Mathew 1963, p. 95).

I think it is proper to consider these early coastal settlements as “city states” from the point of view of their organisational complexity as some writers have applied this concept to the towns of Cycle II (Abungu 1998; Sinclair & Håkansson 2000). Hansen (2000) has dealt extensively with the concept and characteristics of “city state” and noted that the location in the corridors of exchange and in geographical circumstances comprising the sea, the islands, the coastline, and the hinterland, and set-

ting of people from distant areas are some important factors conducive for such habitation centres to develop into “city states”. In my opinion, there is a need to distinguish the concept of state in reference to the sovereignty confined to town or city as traditionally applied for the classical period, from its general application to a nation states that usually encompasses more than one city or town. Hansen has not considered this to be important. His position that political independence is not essential for a “city state” leads him to propose the existence of Swahili “city states” in east Africa under Portuguese and Omani domination (Hansen 2000, p. 606). Here, I will maintain a descriptive simplicity of the “urban” concept and refrain from using the term “city state”.

Also, I do not think it necessary to delineate a difference between a “city” and a “town” in this archaeological study, since both concepts hold similar status as far as urban characterization is concerned.

The status of the sources in terms of information on societies of the east African coast largely reflects the contact situation of the visitors. Western shippers might not have ventured far south in the Indian Ocean, as accounts on the east African coast produced under west European influence appear to have been compiled from second hand sources. For example, the *Periplus* contains significant variation in treatment of different regions of the Indian Ocean. The author devoted just 6 per cent of his entire account to East Africa (Reader 1998, pp. 203–4). Also, the Ptolemaic view that the African landmass curves eastward to join the islands of Asia expressed in the *Geography* persisted up to the beginning of the Later Horizon Cycle II (c. 1100 AD). It found expression in the works produced under western European influence, such as the anonymous Persian geographical treatise entitled *Hudud Alam*, written in the 10th century AD (Minorsky 1937).

Cartography appears to reinforce the general view that early Graeco-Roman merchants might not have participated directly in the trade to the southern parts of the Indian Ocean, but used middlemen instead. There are of course suspicions that perhaps they did conduct visits to east Africa that have not been recorded (Wright 1993, p. 659; Dato 1970; Casson 1989). Clearly, foreign visitors from Arabia and Persia and perhaps from elsewhere around the Indian Ocean had long established contacts with the east African coast, but information from the very early period has not been preserved in documentary records. Only from much later with the wave of Islamic expansion do the sources increase. From the 10th century AD, we note for instance Indian Ocean sailors informed Muslim travellers like Al Masud that Africa was not connected to Asia. Ibn Hawqal (c. 943 AD), a student of the Muslim school of cartography that produced sound schematic maps accompanied by texts, furnished in his world chart an undistorted schematic map of Africa. Another map found in his manuscript collection in Istanbul depicts the Ptolemaic view, but it is quite common in this period to collect distinctive maps (Freeman-Grenville 1966, p. 18). Ibn Hawqal authored *Kitab Surat al*

Ardh (The Book of the Earth’s shape) dated to 1086 AD) and also “The Book of Roads and Provinces” to help regular shipping from Arabia destined to the port towns of the east African coast (Freeman-Grenville 1966, p. 18). However, the geographical treatise of Al Idris (12th century AD) is a further example of a work produced under Western influence still carrying the Ptolemaic view.

Arabic sources dating from the Islamic period contain rich information concerning local population and aspects of social organisation. Visiting merchants perceived the distribution of different peoples along the east African coast. In the extreme north is the “Land of Berbera” or the Benadir Coast of Somalia occupied by herders. Farming communities occupied the “Land of Zanj”, a sub region that stretched southward as far as the land of Sofala, where the merchants bartered gold and as Trimingham (1975, p. 120) has suggested, further south still to the area of the present day Inhambane, the terminus of seasonal trading voyages. The “Land of Waqwaq”, occupied by herders, was supposed to lie south of the “Land of Zanj”. As regards distances, Al Masud (c. 930 AD) emphasized that Zanj settlements stretched for 700 *parasangs* (about 3600 km) along the coast and the same distance inland. He mentions the town of “Qanbalu” on an island and there were also other capitals or “state centers”, perhaps reflecting only the port-towns that had islamised communities. These include Mombasa on the northern coast (Freeman-Grenville 1966, p. 15).

Buzurg ibn Shahriyyah (900–953 AD) of Ramhormuz from the Persian Gulf indicates the early presence of stone building technology on the east African coast in his *Kitab Ajab al-Hind* (The Book of the Wonders of India). He mentions that the Island of “Qanbalu” was fortified with a stone wall (Freeman-Grenville 1981, 1982). Later writers added aspects of social organisation and subsistence to the picture. The Zanj communities had kings, they used iron and consumed meat, honey, millet, bananas, and a tuber named *kalari* (Freeman-Grenville 1966, pp. 14–6). Al Idris reiterated the use of iron tools among the Zanj communities and added the fact that they adorned themselves with copper objects that inter-state warfare was common and warriors rode on oxen. This suggests competition for control of economic resources. They had ideologi-

cal specialists. Al Idris refers to sorcerers as *waganga* in connection with the town of Malindi (Lewis 1974, p.118), while earlier, Al Jahiz mentioned that some members gave religious discourses in public, and Chittick (1975, p. 23) remarked:

This information suggests a fairly highly developed society, one we should not expect at this time and place.

Some words that early Zanj people used such as *waganga* for traditional doctors or sorcerers and *wafalme* for kings are still current in the Swahili language. This is perhaps a linguistic indication of the proto-Bantu affiliations of the early Zanj community. Some scholars attempt to play down such points by picking up for instance a plainly corrupt and unfamiliar word *waglimi* for *wafalme*, and by using the term “Ethiopian” for the word *ahabish* used by Al Masud and later also in the *Hudud Alam* to describe the black complexion of the Zanj community (Trimingham 1975, pp. 24–5; Horton 1984, p. 320). Allen (1993, pp. 26–8) does not think it relevant to take into account this linguistic evidence at all. I will discuss some explanatory approaches to the evolution of cultural complexity that have used the notion of Cushitic-speaking pastoralists as the principal actors in the next chapter.

It might be expected that Arabic sources contain much richer information about early African societies than they do. However, the native communities in the Arabian Gulf were intensely prejudiced against black people. The prejudice was transmitted to later generations and hampered some writers from disclosing information they collected about Africa. African slave labourers had been exploited in the irrigation agriculture of southern Iraq, ultimately leading them to stage the famous Zanj Revolt (*Thaurat-Zanuj*) of around 868–883 AD in the town of Basra (Trimingham 1975, p.117). Al Jahiz (776–868 AD) had forbearers from the east African coast (*Bilad al-Zanj*) where a large number of the slaves had been obtained by raiding, but was born at Basra and grew up there. Perhaps the racial prejudices motivated him to write the rebuttal *Al Fakhr al Sudan min al-Abyadh* (The Pride of Blacks over the Whites). The best example of such a native Arab historian who was rather reticent and opposed to describing life in Africa is perhaps Ibn Hawqal (943–

973 AD), a native of Baghdad in Iraq. After spending much of his lifetime visiting Muslim lands in Africa and Asia, he produced a meticulous geographical work, but his historical work leaves much to be desired and has even invited a suspicion that he relied on second-hand sources (Freeman-Grenville 1966, p.18). In the introduction to “The Book of Roads and Provinces”, he explained the reason for his scepticism,

I have described the earth in its length and breadth ... (and) a view of the Moslem provinces ... I have illustrated every region by a map. I have indicated the position of each, relative to other countries. The boundaries of all these lands, their cities, the cantons, the rivers that water them, the lakes and pools that vary their surface, the routes that traverse them, the trades that flourish in them – all these I have enumerated. In a word, I have collected all that has ever made geography of interest either to princes or to people... I have not described the country of the African blacks and the other peoples of the Torrid Zone, because, naturally loving wisdom, ingenuity, religion, justice, and regular government, how could I notice such people as these, or magnify them by inserting an account of their countries?

(Quoted from Beazley 1897, pp. 451–2)

Local chronicles of the east African coast have documented oral traditions. These reflect elite attempts to make sense of the past and relate to events during the Early Horizon Cycle II (8–10th centuries AD). The famous narrative among the accounts of early Muslim migrations from the expanding empires in the Middle East is perhaps the story of the Muslim Caliph Abdul Malik Marwan of Syria, who is said to have dispatched religious emissaries to propagate Islam and establish towns on the east African coast during the 8th century AD. Later on Persian instructors under Caliph Harun al Rashid carried on the work (Stigand 1913). The *Kilwa Chronicle* provides an account of princes from the City of Shiraz in Persia (c. late 10th century) who under the patronage of Hassan bin Ali, landed at different places on the Swahili coast to establish towns such as Manda, Shanga, Kilwa, and others located on the Islands of Zanzibar and Comoros, as given in the *Chronicle of Pate*. The *Tumbatu Chronicle of*

Zanzibar, and others associated with the sister Island of Pemba that Ingrams (1967, pp. 517–8) has classified as “manuscripts”, largely deal with later diaspora of “Shirazi” people and their associated patrons (Gray 1962, p.12). The assertions contained in the chronicles are open to varied interpretations and have been subject to debate that echoes the social and ideological complexity of the coastal society. The historical sources contribute information useful for reconstructing the urban past, patterns of trade associated with it as well as the chronologies. The Zanzibar Islands have been central to these developments during Cycle II (c. 500–1000 AD) and I will now review information available from some archaeological sites of Zanzibar that contributes to the picture.

1.2 Some archaeological sites of Zanzibar

Archaeological research conducted on the east African coast over the last half century has generated much information about the location of early sites, and types of finds. It has provided basic stratigraphies and chronologies that have contributed to our understanding of early complex sites. The relative visibility and durability of stone used for construction has very much emphasized that much of our archaeological knowledge relies on sites that have preserved stone ruins of some kind. Documentation of such remains began from colonial times. Here, I review information available from a selection of archaeological sites on the Islands of Zanzibar. Pearce (1920) and Buchanan (1932) described a large number of sites on the Zanzibar Islands and some of these (see Figs. 1.1 & 1.3) will be mentioned in the discussion that follows.

Archaeological research began with amateur excavations that Pearce (1920) carried out at the fortified site of Pujini on the Pemba. Later, J. Kirkman (1959) carried out professional excavations at Ras Mkumbuu on Pemba Island to locate “Qanbalu” mentioned in Arab historical sources (Freeman-Grenville 1981, p. 63). N. Chittick (1962) responded to the Zanzibar colonial government’s invitation to investigate the Old mosque at Kizimkazi on Unguja Island. In the mid-1980s, M. Horton and

K. Clark who had worked earlier on the Lamu archipelago in Kenya extended their archaeological survey southward to the Islands of Zanzibar and I participated in this. The report of historic sites and monuments of Zanzibar produced from this survey (Clark & Horton 1985) has provided a basis for most subsequent archaeological missions to Zanzibar. Horton revisited some sites before he finally focused at Jongowe Makutani on the Island of Tumbatu to investigate the later development of Islam on the Swahili coast. I focused my investigations at Unguja Ukuu (see Fig. 1.1). LaViolette and Fleisher (1995) have conducted research on the eastern and northern parts of Pemba Island, and other references to this work are given below. Recently, Chami (1999a, 1999b, 2001a, 2001b) has extended his archaeological investigations from the central mainland coast of Tanzania and some of the smaller offshore islands to excavate Machaga limestone cave site located a few kilometres from Unguja Ukuu.

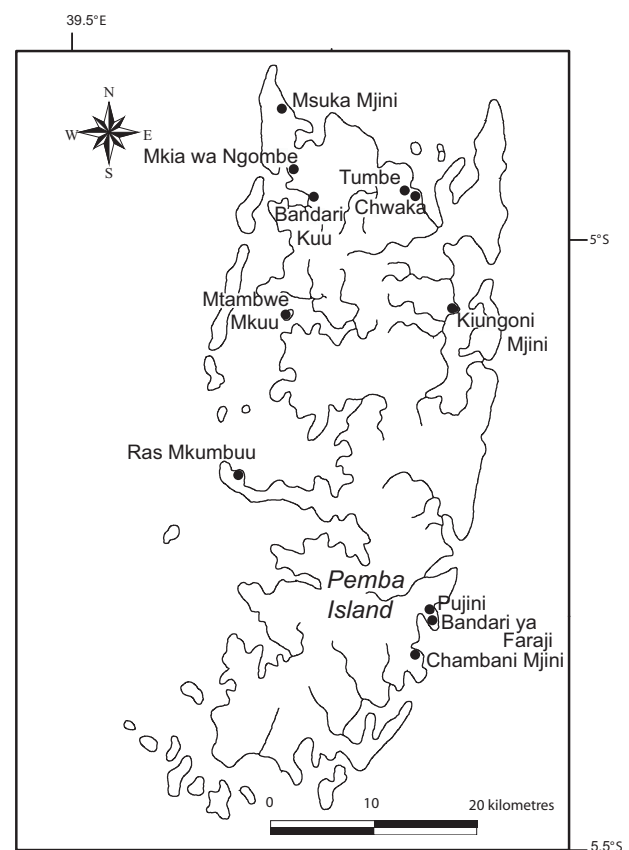


Fig. 1.3. Some early sites on Pemba Island.

Unguja Ukuu (Fig. 1.1)

This large (16 ha) pre-second millennium AD complex site in the southern part of the main Island of Zanzibar has remained obscure for a long time. It has fascinated historians who have searched for information to quarry and as one ethno-historian of Zanzibar has remarked:

As regards Unguja Kuu, it is curious that native tradition is entirely silent as to its ever having been a town of importance

(Ingrams 1967, p. 136)

The 8–9th century Arab historian Al Jahiz mentions “L-Unjuya” in association with “Qanbalu” (Trimingham 1975). His apparent reference to the site appears precise. A more or less similar reference made by Yakut (1179–1229 AD) appears to point to the whole island of Unguja.

Chittick’s (1966) article was based on surface collections and the account of the fortuitous discovery of 8th century Muslim gold coins at Unguja Ukuu in 1866 (Pearce 1920). From his knowledge of coastal sites, Chittick (1967, p. 37) contrasted the position of Unguja Ukuu with Manda in the northern part of the coast:

... of these (earliest settlements on the east African coast), the only ones, which appear to be of major importance, are at Unguja Ukuu and at Manda

He thought Unguja Ukuu to be contemporary with Manda Period I (Chittick 1984, p. 109).

Toponymy can be a useful source of information on primary settlement centers and place names are often important indications of site positions in the regional settlement hierarchy. Ehret (1995, p. 38) has noted:

Every language contains an extensive archive of many thousands of individual artefacts of the past ... the full range of vocabulary necessary to express the whole gamut of knowledge, experience, and cultural practice pursued by the various members of the society that speaks the language. As ideas, behaviours and practices changed in the earlier history of that society, the vocabulary that described these ele-

ments of life necessarily underwent changes – in the meanings applied to existing words, in the adoption or deriving of new words, and in the loss or obsolescence of the older words. The history of the past change and development across that gamut of culture and economy is thus mirrored in the histories of the thousands of individual words with which the members of the society express all the various elements of their lives.

The name “Unguja Ukuu” implies “central place” or the “capital” of Unguja as an Island. The name “Unguja” appears to be proto-Bantu. It is very close indeed to “Ogoja” that is a town in Nigeria, and “Angoche”, a site located in the creek of river Mluli on the Mozambican coast that Idris probably referred to (Guillain 1856, pp. 216–9). The adjective “kuu” is perhaps also a Bantu derivative and implies “great” or “paramount” (“U-” or “M-” being concordial prefixes attached to “-kuu”). Principal places designated in this mode are many and other examples include Mtambwe M-kuu or Bandari Kuu on Pemba Island, and Manda Kuu or Vumba Kuu on the Kenyan coast. West African examples include the famous Nigerian first millennium AD site of Igbo Ukwu (Ibo, the metropolis) contemporary with the sites on the east African coast discussed above.

It appears from the place name that Unguja Ukuu (settled around the mid-first millennium AD) was the capital of Zanzibar Island. Below, I will explore the cultural complexity and character of the site and postulate that it was likely to have been abandoned just before the 10th century AD.

Mkokotoni and Fukuchani (Fig. 1.1)

These sites on the north-western coast of Unguja Island indicate the distribution of the communities on the Island during the 9–10th centuries AD, judging from finds discovered in the lowest levels (Clark & Horton 1985). Mkokotoni has 2.5 m of cultural deposits and a range of pottery suggesting its occupation up to the 16th century AD. Fukuchani, occupied a few centuries before the Portuguese period, contains middens extending to more than 5 ha, and it is partly built over with a stone enclosure house.

Kizimkazi (Fig. 1.1)

Kizimkazi grew up from around 1100 AD when there was a rapid increase in the number of sites on the Zanzibar Islands and the east African coast in general. Kizimkazi is famous for its inscription of 500 AH (1107 AD) designed in floriate Kufic script and inserted on the north wall of the mosque (Flury 1922). The mosque is the oldest one in East Africa that is standing and still in use. The building was rebuilt during the 18th century and another inscription set on the north wall to the right side (Chittick 1962).

Kleppe (1992) revisited Kizimkazi and her excavations confirmed the chronology proposed by Chittick. I hold an alternative view to her suggestion that Kizimkazi was a village site. The inscription carved in Kufic script indicates some literacy while coins and much sgraffiato pottery, used in part for dating the site, indicate the volume of trade and integration of the settlement into the regional networks. A number of old copper coins minted locally that have turned up recently from farming activities on the site include examples reported by Chittick from his excavations. The Kufic inscription perhaps also emphasizes the breadth of contacts within the Indian Ocean region. A form of Kiswahili was almost certainly the everyday medium of communication, but it appears that some people who were literate also combined writing in Kufic and Arabic scripts (see also Chittick 1974a, p. 36). Widespread evidence from other sites on the east African coast demonstrates that Kufic script was often employed on carved stone as parts of religious monuments and to inscribe local coinage. Arabic was preferred for long discourses such as chronicles.

The Persian Gulf was the key area of external trade and contact for Kizimkazi as both the sgraffiato pottery and the Kufic inscription suggest. A powerful princely kingdom ruled the Persian Gulf twin islands called Kish and Kash during the heyday of Kizimkazi. It might well be that sailors and merchants from Kizimkazi were partly engaged in capturing slaves from the mainland to reciprocate the external trade with the Persian Gulf. According to Al Idris, ships from the Kish-Kash kingdom used to raid the Zanj country (east African coast) and took away many slaves (Lewis 1974, p. 120). The actual place name “Kizim-kazi” may well have been localized

from “Kish-Kash” and traditions suggest that formerly “Kish” referred to “Kishm”.

I conclude that Kizimkazi appears to have developed as a site of great importance on Unguja Island. Its size and the fact that it grew up after the primary occupation at Unguja Ukuu, may suggest that it was an urban centre and subsequent capital for the Island prior to the shift to Tumbatu Island perhaps around the mid-12th century AD.

The Kufic inscription on a mosque reused at Tumbatu is very similar to one known from Kizimkazi. Both might have been carved by the same *fundi* who could have learnt his craft either locally or directly from artisans in the Persian Gulf (Horton 1989).

Tumbatu (Fig. 1.1)

The major archaeological site located on the Tumbatu Island (due northwest of Unguja Island) is at Jongowe Makutani. This is on the southeastern tip of the island facing Mkokotoni harbour on Zanzibar Main Island. Horton has suggested that archaeological evidence indicates that Tumbatu was occupied c. 1100–1300 (Clark & Horton 1985). This may mean that when the capital shifted from Kizimkazi along with important cultural patrimonies such as the inscriptions mentioned above, the local community had just briefly occupied Tumbatu. The report by Yakut possibly refers to the shift of the capital from the main Island Zanzibar (c. 1220 AD) to Tumbatu. He described Unguja as:

... the large Island of Zanj in which is the seat of the King of Zanj. Ships make their way to it from all quarters. Its people have transferred from it to another island called Tumbatu whose people are Muslims

(Trimingham 1964, p. 17)

A new ruler from the small island of Tumbatu may have succeeded and shifted the Zanzibar capital there; anyway Yakut did not indicate the reason. The reference to Zanzibar as the “seat of the King of Zanj” may suggest the commanding position and jurisdiction of the Zanzibar capital beyond the Islands at least in the southern part of the Swahili coast during this time. This control might have included parts of the mainland coast as an important area of strategic resources for the external trade.

The remnant architecture of Tumbatu perhaps demonstrates the position of the city in the coastal region. Apart from stone houses, small mosques, and the royal palace for the old headquarters, the Friday congregation mosque is reckoned to be the largest of the period on the east African coast. Before the 13th century, the Zanzibar state centers, Kizimkazi and later Tumbatu were possibly higher order centers at least in the southern Swahili coast. At that time, Kilwa was a modest town with trade largely oriented further south along the coast as Yakut referred to it as simply “a town in the country of Zanj” in contrast with Mogadishu in the northern coast that he described it as “the most important city” (Chittick 1974a, p. 237). Kilwa achieved great political and cultural prominence after 1300 AD when Tumbatu was perhaps beginning to decline. Supplies of gold from Sofala during the 14th century abruptly transformed its former position; it took the lead and became a prosperous trading emporium furnished with extraordinary monuments (Chittick 1974a, p. 239; Sutton 1990).

Tumbatu and Kilwa coexisted and possibly twinned to evade rivalry as no tradition has been recorded suggesting a conflict between the two towns for the control of economic resources of the opposite African mainland coast. Western scholars tend to discredit the *Tumbatu Chronicle* but contains a claim that Ismail, a son of the “Shirazi” founder of Tumbatu, was enthroned at Kilwa. This suggests that there might have been a direct matrimonial link between ruling families of the two settlements to cement their political relations.

Freeman-Grenville reconstructed the genealogy of Kilwa Sultans largely on the basis of the *Chronicle* but placed the name “Ismail” as the successor of the deceased Sultan Suleiman bn Muhammad in the 15th century, which is too late for a son of the ruling house of Tumbatu. However, we note that the *Chronicle* does not mention all the Sultans of Kilwa, it forfeits for instance Daud bn al-Hassan, reckoned as the prominent ruler and great personality in the Kilwa dynasty.

There are other corroborating indications of good relations between Tumbatu and Kilwa. One is that Zanzibar was a safe haven for the top members of Kilwa ruling dynasty as they fled political conflicts there on two occasions, first in the 11th and later in

the 15th centuries, as documented in the *Kilwa Chronicle* (Gray 1962, pp.13, 23).

Other indications corroborating the probable dynastic link between Tumbatu and Kilwa are based on architectural and numismatic evidence. The regal architecture “Mahdali” at Kilwa is traceable at Tumbatu (Horton 1989) and finds of coinage associated with Kilwa Sultans often occur in contemporary hoards of copper coins considered to be of Zanzibar origin (Freeman-Grenville 1957, 1963; Walker 1936).

Shangani (Fig. 1.1)

This refers to the site presently occupied by the old town of Zanzibar. It was located at the seashore on a deposit of deep sands and the sea used to flow into the creek at the back at high tide, protecting the settlement. The site has not been investigated in detail. Preliminary archaeological survey (Clark & Horton 1985) carried out inside the Old Fort located in the middle of town has indicated that the site was inhabited from the late 11th century AD and was contemporary with Kizimkazi. Pearce (1920, pp. 61–2) argued that Shangani was a town from the later part of the 17th century AD, following the previous town of Zanzibar mentioned in the Portuguese sources, that he thought was at Unguja Ukuu. The Portuguese fought and destroyed towns and villages and their records indicate that they ruined the town of Zanzibar twice. Investigations of Unguja have recovered evidence of warfare. However, the insubstantial nature of occupation during the 16th century indicates a village settlement rather than a town. My preliminary conclusion is that Shangani might have succeeded Tumbatu as the new capital of Zanzibar after the 14th century, rather than Unguja Ukuu. The archaeological evidence recovered in the Old Fort at Shangani is insufficient to address this question of urban complexity. Perhaps in the 16th century, Shangani was already a town, as it was important enough for the Portuguese finding it worthwhile to build a chapel there for their visiting merchants.

Ras Mkumbuu (Fig. 1.3)

This site is located near the tip of a narrow headland projecting into the sea on the western coast of Pemba Island and it is cut off from the main island of Pemba

at high tide. Kirkman (1959) dated the initial settlement by imported pottery to the 12th century AD and its prosperity continued until the 14th century AD, when its great monuments were built. Some of these are still standing. Yakut mentions the settlement in the early 13th century and once some investigators thought it could be “Qanbalu” of Al Masud (913–956 AD) (Trimingham 1975, p. 130). Horton’s work on the site confirmed the period of its prosperity. He re-dated Kirkman’s sequence to a century earlier (Clark & Horton 1985, p. 29) and subsequently discovered a phase comprising the remains of stone mosques that he considers dating as early as the 10th century AD (Horton 1996, p. 260). Local oral traditions indicate that the sea has covered the northern part of Ras Mkumbuu.

Mtambwe Mkuu (Fig. 1.3)

This site consists of a small island off the town of Wete on the western coast of Pemba. It is almost cut off from its main Island of Pemba during high tides. Yakut also mentioned the settlement. The 1984/5 survey dated the site by imported pottery to the 9–11th centuries AD and revealed burials, local coins of silver as well as gold coins imported from the Muslim Caliphates in the Middle East, among other finds. The coinage (Horton *et al.* 1986, p. 122) suggests that the local community traded prosperously with Muslim merchants from the Middle East.

Pujini (Fig. 1.3)

This site is situated close to the eastern coast and the central part of Pemba Island and contains the remains of a 15th century stone fortress built by a local Swahili aristocrat. Pearce (1920) did not discover any earlier evidence, but suspected that the site dates back to the 10th century AD. The 1984/5 surveys indicated the presence of remains dating not earlier than the 14th century AD. LaViolette (1989, 1996, 1998) carried out further archaeological investigations of Pujini. She has demonstrated the complexity of the site and found Later Farming and Iron Working community pottery outside the fortress compound. At a small Pujini harbour called Bandari ya Faraji located about 2 km away south of the fortress site, she also located a typical site of

Later Farming communities dating perhaps from the 8th century AD (LaViolette & Fleisher 1995).

Chwaka, Tumbe and other sites in northern Pemba (Fig. 1.3)

Chwaka and Old Tumbe sites are located in the northern part of Pemba Island facing the Micheweni peninsula. The latter site lies adjacent to the site of Chwaka, well known for the ruins of a 17th century local aristocratic family of Pemba (LaViolette 1998). Apart from the previously known later occupation, deposits containing pottery of the Later Farming community and associated finds dating around 8–10th centuries AD have been reported from the Old Tumbe site and lowest levels at parts of the Chwaka site. Fleisher (*pers. comm.*) has reported more early sites including Bandari Kuu situated in one of the inner inlets of Mkia wa Ng’ombe on the western coast of Pemba and later sites from his archaeological investigations in the northern part of Pemba Island (Fig. 1.3). He has been particularly interested in exploring the relationships that existed between Swahili towns and villages. The archaeological investigations have revealed a complex settlement history for the northern part of Pemba covering a period of over a millennium.

Fig. 1.4 shows development of Zanzibar sites and summarises the chronology of development. Zanzibar’s long history of socio-economic complexity reached its culmination during the 19th century. Before discussion development of complexity, I will first discuss the interaction networks that supported the development of the social organisation in the region.

1.3 Interaction networks

Interaction networks have been important mechanisms for urbanism to develop as an open system throughout the Indian Ocean region. Early towns on the east African coast enjoyed locational advantages that ensured access to important sources of goods and suited their role as exchange centers. Most were nodes of trade between overland routes to and from the African interior, and the Indian Ocean network (Fig. 1.5) from a very early period (Mutoro 1998, p. 192). The discussion on these major routes of exchange here distinguishes between early and later networks.

Fig. 1.4. Chronological development of old sites on Zanzibar Islands

	Centuries AD →													
	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Unguja Island														
Unguja Ukuu														
Mkokotoni														
Kizimkazi														
Shangani (Stone Town)														
Tumbatu														
Mvuleni														
Fukuchani														
Pwani ya Wadeburi*														
Pemba Island														
Mtambwe Mkuu														
Ras Mkumbuu														
Bandari ya Faraji*														
Bandari Kuu														
Old Tumbe														
Pujini														
Mkia wa Ng'ombe*														
Mtangani*														
Mduuni*														
Shamiani (Kiwani)*														
Chwaka (Haruni site)														
Mjini Chambani*														
Mjini Kiungoni*														
Kichokochwe*														
Chake Chake (Fort)*														
Chwaka (Mazrui site)*														
Jambangome*														
Finga*														
No. of sites/Century as shown above →	1	1	4	5	7	7	7	6	9	12	9	4	5	4

* Location of the site is not shown in the maps

The early network: This incorporated major maritime trade routes that operated at sub-regional levels, the northern and southern branches and also these had sub-branches connecting the upcountry trade. The sea provided an easier, swifter and relatively more secure and natural medium for transportation of people and goods than the land routes or upcountry branches that were however also important. The northern branch was affiliated to port-towns of southern Arabia and the Red Sea, while the southern branch were tied to Ras Hafun on the Somali coast and further south to Rhapta. Both branches were connected with their respective hinterlands and with the maritime network of eastern Indian Ocean.

Apart from the report of Cosmas Indicopleustes that Rhapta was the last destination for the glass trade by merchants who set out from the Red Sea (Kobishchanov 1979, p. 74), data concerning the southern branch is relatively sparse. During the Pharaonic times, Egyptian Greeks produced accounts on the east African trade and navigation (Wilding 1987, p. 20). Romans were initially ignorant of the merits of sailing with the monsoon winds, but later on acquired such knowledge; they sent merchant ships to

the western Indian port of Barygaza (Broach) and ultimately took control of the Red Sea. As already discussed, they are unlikely to have ventured far south of the Indian Ocean and if they had, they would not have subscribed to the Ptolemaic view for such a long a time.

During the Early Horizon Cycle I (before the time of *Periplus*), the Ausan merchants sailed up and down the coast, linking the northern and southern trade branches. They might well have been responsible for the distribution of coins originating from the eastern Mediterranean basin that appear today along the east African coast, frequently in association with Graeco-Roman coinage (Freeman-Grenville 1960).

During the Later Horizon Cycle I, merchants who linked the two trade branches came from the port-town of Muza (Ocelis). They tied their trade in frankincense and myrrh from Arabia to Egypt and the Persian Gulf with their inland capital of the reigning Sabeen kingdom. They also served the Roman trade, and when the Monsoon wind altered direction they carried exotic Western goods to the Near East. Products like iron weaponry manufactured in south Arabia, pottery, copper articles, glass vessels

as well as varieties of coloured and un-worked glass reached the southern branch via their operation (Casson 1989, p. 286). Some quality glass produced from Egyptian workshops might have reached the east African coast. The merchants of Muza bartered exotic metallic tools and glass stones for valuable bulky African products such as ivory, rhinoceros horn, tortoise shell and slaves while they obtained spices, precious stones, gums and coconut oil from the port-city of Rhapta (Casson 1989, p. 61).

The branches associated with overland trade routes traversed the African interior. In the southern branch, these served the interior of Sudan and Ethiopia and the hinterlands of the Somali coast at Ras Hafun, and the further south Zanj country where Rhapta was located as the major capital. According to Pliny and Strabo, trade goods including cinnamon and cassia intended for upcountry trade were exported from a “far country overseas” (the Far East?) and were first landed on the eastern African seaboard. Despite Miller’s (1969) argument that Ras Hafun never served as a center for discharging the Asian cargo to the upcountry and the current outlook of limitation to its growth from the present conditions and location, we cannot simply ignore the *Periplus* that categorically describes it as the “Cape of Spices”. The cargoes of Asian spices were carried into the interior along the Nile Valley corridor via Egypt and ended up at the Mediterranean (Miller 1969, pp. 106, 144). A coastal king who was kidnapped from his home by Arab sailing merchants and sold in Iraq as a slave together with his entourage in the 10th century AD (Freeman-Grenville 1981, p. 35), perhaps used the same corridor when he ultimately marched back to his country (in 922 AD) via Cairo .

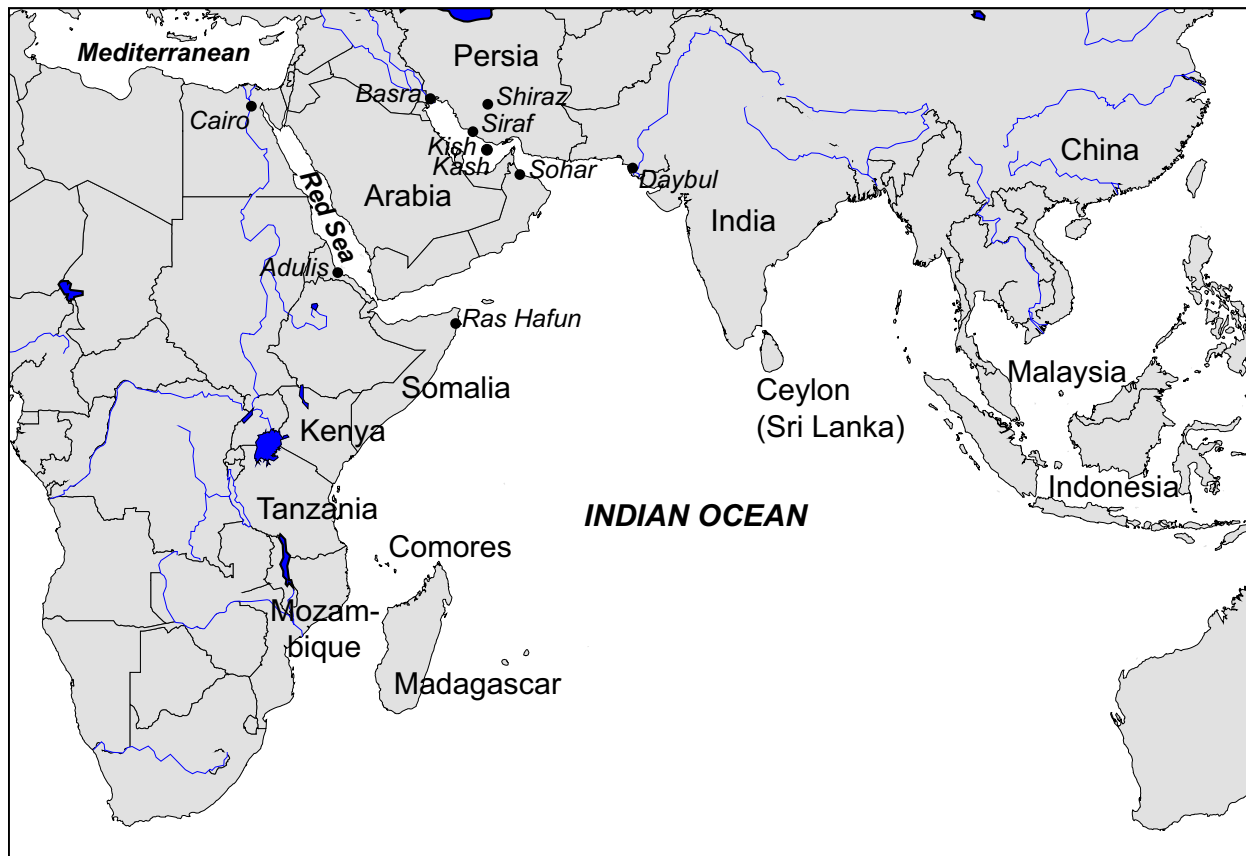
Rhapta apparently survived the collapse of overland trading network during the late 1st century AD, possibly because it also relied on maritime trading activities. Early merchants moved goods upcountry from hand to hand and from one market area to another and used natural features such as plains and river valleys, fertile ridges and highlands that stretch down the coast. The immediate area of access for the Asian cargo into the interior still remains a matter of dispute since Rhapta has not been located precisely on the ground. This site may be anywhere between the Rufiji delta area, where ancient trade goods includ-

ing Roman beads have been excavated and further north, where a number of fortuitous discoveries of early Roman coins have been made so far.

The upcountry branches of the maritime trade were also interconnected. The collapse of African overland trading network weakened the frankincense market in the northern trade branch and affected the early south Arabian kingdoms that among other things relied on it. The spread of Christianity to Arabia around the 4th century AD ushered ideological conflicts that not only further isolated the kingdoms but also annihilated them and forced the merchants of Mouza (Mathew 1963, p. 94), who were also handling Roman-Egyptian trade, to discontinue their activities.

It seems likely that Persian and Levantine merchants took over the position of the merchants from Mouza and crossed into the southern branch. Around the same 4th century AD, Aksum rose to power, gradually dominated the maritime trade of the western Indian Ocean, and extended political control along the southern coast of Arabia, on the highlands and in the valley area (Chittick 1974b). Aksumite merchants journeyed overseas by sea extensively and organised expeditions in search of African gold (Cosmas Indicopleustes 1909, p.165) that might have taken them as far as southern Ethiopia. The Aksumites and other eastern merchants from Persia, India, and Ceylon visited the great shipyard developed at Adulis on the western coast of the Red Sea (Hourani 1951, p. 40). It is not clear if the Axumites sailed far down the east African coast and linked the two branches as the merchants of Mouza did.

From the 5th century AD, Sasanian merchants took their turn in the maritime trade and proved formidable in their fight against the Romans. This blocked the overland caravan routes to Southeast Asia, India and Ceylon, and merchants bound to the East turned to the Red Sea for a secure route. Roman trade entered a recession in this period, but mariners using the Red Sea route still took the opportunity to visit some major towns in the region such as Adulis and Aksum (Hourani 1951, p. 40). By the end of the 6th century AD, the Sasanians gained a greater control of western Indian Ocean trade, overcoming their rivals from Adulis and defeating the Aksumites in 579 AD (Ricks 1970). The Sasanian merchants dominated the trade until the early de-



1.5. Some countries and places linked to the Indian Ocean trading network.

acades of the 7th century AD and this is apparently reflected in the finds at Unguja Ukuu.

The Indian Ocean trading network expanded widely during the three closing centuries of the first millennium AD following the unification of the Tang dynasty in China (618 to 906 AD) and the rise of caliphates in the Islamic heartland from the 7th century AD. Islam spread and united different communities in the Middle East from the later part of the 7th century AD; no power or culture could counteract its effect. Adulis fell under Muslim authority in 640 AD and powerful monarchs of Persia converted to the faith. Arabia merged with the Persian Gulf regions into the Muslim world (Freeman-Grenville 1981, p. 63). Societies living along the east African coast and the Indian Ocean experienced new developments of trade and transformation of spiritual values. The tremendous increase in trade strengthened the east African port-towns that marketed bulky goods and slaves. This would include ports on “the land of Popa-li” as mentioned in a 9th century Chinese text stating that at this place, Persian merchants bartered products for clothing (Freeman-Grenville 1962, p.

8; Wheatley 1975, p. 284). According to Al Jahiz, Unguja is one of the places that exported slaves, ivory and ambergris (Lewis 1974, vol 2, p. 212). Al Masud relates that merchant voyagers from Sohar (the old capital of Oman) and Siraf (its commercial competitor in the Persian Gulf) traded with east African port-towns up to Sofala.

The period corresponds to the Abbasid Caliphate in the Middle East and the Tang dynasty of China. Regular commercial shipping allowed sea-faring merchants from the Far East and from the Muslim lands of Oman and the Persian Gulf to expand their trading activity. This helped to sustain the entrepôts and encouraged more profound commercial transactions among the east African societies.

Historical sources mention some of the trading groups. Ibn Hawqal mentions “a race of white Zanji” bringing articles of food and clothing from other places, another group consists of “Waqwaq” living beyond Sofala (Freeman-Grenville 1966, p. 18; Ferrand 1904). Possibly both these accounts refer to traders from Madagascar (Vérin 1986, pp. 22, 34). Wilding (1987, p. 17) has alternatively sug-

gested that the “white Zanj” could be pre-Islamic Arabic settlers assimilated into the local coastal community. The other category of “Waqwaq” possibly refers to transient group of Asiatic traders or Austronesians from the Maldives who frequented the Swahili coast directly from the Far East; they exercised piracy at various towns and villages and terrorised people of “Qanbalu” (Al Idris 1836). Al Idris mentions the “people of Zabaj Islands” and Al Biruni attributes them to an influx from the island of Java (Ahmad 1960, p.128). The suggested roster of early foreign traders to the east African coast tends to exclude Indians and Chinese and it is often pointed out that Arabs or Persians acted as the middlemen in the trade between Africa and Asia. On the other hand, scholars have often overstated the case of Indonesians (Freeman-Grenville 1962, p. 18; Trimmingham 1975, p. 126; Tampoe 1989, p. 123; Wolters 1967; Hornell 1946, p. 252). They have extended the duration of Indonesian trade with east African coast to over a millennium (Allen 1993, pp. 66–8; Miller 1969, p. 164; Shepherd 1982, pp. 129–33) for which there is no definite evidence. The period, c. 700–1000 AD does however, bracket the formative period of Malaysian history as a great sea-faring nation that dominated the Bay of Bengal, the archipelago and the mainland part in that region (Christie 2000).

Sea-faring activity enabled people of the east African coast to gain extensive maritime experience and strengthen their indigenous technological skills. In sustaining interactions with other parts of the world, they may have been the most important operators of the coastal supply network. The *Periplus* states that they were already using sewn boats or *mtepe*, and dugout canoes. Other people also used sewn boats. According to the author of the *Periplus*, this was observed among the Aksumites as well (Casson 1989, p. 286; Hourani 1951, p. 96). The *mtepe* continued on the east African coast and did not escape the attention of Al Masud during the 10th century AD. The *mtepe* disappeared effectively in the 19th century possibly following the introduction of European sea-craft. Dugout canoes are also common in Asia and elsewhere and some writers (Hornell 1946; Prins 1959) have contended that similarities in such boat models, especially the use of outriggers observed in geographically different regions, depict a diffusion of cultural influences. This assertion may

not be necessarily accurate and it is also important to consider independent invention. Distinct communities facing fundamental needs for water transportation can produce similar technological solutions.

Later network. In the Later Horizon Cycle II (after c. 1100 AD), the Abbasid Sunni Muslim Empire in the Middle East collapsed and an earthquake hit the trading port of Siraf. These events affected several key port-sites based on the Indian Ocean exchange network and forced several others to be abandoned. The maritime trade network polarised. One end of the northern branch focused on the more southerly ports of the Persian Gulf closer to the main body of the Ocean and incorporated Hormuz and the islands of Kish-Kash. Another end was linked to the Red Sea ports (Tampoe 1989, p. 113) that flourished under the Muslim Shia Fatimid Caliphate established at Cairo in Egypt.

In the southern branch, each port-town apparently defined its own area of external connections. In Zanzibar, Kizimkazi for example maintained links with the Persian Gulf while Mtambwe Mkuu on Pemba Island was connected to the Red Sea ports judging from the relatively greater number of gold coins from the particular area that excavations have produced. The apogee for the later period of trade corresponds to the end of the Sung period in China during the mid-12th century. In Zanzibar, like in many other places, imports of Chinese ceramics increased (Insoll 1991). The external trade was crucial for economic prosperity of Zanzibar, as Ingrams (1967, p. 329) has remarked:

... the history of commerce in Zanzibar is the history of Zanzibar itself.

Zanzibar relied on the mainland to obtain the strategic economic resources for her external trade. One 13th century Chinese source describes people, traditions and typical trade products of an Island that may well be Zanzibar:

The Ts'ong pa country is an island of the sea (Unguja, or most likely Pemba on topographic ground) south of Hu-ch'ala. The inhabitants are of Ta-shi (Arab) stock and follow the Ta-shi religion (Islam). They wrap themselves in blue foreign cotton stuffs and wear red leather shoes (makbadh?). Their daily food consists of

meal, baked cakes and mutton ... There are many villages, and a succession of wooded hills and terraced rocks ... The products of the country consists of elephants' tusks, native gold, ambergris, and yellow sandalwood

(Freeman-Grenville 1966, p. 21).

The main Island of Zanzibar is centrally located within the regional network, in close proximity to the continental coastline and within the zone of monsoon winds. Merchants who lived on the Island enjoyed significant advantages as middlemen.

1.4 Zanzibar in recent times

The Oman support to the Swahili urban aristocracies helped drive away the Portuguese who had invaded the east African coast, 1500–1800 AD. This prepared the ground for the Omani political claim to Zanzibar and the rest of the east African coast. The political stability that Oman achieved in the early 19th century enabled the Sultan Said bin Sultan to shift his headquarters from Muscat to Zanzibar Town at Shangani (now the Old Town) and suppress the Swahili aristocrats opposed to his domination. Zanzibar with the rest of the east African coast was merged with Oman into an imperial state with Zanzibar Town as its capital until 1856. The Sultan's move to Zanzibar followed his appraisal of the rich African mercantile system in which Zanzibar was a central location. The Sultan "realised its potential importance as an emporium for trade with the interior of Africa" (Gray 1962, p. 218) and encouraged the ongoing lucrative trade in the region. Middlemen revived old trade routes with the interior.

Zanzibar was also the major depot for slaves captured from the mainland in east Africa and the profits from this trade significantly contributed to the royal treasury. The Sultan's policy of maximising trade profits was based on controlling the prestige-goods system, as valuable goods from the interior bound for overseas markets were first transited at the Zanzibar port for taxation by the royal customs authority that was under Indian management.

Britain suppressed the slave trade that had become antithetical to industrial progress and worked on a new order of trade based on a cash economy to replace the slave trade. Clove introduced to Zan-

zibar became the main cash crop with Arabs occupying important position in the relations of ownership. The Sultan drew his principal trading partners from dominant Western nations and consigned key positions in the local trade to Indian managers. Considerable surplus wealth that accumulated in Zanzibar promoted the growth of urban complexity. Britain ultimately took the political control of Zanzibar from the Sultan. The economic output was geared to Britain and the commerce was integrated into the modern world market (Sheriff 1987). This ended the traditional mercantile system that had prevailed for centuries in the region. With the British Resident as the chief executive of the colonial state who also appointed royal candidates to take only the nominal charge of the throne, major political, economic and judicial transformations of the colonial period followed. Britain continued to map the political landscape of Zanzibar until the successful conclusion in the struggle for political independence that had begun in the late 1950s.

Colonial policies exacerbated ethnic distinctions and fostered inequitable distribution of wealth among elite groups on the one hand, and the general populace living in poor economic and social conditions. This complicated the process of political transition that engaged different elite groups in an intense social and political struggle for controlling the Zanzibar state. Britain-granted political independence to Zanzibar, following the results of multiparty elections, empowered elite groups of chiefly mixed Arab descent. It engendered frustration among elite of absolute African descent and raised deep suspicion of the British-organised electoral process. The African majority party staged a revolution, presumably with the backing of urban left-wing intellectuals that deposed the new leadership on 1 January 1964 and ousted the monarchy. Within a few months, the United Republic of Tanzania was formed, resulting from the merge of Zanzibar with the opposite mainland territory of Tanganyika; Zanzibar remained a semi-autonomous state. This modern political unification contrasts markedly with the early situation when the coast comprised autonomous political entities, which simply maintained peace, economic contact and co-operation with the mainland interior (Middleton 1992, p. 20).

1.5 The development of complexity

Historical and archaeological sources are crucial for understanding urban origins on the east African coast. Linguistic sources have also contributed to the picture. The different sources have so far revealed that the development of urban settlements on the east African coast depended upon local capacities as well as the strength of the wider network at both regional and interregional levels. In characterising urban sites, some investigators focus their explanation directly on peoples or on solid architectural remains. I will discuss this further in the next chapter.

Pottery traditions have been widely used for explaining early cultural complexity. The studies have not generated much theoretical discussion on models of internal versus external origins of the society because the distinction between local and imported pottery is rather apparent. The discussion between people or their ethnic origin and pottery will be focused in the next chapter. Taking into consideration the intra-African perspective, investigators have appealed to the effects of migration for the apparent regularity in the pottery observed over the vast region of eastern and southern Africa. Migration introduces ideas but little consideration has been given to the possibility of these regularities being the effect of large-scale urban transformation processes.

Development of urbanism required the integration of social groups such as long-distance traders and skilled artisans who moved extensively in search of lucrative areas to set up their business. They carried new goods and technologies. Such high mobility groups promoted interchange and triggered a combination of factors not usually activated in the isolation of their original habitats, and which contributed to urban formation (Mumford 1946, p. 4). Examples of such effects include dense concentration of artefacts found at some archaeological sites in eastern Africa and the widespread homogeneity of the pottery traditions. These developments suggest activities of great scale that includes un-regimented movement of people and goods (Wright 1993, pp. 568–9) and which can be interpreted as the effect of rapid urban assimilation of such groups. However, regional pottery traditions have hardly been subjected to such thinking.

As remarked above, urban characterisation has rarely been based on the accounts of artefacts or the totality of the site. There is a need for studies to evaluate the extent to which complex sites, e.g. those of the agro-producers and metallurgists who made Kwale-tradition pottery, can be taken as urban. Limbo, located in the hinterland (district of Kisarawe) north of the Rufiji (Chami 1988; LaViolette *et al.* 1989), is so far the largest known site (c. 3000 sq. m) and one is tempted to think of it as having been part of the early urban network connected to Rhapta as its major seaport. However, the presence of relatively few imported objects from the site in contrast to considerable quantities of imports from many sites of the Later Farming communities may suggest limited contact with maritime trade. Perhaps other products and inland factors were significant in stimulating the socio-economic complexity of the sites. Chronological overlap between sites containing this tradition of pottery and inland sites containing Lelesu tradition pottery around the 3rd century AD is also interesting (Schmidt 1975; Soper 1975; Schmidt *et al.* 1992, p. 30; Sinclair 1993) and possibly indicates the apogee stage in the development of cultural complexity of the sites. The Tanzanian hinterland site of Mkukutu-Kibiti, Kivinje in the Rufiji delta and others on the islands of Mafia, Koma and Kwale (Chami & Msemwa 1997) were possibly villages or hamlets. We have noted the difficulties of relying on built structures in tropical conditions and this evaluation of the sites is based on their diminutive size and lack of concentrated resources. Subsequent work at Mkukutu-Kibiti probably shows a transition from hunting and gathering to a truly sedentary life and a wide network of contacts with contemporary sites of the interior. Together these sites represent the major, though not necessarily exclusive, expressions of early local civilization on the east African coast (Chami 2001a).

From the mid first millennium AD onwards, later farming and iron-working communities produced sophisticated pottery; archaeologists have called it by different names: Wenje ware, Kilwa kitchenware, and Tana ware and Triangularly Incised Ware (Chittick 1974a; Phillipson 1979; Horton 1984; Chami 1994). The pottery exhibits, first, greater diversity in shapes and decorative style when compared with Kwale pottery traditions. The emergence

of these aspects has hardly ever been linked to possible wider effects of urbanism in the region. Secondly, the sites are located in topographic terms on slightly lower ground than sites of their predecessors (Kiriyama 1993, p. 487). Thirdly, the spatial distribution of the sites over a much wider area than that of predecessors could imply demographic strength and also be linked to urbanism. These observations underline the critical importance for archaeological investigators to proceed beyond locating and dating complex sites to dealing with broader issues of their cultural complexity.

Some early complex sites of the Early Horizon Cycle II of the east African coast include Unguja Ukuu, Manda, Mpiji, Chibuene and perhaps also Mro Dewa and Dembeni on the Comoros while the majority were established from the late 8th and 9th centuries AD (Sinclair 1981, 1987, 1991; Horton 1996, p. 394; Battistini & Vérin 1996; Chami 1996, p. 53; Radimilahy 1998, p.129; Mutoro 1987; Abungu 1989; Chanudet & Vérin 1983; Allibert 1989; Wright 1984, 1993; Wilson & Omar 1997). These sites have deposits suggesting that development of complexity occurred in at least three fundamental stages.

The basal deposits represent sites built entirely with thatched mud-filled timber structures mostly from the 7–9th century AD. Chinese stoneware may be present in this incipient phase and often serves as a chronological marker. In deposits dating to the 9th century AD, white-glazed pottery of the Islamic period provides chronological indicators.

The mud-timber building tradition continued through the deposits of the second stage and in addition elite incorporated *porites* coral and even burnt bricks in some buildings at some sites. The volume of trade increased and some trading cities minted the minuscule silver coinage to facilitate local exchange. The coinage increased socio-economic differentiation through the system of hoarding wealth. Islam contributed to the social complexity and evidence for this ranging from the remains of mosques to burial orientations is unequivocal at some sites during this time.

The third stage dates from the 11th century when merchant-trading activity with the Muslim world increased tremendously. This is marked by the proliferation of pottery from the Islamic world including

sgraffiato and Chinese porcelain. Affluent members of the community built substantial homes and religious monuments in stone, but this was still a novelty to be assessed in terms of the wider established building tradition based on non-durable material that has been poorly preserved. In addition, the more extensive Later Horizon sites (after 1000 AD) overlie the smaller occupation areas of the Early Horizon and make it difficult to locate the latter. These problems complicate the definition and interpretation of settlement hierarchy.

The phenomenon of urbanism involves processes, which are wider in scope than are normally encompassed in the investigation of a single site. In highlighting the problem of understanding the development of early urbanism on the east African coast, I have taken a broad view incorporating archaeological, historical, and linguistic source material on Zanzibar and the east African coast in general. I have proposed cycles and horizons for a better view of the particularly early chronological trends in the region. The early networks are viewed as trade branches integrating both the maritime trade and the branches of the inland networks. I have also emphasized the dynamic relationship and the contribution of both the local and external factors that reinforce each other in the development of complexity in eastern Africa. I have shown that the key groups of merchants of different periods and also their gateway-community states waxed and waned. The significance of such broader exchange systems for the survival of the urban states is demonstrated by the collapse of the inland network in the later part of the first millennium BC that weakened the early powerful kingdom of southern Arabia.

Overview

In reviewing some important sites on the islands, I emphasized the crucial position of Zanzibar in the early cultural development of the east African coast, and identified probable shifting of capitals on the main Island that demonstrates the capacity of the early urban communities of Zanzibar to respond to changing situations. The large urban pioneer site of Unguja Ukuu is central to this development; it has preserved its old place name that implies its significance. Some scholars subscribing to the conventional charac-

terisation of urbanism based on stone architecture have not regarded such large important sites that concentrated resources in the region as towns. Studies on early complex development generally refer to historical sources for Cycle I as mentioned in the sources for the classical period. I would like to emphasize the need for an approach that integrates the

data from the two cycles into a coherent framework of urbanism for the region as a whole. This study tries to show the validity of an approach to urban formation on the east African coast that is different from the conventional one. The relevance of the approach to the available empirical data is discussed in the next chapter.

2. THEORETICAL PERSPECTIVES

In this chapter focused on characterizing early urbanism on the east African coast, I will examine the theoretical approaches and criteria commonly used for identifying early towns. The aim is to provide a better archaeological frame for understanding early urban complexity in the region.

The chapter is organised into four sections. The first identifies specific objectives of the study. The second section explores the theoretical points of departure and notions formulated in previous studies to identify early urbanism. To what extent do these provide a foundation on which to build the theoretical characterisation of urbanism? The third section makes explicit the theoretical frame of the present analysis, and in the fourth section, I formulate specific archaeological inferences to provide an overview of the development of early urbanism in eastern Africa.

2.1 Aims of the study

The present study was undertaken with the following objectives in mind:

1) To elucidate the spatial extent and functions of Unguja Ukuu as an early complex site. Initial surveys revealed cultural dynamism at the site and systematic research was needed to identify cultural characteristics of the site in more detail.

2) To provide a chronology of the settlement. The Islamic period pottery and the Chinese stoneware from the survey test pits produced preliminary results that suggested an 8th century AD date for the initial occupation of the site (Clark & Horton 1985). This confirmed information obtained from the discovery of some contemporary Muslim gold coins

from the site in 1865 (Pearce 1920). Basal levels of the site contain other common types of imported pottery such as the blue-green glazed ware and unglazed porous pots, but these were produced and traded over a very long period and are therefore of limited value for dating the early coastal sequence.

3) To suggest a conceptual framework for early urbanism on the east African coast and better comprehend African contributions to economic and cultural developments in the Indian Ocean region. I draw the conclusion that it is essential to restructure the problem of identifying early urbanism that has previously been focused on site features and particular social agents and in addition take into consideration the high degree of functional differentiation and specialisation, and the organisational aspects of the site and its surroundings.

2.2 Review of previous studies

Ecological constraints linked to a value system that conceived of space as a social (rooted in kin groups and genealogical proximity) region rather than a particular physical place, produced African configurations that looked quite different from the cities of the West.

(S. McIntosh 1997, p. 462)

Here I assess the basic notions formulated in previous attempts to define early urban contexts. Investigators in African urban studies have used different concepts of urbanism particularly in relation to the early period (see for instance discussion in Shaw *et al.* 1993, pp. 21–31). One general problem in east Africa that causes much ambiguity is that the urban

concept is implicit because the studies often lack explicit theoretical discourse. Investigators assign little or no significance to explaining their underlying notions (Smith 1972, pp. 567–9).

Towns are complex stratified settlements directly contrasted with coexisting village modes of settlements. One approach of investigation has focused theoretical assumptions of the peoples involved in the development of urbanism, the movement of people to form towns or their involvement in its growth and functions, regarded as inseparable from state formation (Trigger 1972, p. 576). Such an approach is exemplified on the east African coast by studies dealing with ethnic categories, e.g. the “Shirazi”, the Arabs and the Swahili and is used for investigating transitions to statehood. It tries to answer the key question: *how was the town formed?* This is contrasted with, though not necessarily made distinct from, another approach that is focused on settlement development processes. This searches for an explanation of urbanism directly from the effects contained in the archaeological context and tries to answer a key question: *what does a town mean archaeologically?* Hence the two key questions posed above appear to summarise the basic approaches to the characterisation of early urbanism, at least in eastern Africa. Here I will limit my examination of these approaches to a few references so as to condense this review.

Many investigators dealing with transition of village settlements to towns look for evidence of the power base as a necessary aspect for interpreting the change. Pioneers on this subject in Africa worked under the hegemonic ideology of colonialism characterised by tremendous conservatism in elucidating the African past, and thus they denied autochthonous developments. Studies were notably concerned with seeking explanations for the differences observed in the archaeological record by implicating an ethnic group *from the outside* as the principal actors representing in this case the state authority. This allochthonous explanation of the towns characterises both approaches. The first approach focused on the origin traditions of specific groups of people as agents of cultural change. The local chronicles which the coastal elite used to record their origin traditions, emphasized migration and settle-

ment of traders from Arabia and the Persian Gulf to east Africa. These traditions provided just the kind of principal actors that the investigators under the colonial influence wished to conceptualise. By taking the information from this historical source at face value and generalizing it as representing the societies in the region, they pre-conceived their social agents and sought archaeological evidence to confirm the primary role of these agents in the culture change (Kirkman 1954; Chittick 1984, p. 217).

Early Zanj society, as reviewed in the previous chapter, achieved a relatively high level of social and economic sophistication. Colonially motivated positions influenced archaeological scholars who failed to link material evidence and textual information. The allochthonous notions produced on early urbanism not only failed to win general acceptance but also subdued rational archaeological explanation and biased explanation of the African past. In short, previous studies often used a strategy of investigation that isolated particular ethnic groups to implicate as the principal actors in the development of local cultural complexity. I refer to this strategy of explanation as the “ethnic identity approach”.

A new paradigm developed from post-colonial scholarship in Africa generated antithetical explanations to those based on the former supremacist ideology. It gained momentum from the 1980s and consequently redressed some of the inadequacies of the colonial-motivated approaches. What underlined this major shift is the adoption of an intra-African perspective for the explanations of early social complexity. However, archaeological and historical studies of the east African coast under the new vista have simply rejected the use of exotic principal actors in the explanation of early settlement complexity and cultural traditions, but appear to retain the basic approach of ethnic identity. The key question asked under the new paradigm is, “Who are the principal actors? Are they Bantu agriculturists or Cushitic pastoralists?” (Allen 1993; Horton & Mudida 1993; Horton 1997; Chami 1996). The issue whether the principal actors consists of either of the two major indigenous African language groups on the east African coast has polarized scholars and impacted on the formulation of urban genesis and spread or diaspora of people and towns on the east African coast.

Scholars who argue for a pro-Cushitic viewpoint have almost taken the position of the old colonial assumption of the Hamitic myth, except that they only base their position on traditions pertaining to the northern part of the coast. For example, Allen (1993) used Horton's (1986) association of the early settlement pattern at Shanga in the Lamu archipelago with Cushitic pastoralists to formulate this position that the group comprised the principal actors in control of the maritime trade network with foreign merchants in the region. In this respect, Allen cited the incident of Persian merchants touring the Somali coast (Berbera) to barter their products as mentioned in a mid-9th century Chinese text (Freeman-Grenville 1966, p. 8). The expansion of trading networks of the 10th century AD associated with the evolution of urbanism and the solid architecture at Shanga, and perhaps at other sites along the east African coast, does not tally with the initial occupation of Shanga (c. 750/800 AD). Thus the problem was how to link the herders associated with such an early settlement pattern with later urban traders. Allen wished us to imagine that the herders from the Lamu region probably became Swahili urban traders and that this happened in the early period (late 8th century AD):

Suppose that some of (these herders) decided about the end of the eighth century to establish coastal settlements and take up trade instead of herding ... If it was these pastoralists who first decided to found coastal settlements, they might well have invited the collaboration of iron-workers, probably drawn from the neighbouring agriculturists.

(Allen 1993, p. 27)

Horton (1984, p. 382) suggested that the benefit of long-distance trade between the coast and the interior was the possible motivation of the mainland herders. He considered that this was possibly the result of their long time frustration occasioned by the effect of drought.

The expansion of trade during the 10th century AD has been associated with two developments, the spread of stone building technology to the east African coast, also verified at Shanga and the activity of merchants from the Red Sea, Gulf of Aden or Dahlak islands off the coast of Eritrea, who are considered to have diffused the stone building technology

(Horton 1996, p. 234, p. 399). Allen (1993, pp. 30–1) argued that this trade motivated the Swahili urban diaspora as well as pastoralists from the Lamu region to travel far away “with their (Bantu) iron-working clients” to the southern part of the coast, where they abruptly established Unguja Ukuu and other settlements of Shungwaya ancestral character. He added that the sites endured as key settlement entities in the region by accommodating reinforcements from periodic migrations of pastoralists from the Lamu region. He wrote:

A good number of pastoralists must have conquered their aversion to sea travel and sailed off to seek their fortunes up to a thousand miles away. ... If enough of them could create viable settlements in which they and their posterity could hope to hold a honourable position as founders, others (Bantu farmers) would have followed their example. The most successful attempts – Unguja Ukuu before its collapse, Kilwa, and Kisimani Mafia, for instance – may have attracted secondary and tertiary waves of migrants from the Lamu region ...

(Allen 1993, pp. 167–8)

Chittick (1984, p. 219) originally suggested this model of urban diasporas (discussed below) based on the pioneer towns of Benadir, that early descendants of Persian immigrants built the original towns on the Somali coast while Manda (with Pemba as “Qanbalu”) represented the subsequent southernmost primary settlement on the east. He referred to a number of oral traditions in his conclusion of Manda to support his position. Linguists and historians and archaeologists also supported the notion (Nurse 1983; Nurse & Spear 1985; Pouwels 1987; Horton 1996).

Scholars who argue for a pro-Bantu viewpoint accepted their role in migration and viewed them as cultural champions. This often also leads to the simplistic correlation of the group with a complex of material culture traits such as ceramic traditions (see for example Chami 1994, and for detailed criticism by Sinclair *et al.* 1993, pp.10–12). It is likely that innovations spread simultaneously by a variety of mechanisms including trade from centers in both the northern sector (the Benadir and the coast of Kenya) and the southern sector (the coast of Tanzania and Mozambique, and the Islands of Comoros and

Madagascar). Sedentary communities living in the former sector had much closer links with pastoralists than such communities in the latter sector. The views of the evolution of complex cultural traditions as having been engineered by specific ethnic groupings seem helpful neither in explaining the problem of urban transition nor how the town was formed. Very recently, Chami (1999b) has reviewed his position in favour of trade networks as the principal mechanism for the spread of cultural traditions.

The second common approach to early urban interpretation tries to explain the character of the town from the effects of processes manifested at the site and poses the question, *what does a town mean archaeologically?* The customary view of towns as “emblems of settled life conducted with the aid of permanent buildings for protection and storage” (Mumford 1946, p. 3) has largely dominated this approach. Hence, archaeologists have generally identified a town on the basis of its overall physical form or structure (Grove 1972, p. 526). Many studies attempted to examine the effects or trait-complexes but have limited the range of observation from archaeological excavations for representation of the urban setting to the remains of stone (Kirkman 1954, 1963; Chittick 1984; Wilson & Omar 1997, p. 38). I have called this the “site structure approach”. By emphasizing the urban-rural dichotomy, the site structure approach characterisation of a town contrasts stone constructions as a representative feature of urban life with mud-wattle structures indicating village settlements. Kirkman cited by Connah (1987, p. 63) expressed the primary and perhaps colonial notion behind this, that “a building not made of stone was not a building”. It is simply a “hut”. The larger picture of it being semi-permanent is that it represents no social change and social life of the dwellers is far from being permanent and unworthy of urban evaluation. The notion draws parallels between permanence in urban social life with durable constructions. There was no candidate site for a town without stone structures using this definition, no matter what level of socio-economic organisation and other developments that archaeological evidence may reveal.

Both the site structure and the ethnic identity approaches used for early urban characterisation in the previous studies are unfocused. Here I will reassess the site structure approach.

A number of points demonstrate that the site structure approach is unfocused and too restrictive for evaluating early urban phenomena or contexts. The main problem is its focus on durable buildings. These may be grand and striking, or preserve features revealing attributes of symmetry, typical decorations and other idiosyncratic traits that can hint at the larger picture. All of these have represented important criteria in many urban studies. However, the first shortcoming of the approach is that development of stone constructions comes late in the history of building tradition on the east African coast and reliance upon such a criterion dismisses any site of pre-stone period of construction as a candidate for a town. The approach lends itself to an unwarranted denial for the existence of towns during the early periods. This created a perfect pretext during the colonial time to repudiate early traditions of urbanism in the Africa south of the Sahara. Since towns are developed over time, a relevant approach of this investigation ought to avoid a narrow time frame of analysis and incorporate information from different periods in a diachronic view. Central site features may defy recognition and when preserved under rare circumstances, their character, plan or location may be still extremely variable even within distinctive phases of occupation (Andah 1995, p. 70). The important point made here is that identifying an early town by the physical form is not always a plausible solution, given archaeological reality in Africa south of the Sahara.

Use of the stone building criterion locks the focus of urban inquiry on to tangible structural data, while more often than not, the early archaeological record lacks that type of data. Perhaps Horton’s use of the posthole impressions of the mud-wattle structures traced in the soil from Shanga may be viewed as an attempt to unlock the inquiry. However, he used on such non-tangible data the notion of “formal planning” commonly adopted in urban studies associated with tangible structures to deduce the effect of town as a polity or administration (Horton 1996). The approach severely curtails its interpretative value and bears little potential for extrapolating social forces and reaching a meaningful deduction when applied on intangible data lacking most salient attributes of tangible data. With such a primarily eurocentric notion of “formal planning”, Horton came up with negative evidence for the presence of early

states and towns. The fundamental shortcomings of the site structure approach take away any predictive power of this approach and reduce its potential for exploration of early urbanism in the region.

Concerning the ethnic identity approach, first, the adoption of principal actors in the explanation of urban complexity is questionable, because it equates archaeological culture with particular ethnic groupings (Shanks & Tilley 1987, p. 12). Second, the treatment of stone building technology completely alienates it from local society. This use of an allochthonous factor to explain changes ties the two explanatory approaches together. I think it is a cultural misconception to argue that an attribute of local culture such as this ought to match affinities, for instance, from the hinterland or the interior of the continent to qualify for being regarded as local (Chittick 1984, p. 217). Thirdly, the migration premise taken from the chronicles introduced a gross anomaly into the archaeological chronology of early urbanism on the east African coast. The ascribed date of around the 9th century AD provided a temporal bracket for rejecting any corpus of dating evidence pointing to earlier periods (Chittick 1984, pp. 67, 94) and other scholars have also followed it.

Archaeological evidence so far recovered from the southern part of the coast reviewed (Chapter 1, and see especially Chami 1998, 1999c) provided evidence of complexity tied to chronology that challenges many of the views expressed in the previous studies. It does not correspond with Allen's (1993, p. 27) model of Swahili urban diasporas to the southern part of the east African coast. Together, the historical and the new archaeological data should allow us to propose a better chronological framework of early urbanism for the eastern coast of Africa. The debate on Bantu and Cushitic principal actors may exalt a particular interest group or activity and serve as a pretext for addressing an imbalance of the previous account. As pointed out by Hassan (1999):

We must not allow ourselves to be embraced by legacy of the past and build on the ruins ... The emphasis must be placed not on the glory of who did what first, but on the means by which people adopted or initiated certain innovations, and the social matrix of change, development, and cross-cultural contacts.

The general problem of explaining urban transition or *how a town was formed* and also *what it means* lies in the use of a single criterion. In the case of the site structure approach, the criterion used, namely, building in stone, consists of a single morphological feature that hardly reflects urban diversity. In the case of the social identity approach, the use of ethnic agents to explain the transition to urbanism is even more problematic and studies have resorted to cultural diffusion. Andah (1982, p. 69), for instance, has criticised such a tendency as reflected among investigators in African studies in adopting allochthonous explanations deriving perhaps from the Near East (Sanders & Webster 1978, p. 283). Archaeologists do integrate data from texts and iconography and Connah (1977, p. 461) has argued that categorical avoidance of the external assumptions is hardly escapable. He stressed the advantages of drawing inferences from diverse material or resources. His own suggestion about the context from which early urbanism took place is that perhaps "individuals who were able to take control of trade in basic items such as food, metals, and salt thereby acquired power over their societies".

Neither the site feature approach nor the ethnic identity approach lead to satisfactory archaeological inferences for characterising early complex sites on the east African coast and they need to be replaced.

2.3 Theoretical points of departure

Reassessing the contributions of the previous studies on the procedures used to interpret early urbanism shows us the need for alternative archaeological frames of reference. The conceptual tool that I will propose here for defining a town archaeologically is not a new idea but a framework of inference intended to produce a better strategy for early urban characterisation. It is not claimed here that such framework is relevant for every site but it aims to overcome the shortcomings identified in previous studies. The approaches suggested will be based upon broader criteria for examining the material remains and contexts.

As archaeologists, how can we infer the former existence of urbanism? The prospective line of enquiry is to understand how the town could have been formed and focus practical examination on the wide

range of effects generated. The new conceptual tools ought to direct theoretical assumptions to the problem of identifying the effects of processes associated with early towns *in sensu lato*. The use of a preconceived notion of social agency should be disposed of. In building the strategy, I would like to discuss two models for the emergence of key sites of Cycle II from *c.* 500 AD onwards on the east African coast in the light of the available empirical evidence.

2.3.1 Alternative models for the emergence of early urbanism

The first model for the emergence of the towns widely used in east African scholarship assumes that the development of all major early settlement entities associated with farming and iron-working communities (Cycle II) involved a change from village to towns. I refer to this view of a town resulting from an outgrowth of a village as the *organic* model for development of early urbanism. In criticizing a similar view in West African archaeology, Andah (1995) suggested that “towns are not necessarily alike in terms of their origin and their historical growth” and argued that some towns were established relatively quickly through an expanding frontier of external trade and further that “a distinctive, if not common feature of these towns was the presence of a market right at the center”. I refer to this second model, viewing the rapid establishment of the regional market towns on sites from the outset as the *generic* model for the development of early urbanism. How should we categorise most early regional settlement entities that emerged along the east African coast during Cycle II (*c.* 500–1000 AD)?

Previous studies using the organic model interpreted the earliest archaeological deposits of the key sites as representing villages that later transformed into towns (Pouwels 1987, p. v). Chittick (1974a) thought that early Kilwa comprised a poor fishing village. However, he specifically recognised the earliest phase of Manda. The reason for his urban characterisation is probably the early occurrence of stone relics and the considerable quantity of imports recovered there; otherwise the two sites largely resemble each other in their fundamental characteristics e.g. in the shapes, size and colours of glass, shell beads and local wares recovered from the early pe-

riod (Morrison 1984, pp. 181, 183; Chittick 1984, p. 217). Similarities in the objects as well in house construction continued through the later period (Chittick 1984, pp. 15, 26, 191). We also noted Kleppe (1992), who favoured the village interpretation of the early settlement at Kizimkazi.

The affluence resulting from the community participation in the exchange networks seems obvious in the deposits. Wright (1993) pointed out the dearth of archaeological evidence prior to this period, except for settlements of the early iron working community that Soper and others had described as dating from *c.* 200 AD. Assessing the size and nature of the 9–10th centuries AD settlements in the region, he considered these sites as villages, whether large or small. In his view, towns began from the 11th century AD onwards with Islamic influence integrating into local ideological and political organisations. Mutoro (1998, p. 192) indicated that affluent coastal sites that predate 800 AD grew up along the major commercial highways and participated in the long distance trade without commenting explicitly on the character of their cultural complexity.

The general attribution of the key sites to village is not devoid of inconsistency from the character of the deposits in terms of economic prosperity. Chittick (1975) realized that major developments impacted on the early sites, but dismissed these as originating from elsewhere in the region. Horton’s consideration that these were villages with seasonal “trade fairs” may reflect the difficulties from his approach in obtaining decisive evidence for the presence of a state administration. His allied conclusion that merchants located the sites peripherally in order to escape detection and control by the primary towns in the far north matches Chittick’s notion of urban origins, as mentioned above.

Under the formidable Sasanian power around 500 AD and a general recession of the Roman trade, the eastbound overland trade of the Mediterranean switched to the maritime route through the Red Sea. The frontier of western Indian Ocean trade expanded and visits to major towns of eastern Africa increased. Unification of the Tang dynasty and the rise of the Islamic caliphates in the few centuries that followed provided further stimulation to the interregional trade. This perhaps summarizes the wider context in which Unguja Ukuu was founded as an

important centre on a new location. At local level, it is probable that groups of early villages in the region had centres of trade. But subsistence production practised in such circumstance of isolation does not help the non-agricultural sections to grow. The expansion of the trade frontier affording greater possibilities of interchanges usher new combinations that stimulate such sectors to grow (Mumford 1964, p. 4). New sites attract groups of skilled workers and traders from the villages who operated as “wholesale” middlemen and competed to control the flow of merchandise and acquire social positions. Elite members of existing clans, lineage chiefs and other social groups struggle to accumulate resources from the exchange system and maintain their status. Hence, migrants from local villages on the Zanzibar Islands, remnants of the Late Stone Age communities whose presence before the turn of the first millennium AD has been recently attested on the Islands, and perhaps those of the Late Horizon Cycle I settlements from the Rufiji area whose cultural importance continued up to *c.* 600 AD (Chami 2001b, p. 84; 2001a, p. 17), and perhaps others from elsewhere, might have been motivated to establish Unguja Ukuu as a market town in the region.

Existing empirical evidence from the key sites of the Later Horizon Cycle II (*c.* 500–1000 AD) that has been used to imply villages may well be reinterpreted in support of the generic model of urban development that the sites were established abruptly as market *towns* from the onset of occupation. First, this comprises widely traded exotic goods such as glass vessels and beads, glazed ceramic vessels that occur very early in the sequence. Second, archaeological deposits of the early key sites on the east African coast contain considerable quantities of subsistence and technical debris (see detailed discussion by Wright 1993, pp. 661–4). In whole, the general site formation appears to be the establishment of market towns on new locations rather than consolidation of the existing village activities.

Such gateway communities (Burghardt 1971; Hirth 1978; Horton 1996, p. 20; Abungu 1998, p. 204) developed the sites as new redistribution centres and pursued the economy based on intensifying regional and external exchange. This enabled them not only to participate in long-distance interactions at regional and interregional levels and make avail-

able to their settlements resources from different ecological zones, but also readily absorb suppliers of foodstuff and raw material even from far distant areas of the Indian Ocean. In the 10th century AD, Al Masud also came to imply this (Wright 1993, p. 664). The varied environments of Africa (Chapter 3) consisting of the islands, the coast and the vast interior provided extensive areas for the long-term secure operation of a wider network that opened incentives for the development of urban complexity.

Part of the early urban complexity was the prompt interaction of the urban community with herders and active farming villages that produced agro resources over and above local subsistence requirements. Maintenance of peace and security along lines of supply is important to ensure continuity of the economic relationships upon which urban prosperity depended (Hirth 1978, p. 42; Horton 1984, p. 36), and Nicholls (1971, p. 42) noted this with respect to the expansion of urbanisation on the east African coast during the 19th century. However, economic competition and warfare may alternate and this could be a cause for destabilisation of the networks among early societies, and even wreck the economic and social foundations of the early urban centres in a region (Friedman & Rowlands 1982, p. 238). As institutional power builds up in time, authorities attempt to convert trade into tribute relations and win political allegiance (Southall 1998, p. 16). This might well be the case with the Zanj communities, as Al Masud informs us that warfare was not uncommon (see Chapter 1).

Secondly, a fascinating indicator lending support to this *generic* model for the development of the early key towns during the period is the location of sites with sheltered sandy beach anchorages that guaranteed access to the wider interactions in surroundings although not necessarily suitable for annual cropping or in proximity to productive areas. This unique location demonstrates the need to provide services and the potential benefit of the long-distance trade. The highly effective way of amassing substantial wealth from circulation depends very much on a well-organized system of communication, the requirement of which constitutes the primary motive for the location of the sites. This lends strong support to Andah’s general observation that markets had a central function in triggering formation of such

early towns. In addition, the location might well have been important in determining the subordination of other nearby sites to peripheral or neighbourhood status. Sea craft comprise important means of transportation; it facilitated the movement of people, bulky cargo of agro-products and raw material, as well as the exchange of information and cultural traits to areas accessible to the sea.

Hence, the generic model of urban development presented here does not claim relevance to every site in the region, if it can be shown that investigation of longer-term changes to urbanism is a germane research concern, or objective for some particular sites. It may suggest that most key sites did not produce archaeological deposits representing the transition from villages to towns in the conventional way.

2.3.2 The framework of archaeological inference

We need to equip ourselves with a new set of conceptual tools for recognizing early urban contexts so as to answer the question: "What does a town mean archaeologically?" There should be a shift in emphasis from preoccupation with monumentality (the site structure approach) based on the customary view of the town and social agency, as used in the ethnic identity approach. We ought to direct our theoretical assumptions away from, out of, or in addition to central site features and focus on the problem of identifying the effects of processes associated with early towns, and the use of a preconceived notion of social agency should be disposed of. The approach will be based upon broader criteria for examining the material remains and contexts, and focus practical examination on the wide range of effects of the functional processes generated by the town. Processes and archaeological contexts that appear significant will be constituted in a framework comprising relatively broad sets of functional criteria, open and descriptive in character that will also consequently reflect urban diversity, relevant for the earlier period. Such a framework will be developed in this study and should be regarded as the means for exploring very diverse and socially complex issue of urbanism.

A review of literature on the concepts of African urbanism will provide the basis for selecting criteria. Available overviews include Connah (1987), Sinclair *et al.* (1993), S. & R. McIntosh (1993) and Hassan (1993). First, the characteristic difference between urban and non-urban units of settlement lies in the greater scale and diversity of functions and interactions in towns as compared to villages (Tringham 1972). Second, a town concentrates goods and services both for its own use and for a wider area (Mabogunje 1962, pp. 3–4; Grove 1972, p. 560; Southall 1998, pp. 1–5; Marx & Engels 1976, p. 64).

Third, my understanding is that most functional organisations of a vigorous society leave material traces and impact on the environment. These attributes are possible to interpret archaeologically long after towns have disappeared. The general idea of using functional organisation or context in constructing an archaeological inference for urban characterisation is not entirely new in African studies. It is not a legacy from the previous studies on the east African coast but from urban studies in West Africa, as Andah (1982, p. 69) adopted functional variables such as agriculture, trade, cultural industries, fishing and others. It is not straightforward to infer all the functional concepts directly from the material remains, but they are crucially important variables to understand. Being not self-evident to everyone it may be worthwhile to review some important ones here.

Technological functions embrace specialist activities comprising many variables. These operations generate income for the population, goods for wider exchange network, and allow the elite to accumulate the wealth and settlements to flourish as trade centres.

Socio-economic functions include interaction networks involving the prestige goods system, production processes and education as well as administration, defence and warfare. The exercise of control over the central social hierarchy and over the above-mentioned activities differentiates activities of groups in the core area, often also dealing with administration in the wider area. Ritual mediation between social groups and domination of the hinterland are other important functions. These often de-

ployed religious symbols and rituals to which all the population adhered. This reduced tensions between urban and kin-related structures (Southall 1998, pp. 14–6). In terms of general theory, scholars once used theoretical criteria for urban characterization that ruled out ceremonial sites (Wheatley 1972). Central market sites have long served as loci of ceremonial activities and the exchange of information.

Agriculture is a socio-economic function that provides a subsistence base and engages a large section of the population. It is accepted here as an important variable, but it is difficult to document its physical manifestation at key sites on the east African coast. First, the market towns did not require self-sufficiency in subsistence to avoid starvation and to satisfy other social demands. The location of the towns in non-alluvial soils suggests the option for the central hierarchies to avoid starvation was not to choose to intensify agriculture; it was more convenient to use the network of settlements to intensify external exchange. Hence agriculture is indeed important, but a less significant variable for urban definition in the region and non-agricultural functions provide a more relevant option (Trigger 1972, pp. 577–8). The Benadir towns provide an exception, having both good possibilities for exchange and highly productive riverine agriculture (Jama 1996).

Community is sometimes used to account for the definition of towns. However, community size alone cannot serve as an index of urbanisation. Population density linked to community size and pressure on land can be an important consideration, but requires cautious control of chronology and intricate series of archaeological reasoning.

In the explanation of the urban context, it is neither possible nor necessary to account for every function of the settlement. The framework will be limited to variables that are sufficiently generalized for reflecting the urban context. Such inferences will be evaluated in terms of the degree and effectiveness of the organisational functions recognized. Concentration of resources is an urban effectiveness tendency to take advantage of scale economies. For example, the exchange of merchandise brings about a division of labour, which is an important strand of complexity that can be used to distinguish the degree of social differentiation and recognise urban contexts. The inferences will be combined to provide an overall impression of urbanism in eastern Africa. Other lines of evidence to provide low-level conclusions will be sought to help construct the larger picture.

In the chapter that follows, I describe the general environment and economy that are important variables in the developments of complex cultural systems.

3. ENVIRONMENT AND ECONOMY

The environment provides the setting for the development of economy and technology as factors shaping cultural destinies. It hosts opportunities and constraints in social and economic terms, for a community to reorganize itself constantly and it is therefore a reinforcement that set in motion an increasing growth of social complexity (cf. Reader 1998, pp. 224–6). Environment exercises great influence not only over social organisation, but also site location rules, and other social institutions (Murphy 1986, p. 121). There are many references on the environments and economies of the east African coast and no attempt will be made here to cover them. This appraisal will be limited to factors that could have contributed to and affected changes in the traditional economy on the Tanzanian coast in general and on the Islands of Zanzibar in particular.

Zanzibar comprises the two largest islands, Unguja and Pemba that are separated from the continent by the Zanzibar channel (30–40 m deep) and the Pemba channel (700–800 m). Unguja is the main island and it lies between 4° 80' and 6° 30' S; it is about 87 km long with an area of about 1660 km². The Sister Island of Pemba lies 48 km northeast of Unguja between 39° 35' and 39° 50' E, and it is about 56-km long and covers an area of about 985 km² (see Fig 1.2).

This chapter is organised into three main sections. The first on the environment, discusses the physiography, soils, flora and fauna, rainfall, temperature and humidity. The second on the traditional economy, discusses the subsistence activities and technologies. The third main section deals with location of the early sites.

3.1 Environment

3.1.1 Physiography

This section will discuss geology, topography, drainage and hydrology. The geology of the islands is of course related to that of the nearby African mainland. The latter area consists of the low-lying coastal plain (less than 200m in altitude) and the hinterland. The hinterland is a low plateau made up of sandstones overlying clayey sands. The coastal plain is largely made up of Cenozoic rocks derived from Palaeogene maritime sediments of clay sand, limestone and lagoonal mud. The upper beds consist of terrestrial, riverine and lake sediments from the Miocene to the Holocene periods. The beds are related to Beit Ras sandstones and raised beach sands on the main Island of Zanzibar (Alexander 1968; Mörner 1992). The coast and the hinterland are locations for many archaeological sites; these two broadly distinct geological units must have provided the fundament for cultural developments in the area.

The coastal plain was broader in the pre-Miocene period and carried the basin of the Rufiji river system that discharged into the Indian Ocean. A delta of accumulated coastal sediments formed over the 250 million year development of the Rufiji basin. The sediments include a variety of limestone and traces of lignites and pyrites. It is mentioned below that the latter has been observed to permeate as concretions from clayey limestone found in some parts of the Unguja Island. In Quaternary times, deep blocks of sediments gradually pushed away from the delta resulting in clusters of dry-land cores that emerged

from the sea. These form the bedrock of the islands of Zanzibar and Mafia. The honeycomb casing found near the shorelines of the two islands and the immediate smaller islands consists of the erosion-resistant strata of Miocene sediment formed after the sea had eroded the thinly cemented top layers. Other areas of rocky landscape on the Islands consist of reef limestone and coral that during the Quaternary gradually filled the deep channels left by the longer courses of the Rufiji system. The isolated residual hills on Unguja Island (e.g. in the Masingini-Mkokotoni area) and the low ridges in the southern part of the Island resulted when the sea level dropped, the tidal action further modifying the coral platform and finally eroding the formerly consolidated ridge system (Kent *et al.* 1971).

The landscape of the southern part of the main Island and the peninsula where Unguja Ukuu is located consists of a coral limestone that covers a Pleistocene deposit (Fig. 3.1, see page 48). The early site is on the low ridge of deep sands and its low-lying area inclined to the sea may represent such a sand-filled stream on the bed of coral limestone. The well dug into this area has been providing reliable supplies of water to the present day inhabitants of Unguja Ukuu.

The Islands of Zanzibar can be divided physiographically into three zones, the coast, the low-lying corridors and elevated areas. The coastal plain is characterised by coral-reef limestone areas. The littoral part of the coast where many early sites are located comprises beaches (often linked to patches of deep sands), mangrove swamps and coral limestone areas (CLA) (Fig. 3.2). The corridor zone comprises wide bottomed valleys flanked by the elevated areas of hills and ridges.

In the central coast of Tanzania, geology largely influences topography, drainage and hydrological conditions. In the hinterland, hills and mountains such as Nguru, Usambara and Uluguru fringe the landward side. Major rivers such as the Rufiji, Ruvu, Wami and Pangani that have been the foci of recent archaeological surveys provide an extensive drainage network. Smaller rivers recharge lakes and swamps, providing excellent locations for farming community settlements. Bays, estuaries, sand dunes and coral cliffs mark the indented coastline. Many

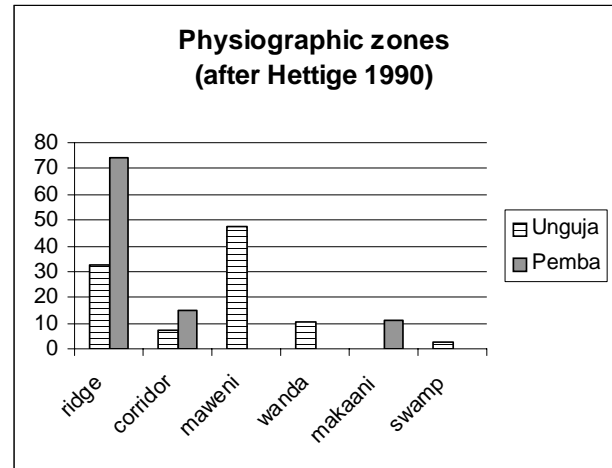


Fig. 3.2. Physiographic zones – Zanzibar Islands.

farming and trading community sites are located at the head of estuaries (Wright 1984, p. 14; Horton 1996, p. 407).

On the Islands of Zanzibar, the seashore rises a few metres above sea level while the CLA stretches inland. There are no mountains on the Islands of Zanzibar except ridges, fault structures and the corridor valleys. The flat valleys culminate in eroded bays at the extreme northern and southern ends of the Islands. The valleys vary in width between 4–5 km stretch north and west on Unguja Island. These occupy the central parts of this Island (e.g. Bumbwini, Bambi-Upenja, Mahonda and Mwera). The highest point on Unguja Island approaches 120m and the topography descends gradually to the eastern part of the CLA (Fig. 3.3, see page 48).

The drainage system of the islands relies on rain-fed streams that follow the topography and there are no perennial rivers. On Unguja Island, the largest stream (Zingwezingwe) flows northwest and terminates in basins generally corresponding to the areas of highest rainfall (Fig. 3.4). The drainage system is more complex on Pemba Island. Before rainwater discharges into the sea on the western coast, it runs along the slopes of deeply eroded valleys via the swampy and silty floors of the tidal creeks. On the east, altitude drops gradually from the ridge and the flow accumulates in small rainwater lakes onto the old reef of low flat-bottomed valleys that characterises the eastern part of the island.

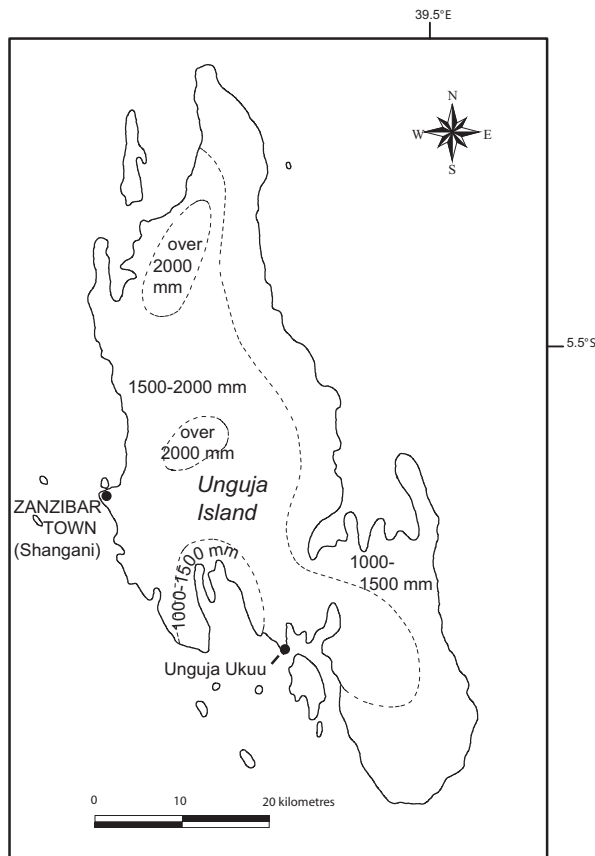


Fig. 3.4. High rainfall areas on Unguja Island.

Hydrological conditions are excellent on the Zanzibar Islands. The soil strata in the corridor zones reserve adequate fresh water at depths not exceeding 15m. Water is rarely depleted when used for domestic purposes. Ground water is tapped from surface wells. Some problems can occur near the shoreline, as water may be tidal and susceptible to seawater intrusion unless wells relying on perched aquifers are not overused (Stockley 1927, pp.15–7). Fresh water sources are also reliable on Pemba Island and most early sites are distributed following the advantages of the sea.

The relatively thin (10m) layer of Quaternary limestone in the coastal areas does not form an aquifer but conveys sub-surface streams running on its impervious strata and showing up in caves and solution channels. This water is available all year round and only decreases somewhat in dry seasons. Some villages on Unguja Island have traditionally dependable upon these water sources.

The platform of coral limestone collapses as a result of progressive dissolution of the rock shell by rainwater that weakens its roofing, resulting in the

exposure of the various caves found on Zanzibar Islands. Many underground caves are given over to spirit worship. Microlithic tools of a Late Stone Age population dating before the first millennium AD have been found recently in one such underground cave located at Pete, c. 3–4 km northeast of Unguja Ukuu (Chami 2001b).

3.1.2 Soils

Major soils of the Tanzanian coast consist of sands and laterites (Appendix A). Non-calcareous black soils and some geologically recent coastal sands also occur. In the southern part of the coast, river valleys with alluvial and deltaic soils, which are particularly significant for agriculture, break the general pattern.

The soils of the Zanzibar Islands (Fig. 3.5, see page 48) are largely formed of material eroded from Quaternary coral limestone mixed with recent deposits (Stockley 1927). Calton (1948, Calton *et al.* 1955) and Hettige (1990) have classified these soils and here the FAO (1973) terminology will be used for reference.

On Unguja, Calcaric Regosols, Cambic Arenosols and Acrisols (*Kichanga*) occur in the coastal zone particularly in the western half of the Island. These comprise a major group of rich soils on Zanzibar and represent an active catena rather than a mature sequence. Shallow Leptosols (*Uwanda-Maweni*) groups are characteristic of the stony CLA terrain not attractive for settlement. In the corridor zone, the Vertisols (*Kinamo*) are traditionally distinguished by cracking when dry. However, these are not homogenous soils. Hettige shows this variation identifying Areni-Gleyic Cambisols, Cambic Arenosols, and Haplic and Gleyic-Haplic Nitisols. In the elevated inland areas, Cambisols (*Kinongo*) comprise a mature sequence. At present, these soils support the highest rural population density on the Zanzibar Islands and also occur along the coast, and also as pockets of deep deposits in the CLA.

Pemba soils are generally considered to be more fertile owing to the higher precipitation experienced there (Appendix A – Pemba soils). They are generally productive, especially the rich types, and provided the local communities with the capacity to maintain a subsistence economy.

3.1.3 Flora and fauna

The vegetation of the Tanzanian coast and the Zanzibar Islands is classified in the FAO vegetation map of Africa as “the Zanzibar-Inhambane floral mosaic” (White 1983). The savannah bush dotted with canopy trees is the most extensive sub-mosaic of the Tanzanian coast. Beyond the hills fringing the coastal belt, the hinterland comprises a large arid expanse of bush and thicket. Towards the interior, the mosaic merges into remnant forest distributed at a distance of about 16–32 km (250–370m above sea level).

The structural economic changes introduced from the colonial period on the Islands of Zanzibar, have largely altered traditional land-use patterns. On the Island of Zanzibar, the elevated inland areas, the western half of Unguja and an area covering most of Pemba comprise zones of natural rainforest. These are now replaced by clove plantation agriculture and must have been an important resource area for the early communities on the islands. Recent food-producing activities have intensified the stress on land and forests (see below section 3.2).

The corridor zone lying between the ridges is thought to be the original home for the Borassus palm (*Borassus aethiopum*) and it is characterised by patches of the savannah grassland. The economic importance of this area is discussed below.

The coastal vegetation includes mangroves (e.g. *Rhizophora mucronata*, *Gymnorhiza bruguiera*) found in swamp and estuaries. These are more abundant on Pemba Island, where they cover nearly the whole western coast and also front the mouths of all streams. Mangrove protects waterways, and provides a breeding ground and a general sanctuary for innumerable marine organisms. The mangroves are among important coastal resources heavily impacted by human activity.

Other important trees of the coastal zone include coconut (*Cocos nusifera*), Borassus palm, mango (*Mangifera indicus*) and baobab (*Adansonia digitata*). The significance of these resources for the present as well as for the traditional economies will be discussed below.

The CLA has natural vegetation consisting of scrub, low, and dry bush. Species include *Psiadia dodaneifolia* and *Adansonia digitata*, *Xyrophytes*,

Euphorbia, *Phoenix reclinata* (wild-date) and Borassus palms that commonly grow on the 10-m. contour near the coast. Asiatic species include Casuarina (*Casuarina equisetifolia*) and screw pine (*Pandanus livingstonianus*) growing notably in rocky surfaces. The shallow soils of the CLA restrict land available for annual cropping and are suited mostly for grazing and shifting cultivation (Plate 3.2a). The economic importance of CLA in relation to the site location of Unguja Ukuu will also be discussed below.

The Zanzibar Islands have supported a varied fauna. The marine and littoral fauna, which provides a wide range of food resources, and the fishing gear, are detailed in Sinclair and Richmond (1997). The islands also supported a variety of terrestrial species. Until recently, the CLA bush and the remnant forests teemed with a variety of small game such as duikers (*Cephalophus adersi*), the Zanzibar suni (*Nesotragus moschatus*) and tree coneys (*Dendrohyrax neumanni*) as well as predators such as leopards. The common African pig (*Potamochoerus nyassae*) is known on Unguja Island. The black pig (*Sus scrofa*) is known from Pemba Island and historians postulated that the Portuguese introduced it in the 16th century. The red colobus monkey (*Colobus kirkii*) is a well-known endangered species that is probably endemic to the Unguja Island forest. Large bird resources of Zanzibar include Muscovy and Madagascar ducks, guinea fowl and geese.

Geologists have noted differences in the distribution of fauna between Unguja and Pemba. For instance, fossil copal and some living fauna such as leopard, ant (Swah. *siafu*), *colobus kirki* monkey are almost unknown on Pemba Island and species like flying fox *Petropus voeltzkowi*, said to have affinities to the Malay-Indonesian archipelago and *Dendrohyrax* among other mammals occur only on Unguja Island.

3.1.4 Rainfall, temperature and humidity

Climate and weather provide important sets of environmental conditions for human survival. Two factors moderate extreme weather conditions in the coastal zone, the rainfall pattern consisting of main wet seasons experienced annually, and the move-

ment of the tropical convergence zone. The latter induces wet conditions on the coast and the interior. The north-east and south-west monsoon winds blowing twice a year influence the rainfall pattern and have affected cultural evolution in the region. The south-west monsoon begins with its lowest speed (about 6 knots at 15.00 hours) around March and ensues the highest precipitation (*Masika*). The wind attains the highest speed between June–September, moves away the cloud cover and bestows a cool and dry season (*Kipupwe*). The swift Mozambican current operating during this windy season encroaches the Zanzibar channels and severely limits sailing activity. Around October–November, the region experiences a season of lesser rainfall (*Vuli*).

The land strip behind the coastal plain on the mainland and the CLA on the eastern parts of the Zanzibar Islands receive less rains therefore have slightly longer dry seasons. The north-eastern highlands of Tanzania and Pemba Island receive a lot of moisture perhaps owing to their direct exposure to the north-east monsoons. Rivers running in some

areas on the east African coast break conditions of aridity such as around Pangani and Wami river valleys in Tanzania, or Tana and Galana river valleys in Kenya. The average temperature for the coastal area is 24° C. Temperatures and humidity drop considerably towards the African interior where land broadens and rises from the plateau to higher elevations.

The Zanzibar Archipelago has a relatively high precipitation. The mean annual rainfall is about 1955mm with Pemba Island receiving the highest in East Africa. The heaviest rains appear in March–May (Fig. 3.6). Average annual temperature ranges between 23–28° C with a few degrees lower in Pemba (Fig. 3.7). There is minimal daily variation of temperature. Cloud cover is associated with the north-east monsoon and begins to increase around February causing the rise of humidity (55–95%) and temperatures. The cloud cover retreats between July–August (Fig. 3.8) causing the lowest annual temperatures.

The wind system and the resultant weather have provided soils with adequate potential for agriculture, sailors with conditions to trade, and local societies with the rhythm of cultural life.

Fig. 3.6. Rainfall pattern – Zanzibar Islands

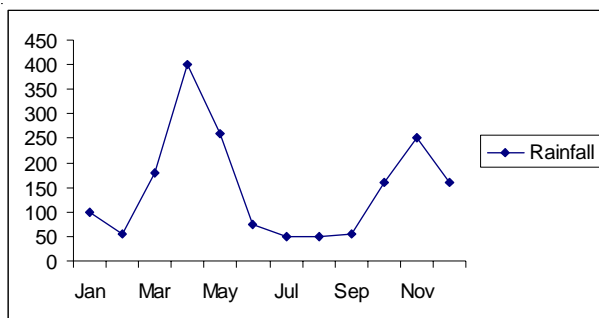


Fig. 3.8 Cloud cover – Zanzibar Islands

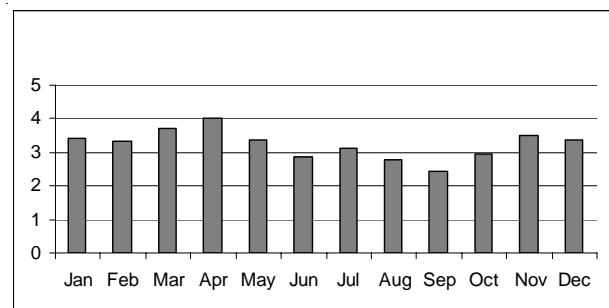
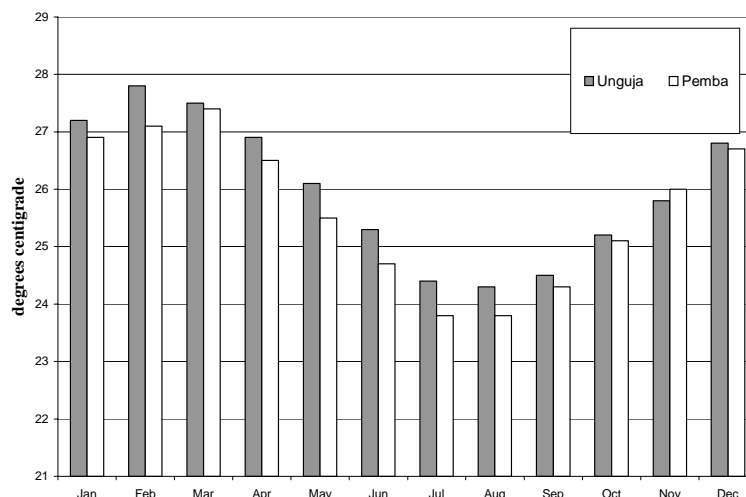


Fig. 3.7. Temperature pattern – Zanzibar Islands



3.1.5 Environmental change

Changes of environment impact upon human cultures and affect distribution of natural resources. For instance, the present ecological regimes reflect the effect of complex long-term cyclical climatic changes associated with the Quaternary period and in the last 10,000 years, temperature rises transformed the African continent into regions marked by disparate moisture patterns (Scott 1997, pp. 43–5). Sediments and sea-level fluctuations are among different records used to infer past climatic changes. Stockely (1927) is perhaps among the earliest geologists who suggested a broader picture of environmental change on the islands of Zanzibar. He examined the morphology of the eastern coast and recognised in Unguja Island exposures of raised beaches, and compared these with details of the present coastline. Stockely suggested rise and retreat of sea levels during the Pliocene period. He noted the western coast of Pemba Island is characterised by drowned valleys and creeks of great depth and that raised beaches are absent. This led him to suggest that perhaps the sea has been encroaching in the recent period. This may have affected the low-lying areas such as Ras Mkumbuu on Pemba Island where oral traditions suggest that part of the archaeological site is submerged.

The proposition on the sea-level fluctuations from the Pliocene to the present that Stockely had suggested earlier appears to be largely consistent with later observations made on the east African coast. Mörner (1992, p. 261) observed some Holocene coral reefs significantly eroded to flat surfaces below present sea level off the shore of the Zanzibar town, and he implied a sequence of high followed by low sea levels. He used comparative data to suggest a rise of the sea for eastern Africa, at least from the last millennium BC, that peaked c. 100 BC. During the last two thousand years, it reached its lowest level c. 1100–1200 AD. He also affirmed that a fossil beach (about +1 m) related to the Last Interglacial observed in Zanzibar corroborates observation made earlier at an estuary in Dar es Salaam (Mörner 1992, p. 291; Somi & Mörner 1988).

3.2 Economy

The economy will be discussed here under the headings of subsistence activities and technology.

3.2.1 Subsistence activities

Farming communities of the coastal area have exploited agri- and silvicultural resources for more than two thousand years. Traditional systems rely on permanent or annual cropping and also shifting cultivation. Smallholder agriculturists use both systems.

Annual cropping involves mixed farming and “wet farming”. The latter is carried out on the heavier and richer hydromorphic soils and contrasts with “dry farming” or shifting cultivation. On the mainland, shifting cultivation is commonly practised in lowland and plateau areas. The soils and low precipitation of these areas are similar to the *Wanda* and *Maweni* soils on the Zanzibar Islands and high-calorific value crops such as maize, millet, sorghum, legumes and rice are cultivated. Wet farming is practised on the mainland around watercourses and in river basins rich in alluvial soils and these areas correspond to the hydromorphic soils of the corridor zone on the Islands.

The immediate vicinity of the archaeological site of Unguja Ukuu is characterised by the CLA shallow soils support some citrus fruits, papaya, legumes, spices and *materia medica*. Communities involved in mixed farming sometimes move to other places and practise shifting cultivation as a strategy for maximising subsistence output. The latter farming system practised in the CLA involves planting crops such as millet, maize and legumes that are resistant to desiccation, or citrus trees that have a rigorous rooting system. Peasants in the CLA fields traditionally used the midrib of the coconut frond tied with a baobab bark rope as footwear to protect themselves against sharp coral stones. Slash-and-burn activity carried out in the CLA during the dry season prepares the land and the ritual of “seating the spirits” accompanies cropping. Corporate groups comprising 20 up to 30 kin members usually help individual households in the tasks of clearing the bush, digging holes for yams, sowing, removing weed and harvesting. Seedlings from seeds sown before the rainy season are transplanted to thin out the crops. Short periods of cropping alternate with long periods of natural fallow to allow the bush to regenerate and restore soil fertility.

Peasant households are largely self-supporting in food production (Fig. 3.9) and therefore attach great importance to occupying a permanently established

Fig. 3.9. CLA crop productivity (Kg/ha) (Zanzibar Archives file AU1/129)

Crop	kg/ha
Sorghum, <i>Sorghum bicolor</i>	670
Maize, <i>Zea mays</i>	615
Bulrush millet, <i>Pennisetum typhoides</i>	110
Cassava, <i>Manihot esculenta</i>	2 240
Yam, <i>Dioscorea alata</i>	8 965
Green gram, <i>Phaseolus aureus</i>	505
Pigeon pea, <i>Cajanus cajan</i>	170
Chillies, <i>Capsium</i> spp.	225
Tobacco, <i>Nicotianum tabacum</i>	560
Sesame, <i>Sesamum indicum</i>	70

farming plot (*kivungu*) for dry farming in the CLA (Middleton 1972, pp. 289–91). The size of these plots is usually proportional to the size of the family unit. For a small household planting a single crop, the *kivungu* is about 0.4 ha. For a large household, usually combining cereal and root cropping, it may extend from 0.8 to 6 ha. A poor-quality *kivungu* is occupied for about one year and better ones for three years. The best *kivungu* is one that has the original dense cover of tall bush requiring a fallow period extending up to 5 years. A fallow plot (*vuwe*) may be left for only 2–5 years if it is located close to permanent habitation area. Plots suitable for rather heavy cultivation are left for up to 15 years or more and usually located away from the habitation sites. This amounts to a natural fallow since *vuwe* becomes wooded (*mwitu*) again (Khamis 1940s, p. 8).

Low dry stonewall enclosures (*ma-bigili*) are widespread in the southern part of the main island of Zanzibar characteristic of the CLA landscape. A *bigili* (plur.) is usually erected around *kivungu* and raised up to about 0.5–1.5 m high as a protective barrier against wild pigs that used to forage freely but also were attracted to the crops. When food is scarce during the dry season, pigs used to enter village compounds in search of food. Alternatively, temporary features in the form of ditches called *wina*, timber fences, or even natural features such as bushes and trees are commonly used for boundaries. Communal ownership was widespread in the past; family land rights were well defined for the *kivungu* and offspring or new clan members inher-

ited it (Middleton 1972, p. 290). Oral traditions suggest that outsiders could acquire the right of cultivation by paying charges in cash or in kind to leaders in the social hierarchy (Wilson 1948).

Animals such as monkeys and birds are attracted to the crops in the CLA. The task of keeping off the pests engaged peasants in a kind of seasonal mobility. Each *kivungu* is turned into an encampment in which the family establishes temporary huts of varied size, a large one for living, a small one for keeping the livestock while the fallow bush turns to a pastureland (Wilson *ibid*). At the end of the season, farmers move back to their permanent settlements located in the patches of sandy areas (Plate 3.2b). The notion that earliest settlers on Zanzibar Islands occupied the CLA is archaeologically unfounded.

Farming coastal communities use forest resources to supplement their subsistence needs and the forest at the same time provided for several other utilities. Beside farming and grazing, the CLA is a phenomenal ground for hunting. Hunting groups use snares to catch birds and other wild animals while the common trap for pigs is ditching along known pig runs. Formerly, people hunted pigs using spears and dogs. Later on, guns contributed to the over-exploitation of the resources. Pigs, monkeys and leopards are normally given to the hunting dogs when caught, as Muslims consider these animals to be non-edibles. Hunting is a popular sport on Zanzibar and in combination with increasing deforestation has severely reduced populations of pig and other species.

The hydromorphic soils of the corridor valleys are favourable for sugar cane and rain-fed rice. Most coastal inhabitants are great rice-eaters. The saying that “to rice-eating people, no meal is a meal without rice” (Harlan 1993, p. 58) is highly appropriate. Rice fields occupy about 4% of Unguja Island and about 9% of Pemba Island (*Landuse Atlas, Zanzibar and Pemba islands* 1982; Fig. 3.10, see page 48). The origin of rice-food culture on the east African coast is not known precisely. The *Oryza sativa* species of Asian origin has endured for a long time and well adapted to local conditions. It is known from Mahilaka on northwestern Madagascar from c. 900 AD onwards (Radimilahy 1998, p.195). The African cultivar, *O. glaberrima* grows wild in the coastal area but it is insignificant at least today since

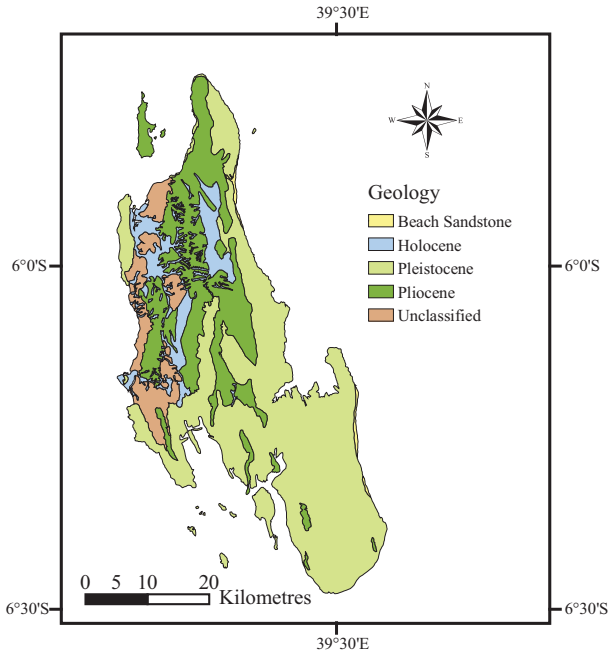


Fig. 3.1. Age of geological deposits – Zanzibar Islands

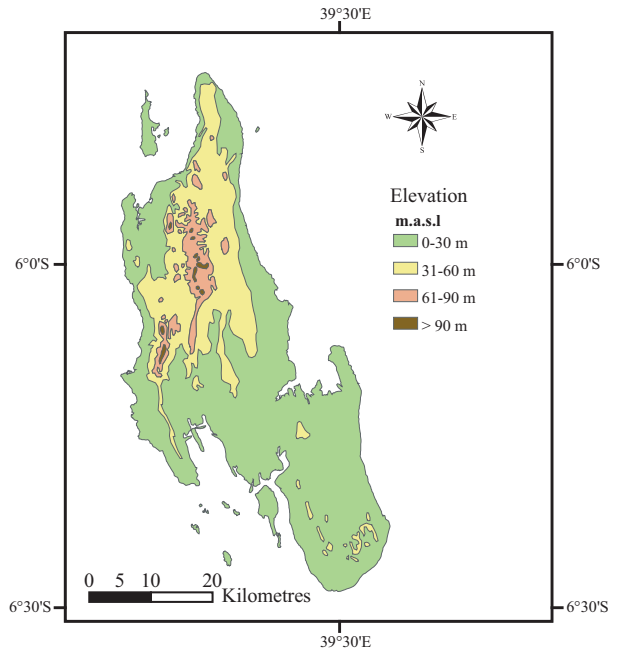


Fig. 3.3. Elevation – Zanzibar Islands

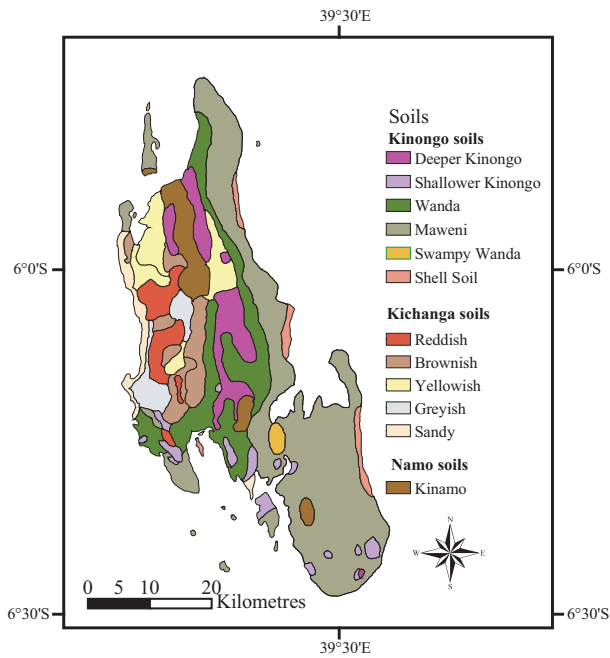


Fig. 3.5. Generalized soil types – Unguja Island

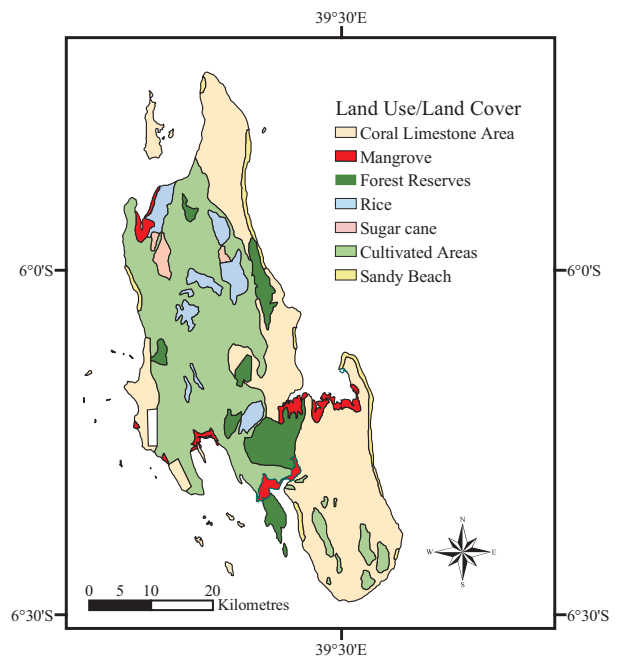


Fig. 3.10. Land use pattern – Zanzibar Islands

it is regarded as a weed rather than a proper crop plant. Rice is traditionally planted during the season of lesser rainfall like sorghum, and seedlings are rarely transplanted (Carpenter 1983). An average upper yield is about 1500 kg/ha. The best rice fields are drowned valleys and wet slopes of Pemba, and the corridor valleys north of the main island became important perhaps recently.

The elevated ridge zone support plantations of cloves (*Caryophyllus aromaticus*) introduced to the Islands from the 19th century and occupy about 42.4% of land on Unguja Island (72.5% on Pemba Island). Peasants living in the elevated areas cultivate, maize, millet (*Pennisetum typhodium/Pennicillaria spicata*) and sorghum. A wide variety of fruits, vegetables and root crops are grown together.

Mixed farming communities keep some livestock such as cattle (*Bos indicus*) while goats and chicken provide additional nourishment. Livestock are kept singly or in small herds but not only to slaughter and supplement subsistence demands but also for economic security. Livestock can be exchanged for grain in times of need. In the coastal area diseases such as East Coast fever caused by tsetse flies limit the distribution and the number of cattle to below 100 heads per family (*Atlas of Tanganyika* 1956). The cattle-dominated area on Unguja Island is limited to the south-western part while on Pemba Island cattle are kept in the north eastern area. Donkeys are used for draught purposes. Sheep are kept on the small island of Kisiwa Panza to the west of Pemba (Ingrams 1967, pp. 289–90).

Tree cropping contributes much to local economies beside crops of high calorific value. A number of trees are cultivated for their subsistence and economic values. Multi-purpose resource trees of all ages include coconut and mango. In addition, these trees yield valuable fruits and other resource products such as timber for making canoe, doorsill, and window frame. Trees also provide dense foliage as repose from tropical sun that ends up as manure for improving the organic content of the soil.

As already indicated above, mangroves occur in different varieties. The chief ones (*Rhizophora mucronata*, *Gymnorhiza bruguiera*) are well known in traditional economies for producing dye used for tanning leather. It is known in recent times

to have almost driven oak bark out of the European and American markets (Craster 1913, p. 56). Another important variety of mangrove (*Ceriop candolleana*) known as *mkandaa* (Swah.) provides for ribs of dhows and for construction poles. All mangroves are useful for fuel that their over-exploitation as firewood and material for producing charcoal constantly raises the concern of environmental conservators (Battiscombe 1908, p. 247).

The baobab, the second largest tree in the world, is another tree of remarkable economical importance. It marks old sites in many coastal areas. Its bark provides one of most reliable types of fibre ropes traditionally used for fishing line, for plaiting matting sails, basket-ware and for most tying purposes in the construction industry.

Copal (*Trachylobium verrucosum*) is now forgotten but it used to be an important economic tree providing resin from pre-colonial to colonial times. It was a regular export product for many centuries. It is among the trade items mentioned in historical documents, such as in Portuguese sources and in the *Periplus of the Erythrean Sea* (Casson 1989) and occurs in archaeological deposits (Schmidt 1992 *et al.*, p. 36). Stockely (1927) mentions Zanzibar Pliocene geological deposits containing fossil copal and that it was exploited in colonial times, as R. Burton (1872) gives a vivid picture of copal working. Perhaps the tree grew naturally in the region and it was also encouraged for its economic value (Elton 1874). Zanzibar and Tanganyika continued to export copal well into the colonial period. Between years 1904–1913, the former country exported between 1.6–2.8 thousand-pound weights (Stockely 1927, p. 104). In addition to a probable reason for vanishing of copal economy that Chami (1996, p. 42) has already suggested, it is also understandable that with the rise of Kauri resin in New Zealand in the early twentieth century, the world market for natural copal collapsed (Stockely 1928, pp. 4–5).

Beside agriculture and silviculture, mixed farmers located near water sources also engage in a number of economic activities. Different types of fish enrich the menu and provide a means of income and exchange. Traditional fishing gear includes baited hook and line, traps, and nets. A knife or a spear is used for direct stabbing. In small streams or channels, fishing may include the use of narcotic sap (*Euphorbia*

cactus) to stupefy fish and aid in their collection. Women and children favour fishing in the shallow waters and collect whitebait, shellfish and other types of small edible marine animals. Marine salt is also widely available.

3.2.2 Technologies

Technological traditions were fundamentally important for adaptation of the early coastal societies in east Africa to their environments and supporting organisational complexity. For instance, metalworking produced utility artefacts for exploiting natural resources, strengthening defence, facilitating trading and exchange, and reinforcing social status. Workshops provided tools like the short-handled billhook, 1-m long crowbars with pointed and chisel-shaped ends, and small hoes with narrow 20-cm long blades mounted on 1-m long handles (Khamis 1940's, p. 6). Iron was an important commodity that circulated in networks in the form of raw material and was also distributed as finished products. In addition, social functions and the processes involved in the production iron were important factors in social stratification. In turn, social interactions helped to supply iron ore and movement of other goods.

Archaeological surveys have shown that early communities that had settled on Zanzibar were involved in iron working, but they may have had to import iron ore from the opposite mainland. Stockley (1927, pp. 237–8) observed concretions of iron pyrites that appear like fine brassy dust in some clayey limestone of northern Unguja Island where precipitation is relatively low and prevents transformation of whole rocks. These crystallize out as small pallets of limonite, goethite or haematite. Early ironworkers on the island might have used these as sources for iron working (Stockley 1927). Such limestone residual deposits containing ferric-rich oxides are the original Tertiary beddings of deltaic sediments in the geology of the islands. Stockley remarked that similar mineralogical process marked by changes in the colour of limestone from pink to red also takes place among igneous and metamorphic rocks on the opposite mainland of East Africa.

Traditional industries also engaged early coastal communities to work with non-ferrous metals such as copper that also directly contributed to develop-

ment of social dynamics. Steel was rare, it has been postulated that it was probably imported (Kusimba *et al.* 1994).

The modern economy has almost crushed traditional metallurgical traditions that supported past economies. Contemporary urban societies imported metallic goods that bypassed and in some places wiped out traditional smelting and pot making. Iron-smithing has survived by depending on large amounts of scrap metal from the towns. Indigenous young artisans, mostly from the Kidoti village in the northern part of the main island, are blacksmiths who operate the *mivua* forging system in the Mlandege neighbourhood of the present Zanzibar town. The village still has a large guild that engages a number of apprentices under a master artisan (Plate 3.1). The piston-type bellows called *mivua* consist of two hollowed trunks of a hardy palm tree (*Pandanus*



Plate 3.1. Present day iron forging using piston-type bellows, workshop at Kidoti village, north of Unguja Island (Photo 1995).

rabiansis, Swah: *mkaya janga/msanaka*) sunk into the ground and connected below to two short narrow iron pipes (*deri*). A clay pipe (*kewa*) connects the two metallic pipes with the other outlet directed to the fire. Two long sticks tied up at the lower ends with rags are moved alternatively up and down the bellows to blow air from top to the fire. Now, iron pipes increasingly replace the hollow tree trunk bellows. Other Mlandege workshops, basically owned by low-caste Indian artisans, use *viriba*-forging system. This forging system originally imported from the Indian subcontinent and John S. Leigh (Kirkman 1980, p. 292) described it in the early 19th century consists of two bellows made of sewn-up goatskins that are called *viriba* (sing. *kiriba*). Otherwise both systems use a similar forging tool kit that consists of an anvil (*fuyawe*), a hammer (*nyundo*) and tongs.

Women's competence is estimated in other traditional industries known from archaeological studies such as making pottery and beads. This includes weaving and plaiting with fine leafy strips of wild date (*ukindu* Swah.) to produce small mats, food covers, and baskets. Men are also involved in the craft industry and use coarse strips or sticks of *Borussus* and *Raffia* palms to produce hats, basketry, and large mats.

The necessity for water transportation generated a series of technological skills and machinery such as navigation and making boats (Plate 3.2d). Early vessels include the *mtepe* sewn with fibre rope and provided with a square-mat sail (see the cover page), and the dugout canoe. The former is reckoned to be resilient to breaking against coral rocks and it was equipped with compass, quadrant, and charts for voyaging in open seas but it has been completely superseded by new types of boat. Owners usually suspended amulets from the long ornamented prow to protect their boats against the evil eye. The dugout canoe is still in vogue and ideal for local fishing, transportation, and efficient particularly for plying narrow tidal creeks.

Water, land, and forest resources are integral components of the dynamic relationships between human societies and environment providing a dependable base for social, economic and political developments.

3.3 Location of early sites

Site location rules are very often economically oriented. On the islands of Zanzibar, early sites flourished mostly in areas of deep sands near the shore easily accessible from the sea (Plate 3.2c). Favoured localities include small bays, estuaries well protected from rough currents when winds blow. A sandy terrain has many advantages for convenience of living over rocky areas or marshlands. It is easier to dig wells, house foundations and graves and to find suitable areas for home gardens. Traditional shallow draught boats could be anchored securely in harbours with sandy seashore, moored by means of stone or stone-loaded timber anchors, and supported with timber cradles as the tide retreated (Garlake 1966; Wilding 1988). The anchorage was important for the prospective development of a site and the emphasis was not placed on obtaining a deepwater. In his study of settlement patterns on the northern part of the coast, Wilson (1982, pp. 213–4) considered a deep-water as a more favourable kind of anchorage than the shallow ones, but I think such an approach requiring a jetty would have been shunned.

Flanking small islands or lines of coral reefs afforded general protection to the anchored sea vessels. Easy access to the sea was also an important factor. In plying between the shore and the sea, boats use the breaks in the reefs or between the islands as outlets and a cluster of early sites on the central coast of Tanzania opposite Zanzibar provides a good example. The site of Misasa used the break in the coral reef around Kisiju; Mpiji and Changwehela sites used the wider break flanking the sites, while Kaole and perhaps the inland sites of Kiwangwa, Masuguru and Msata used the breaks around Mbegani and Bagamoyo (see Fig. 1.2 and Chami 1996, p. 49).

The opposite mainland was a strategic area because it yielded abundant resources for external trade. Easy access to it was an important factor in locating prospective sites on islands off the mainland shore. The western coasts of the Zanzibar Islands have extensive rocky shorelines that limit the number of suitable anchorages. However, sites located on this and



a



b



c

d

Plate 3.2. (a) View of CLA. (b) Unguja Ukuu site vegetation. (c) Unguja Ukuu beach. (d) Unguja Ukuu traditional wooden boat building. Photos: Paul Sinclair.

on the northern shores had the greater advantage of being closer to the mainland than sites lining the eastern coasts. Settlements could easily supplement any shortage of subsistence requirements through the local exchange network. Most economically prosperous early sites on Zanzibar Islands were located on the western or northern coastlines.

Typical agro-oriented (AO) communities looked primarily for sources of fresh water, productive soils and the local vegetation structure to locate their habitation sites. These include sites on the mainland where many important ones were located at nodes of commercial routes connecting to inland trade routes so as to cater for long-distance trade that passed on their way. Gateway communities located on the coast and in proximity to the sea with a good harbour could combine agricultural production, fishing and trading.

Marine-oriented (MO) sites located in proximity to the sea largely relied upon the exchange system to acquire the agro-surplus from AO sites. However, harbours with sand beaches are limited. This could have acted as a power base; the factor in the economic and political subordination as aggregations of sites in the surrounding areas might well have relied on a site with such facility (Haas 1982, p.160). Early port-town communities exploited the considerable advantages of the sea; not only for meeting their immediate dietary needs, for widening their access to alternative resources of distant areas but also for generating greater income. Rapid exchange of information and traits greatly inclined the societies to cultural and economic developments.

The sea is a convenient and natural infrastructure for transportation of goods and information. For this reason, the AO sites that depended on a labour intensive mode of transportation of goods carried on head, generally stand in stark contrast to MO sites. Navigable inland watercourses that were available to traders associated with some MO sites had only limited potential to support transportation.

Overview

The vegetation, weather and soil conditions constitute an important component of the local economies and development of society. The traditional economy linked the ecological zones of the mainland and the islands. The ecological variations stimulated inter-communal exchange and long-distance trade and created differential distribution of strategic resources over extensive regions. Perhaps these, rather than the ethnic migrations perpetually claimed in conventional studies, stimulated mutual interactions and supported the evolution of complex social organisations. Mixed farmers used the resources provided by the environment to diversify their subsistence strategies and cope with sudden food scarcities.

Economic development from recent times altered the structures of demand, land relations, trade patterns, traditional industries, the sea craft and anchorage conditions. In the next chapter, I describe the site of Unguja Ukuu and its immediate surroundings and the archaeological survey work carried out there.

4. THE SITE SURVEYS

A number of people participated in the survey work carried out at Unguja Ukuu. They include the workmen from the village of Kaepwani, staff from the Zanzibar Antiquities Service and archaeological colleagues from Sweden, Bent Syse from the Swedish Central Board of National Antiquities (field walking during the first season of field work, 1989) and later Anders Löfgren from Lund University (drilling/phosphate testing, 1990). Michael Petré and Jimmy Jonsson of Uppsala University participated in the last season (further mapping/electro-magnetic survey), and a technical team from Madagascar supervised by N. Marine from Geophysical Observatory University of Antananarivo carried out the electro resistivity.

This chapter provides information on the site and its location, the methods adopted for the survey and the recovery of data. The results of the surveys were used to select the excavation areas.

4.1 The site location

The site of Unguja Ukuu is named after its location in the southern part of the main island of Unguja. It is situated about 25 km from the Zanzibar town centre. Unguja Ukuu is a coral landscape area (CLA) marked with field boundaries consisting of ditches, light timber fences or dry stone walling (Chapter 2). However, it has patches of deep soils upon which the largest of the archaeological site and most villages of Unguja Ukuu are located (Fig. 4.1). Deep sands support household gardening while the broader rocky landscape is mostly used for grazing and shifting cultivation (see Fig. 4.2).

The archaeological site is located on a long patch of sand on the seashore in the vicinity of Kaepwani (the homeland-by-the-seashore). The sandy strip makes it easier to walk on than the surrounding rocky landscape and is therefore an important access passage from the inland to the sea. The site is well placed and spreads on the high ground of the peninsula (max. altitude 10.7-m) and the low-lying area between the seashore and the creek (grid 41500120, SASES no. JvHr, Long 39°29"E Lat 6°18"S). The site is limited to the south by the seashore, to the west by a coral-bush landscape, to the east by a creek called the Uzi channel, and to the north by the modern village of Kaepwani (see Fig. 4.1). Uzi Island consists of coral with small patches of deep sands that have attracted small settlements. It can be reached at low tide along a specially prepared motor track.

The archaeological site of Unguja Ukuu has an uneven topography. The western part is low-lying, while the far eastern extent comprises a north-south oriented ridge of red sands dominating the site (Fig. 4.2). From the high part of the ridge, the topography descends abruptly to the creek in the east (Plate 4.1). The southern end of the site is the neck of the peninsula, where the ridge has a more gradual descent (see Fig. 4.1). The creek bank has a narrow sandy beach littered on the surface with early glass beads, fragments of pottery and glass vessels and it is fronted with a mangrove swamp. Canoes use the muddy sea-water of the Uzi channel to access the extreme north-western side of the site. The creek ends with the Pete inlet linking with the Jozani forest reserve that forms a land bridge between the southern coast of the island and the western coast at Chwaka bay.

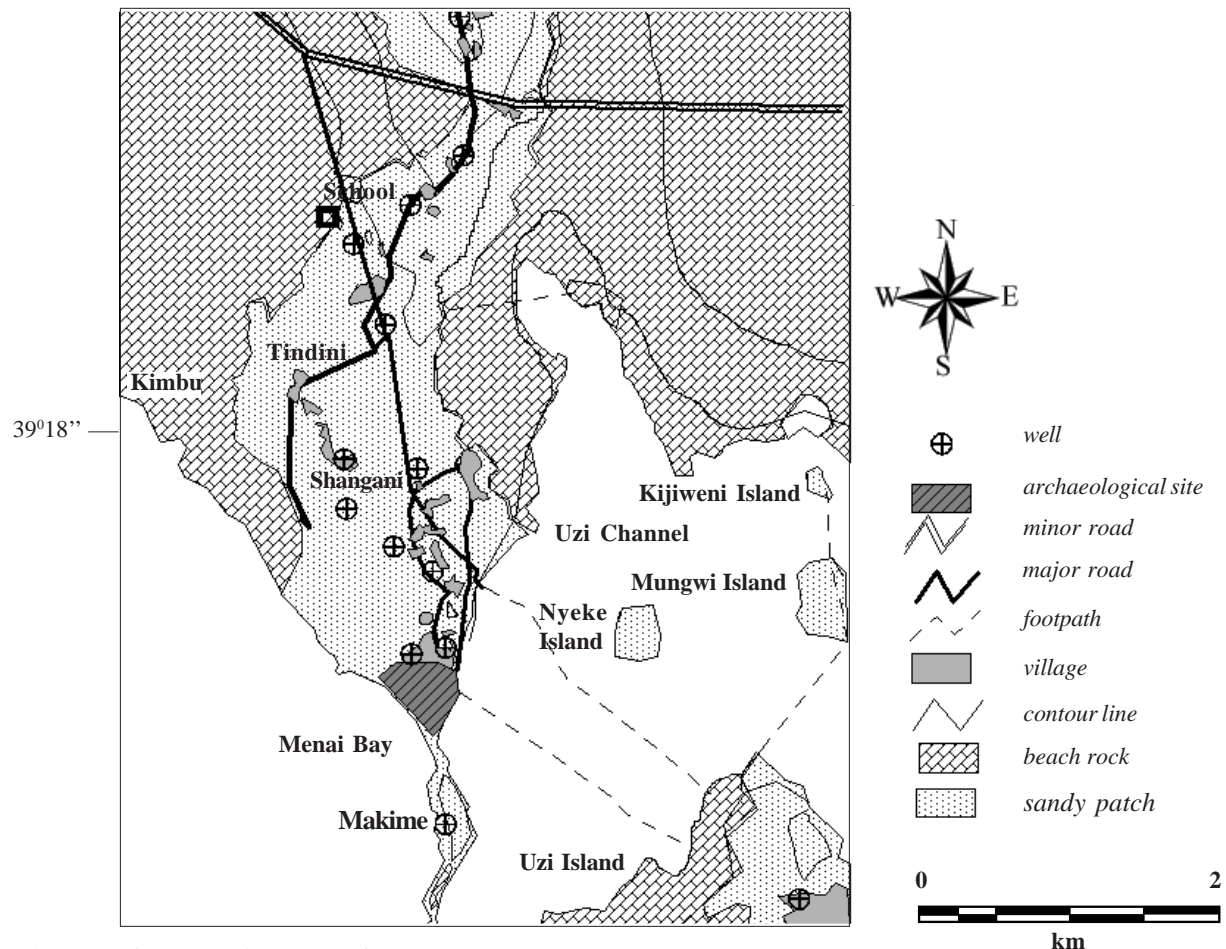


Fig. 4.1. Area location of Unguja Ukuu.

The extensive sandy beach in the southern part of the site is the main anchorage (Plate 3.2c). It is protected by the Makime headland lined with mangrove swamps to the east, by small water-worn uninhabited coral islets of the Menai bay from the seaward side off the main part of the Zanzibar channel, and by a small coral cliff at the far western side. The beach is the best anchorage for the early period (see Chapter 1), with the sea providing excellent communication for the site with other parts of the Zanzibar Islands and also with the opposite mainland coastline through the Zanzibar channel. Fishing boats cross over the channel between Zanzibar and the mainland coast in just a few hours. The site can be reached by boat through the southern inlets in the Menai bay, or entered from the northern side by a road through the present villages of Unguja Ukuu. The deep sands stretch inland about 7 km and meet the residual hill of Kaebona at an altitude of over 25 m.

4.2 The initial survey

Three test pits excavated at Unguja Ukuu during the preliminary investigation of 1984 directed by

Horton with the support from the British Institute in Eastern Africa were part of the general survey for the Islands of Zanzibar (Clark & Horton 1984/5). Based on the scatters of pottery over the site, a topographic map was produced showing the location of the three test-pits, the midden areas, the stone well (still in use), positions of the prominent standing features of the site, a ruin of a recent Arab house, and the probable place where the Abbasid gold coins were found in 1865. The test excavations indicated the presence of sub-surface stone relics. Pearce (1920, p. 147) refers to a mosque ruin at the site:

Close to the landing-beach there is a short length of loosely built wall asserted by the natives to be the remains of a mosque. The natives stated that the masonry-built well, a few yards southward of the mosque had been built by the Persians.

Clark and Horton estimated that the site covered about 15 hectares and was occupied from the late 8th–10th centuries AD, with a possible occupation in the 16th century AD.

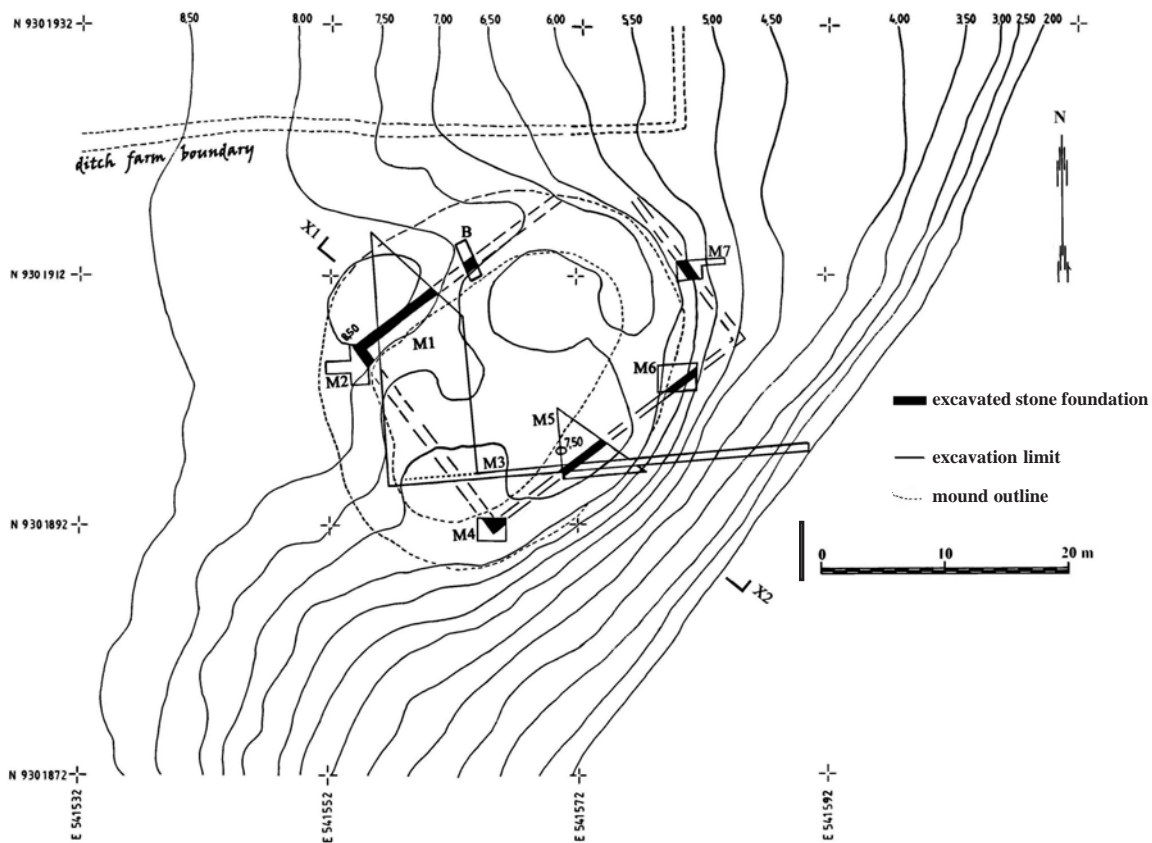
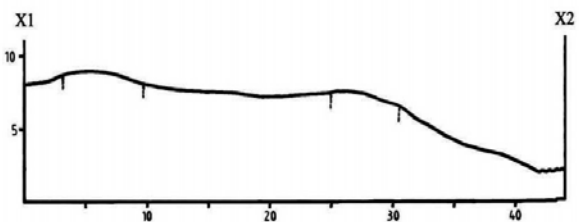


Fig. 4.2 Ring-shaped mound on the ridge at the eastern part of the site, also showing locations of Unit B and Unit M excavations. To the right a cross-section of the mound area between X1 and X2.



4.3 The Urban Origins project surveys

A SAREC-sponsored regional research programme called “Urban Origins in Eastern Africa” subsequently supported archaeological research on Zanzibar and form the basis of this study. Each of the four seasons (1989–1993) of fieldwork undertaken at Unguja Ukuu extended to approximately 6 weeks. In all seasons, except for that of 1994, the fieldwork was carried out in collaboration with archaeologists from Sweden.

The initial survey was found very useful. The map and the corpus of information exposing the complexity of the site served as a basis for the subsequent surveys that helped us to work out the strategies of investigation. We intensified the site surveys before carrying out excavations (Chapter 5). The surveys aimed to obtain an advanced preliminary

knowledge about the site. This includes information about (a) all probable periods of occupation in the respective areas (b) the strata and their changing character, and (c) some sub-surface features distributed over the site. Maps of surface geology, topography and soils supplemented our knowledge of the site. These include the old sheets (1 in: to 6 miles) of 1934 and the recent sheets (1:10,000). Aerial photographs of the islands (1:50,000) were acquired for the project. The map data helped us to grasp the broader environment or landscape of Unguja Ukuu made up predominantly of coral-stone, which is particularly characteristic of the southern part of the island. We learnt that the archaeological site is located within a large patch of sandy terrain of reddish loamy sands, originally formed from residual deposits of various limestone that characterize the low ridges of Unguja Island. This led us to start the survey task by field-walking the sandy patch



Plate 4.1. View across the creek at the eastern side of the site.

in which the site is located before planning other surveys such as drilling, electro resistivity and electro-magnetic probing.

4.3.1 Field-walking and recording

Accompanied by Bent Syse from the Swedish Central Board of National Antiquities, we first field-walked the whole terrain of Unguja Ukuu to look for traces of early occupation. We walked transects in the territories of bush and crop fields about 100 metres on either side of the road and covered a distance of about 5 km from Chichi village in the north to the Makime headland in the southern side of the site looking for samples of surface pottery and features of historical interest to record. We then extended our walk to the nearby island of Uzi before walking intensely over the archaeological site.

At the extreme eastern side of the site in an area on the ridge, we noticed a low ring-shaped mound with a depression at the centre and covered by thick vegetation. This was marked as a “midden” during the initial survey. We contour-mapped this and an-

other low mound at “the site of the mosque” close to the harbour in the southern part of the site and the ring mound on the top of the ridge (Fig. 4.2). The stone well of the site was measured and found that it stretches into 5m of sand, then through coral rock before another sandy horizon at about 0.8m below sea level. The water level measured in dry season (September) was only 80 cm. The well consists of a series of circular cement structures of about 1.4m placed on the rock and raised through the upper sandy levels. Deposits built up around the well from ridge area dwarf the height of the well and make it rather dangerous and therefore necessary for the wall to be raised more than once to protect it. The well probably relies on a deep aquifer as it supplies fresh water, although located less than 100m from the sea.

We found on the site a benchmark of the Zanzibar Department of Land and Surveys that we used as datum point for mapping and recording. In almost all seasons of fieldwork, we used a basic equipment for measurement that consists of a compass, linear measure taps, rulers, and a dumpy level. M. Petré used a laser theodolite (Geodimeter System

400) in the final season of the fieldwork for the electric resistivity survey and to record topographical values at various points on the site that we established for archaeological reference.

4.3.2 Drilling

Drilling is primarily a geological technique of investigation that was tried for archaeological purposes in different countries covered under the Urban Origins project and which gave very successful results (Sinclair *et al.* 1992). It is one of the survey methods also conducted at the site for relative convenience to use, minimal destructive effect to the archaeological site and the scope of partial data recovery. The method allowed sampling of data from all occupation periods of the site and gave an insight into the general distribution of deposits. The survey was carried out in collaboration with A. Löfgren from the Swedish National Heritage Board.

The drilling kit, produced by BORROS Geotechniques in Sweden, consists of a portable fuel-powered engine connected to a screw auger for use as the soil sampler (Plate 4.2). The auger (50 mm bits) is driven into the soil with the help of the power unit placed over the extension rod. Extension rods could be joined together securely with previous ones by screwing until the desired depth in the ground is reached. While proceeding into the ground, the auger grips the soil and produces a disturbed but continuous ribbon of deposit which can then be removed from the auger.

Four to five people were engaged in drilling and recording the cores. With sandy deposits of the site, caution was needed in handling the auger rods to avoid shaking that can cause mixing. For withdrawing augers from the ground, we did not use the power unit but instead used the jack puller with two crow bars of 1.5 m. long and each with a 2-tons capacity. On extraction, the auger was immediately placed length-wise into a half-sliced PVC gutter pipe. The core was cleaned on the outside to reveal the stratigraphic divisions at glance mainly by colour and carefully separated from the auger. The core soil was not sieved but the presence of charcoal, daub material and artefacts like beads and pottery fragments were recorded. Measurements of the strata were taken from each unit up to the natural level. Each

soil stratum of the core was tested for phosphate content (Appendix B – cores). The record includes surface altitude at every drill point. Sticky paper straps were rubbed against the soil of each stratum and kept for the purposes of recording colours. All sets of data were recorded in a special form and then ultimately fed into the computer.

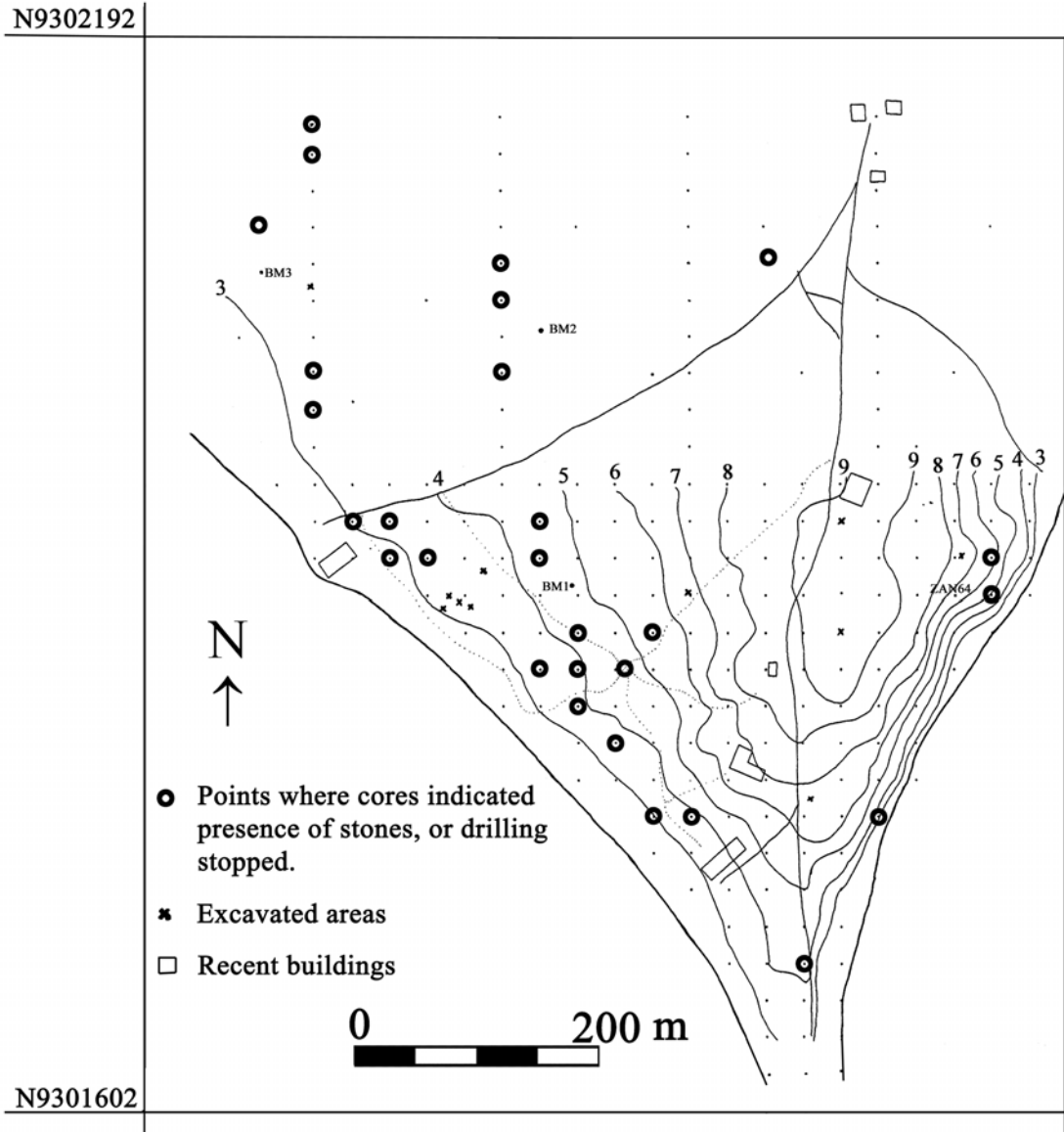
We conducted drilling on parallel north–south oriented grid lines with drill-points spaced at 20m intervals. This was done for the southern section of the site, where a total of 174 points was drilled. The north-central section of the site was transacted with four equidistant parallel lines 100m apart. We drilled 40 points at 20m intervals along the lines. We also drilled 8 other points in the area, chosen arbitrarily between and outside the transacts (Fig. 4.3). In total, 222 points were drilled over the site comprising a 65% coverage of the total area. The site stratigraphy based on results of the cores is given in Figure 4.4. The points where the drilling stopped were noted as probably indicating the presence of stone.

4.3.3 Soil testing for phosphates

In basic soil (pH greater than 7), decomposition of some organic compounds releases phosphates enriching the soil. We tested each soil stratum of the core for phosphates using the Spot Test method (Österholm & Österholm 1983) as already mentioned in relation to drilling. The results plotted against the core profiles (see Appendix B) are discussed below in conjunction with the drilling results. Both upper and lower levels of the site generally indicate



Plate 4.2. Drilling operation at Unguja Ukuu.



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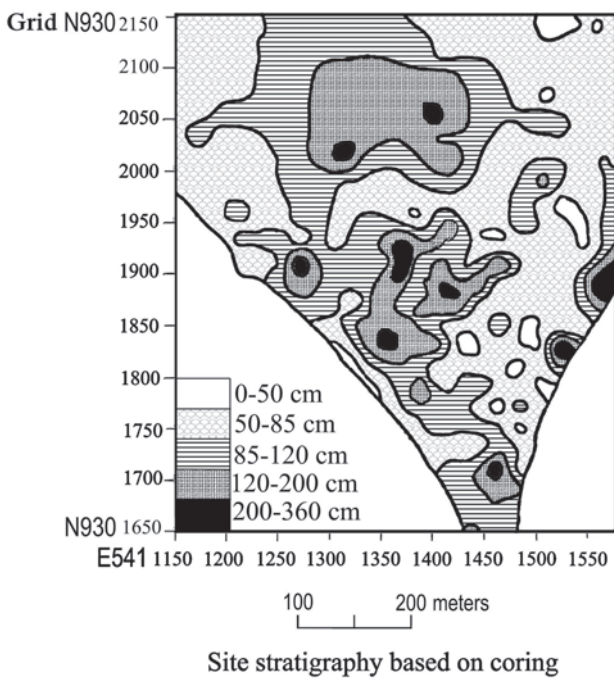


Fig. 4.3. Map of the site showing relief contours, grid of drilled points, and distribution of subsurface stones based on coring.

Fig. 4.4. Stratigraphic areas of the site based on the results of coring.

values ranging between medium and high, despite the characteristic sandy deposits of the site.

4.3.4 Electro-resistivity survey

The electro-resistivity survey carried out by a technical team from Madagascar was aimed to map the distribution of subsurface remains at the site. The team started from “the site of the mosque”, where drilling met resistance at several points and proceeded northward. The team had a tight schedule and bush cover over the site slowed down the pace of their work so that it covered an area of not more than 0.77 ha. Regular parallel grid blocks of 20 by 40m oriented north–south were selected for surveying and measurements were taken at stations spaced 2m apart. When bush or other barriers obstructed access, smaller blocks were selected. The procedures of the electro-resistivity survey and the interpretations of the resistivity anomalies are summarized below on the basis of the account submitted by Marine.

Electro-resistivity measurements involve passing an electric current through a circuit linking two electrodes inserted into the ground at points 1m apart and connected to a resistance meter (RMCA-4). Oscillated responses are readable directly in ohms. The electrodes measured the potential of the ground or the degree of compaction. Apparent resistivity is obtained by multiplying the resistance with the appropriate geometric factor of the array. The Werner standard array was used in this case and measurements were taken at the mid-point of the array.

Electrical soundings using a Schlumberger array were also carried out in the survey area following the same grid and orientation with grid stations, spaced at 2-m intervals so as to help explain the causes of the resultant anomalies.

Three sets of data were recorded at each survey station: apparent resistivity, co-ordinates and electrical soundings. These were then fed to the computer and the Surfer software was used to process and normalize the data for easy reading. Variations in lateral resistivity have been plotted in curves as surface maps (Fig. 4.5). The results of the soundings have been produced as profiles. The map shows zones of low and high resistivity separated by the transition zone of relatively low resistivity enclosed within 200–300m curves. The low resistivity zone

has an even surface and falls largely within blocks A, F, G and H, while the high resistivity zone appears in the map on blocks B, C, D, E, J, K, L, and I in the western part of the surveyed area.

Three main layers of differential resistivity were discernible from the results of soundings. In the low resistivity zone, resistivity increases with depth, a non-resistant (conductive) layer lies on top, a low resistivity layer in the middle, and a very resistant layer at the bottom. This profile variation in resistivity is the result of the electrodes being spaced at 1-m interval ensuing a limited probing capacity of the electrodes. The electric current penetrated only 0.75m deep and could not penetrate to the deepest resistant layer. The measurable response came from the low-resistivity second layer. The variation is described as “indolent”.

In the transition zone, the conductive layer lies on top and stretches down to an estimated thickness of 1.7m. The exceptional station D2 has the resistant layer beneath the conductive layer and resistivity increases with depth. This low resistivity character can be attributed to the limited probing capacity of electrodes for the reason outlined above.

The area of highest resistivity is found at the western part of the site (see Figs. 4.5). It is marked by sudden resistivity variations and delineated by the 400m ohm curve. The anomalies suggest the presence of resistant features. At one station (D1), the resistant layer lies near the surface and resistivity decreases with depth. At station J2, the first and the third layers are both resistant but only the effects of the first and the second layers show up.

Sounding operations were also focused at specific anomalies. At six points (C1, C2, C3, C4, B2 and B3), the resistant layer lies near the surface; the conductive layer beneath it induces the anomaly. The second layer is resistant at places B1 and C5 but the effect is forfeited perhaps owing to irregular configuration of the anomaly. The highest resistivity layers are at five points (B1, B2, B3, C2, C3 and C4) that the anomalies may represent structures. These are interesting places to investigate, possibly for solid relics. Other such places lie to the south-west of block E, in the north-west of block L, in the north of block J, in the west of block I and below feature D3 in block D.

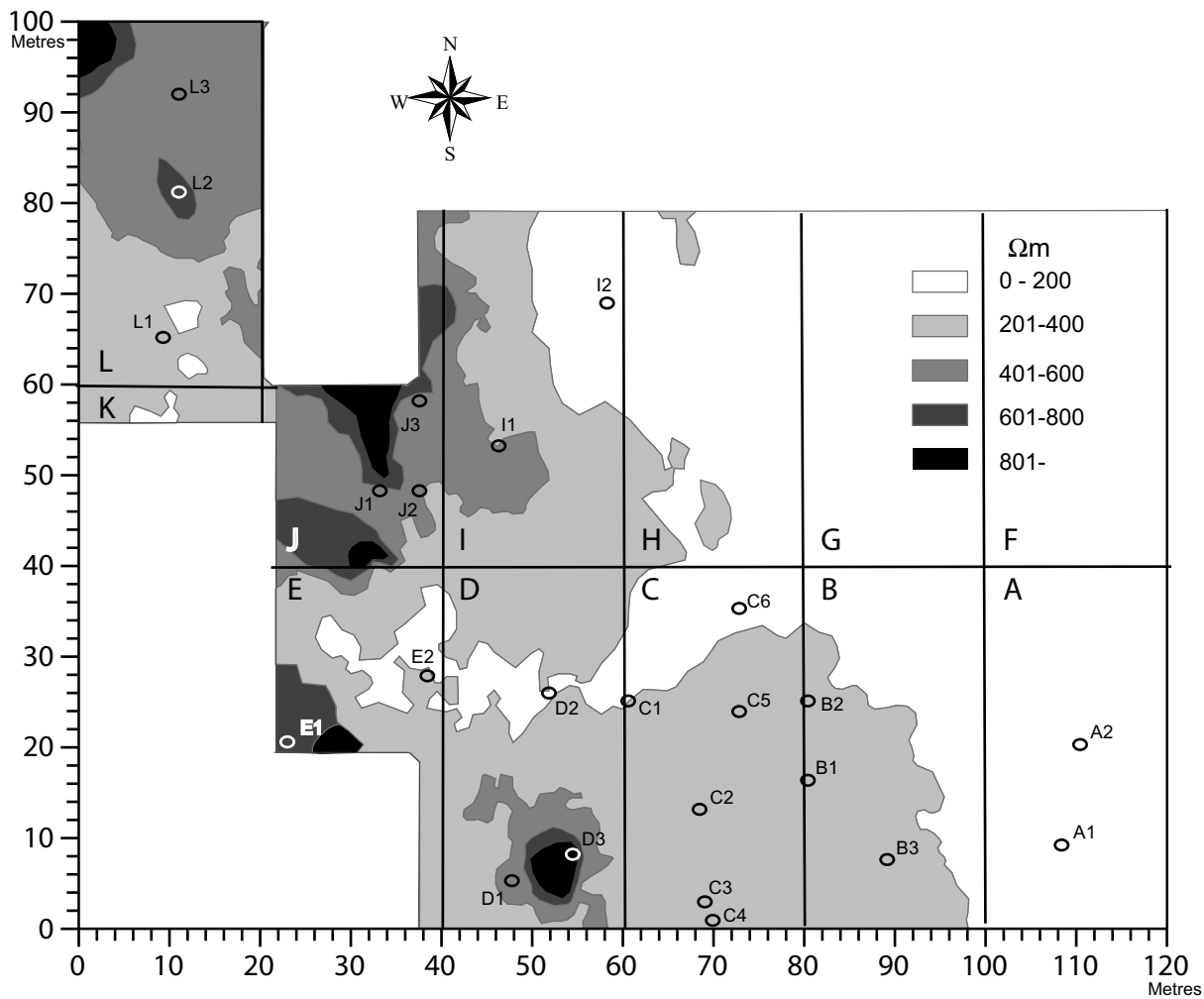


Fig. 4.5. Map showing the result of electro-resistivity survey.

4.3.5 Electro-magnetic survey

This survey with a metal detector (White's Eagle II) was aimed at identifying areas of the site with metal remains. Unfortunately, M. Petrén who supervised the survey assisted by J. Jonsson fell sick and could not complete the work. The survey was made in Zone L2 and covered about 0.4 ha (see Fig. 4.6). A total of 207 points indicated the presence of metal in the area. About 143 points can be interpreted as indicating the presence of iron and 64 of non-ferric objects. A few points checked revealed uninteresting modern objects with the exception of two coins, one is a quarter fragment of a Chinese bronze coin (see page 140) from the North Song period (960–1126 AD) and the other is a copper coin of Zanzibar Sultan Barghash bn Said (1870–1888 AD).

4.3.6 Results of the surveys

Field walking was aimed to inspect traces of early occupation and focused the outlying areas of the site within the relatively large patch of sandy soils at Unguja Ukuu. The survey was extended to Uzi Island. We did not find any traces dating to the pre-Portuguese period. Elders from the villages of Unguja Ukuu claim that Wanyasa from the African mainland were buried in the stone-lined graves that we observed at the extreme southern part of the Makime headland. They settled there and planted groundnuts (*Arachis hypogaea*). Surface pottery confirms recent occupation of the area.

We fieldwalked the sandy patch to the northern part of the early site (Fig. 4.1) and noted two sacred sites in small caves. One is in the neighborhood of the village school compound some metres

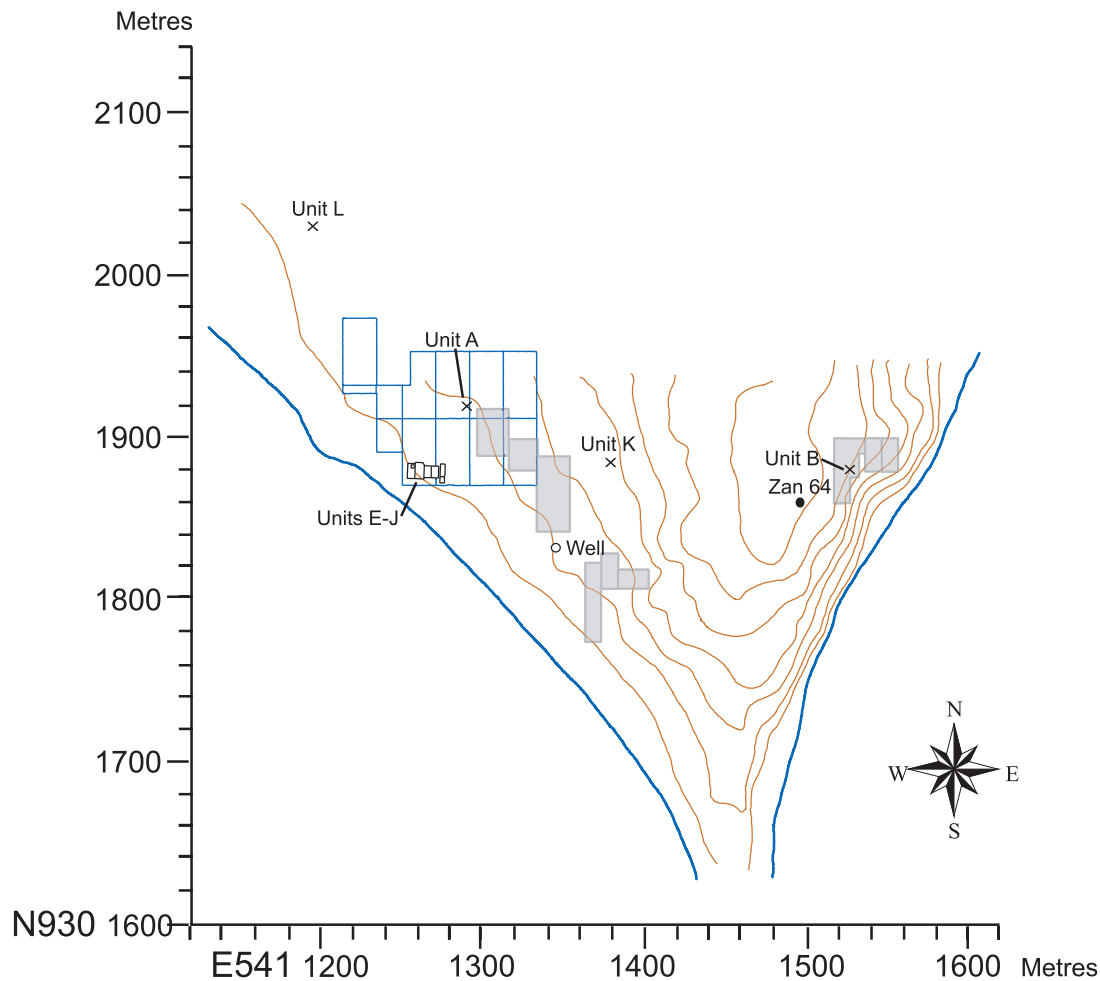


Fig. 4.6. Map of the site: shaded blocks show areas of the electro magnetic survey; line blocks show areas of electro-resistivity survey.

south at the edge of coral platform. We found it marked with red and white rags and littered with modern local potsherds. In the vicinity called Kimbu close to the seashore of the western inlet of Unguja Ukuu just west of the Tindini village, we found another sacred site. Fragments of pots found at such places are probably associated with the ritual incense burning. The pottery found at Kimbu includes relatively large sherds of yellow-glazed ware with hard red fabric. Due south-west of Unguja Ukuu is the Fumba peninsula with a shore containing potsherds of blue-green glazed ware and could have reached there during the period of primary occupation at Unguja Ukuu and that might be usefully explored in the future.

On the predominantly coral islet of Uzi, we noticed two interesting places. The northern tip con-

tains a pocket of deep sands littered with local potsherds in association with fragments of later Chinese porcelain. The village of Shakani in the northern part of the Island is located within another interesting patch of deep sands. There is a graveyard in relatively dense thicket close to the village containing a mound of some significance in the middle that is possibly an earlier site of Uzi.

We field-walked the archaeological site at Unguja Ukuu and confirmed features marked during the initial survey. We discovered that surface pottery scatters to about 30–40m away from the designated boundary in the north into the village area. A large area (about 0.8 ha) at the extreme north-eastern part of the site contains no cultural material and supports observations from the previous survey. Hence, it appears that the site covers an area of approximately

17.2 ha. The results of drilling have revealed the distribution of the cultural deposits of the site.

In the southern section of the site, drilling covered about 6.4 ha. The computer (Surfer golden software) has interpolated from the drill point distribution an area of about 8 ha for the north-central section of the site. An additional 3.6 ha has not been drilled at the eastern and western areas of the site (see Fig. 4.3). The drilled area comprises about 13.6 ha or *c.* 79% of the surface area for the site.

The site is not located on an even ground and therefore topography can not be ignored when considering site stratigraphy. The site can be divided into three topographic zones, the ridge zones (R) that give prominence to the site and distinguished by a 7m contour from the relatively low-elevation zones (L) to the west, and the low-elevation zone of eastern side (LF) that is partly affected by high tide (See Fig. 4.7).

The L-zones comprise two adjacent locales, Area No. 1 (or L1) covers the western side of the site adjoining the main harbour marked the previous as a midden area. The principal deposits as observed from the cores consist of an upper level of grey sand, dark brown sandy clay deposit beneath and a fine brownish natural deposit at the bottom. The upper deposits are somewhat unstable perhaps owing to erosion down the slope. The middle layers are sometimes black and characterized by high humus content. The general stratigraphy on the slope rarely exceeds 120 cm. The upper stratum has high phosphate values but these are low in the somewhat clayey deposits beneath.

Area No. 2 (L2) comprises a large expanse of the site. The southern section covers the central part of the site, it borders the foot of the ridge in the east and extends to the area around the well. There is a depression at the north-eastern part. The area registered relatively deep sequence of deposits, between 1–2.8m. However, the cores revealed that a narrow sandy strip (5–7m) adjacent to the shore lining the western shoulder of the peninsula contains very few cultural deposits. In general, L2 has high phosphate values that rarely fall below 3. The motor road crossing the site exacerbates further erosion as the area has thin deposits. In the “area of the mosque” at the southernmost part of L2, drilling met resistance at a number of points. In the northern sec-

tion, the L2 ground is relatively higher and highest surface density foliage of the site occurs in this area. The upper levels consist of black humus layer on top, grey earth or dark brown sandy clay beneath, and red or brown deposits in the lowest level.

Two ridge zones (R1 & R2) have been identified. Area R1 refers to the topmost section stretching north–south and bound by a 7m contour. This area has been used for housing; it is traversed by the footpath and the motor track. Surface deposits are prone to rain erosion and ongoing cultivation aggravates the process. This is clear from the fact that many cores conducted in this area do not contain the black humic layer. The deposit is shallow (not exceeding 80 cm) and consists of grey sand and loamy brown earth. Phosphate values are high (not lower than 4). In the northern section, cores preserve a black humic layer on top because the area is under tree cover. The principal deposits are brown in colour. The general stratigraphy is over 1m thick but this diminishes towards the northern limit of the site. Phosphate values are not lower than 3 for the entire sequence throughout the area. The southern section of the zone descends to the neck of the peninsula. The cultural deposits are unstable and suffer the effect of rain and cultivation. The principal deposits alternate between grey and brown earth. Black layer of humus appears on top because of the low bush. This section has a general stratigraphy of just over 1m and phosphate values are high.

Ridge area No. 2 (R2) refers to the small area slightly off the centre of the ridge that is occupied by the low mound with a ring shape and a depression at the centre. This zone is bound by a 6m contour to the east, 10m contour to the west, and extends towards the creek and the deposits consist of upper-level grey sands and lower-level brown sands (see Fig. 4.7). The area was left with bush to regenerate for a long time and preserves the black humus layer. The stratigraphy is over 2m deep and phosphate values range 3–4.

The low-elevation zone of the eastern side (LF) refers to the eastern slope and the narrow littoral strip at the foot of the ridge. Upper-level deposits in the southern part of this zone are grey in colour, while the lower deposits are brown. The black humic layer rarely appears except on the slope, for it is constantly washed away by tidal waves. The northern part of

the shore is slightly broader, allowing a mangrove colony to thrive. Main deposits consist of grey sand and bluish silt material. Phosphate values vary between 3 and 5. The black humus layer on top rarely appears. The deepest stratigraphy of the site has been recorded from cores at this part of the site, (3-m from Core no. 10 and 3.6m from Core no. 52, see Appendix B). The shallowest cultural core is no shorter than 1m. Wet conditions and secondary material washed from the slope may have induced this exceptional stratigraphy and it is possible that the bottom vegetative material consists of alternative layers of mangrove.

The results of drilling provide an array of preliminary data, although I did not find small objects picked up by the cores as reliable for dating the strata. Also, topography introduced some irregularities that makes it risky to suggest a general chrono-stratigraphy of the site based on soil coloration. The core data allowed us to produce a map of varying stratigraphic depth (see Fig. 4.4) based on the six topographic areas that can be verified with the results of excavations to predict the extent of occupation at different periods of the site. The map indicates that the occupation covered about 3.9409 ha during Period Ia.

Drilling and electro-resistivity surveys show a pseudo-coverage of the area, about 0.7 ha and anomalies of stone concentrate around the harbour area where drilling met resistance at 57 points (see Fig. 4.3). If these points are projected against 79% of the site drilled, we obtain hypothetical figures of about 912 points for the entire site, and therefore 8% points of resistance. This index may be used to arrive at a probable spatial distribution of stone remains over the site, if each point at least 20m apart is regarded in theory to represent a stone relic. The southern part of L2 is the high electro-resistivity zone and the correlation indicates relics of stone being probably present in the area. High phosphate levels obtained from the cores demonstrate the importance of the site as most areas were actively occupied through the periods.

4.3.7 Population estimate for the site

Determining the population at an early site is not a straightforward question (Schacht 1981; Hassan 1979). This is particularly true when the site has no

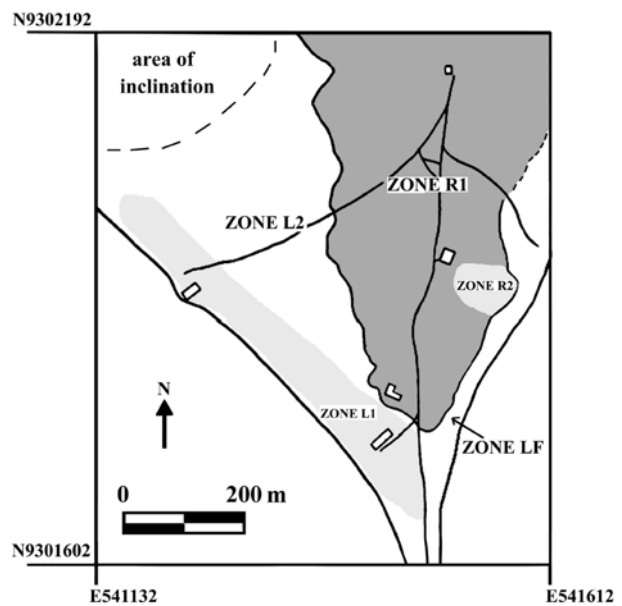


Fig. 4.7. Map showing designated topographic areas of the site.

standing structures of its period. Population estimation has been carried out for instance in Mozambique at the Zimbabwe Tradition settlement of Manyikeni on the basis of stratified random sampling, using 1x1m excavation units and ethnographic parallels on floor areas of present household structures (Sinclair 1987). Radimilahy (1998) has also produced estimates from the urban site of Mahilaka in northern Madagascar and there the results of drilling and phosphate mapping were included in the estimates.

At Unguja Ukuu, we carried out an ethno-archaeological survey at the nearby Shangani village about 0.7 km north of the archaeological site and in an environmental setting similar to that of the archaeological site so as to obtain a basis for the population estimate of the early site. The land use density of the present village is relatively sparse, and this needs to be compensated for when modelling the complex settlement of the past. The Shangani village is divided into two compounds along the axis of the road. We focused our survey on the western half where public areas of the village such as the market place (Sokoni) with a single covered tea kiosk, an office for the ruling party, and a community hall are also located. Mapping of the village area aimed at obtaining basic indices for extrapolating the population of the past, including its perimeter, area and the number and occupancy of the buildings it accommodates.

A house-to-house survey was carried out at a modern village of Shangani to obtain an index for estimating population of the early site. The houses of the village are all built of coral-rag stone mortar with lime. Most structures have open courtyards enclosed either with coral rag or fences of sticks bound with palm fronds. The open spaces between the houses are planted with gardens. Today the inhabitants of the village depend on agriculture and fishing for their livelihood. Some people combine such pursuits with small-scale business and travel to and from the town by bus. Specific enquiries were made about the number and marital status of the inhabitants. This data was supplemented with information on building types and functions. Data from the survey indicates an average occupation density ratio of 4.5 adults per house for the village. This allows us to estimate to propose a minimum population of 145 adult inhabitants for the western compound of the village covering 8024 m² (0.8 ha). The sum of about 35 buildings suggests a building density of about 44 structures per ha (or 60% of the total village area).

Applying the estimates obtained from the Shanani village (see Fig 4.8) to the 17.2 ha area of the early site, we arrive at the following estimates: 10.3 ha built area, 453 houses occupied by about 198 adults per built ha or c. 199 adults per built ha. However, it is probable that the early site was more densely built with relatively larger houses that accommodated more people than the present day village of Unguja Ukuu at Shangani. A more realistic estimate for the past urban population might be 70% for the density of the built area, 48.4 structures per ha and an occupancy ratio of 7 adult inhabitants per house. A revised estimate of population for Period Ib when the entire site was occupied is 4914 adults.

It will be demonstrated that in Period Ia, the site was occupied in clusters and interpolation from the site-stratigraphy map produced from coring data (Fig 4.3 & 4.7) provides a guide. Hence, lesser population can be expected from this period. A surface area of 3.9409 ha for Period Ia is referred from the map if taken to represent 120–360 cm depth of deposit within a total (9.6591 ha) of the drilled area.

Fig. 4.8. Results of the Shangani village ethno-archaeological survey used as a basis for population estimate of the site

	Number	ha	%
Total number of buildings	35	0.2782	
Public buildings	2	0.0116	
Houses unoccupied	2		
Houses occupied	31		
Total inhabitants for all houses	136		
Average inhabitant per house	4,4		
Total settlement area of the village		0.8024	
Settlement area with no buildings (gardens, open spaces)		0.5242	
Relationship (percentage) between settlement area with no buildings and area with buildings			53

Adding the 0.8 ha of the early-eroded occupation area in the central portion of the site, the estimated area for Period Ia within the drilled area totals to 4.7409 ha (about 33% of the whole area drilled). Using 48.4 structures per ha results in an estimate of a total of 229 houses and an adult population of 1603 for Period Ia.

Overview

The surveys were aimed to recover partial information that would enable decisions to be on the appropriate excavation strategy for the site. The results provided a guide for selecting the excavation areas to cover all probable periods when the site was occupied. The strategy of investigation placed the major concern of this study to obtain data for interpreting chronology of the site and its functional characteristics. It was deemed important to conduct at least one small stratigraphic excavation made in different areas of the site so as to examine details of the cultural sequence, type and context of the artefacts, and to obtain material for dating. It was also considered useful to open some shallow-area excavations in Zones L2 and R2 so as to obtain ground-plan samples of structures from the site representing the end periods of occupation. Excavations conducted in the former area verified some resistivity anomalies, and in the latter area they explored the structure represented by the ring mound.

5. EXCAVATIONS AND DEPOSITS

The excavations of Unguja Ukuu and the surveys previously described provide the primary data for this study. The excavated pits – called units – are named alphabetically, A–M. (Fig. 5.1). The site has been divided into different zones on the basis of topography and the stratigraphic results obtained from the survey stratigraphic coring. Two units excavated to natural soil are located in each of the zones L1, L2, RA and R2. Other non-stratigraphic excavations were opened to obtain outline plans of the structural remains from the later period of occupation in zones LA, L2, RA, R2 and LF. The excavations followed the order of cultural layers, rather than arbitrary levels, as the soil deposits of the site reveal clear stratification.

In the following description of the excavated units emphasis is placed on the evidence for dating the sequence of the site by imported pottery (Chapter 6) and the location of samples tested for radiocarbon determinations (discussed below). All deposit from the excavations was dry-sieved through 3 mm wire mesh for retrieval of artifacts and faunal remains (Plate 5.1). Features and profiles were drawn and photographed. Soil samples from the profiles of Units A and B were tested for pH and phosphate levels. Samples of charcoal and bone for radiocarbon dating were collected only from these units. The Munsell system was used to describe the soil colour from these units.

An average of 7 workmen assisted with the fieldwork. We enjoyed the co-operation of archaeologists from Sweden who collaborated under the auspices of the Swedish Central Board of National Antiquities. Bent Syse participated in the excava-

tion of Units A & B. In the 1990 season, Anders Löfgren supervised the drilling programme; he also cooperated with Dr Leif Stenholm and Dr Anders Lindahl from the Lund University on the work of Units C–E. Tertia Bernette, an archaeology student from UK, was supported by the British Institute in Eastern Africa and assisted in the excavations of Unit L and M.

This chapter has three sections. The first discusses the excavations and deposits. The second describes the excavated features, and the third discusses the stratification and chronology.

5.1 Excavations and deposits

The stratigraphic excavations (A, B, C, D, J, K and L) cover an area of 24 m². and made possible to examine about 222 m³ of the stratified deposits. The broad shallow excavations covered a total area of about 410 m² and shifted volume of deposits of about 11,500 m³. In the description of the stratigraphy, two depth values are given in the brackets; the first refers to the thickness of deposit (given as a range in cases of sloping stratigraphy) and the second refers simply to the depth from the highest point of the layer to the lowermost.

Distinct results were obtained for the soil samples collected from each profile of excavation Units A and B which were tested for phosphate concentration and for pH values (Fig. 5.2). The pH tests gave a range of values between 7–9, suggesting a basic or slightly alkaline soil that probably refers to the whole site. Despite the fact that the concentration of phosphate is usually small in subsurface soil water, the tests indicate an interesting variation. Very little

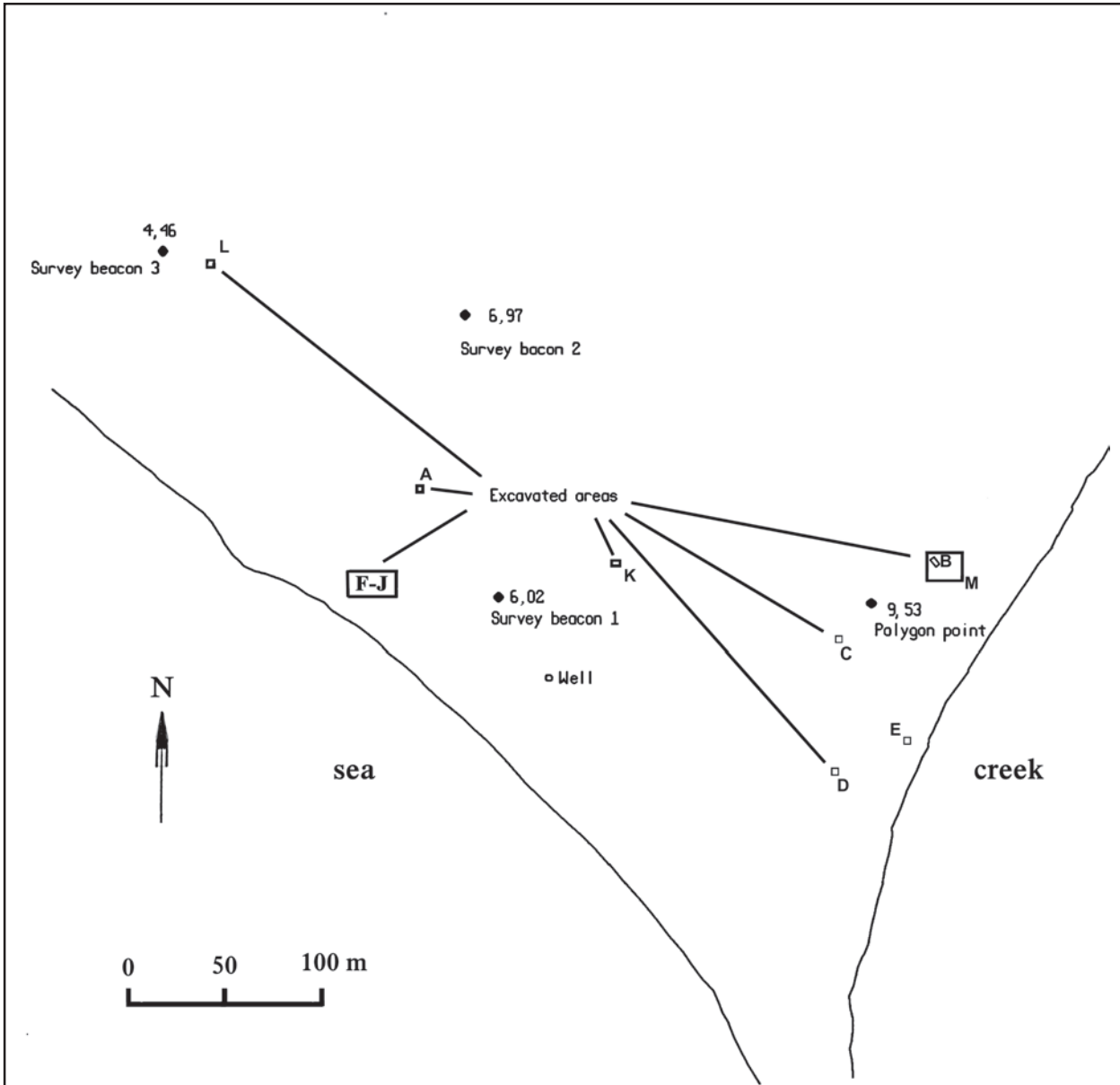


Fig. 5.1. Location of the excavations.

phosphate is generally available over the earliest cultural deposits. The basic character of the soil might be responsible for this low record. However, the middle and upper levels the excavation Unit B, and rubbish pits indicate somewhat higher values being available probably for biological uptake.

Unit A:

Unit A (size 2 x 1 x 1.7m): This stratigraphic excavation was opened in Zone L2 designated from the resistivity survey as a “transition zone” (see Fig. 4.5). A tumulus of small stones piled on the surface and

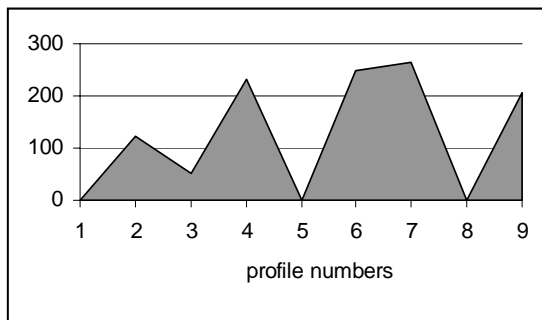
identified from the resistivity soundings as anomaly (Feature C3), was removed. The excavation profile is given in Fig. 5.3. Two core points (Nos 111 and 117, see Appendix B) drilled nearby suggest that the entire sequence of the strata at this place has high phosphate values (4–5).

Layer 1 (c. 10 cm thick; 0–9.3 cm): Small stones mixed with sand and humus.

Layer 2 (22 cm thick; 9.3–30 cm): Black soil rich in humus covered a mass of large stones. Imported pottery included a rim of sgraffiato pottery with simple incisions (Plate 6 No. 16) and a fragment of blue-on-white porcelain bowl.

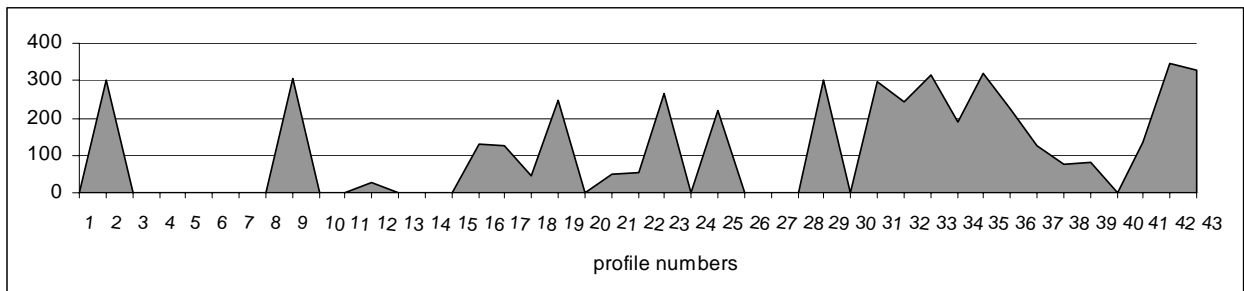


Plate 5.1, Hassan and Barnet dry-sieving the excavated earth with a 1 mm wire mesh.



(a) Unit A

Fig. 5. 2. Results of tests for phosphate: (a) soil from Unit A profiles, (b) soil from Unit B profiles with low values generally corresponding to early deposits.



(b) Unit B

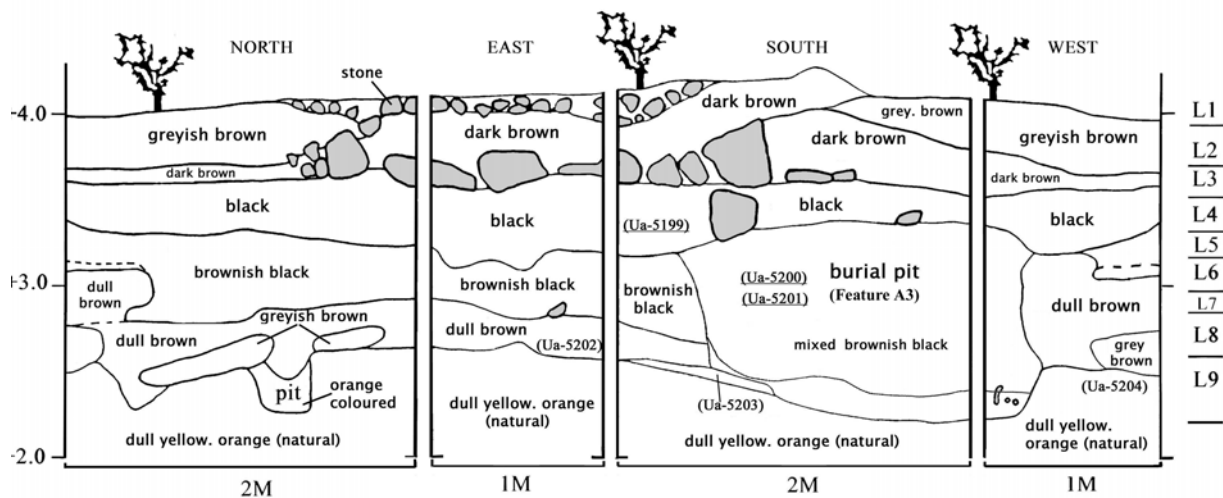


Fig. 5.3. Excavation profiles, Unit A.

Layer 3 (c. 18 cm thick; 30–40 cm): Dusty grey deposit surrounded the debris of large blocks of *porites* coral, Feature A1 (Fig 5.4a). Pottery included a fragment of a blue-on-white porcelain bowl with a *shou* character (Plate 6 No.1).

Layer 4 (c. 20 cm thick; 40–70 cm): Brownish black (2.5 YR 3/1) deposit. Imported pottery includes sherds of sgraffiato with pink (7.5 YR 8/4) body and the late green monochrome. The charcoal sample from this layer (Ua-5199) returned a date between 1430–1650 AD and this is corroborated by the local pottery.

Layer 5 (c. 14 cm thick; 70–86 cm): Dark brown (7.5YR2/3) deposit mixed with brown soil and traces of daub in the southern part of the excavation. Besides the blue-green and other glazed wares, this deposit yielded the white stoneware of the Tang period (618–907 AD) probably indicating an occupation not later than the 9th century AD.

Layer 6 (c. 20 cm thick; 86–100 cm): Dull brown (7.5 YR 4/2) deposit of mixed soil. Postholes of a uniform diameter (c. 3.5 cm) became apparent in the southern part of the unit (Feature A2, Fig. 5.4b). Layer 6 yielded many sherds of the blue-green glazed pottery. The charcoal sample (Ua-5200) collected from this deposit suggests a date between 600–770 AD.

Layer 7 (c. 11 cm thick; 100–1.25 cm): Mixed brown soil and a large patch of yellow brown earth indicating a continuation of the post-holes appeared at the north-western corner of the excavation. One sherd of lead glazed polychrome ware was found,

and the fact that no white-glazed pottery came to light from this deposit may be indicating a late 8th century AD date. Other types of foreign pottery found include eggshell and blue-green glazed wares. However, the charcoal sample (Ua-5201) collected from this layer returned a late date of between 1000–1220 AD.

Layer 8 (c. 11 cm thick; 1.25–1.42 cm): Fine dark brown sand containing a shell midden with large-size shells. The removal of this layer revealed that the patch of yellow brown earth that denotes a grave as well as a natural hard ground deposit of red clay appeared in the western part of the excavation. The imported pottery included eggshell and blue-green glazed wares.

Layer 9 (c. 16–28 cm thick; 1.42–1.70 cm): Sandy soil around the grave. Cultural deposits that continued in the other section of the excavation were excavated as three separate deposits (9a–c) and charcoal samples (Ua-5202–4) were collected from each of these.

The dark brown (7.5YR3/4) sand deposit of Section 9a characterized the eastern part of the unit. It contained a bedding of small pumice stones. The charcoal sample (Ua-5202) dates between 320–540 AD (see Fig. 5.13).

The dark brown (7.5YR3/2) sand deposit called Section 9b characterized the southern part of the unit was mixed with light brown (10 YR 7/4) natural sand below. This lowest cultural deposit was excavated around the grave and yielded a charcoal sample (Ua-5203) suggesting a date between 430–650 AD. The grave exposed two skeletons of hu-

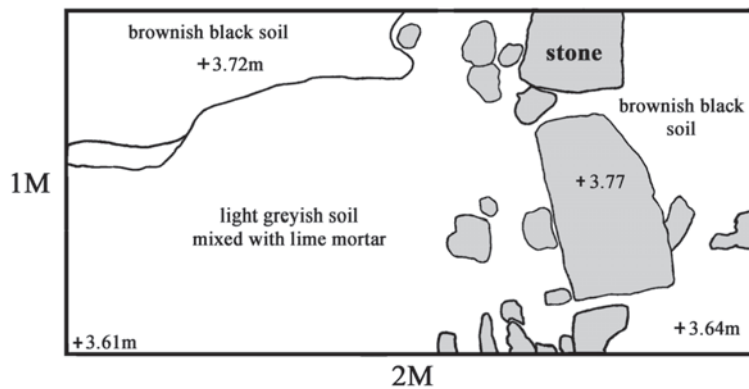


Fig. 5.4a. Excavation plan, Unit A, top of Layer 3: showing the stone Feature A1.

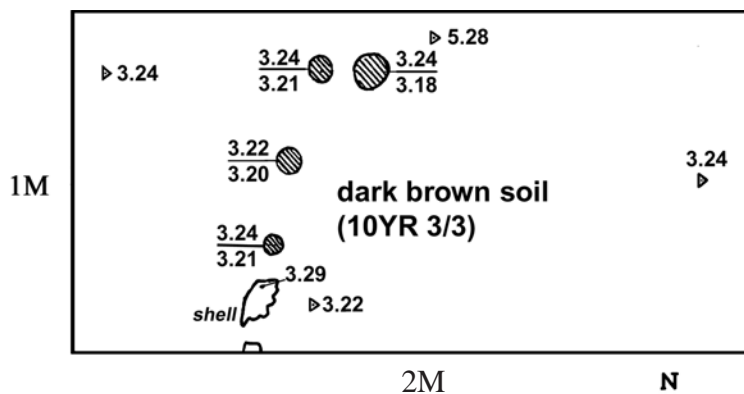


Fig. 5.4b. Excavation plan, Unit A, top of layer 6, Feature A2: posthole impressions that probably represent grave markers.

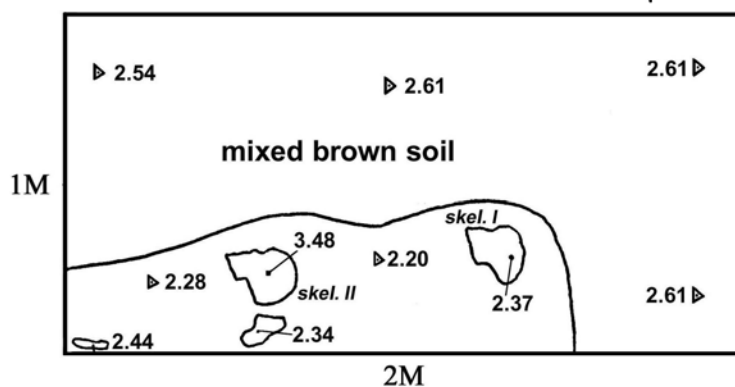


Fig. 5.4c. Excavation plans Unit A, top of layer 9b: first appearance of human skulls (cf. Plate 5.2).

man adults, Feature A3 (Fig. 5.4c, Plate 5.2) that were laid to rest on the brown (10 YR 7/4) natural sand. The orientation of the burial is discussed below (Period IIb burials). A bone sample (Ua-5197) that was extracted from one skeleton gave a date between 670–1000 AD. However, this was probably contaminated, given the comment from the laboratory that it showed too much mineral content. A likely date of between 1440–1600 AD of the burial was obtained for a sample (Ua-5198) from the other skeleton.

The dark reddish brown (5YR 2/3) sand deposit of Section 9c that characterized the north and western parts of the unit produced a charcoal sample (Ua-5204) dating between 660–890 AD.

Suggested periods:

Unit A reveals occupation for all periods of the site:

Period Ia: Refers to layers 8–9 on the account of types of imported pottery and some radiocarbon dates. The two tests (Ua-5202 & Ua-5203, Fig. 5.13) from the bottom components of the excavated deposit (Sections 9a & 9b) point to the beginning of



Plate 5.2. Burial demonstrating the skeletons of at least two people laid to rest in the same grave; excavated from Unit A.

the settlement, c. 500 AD. This can be deduced from the mean or overlap of the two tests when considered at a range of one standard deviation. Layer 8 is affiliated to this period for the deposit above it (layer 7) and contained pottery of the 8th century AD. The charcoal sample Ua-5204 (660–890 AD) obtained from the deposit of Section 9c indicating a later date for this deposit has not been considered as significant. It possibly represents a secondary deposition from layers 7 and above caused by disturbance of the deposit when preparing the grave.

Period Ib: Refers to layers 5–7 on account of imported pottery. Both the charcoal sample (Ua-5201) giving a later date, and the fragments of sgraffiato pottery both might have been re-deposited in layer 7 from layers near the surface possibly as a result of the grave preparation activity.

Period II: Refers to layers 1–4 the reoccupation periods of the site, on the basis of Chinese porcelains and radiocarbon dates. Layers 1–3 comprise Period IIa c. 1100 AD. Material of the earlier and the later periods is frequently mixed in the surface level that is subject to disturbance. The Chinese porcelain and the charcoal sample (Ua-5199) from layer 4 suggest a date between 1430–1650 AD for Period IIb.

Unit B:

Unit B (3 x 1 x 2.7m) was opened in Zone R2 containing the ring mound (Figs. 4.2 & 4.7) to examine the cultural sequence of the area. Cores 11 & 12 are the closest to this excavation and have suggested that the stratigraphy of the area varies between 80–120 cm and consist of sandy deposits, grey on top, black in the middle and brown at the lowest level, and all with relatively high phosphate values 3–5 (see Appendix B). The excavated profiles are illustrated in Fig. 5.5.

Layer 1 (c. 11cm thick; 0–15 cm deep): Black soil with traces of dull-brown daub and small loose stones.

Layer 2 (c. 11 cm thick; 15–30 cm deep): Deposit of similar character. Imported pottery includes sherds of a fragment of a simple incised sgraffiato ware (Plate 6 No. 16), the white glazed and the blue-green glazed wares.

Layer 3 (20 cm thick; 30–50 cm deep): Brownish black (10 YR 2/2) earth. Imported pottery includes the blue-green glazed ware, unglazed porous wares with buff fabric oxidised to light orange. In addition, a base fragment of sgraffiato bowl with light green glaze inside, and a jar fragment of olive-green glazed Chinese stoneware (Dusun) occurred at the bottom (Plate 6 No. 3).

Layer 4 (c.16 cm thick; 50–66 cm deep): Dull brown clayey sand covering a considerable amount of large stones (Feature B1) but with no trace of

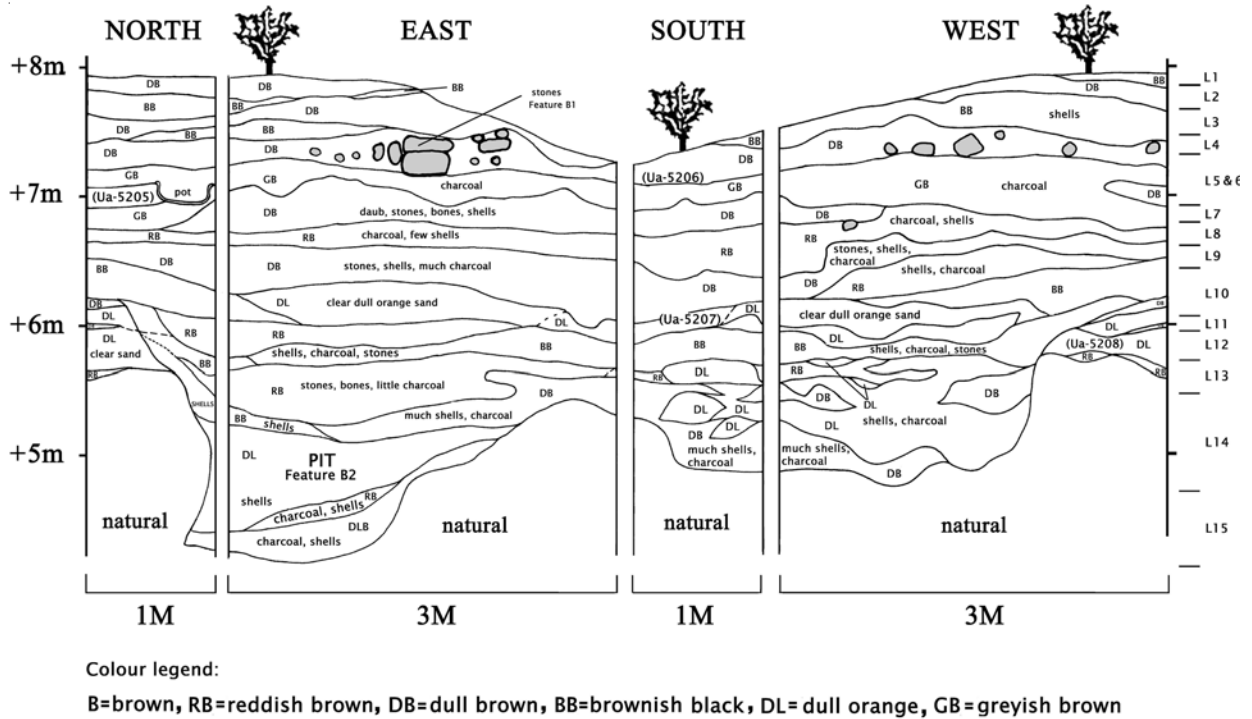


Fig. 5.5. Excavation profiles, Unit B

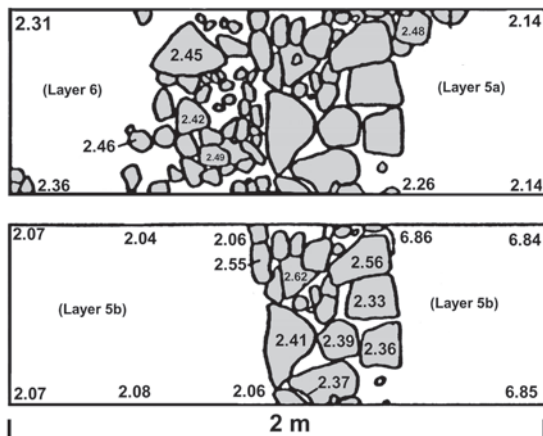


Fig. 5.6. Excavation plans Unit B: Feature B1 shows part of the stone foundation of the large house, as it appeared from the top of layers 4–6.

lime (see Figs. 5.5, and 5.6). The roster of imported pottery is the same as in layer 3, but here it includes a base of Changsha stoneware and a polychrome ware of the Islamic period (Plate 6 Nos. 6 & 15 respectively). Six copper pieces that appear to be coins were also recovered.

Layers 5 & 6 (18 cm thick; 66–84 cm deep): Brown soil with stone foundation. Imported pottery includes the white-glazed ware and the grey-green stoneware. The dark brown deposit (5a, c. 34-cm deep) removed from the outer side of the structure

in the northern part of the excavation produced a charcoal sample (Ua-5205) suggesting a date between 770–980 AD. Deposit 5b is similar in colour and the inner section of the foundation in the southern part of the excavation produced eggshell ware. A charcoal sample (Ua-5206) from below the stone foundation suggests a date between 793–799 AD (see Fig. 5.12). Layer 6 comprises dark brown soil and is stratigraphically related to deposit 5a. It yielded white glazed pottery, grey earthenware with sizeable fractures and air holes as well as grey-green stoneware of the type previously noticed in layer 4. From layer came six plain copper pieces that might have been primarily used as coins and buried at this level (Plate. 7.4.1 Nos. 5–10).

Layer 7 (c. 18 cm thick; 84–100 cm deep): Bright brown sandy deposit. A small sherd of the lead-glazed polychrome ware (see Plate 6 No. 15) and a fragment of probable early type sgraffiato suggest a date of the late 8th or early 9th century AD. Other types of imported pottery include eggshell, blue-green glazed, and thick unglazed porous wares.

Layer 8 (c. 10 cm thick; 100–110 cm deep): Brown (7.5YR 4/8) sand at the northern section changing to dark grey (7.5 YR 3/4) at the southern section the excavation. Changsha painted stoneware

(Plate 6 No. 11) found in this layer appears to date this deposit to c.700–800 AD.

Layer 9 (c. 18–25 cm thick; 110–135 cm deep): Clear bright brown sand with relatively few artifacts. Imported pottery includes Chinese white stoneware (Plate 6 No. 12) that suggests the deposit dating close to 700 AD or perhaps slightly earlier. The lower level of this deposit produced a base fragment of unusual soft-stone bowl based apparently on an ancient manufacturing tradition (Plate 7.5 No. 7).

Layers 10 & 11 (c. 30 cm thick; 135–165 cm deep): Dull and bright brown sandy deposit. Layer 10 deposit excavated down the inner part of the building in this area (20 cm thick) produced the eggshell ware, the blue-green glazed earthenware and more of the crème stoneware. Layer 11 (17 cm thick) consisted of the upper and lower deposits. The upper deposit (c. 8 cm thick) appear contemporary with layer 10 while the lower deposit produced a charcoal sample (Ua-5207) dating between c. 667–779 AD. A large pit Feature B2 from the lower part (see Fig. 5.5) produced thin-walled (4 mm) fragments of a rare thin pink earthenware.

Layer 12 (c. 12–20 cm thick; 165–185 cm deep): Light brown soil mixed with dull brown earth and flecks of charcoal. The upper part (deposit 12a) mostly consists of the fill up soil of the pit. Intact cultural deposit preserved at the north-western part of the unit (deposit 12b) produced eggshell ware, blue-green glazed ware and more of the thin pink earthenware. The charcoal sample (Ua-5208) from this deposit suggests a date between 562–654 AD.

Layers 13–15 (c. 85 cm thick; 185–270 cm deep): Lenses of brown sand in these three bottom layers occur in the pit and thin out at the centre (see sections). The considerable number of artefacts observed in these layers includes blue-green glazed, and eggshell wares. Also, excavation of the base cultural layers 14 and 15 Layers produced among other things some interesting pieces of early glass (see glass Plate 7.1 No. 1, 7, 13 & 14)

Suggested periods:

Period Ia: Refers to layers 7–15, *Period Ib* to layers 4–6 both are dated by imported pottery and radiocarbon dates. Layer 6 yielded copper pieces that probably are coins but of late variety. I believe they were buried in that context and hold no chronological significance to this period.

Period II: Refers to deposits of layers 1–3. The sgraffiato pottery points to a Period IIa date for these deposits, although various types of pottery such as Dusun, the blue-green glazed, unglazed buff and the white-glazed wares overlap, probably the result of disturbances that appear common in the surface levels (cf. Chittick 1984, p. 229).

Units C, D & E:

Three units in Zone RI of the site were investigated in conjunction with construction activities at the site. The first two units (C & D) are small excavations, and Unit E is a borrow pit dug to obtain earth for construction of the existing camp houses.

Units C & D (1 x 1m) revealed a stratigraphy varying between c. 20–45 cm and confirmed the results from the cores (No. 32 & 34) drilled nearby. Phosphate samples from the core profiles had values no higher than 3 (see Appendix B). The depth values are based on Unit C (c. 35 cm deep) and three following cultural levels can be derived from the five layers:

Level I (2–10 cm thick; 10 cm deep) consists of black topsoil overlying a grey brown soil mixed with light sand containing charcoal and pottery. Level II (4–12 cm; 21 cm deep) consists of a dull brown deposit overlying a greyish brown soil. In Unit C, the deposit of Level II contained a large, locally made broken pot (c. 50-cm diameter, Feature C1, Plate 5.3) with a fragment of a grindstone (Fig. 7.6 No. 5) beneath it. Level III (4–8 cm thick; 33 cm deep)



Plate 5.3. Large local pottery bowl excavated by Löfgren from Unit C (Feature C1).

consists of a fine orange sand deposit with patches of grey-reddish brown earth in the upper section and dark brown patches in the lower section lying on the natural deposit of red clay.

Levels II and III are culturally rich and produced late types of sgraffiato and local pottery, glass beads, fragments of glass vessels, and iron slag.

Unit E (c. 50-cm): This borrow pit was simply cleaned to record the stratigraphy, which comprised grey sand overlying brown clayey sand.

Units F, G, H & I:

These broad shallow excavations (c. 40-cm deep) were carried out in Zone L2 in the low-resistivity “transition area” (see Fig. 4.5, Fig. 5.7, Plate 5.4). The sequence comprises a black sandy topsoil overlying a dull brown earth with some stone debris and pits, and a thick level of white sand at the lowermost part containing fragments of dressed *porites* coral stone (Plate 5.5) and a great deal of iron slag.

The diverse sample of small finds includes a wide range of faunal remains. Many robber trenches in this zone suggest that building stones have been carried away. We could hardly recover a plan of

any meaningful structure from these excavations in the area. The deposit below the lowermost white sand of excavation Unit I appears intact and we covered the area with polythene sheeting before back filling for possible future exploration. The cultural succession of Unit I was investigated with Unit J.

Unit J:

Unit J (2 x 1m, max 2.03m) was excavated in the north-eastern part of Unit I where the resistivity survey indicated an anomaly. The aim was to record the stratigraphic sequence of the area and relate it to the anomaly. No samples for radiocarbon dating have been tested from this excavation and the suggested chronology for the deposits is entirely based on the associations with imported pottery or other chronologically diagnostic material recovered.

The area reveals a basic succession of the dull or dark brown sand interdigitated by lenses of white sand. The excavated profiles are given in Fig. 5.8. The stratigraphic description begins with Layer 4 as the three topmost layers (c. 0–35-cm thick) were removed as part of Unit I.



Plate 5.4. Broad shallow excavation, Units F–I, at the site of the mosque (Zone L2).



Plate 5.5. Excavated blocks of coral stones preserving lime plaster surfaces and some moulding decorations, probably from the old mosque that existed in the Zone L2 (Units H and I).

Layer 4 (c. 9 cm thick; 35–44 cm deep): Light and dark brown earth. Grey coloured soil covered a considerable quantity of stones in the northern section of the unit. A fragment of a Longquan green celadon bowl from the Ming dynasty (14–16th centuries AD) was recovered from this deposit (Plate 6 No. 7).

Layer 5 (c. 11 cm thick; 44–55 cm deep): Dark brown sand containing small stones. This was thicker in the southern section of the excavation unit, where it produced a fragment of the lead-glazed sgraffiato similar to that illustrated in Plate 6 No. 16.

Layer 6 (c. 9 cm thick; 55–64 cm deep): The deposit is similar to the layer above in content and character but here it yielded 4 minuscule silver coins (Plate 7.4.1 Nos. 1–4).

Layer 7 (c. 10 cm thick; 66–76 cm deep): Dull brown soil mixed with white sand. The mass of relatively large coral stones, Feature J1 filled the southern and western sections of the excavation and measured up to 10–15 cm high (Fig. 5.8). Some stones are dressed. The deposit in the northern section of the unit consists of white sand with round features that are possibly postholes, Feature J2 (not illustrated).

Layer 8 (c. 4 cm thick; c. 76–80 cm deep): Dark brown (2.5 YR 4/8) soil mixed with small stones. A hard shattered surface, Feature J3, appeared (see Fig. 5.8). This, together with a lens of white sand, seals off the underneath deposit. In the south-eastern corner of the excavation a small pit appeared, Feature J4, as well as patches of red earth. Imported pottery from this layer includes the white glazed ware, suggesting a date of c. 9th century AD.

Layer 9 (6 cm thick; 80–86 cm deep): Dark brown deposit. A large pit, Feature J5, filled with dark reddish brown earth with flecks of charcoal appears just below the small pit noticed in the layer above (Fig. 5.8). White glazed pottery is also present; one fragment is splashed with brown abstract motifs and suggests pottery dating almost contemporary with the above.

Layer 10–11 (c. 5 cm thick; c. 86–91 cm deep): Dark brown deposit containing pottery and includ-

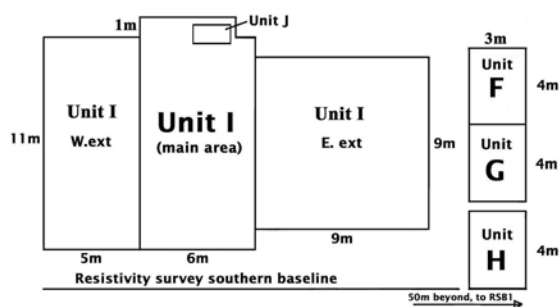


Fig. 5.7. Excavated areas, Units F–I, and J.

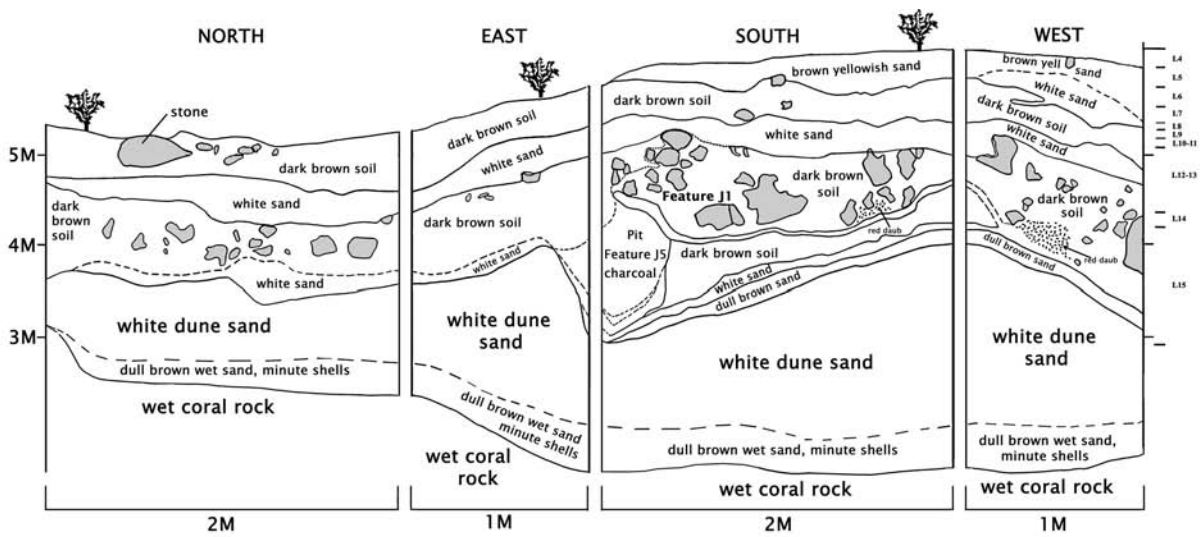


Fig. 5.8. Excavation profiles, Unit J.

ing a fragment of Chinese polychrome ware that perhaps suggests an 8th century date for this deposit.

Layers 12–13 (c. 40 cm thick; c. 91–131 cm deep): Dark brown (2.5 YR 4/8) earth containing red-clay surfaces mixed with whitish (2.5 Y 8/3) sand. Neither layer produced white-glazed pottery. Layer 12 contained a sherd of buff fabric described as “Susa ware” (Chittick 1984, p. 94) that probably suggests a deposit of the 7th century AD on the basis of examples found at Susa in the Persian Gulf. Layer 13 consisted of a thick deposit of light brown soil excavated down to the white sand. Excavation revealed a larger size of Feature J5 that contained some charcoal, potsherds and some edible shells, but cut the south-eastern corner of the unit. Imported pottery includes fragments of blue-green-glazed ware, eggshell ware, and buff porous pots.

Layer 14 (10 cm thick; 131–141 cm deep): Thin dull brown sand and white sand below. Artefacts came from the large pit already mentioned in the layer above. Imported pottery includes an interesting fragment identified to be of the late Roman period (c. late 5th century AD) from the southern Mediterranean (Fig. 6.1 No. 46). Another interesting pot is a local type with bands of shell impressions and white paint surface decoration, characteristic of the

material from the Mozambican coast where it is dated to around the 6th century AD (Fig. 6.2 Nos. 1 & 5; see also Sinclair *et al.* 1993, p. 423, Fig. 24.9).

Layer 15 (c. 70 cm thick; 141–203 cm deep): Homogenous white sand containing no traces of construction. The sand appears natural, but cultural material such as iron slag, the fragments of local pottery (Fig. 6.2 Nos. 1, 5), blue-green glazed and the buff unglazed porous wares were found soaked and considerably weathered in the upper (12 cm) level. The lowest 20-cm horizon consists of water-logged light orange sand with numerous tiny seashells which lies directly on the coral rock substrate.

Suggested periods:

Period Ia: Refers to deposit of layers 10–15 on the basis of pottery, especially the fragments from Mozambique, those from the southern Mediterranean region, the “Susa ware” and the Chinese ceramics.

Period Ib: Refers to the deposit of layers 8–9 based on the presence of white-glazed pottery dating to this period.

Period IIa: Refers to layers 5–7 on the basis of the sgraffiato pottery, and also coinage.

Period IIb refers to layer 4 (layers 1–3 were removed earlier in Unit I).

Unit K:

Unit K (size 1 x 2m, deep 0.8–0.9m) was opened near the western incline of the ridge, c. 45-m north-east of the stone well.

This excavation, aimed to test the cultural sequence of Zone L2. Results from the drilling indicated a varied stratigraphy in this area. The closest drill points are Core nos. 87 and 88. The former, due west of the excavation indicated 1.2m of stratigraphy and the latter uphill to the east indicated cultural deposits of only 60 cm. Beneath the humic black topsoil were the cultural deposits of a brown colour with relatively high (3–5) phosphate values. The excavated profiles are illustrated in Fig. 5.9.

Layers 1–2 (c. 6–20 cm thick; 0–20 cm deep): Black soil containing small stones and scattered shells. One sherd among the imported pottery appears to be of lustre ware.

Layer 3 (10 cm thick; 20–30 cm deep): Reddish and dark brown (2.5 YR 3/3) soil deposit. The surface consists of a large patch of black soil spreading to the north-western corner and surrounding an area with white sand at the central part of the excavation. A fragment of late sgraffiato ware suggests that the deposit is broadly contemporary with the layer above.

Layers 4–5 (c. 10 cm thick; 30–45 cm deep): The deposit of both layers is similar to layer 3 above, but layer 5 consisted of a large pocket of soil (Feature

K1) rich in shell midden and with traces of charcoal (see Fig. 5.11). Scatters of shells and small stones appear in small patches of yellowish and red sand. A fragment of stone foundation (Feature K2, Fig. 5.9) juts from the northern wall. Imported pottery includes fragments of late green sgraffiato and pale grey celadon with light-green glaze. Two other interesting fragments comprise one possibly of lustre ware and the other from a yellow-glazed pot with a brown fabric.

Layer 6–7 (c. 15 cm thick; 35–50 cm deep): The deposit is similar to that above. It was excavated parallel with the stone foundation (12 cm wide) projecting (c. 70 cm) from the northern wall of the excavation. A brown patch became apparent in the north-eastern section, while a pit containing a dense shell midden concentration appeared in the western section. The latter produced a fragment of *Champlevé* sgraffiato, suggesting a date of 15–16th centuries AD for the deposit.

Layer 8 (10 cm thick; 50–60 cm deep): Ash deposit that produced late incised sgraffiato with green and yellow glaze. The stone foundation extended to this level. A brown patch with the remains of a juvenile human skeleton (Feature K3, Fig. 5.10–11) appeared in the north-eastern part of the excavation.

Layer 9–11 (30 cm thick; 60–90 cm deep): Layer 9 consists of fill from the pit with shell midden

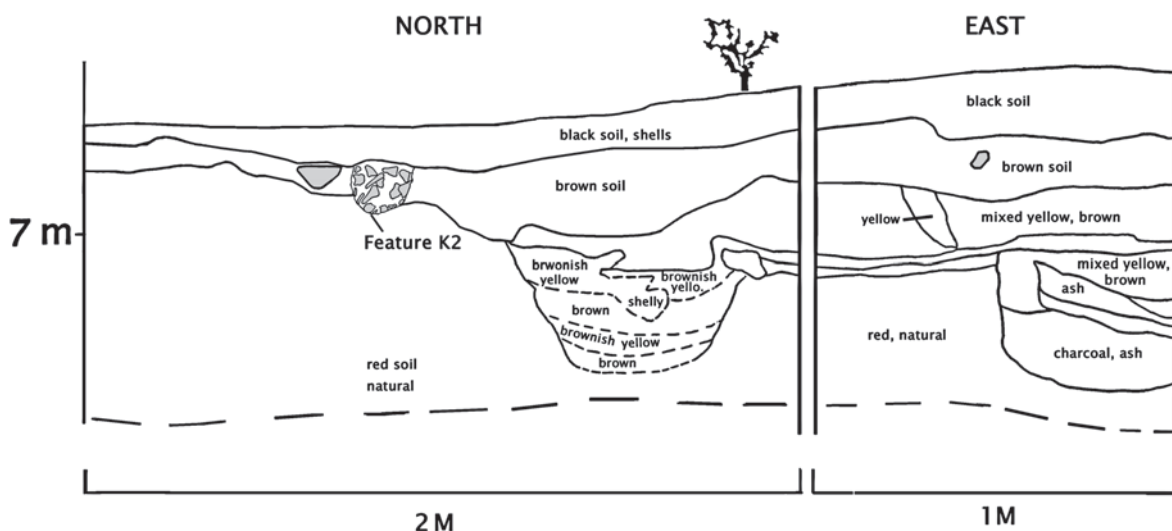


Fig. 5.9. Excavation profiles, Unit K, north and east.

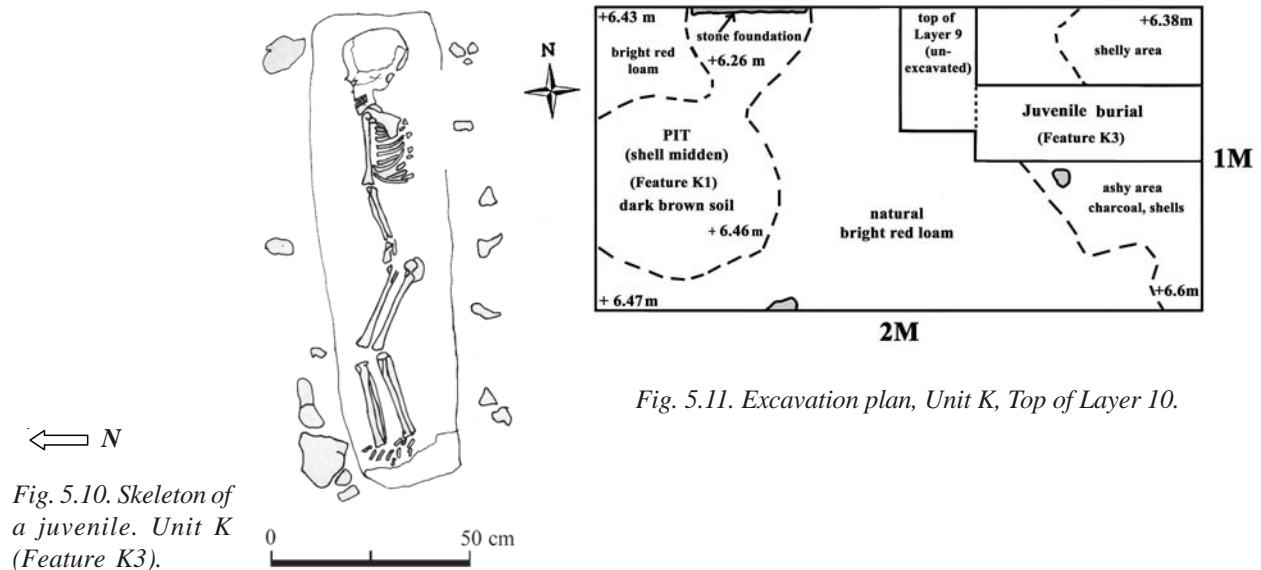


Fig. 5.10. Skeleton of a juvenile. Unit K (Feature K3).

Fig. 5.11. Excavation plan, Unit K, Top of Layer 10.

but no sgraffiato ware. A natural deposit of red and brown sand surrounded the shell pit, the ash pit in the southern section, and the burial chamber in the eastern section that cuts areas of the midden deposits beneath it (Fig. 5.11). Layer 10 (c. 8 cm thick) consists of mostly similar deposit and produced the white-glazed ware with brown coloration and the Chinese grey-green celadon. Brown and yellow sand from a small pit produced local pottery similar to the type that Chittick (1984) dated to the late 10th century AD. The large pit yielded shells only. Layer 11 is a deposit from the pits and produced a fragment of Chinese stoneware (Plate. 6 No. 2).

Suggested periods:

Deposits of *Period Ia* failed to appear in this excavation.

Period Ib refers to layers 9–11, dated by the Chinese white ware and the brown-plasted white glazed ware both of which date from c. 900 AD and which contained no sgraffiato at all.

Period IIa refers to layers 4–8 containing celadon and indicating the presence of the late sgraffiato wares pointing to a date c. 11th century AD.

Period IIb refers to the topmost layers 1–3, dating to the 15–16th century AD on the basis of late sgraffiato and lustre ware.

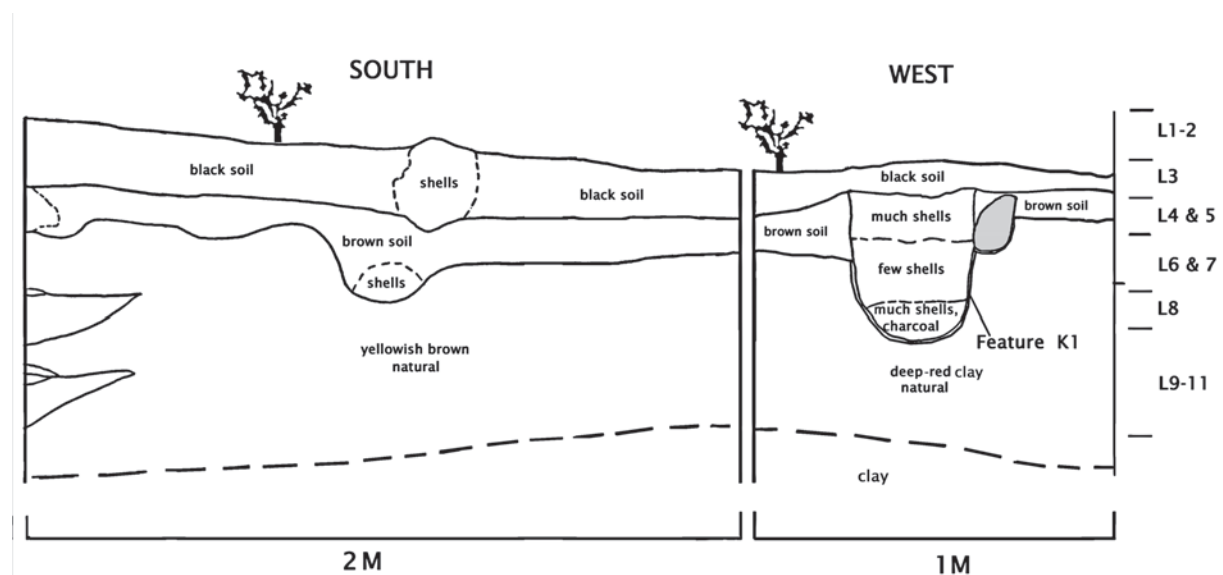


Fig. 5.9. Excavation profiles, Unit K, south and west.

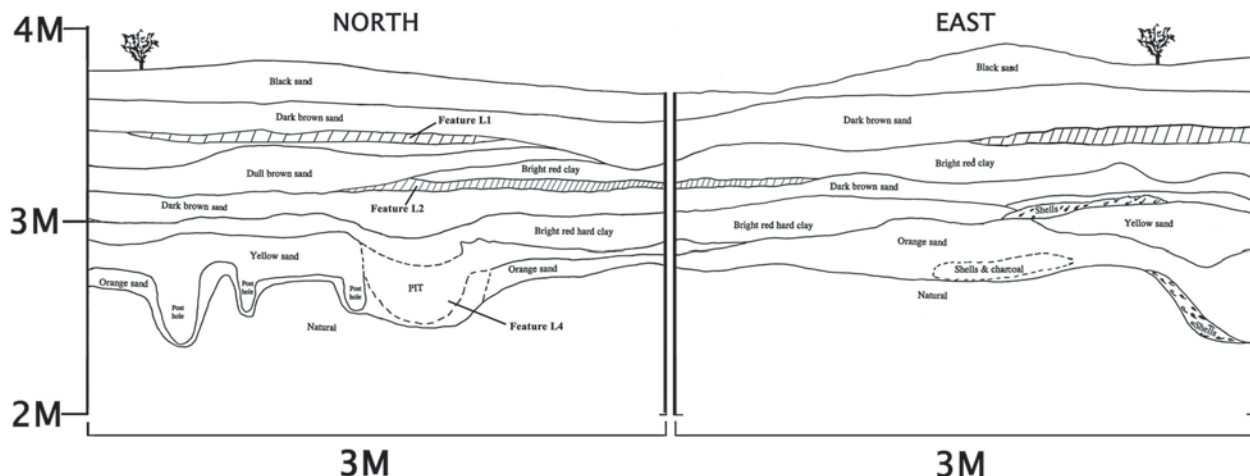


Fig. 5.12. Excavation profiles, Unit L, north and east.

Unit L:

Unit L (3 x 3 x c. 1.8 m) aimed to inspect the sequence and cultural material of Zone LA (see Fig. 5.1). The area has a gentle slope and the surface is uneven owing to ridge cultivation. The excavated profiles are illustrated in Fig. 5.12.

Layers 1–2 (c. 34 cm thick; 0–34 deep): Black soil. Imported pottery includes: monochrome of the Islamic period, black glazed sherds with charcoal grey fabric, single fragments of sgraffiato with simple incisions, and lustre ware. Together these date the deposit to around the 11th century AD.

Layer 3–4 (c. 11–21 cm thick; 34–55 cm deep): Deposit of red clay. Layer 4 consists of a hard flat surface, and Feature L1 (Fig. 5.12) produced the white glazed ware. A small pocket of loose soil that also appeared at this level yielded a fragment of Changsha stoneware.

Layer 5 (c. 31–38 cm thick; 55–93 cm deep): Red unconsolidated clay containing dark brown streaks with charcoal. Changsha stoneware was recovered from this level.

Layers 6–7 (c. 4–10 cm thick; 93–103 cm deep): Deposit of red clay forming a hard flat surface. Feature L2 in layer 6 dominates the south-eastern section of the excavation and seals the underlying deposit (Fig. 5.12). A pocket of soil containing a shell midden occupied the south-western and the north-western areas of the excavation in layer 7.

Layer 8 (c. 5–18 cm thick; 103–121 cm deep): Brownish black soil interrupted at the south-eastern

corner of the excavation by a patch of red earth. The east section produced quantities of shell.

Layer 9 (c. 9–12 cm thick; 121–133 cm deep): Black sand containing considerable quantities of charcoal. Hard bright red natural soil appeared at the south-eastern corner and the southern edge of the excavation. Just beneath, the excavation exposed a pocket of burnt dark brown soil with a few large stones and considerable quantities of charcoal. Feature L3 is probably a hearth.

Layer 10 (c. 3–8 cm thick; 133–141 cm deep): Dark brown soil speckled with red and black patches. One pit, Feature L4 in the northern section of the trench and another, Feature L5 in the western section cut through the lower cultural deposits (Fig. 5.12) and extend into the thick deposit of natural white sand similar to that observed at the base of the excavation in Unit A and J.

Layer 11 (c. 4–10 cm thick; 141–151 cm deep): Black soil cut by pits from above.

Layer 12 (c. 6–9 cm thick; 151–160 cm deep): Brown soil contains flat bones (Plate 5.6a). Imported pottery includes fragments of a flat-based dish with red slip identified as of Late Roman period from the Mediterranean world (Plate 6 No. 45).

Layers 13–15 (c. 20 cm; 160–180 cm deep): Soft yellow sand comprising the lowest fill of the pit and deposited over a sterile white sand mottled in the eastern section with patches of light brown sand (Plate 5.6b). Imported pottery includes fragments early Chinese stoneware and a red slipped Indian pot (Plate 6 No. 43). Layer 13 yielded a fragment

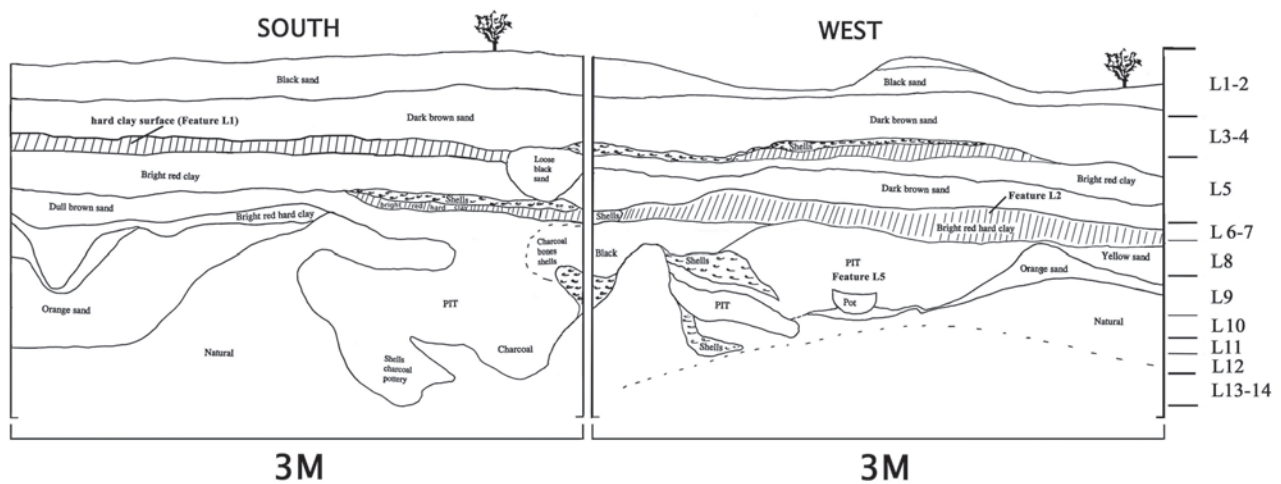


Fig. 5.12. Excavation profiles, Unit L, south and west.

of dark green quality glass with loop decorations in relief (see Plate 7.1 No. 7).

Suggested periods:

Period Ia: Refers to layers 12–15 according to the deposit containing pottery of the Late Roman period recovered from the top layer 12.

Period Ib: Refers to the deposit from layers 3–11 delimited by the deposit of the earlier period beneath it and by the top level containing the white glazed ware and the Changsha stoneware.

Period II: refers to layers 1–2 containing the sgraffiato and other pottery types of the Islamic period such as monochrome and lustre wares.

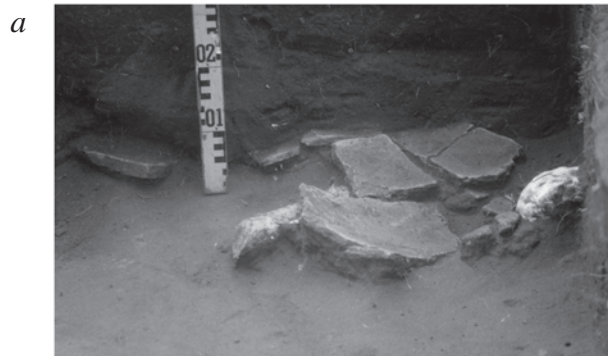


Plate 5.6. Excavation of Unit L. Top: (a) Excavated Layer 12 exposing flat bone carcasses. Bottom (b) Excavated Layer 15 revealing underneath the natural yellow dune sand with light brown patches in the area.

Unit M and the associated trenches:

Unit M (Plate 5.7) refers to broad excavations in the mound area and the trench in Zone R2. We already had stratigraphic knowledge of this area from previously excavated Unit B and from the drilling. The aim of this shallow excavation covering around 170 m² was to trace the ground plan of the large structure (Feature M) represented by a few isolated remains of stone visible on the surface. One village elder remembers having participated in quarrying stones from the area for reuse in the village mosque that now has been replaced.

From the excavation of Unit M, we located the north-western corner of the building. In the smaller deeper trenches (sub-units M1–3, size 1x1 m), we recorded three joining angles of the plan (Plate 5.7a). The building has an internal dimension of 23.9 x 17.1m and oriented north–south at 273 degrees magnetic. A stone pavement was excavated at the western edge of the building that was probably a veranda or an outbuilding (Plate 5.7b). The sub-units revealed up to 5 cultural layers varying between 45–65 cm deep. Among other artefacts the pottery

recovered consists of high quality vessels and include the white glazed and blue-green glazed wares. From the broad excavation, a complete blue green-glazed jar (Fig. 6.17 No. 6, Plate 1) was unearthed near a tree stump.

One sub-unit (0.5m wide) was extended as a long trench from the southeast corner of the building eastward down the incline of the ridge. The excavation exposed a length of a double-walled stone foundation oriented north–south and constructed of rubble (Plate 5.7c). These are possibly the remains of a town wall, or a retaining or defensive wall of the house. The trench entered the beach Zone LF at its lowest part and shows that the beach area consists of very shallow cultural deposits. It confirmed that the alternating layers shown in Core No. 16 (see Appendix B) actually represent layers of the mangrove roots interdigitated with beach sand, an interesting indication of environmental change that might be investigated in the future.

5.2. Excavated features

Features such as burials, refuse pits, earthen floors, post-holes and stone relics have been recovered from the excavations and are described below by period.

Period Ia:

i) *Earthen floor*. Feature J3 in layer 8 of Unit J consisted of a hard surface that was possibly broken by the foundation trenches of the stone mosque.

ii) *Rubbish pits*. Two rubbish pits of some significance were excavated from this period. These refer to Features B2 and J5 observed in layer 11 of Unit B and layer 13 of Unit J respectively. The former produced considerable quantities of artefacts including glass beads, pottery, bones, while the latter yielded a small quantities of potsherds, charcoal and shells of edible molluscs.



a

b

1 m

c

1 m

Plate 5.7a–c. Excavation of Unit M. Left (a): showing some joining angles of the large building in the area. Top right (b): Remains of a masonry pavilion that was probably a veranda to the building. Bottom right (c): Long trench to the beach exposing in the middle the double-wall foundation aligned parallel to the shoreline.

Period Ib:

i) *Earthen floors*. Flat, hard packed earthen surfaces that are probably the remains of clay floors of domestic houses for this period were noted in Feature J3 (Unit J layer 8), and Features L1 and L2 (Unit L layers 4 and 6). The two latter floors are distinct and alternate with deposits of dark brown soil and seal the underlying deposit.

ii) *Stone structures*. The solid structures related to this period consist of the large house built on top of the ridge, and the stone foundations of the wall on the outside set parallel to the shoreline at the western side of the building, where there is a steep gradient into the creek (see Fig. 4.2). Part of the stone foundation of the house was excavated as Feature B1. Traces of daub but not lime in the soil deposit surrounding the house probably indicates that clay might have been used as bonding material in the mortar to support the stonewall. On the other hand, if rainwater might have washed out the lime from the deposit, then it could be the case of lime having been made and used earlier than the 10th century AD. This remains an undemonstrated possibility. The double-line stone foundation could be the remains of a retaining wall of the house rather than a town wall (see Plate 5.7c).

iii) *Rubbish pits*. Two notable rubbish pits excavated from this period refer to Features L4 and L5 (Unit L, layer 10). The former was laden with shells while the latter yielded considerable amounts of other objects including glass beads, pottery and a small quantity of shells.

iv) *Hearth*. Feature L4 observed in layer 9 of Unit L is interpreted as a hearth or fireplace and it is characterized by dark brown soil with large stones.

Period IIa:

i) *Postholes*. These impressions left by rotten posts or sticks were rarely recognized from the limited stratigraphic excavations. Perhaps Feature J2 (Unit J layer 7) represents such postholes supporting a construction. These postholes appear to be associated with the remains of the stone mosque (Feature J1) referred to below and indicate the possibility that the mosque incorporated timber supports.

Feature A2 (unit A layer 6) consisted of dark round patches. These irregular configurations probably represent stumps used as grave markers in connection with the burial described below.

ii) *The small stone house*. Feature K2 refers to the fragment of stone foundation observed from the excavation Unit K (see Fig. 5.9) representing a small house. On the basis of associated finds, this appears related to Period IIa.

iii) *The Stone Mosque*. This mosque refers to a mass of relatively large stones of a collapsed building observed from Unit J.

iv) *Rubbish pit*. This refers to Feature K1 that continued down to the lowest levels of Unit K and contained ash and bivalves of differing size. A lump of potting clay found in the fill might suggest the shell-working groups that used the site in a season of shell abundance, having members probably also engaged in pottery making.

Period IIb:

i) *Stone structures*. Loose stones that piled up on the surface and removed to clear for the excavation of Unit A (Feature A1, layer 3) has been interpreted as a mausoleum. The grey-tinged deposit associated with this feature shows clear traces of a lime constituent of the mortar used in the construction. The mausoleum that ultimately collapsed could have been decorated with the 15th century blue-on-white porcelain, a tradition known from elsewhere in the east African coast as fragments of such vessels appeared in layer 2. The location of mausoleum in front of the stone mosque described above is another common tradition.

ii) *Burials*. Two burials were noted for this later period, one from Unit A (see Plate 5.2) related to the mausoleum, and the other observed from Unit K (see Fig. 5.10). Indications of the grave markers for the former burial grave (Feature A2) came to our notice in the first instance in the form of round stake holes from layer 6. However, it appears from the profile (Fig. 5.3) that the grave pit was dug when layer 4 was being deposited. Bone samples (Ua-5197, Ua-5198) taken from each of these skeletons show great chronological variance. The former sample is contaminated. Perhaps the latter sample

(Ua-5198) suggesting a date between 1450–1650 AD provides the chronology of the burial and contributing also to the general chronology of the site for the reoccupation Period IIb.

Two partial skeletons of adult humans (Feature A3, Plate 5.2) were buried during this re-occupation Period IIb. The coloration of the grave soil and the pattern in which the skeletons appear in the same grave suggest that the grave might have contained more than the two individuals. However, we did not expand the excavation to verify this fact owing to the depth.

The deceased face magnetic north and was stretched out east–west on the natural brown sand. This posture of the burial for east Africa matches the Muslim practice for the disposal of the dead with the orientation towards *qibla* (facing Mecca). The period and the absence of burial goods reinforce this interpretation.

Why were the deceased Muslim individuals buried in a mass grave? A distinct hole observed in one of the skulls from this excavation suggests a possible answer. The hole has a rhomboid configuration, and unlikely to have been caused by root penetration. An arrowhead might have inflicted the damage to the skull, and this hints at an armed conflict being the probable cause of death that can be applied to all the deceased persons in the mass grave. Islam sanctions the burial of more than one individual in the same grave in case they are victims of war, an epidemic or for any reason if the bodies have begun to decay (Juma 1996a, p. 352).

A skeleton of a single juvenile buried in much the same posture and orientation as observed with the burial from Unit A (see Fig. 5.10) was observed from Unit K and also not associated with any burial goods. This burial appeared initially as the patch of brown soil (Feature K3). The excavation encompassed the burial pit and provides no record on the profile. The mouth of the burial pit is associated with Period II levels and contained *Champlevé* sgraffiato.

5.3 Chronology

The site is reasonably dated on the basis of imported pottery and radiocarbon dating from the excavated contexts and an analysis of the archaeological strata. I have referred to pottery of African manufacture for dating the deposits only in a very few instances.

Most types of imported pottery used in suggesting the chronology at Unguja Ukuu have been reported earlier from other early coastal sites, and the pottery chronology largely concurs with propositions made from other studies (e.g. Chittick 1974a, 1984; Wilding 1977, Tampoe 1989; Horton 1996). A minor variation concerns dating of the incipient phase of occupation (Period Ia).

The different varieties of pottery that provide a *terminus ante quem* for the deposits of the site have been described in detail in Chapter 6. The Near Eastern blue-green glazed ware has been reported elsewhere from at least the 6th century AD (Wilding 1988). The other types of Near Eastern vessels consist of unglazed vessels produced in the pre-Islamic period such as the thin-walled pink pottery, the eggshell ware, and the *hando* red polished ware which have all been reported from at least the 6th century AD contexts. The Chinese Tang stoneware also appears before the Islamic pottery. Rare kinds of pottery that have been found, such as the specimens of the late Roman period from the southern Mediterranean (Juma 1996b) and the non-Madagascan type of the chlorite schist vessels decorated with circle and dot at the centre, all point to ancient traditions and these reinforce the suggested beginning for the primary occupation of the site from c. 500 AD. For the later part of the Period Ia occupation, early pottery of the Islamic period points to the 9th century AD date. Remarkably few fragments of the lead-glazed sgraffiato appear from the site and this probably indicates that the settlement was abandoned around 900 AD, when such pottery was being introduced to the east African coast. Perhaps this also explains the virtual absence of the white porcelain from the 10th century AD. Hence, the pottery also indicates the end of the primary period of occupation.

Pottery and other materials such as coins indicate that there was some activity at the site around 1050–1100 AD (Period IIa). The settlement was perhaps much localised and had limited relations with the outside world. Activities involving *inter alia* sizeable quantities of imports seem to have been transferred elsewhere. Larger quantities of imports from this period are known from Kizimkazi further south on the main island.

The last period of occupation for the site is c. 1450–1600 AD (Period IIb). The fragments of sgraffiato

pottery, especially the single sherd of *Champlevé* type, the monochrome of the Islamic period, blue and white and the Longquan celadon, provide good chronological markers for this period.

The radiocarbon determinations have filled in the chronological gap left by the imported pottery in dating the deposits of Unguja Ukuu. A total of 13 samples (see Fig 5.13a, Fig.13b) collected for radiocarbon testing at the Svedberg Laboratory Uppsala University, Sweden gave results that have been calibrated using the method of Stuiver & Becker (1986). Allowance was made for Southern Hemisphere conditions prior to the calibration process (Lerman, Mook & Vogel 1970). All samples are of charcoal, except for two on bone material taken from the skeletons and dates are given here with one sigma range.

The results are generally consistent with the stratigraphy, except for the charcoal sample from layer 4 and the bone sample taken from Skeleton II. The radiocarbon determinations suggest that the primary occupation of the site begins a few decade prior to 500 AD. However, I have taken a conservative position here for dating the beginning of the occupation *c.* 500 AD on the basis of the aggregated radiocarbon results. The cumulative probabilities show a two-peak pattern. The first with a spread from *c.* 200–1200 AD incorporates three periods of occupation (Period Ia, Ib and IIa)

defined above on the basis of pottery. The cumulative probabilities show another peak between 1400–1650 AD and this corresponds well with occupation Period IIb. The radiocarbon determinations provide a reasonable correlation with the dating of the deposits by the imported pottery.

Overview

Hence the results of excavation largely match survey results by drilling (Chapter 4) and together these reinforce a pattern of stratigraphy and distribution of structural remains over the site. The wealth of information on the development sequence of the site from the excavations provides a framework for the overall interpretation of the site. Several features were observed. Mud-timber structures that dominate all periods of the site were recognized from the association with earthen floors. The small size of the excavations meant that very few postholes representing such buildings have been noted, and it is difficult to recognize the larger scale structural components. The refuse pits constitute other features of importance and are associated with the pre-stone phase building of the site. Some pits are rich in artefacts, deep and likely to have been used for a long time. The pits excavated from Units A and B, those from Unit J associated with Feature J4, and the five others from Unit L provide good examples.

Fig. 5.13a. Table of radiocarbon dates from Unguja Ukuu

Lab. No	¹⁴ C year BP	Correlation to Southern Hemisphere	Excavation Unit	Layer	Comments
Ua-5197	1210 ±150	1180 ± 150	A	skeleton I	
Ua-5198	350 ± 100	320 ± 100	A	skeleton II	
Ua-5199	400 ± 100	370 ± 100	A	4	
Ua-5200	1380 ± 110	1350 ± 110	A	6	
Ua-5201	950 ± 100	920 ± 100	A	7	
Ua-5202	1670 ± 100	1640 ± 110	A	9a	
Ua-5203	1520 ± 110	1490 ± 110	A	9b	
Ua-5204	1290 ± 100	1260 ± 100	A	9c	
Ua-5205	1200 ± 100	1170 ± 100	B	5	
Ua-5206	1350 ± 100	1320 ± 100	B	5	under stone foundation
Ua-5207	1300 ± 60	1270 ± 60	B	11	
Ua-5208	1460 ± 60	1430 ± 60	B	12a	
Ua-5209	15650 ± 150	15620 ± 150	B	12b	too much minerals

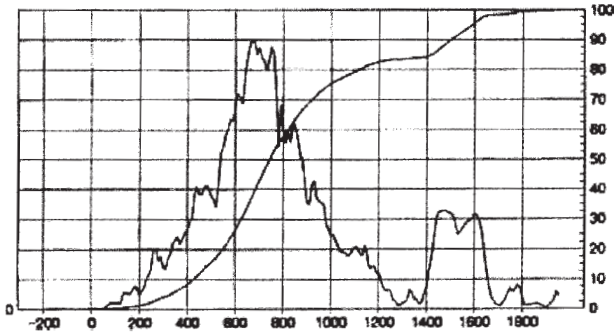


Fig. 5.13b. Results of 12 ^{14}C -dates from Unguja Ukuu. Period AD. Test numbers Ua 5197–5208.

Stone buildings covered a small part of the site. These structures date chiefly to the subsequent period (II) and appear to have aggregated in the southern section of the site (Zone L1) near the seashore. The earliest stone building is the aristocratic house with a retaining wall excavated from Unit M on the top of the ridge and dates from the end of Period Ib (c. 900 AD). Many fragments of quality pots of this period found in the area can be associated with this house. Structures of the later periods include the small house, the foundation of which was exposed in Unit K, while oth-

ers are associated with the later mosque on the site and the burial. The art of dressing the *porites* coral stone was clearly known, as fragments have been found associated with such structures. We also noticed the architectural tradition of constructing a mausoleum as a significant expression of the Islamic influence from the later period of the site. Evidence for early Islamic influence did not come to light from the excavations. A large number of pottery fragments and other finds were recovered from the excavations and these are discussed in the following chapters.

6. POTTERY

Pottery is the bulkiest of the material found on the site and over 13,000 fragments were recovered from stratigraphic excavations. It consists of the African (or local) pottery, and the pottery imported from regions bordering the Indian Ocean. With respect to local pottery, the deposits of Period Ia contain a higher proportion of sherds (68 per m² of deposits) than the deposits of Period Ib (62.2 % per m² of deposits) while the imported pottery occurs in lesser proportion (32 %) for Period Ia than Period Ib (68 %). The general density proportion of imported pottery against local pottery increases through time, indicating 0.47 % for Period Ia, and 0.6 % for Period Ib.

6.1 Local pottery

Local pottery consists of hand-made earthenware and usually has irregular shaping marks visible on the interior surface. The pots were fired in the open and the surface is never glazed but simply smoothed. Good finishing among the fine varieties was achieved by burnishing, often with graphite or red slip. The fabric (fired clay) varies in colour between shades of dark grey and red, depending upon the tint of the clay and firing conditions and it is generally coarse. One broad type has a sandy fabric and an often poorly fired core, whereas the other is less coarse and comparatively hard or compact. A total of about 15 bowl fragments with burnished surfaces exhibit glittering surfaces, perhaps indicating mica in the clay.

The local pottery from the site comprises the typical tradition called by different names, namely, Kitchenware, Tana and TIW as pointed out and referred to in Chapter 1 a being broadly parallel with examples from other sites on the east African coast.

The assemblage has been sorted and recorded according to attributes of fabric, decoration and morphology of rim (R), neck (N), shoulder (S), body (Bo), and base (Ba).

Decorations (Fig. 6.1) on the pottery consist of marks made on the rim, neck and shoulder in the form of incised patterns, shell or other impressed motifs, or burnishing, in which graphite and/or red slip has been added. In the former, separate infilling like oblique hatching or panel lines, and also a variety of impressed motifs frequently emphasise the principal patterns. Rare examples comprise impressed motifs placed within the incised work. Impression also occurs as spaced motifs. Impressed motifs appear in different shapes: rounded, triangular, thumb- and nail-made, comma and other miscellaneous fashions.

The aim of the pottery analysis is to interpret the probable function and cultural associations. The whole material has been grouped into three principal types, distinguished chiefly on the basis of shape and fabric. Here a type implies a group of related shapes. The designated types have been corroborated with the vessel structure categories proposed by Shepard (1956, pp. 227–45; see also Sinclair 1987, pp. 164–5), as such categories are considered useful when working with broken pottery sherds (Fig. 6.1b). Category 1 comprises rims and body sherds that can derive from any vessel shape. Categories 2–3 consist of rim-neck and shoulder-body fragments of restricted vessels. Category 4–5 consists of the independent or dependent restricted vessels. Category 6 consists of constricted bowls and Category 7 unrestricted vessels:

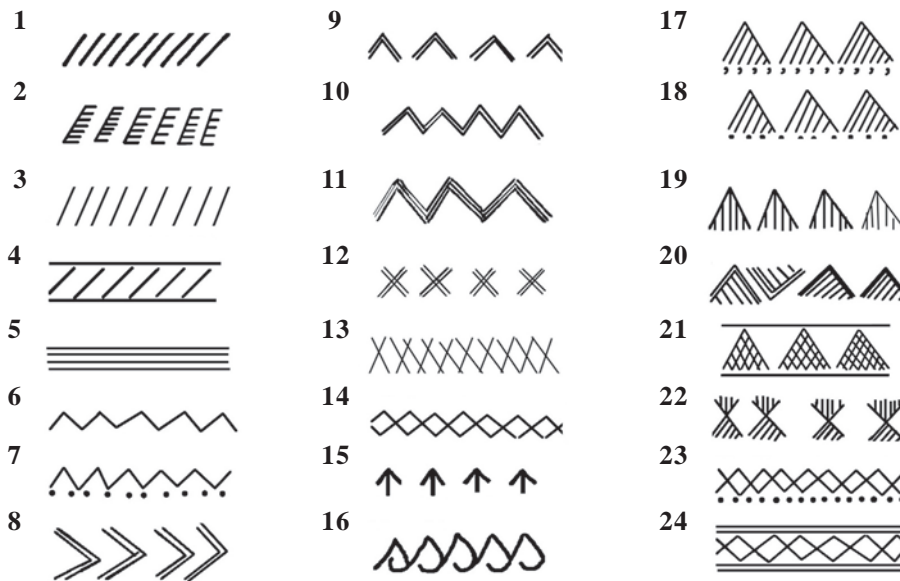


Fig. 6.1a. Types of pottery decoration.

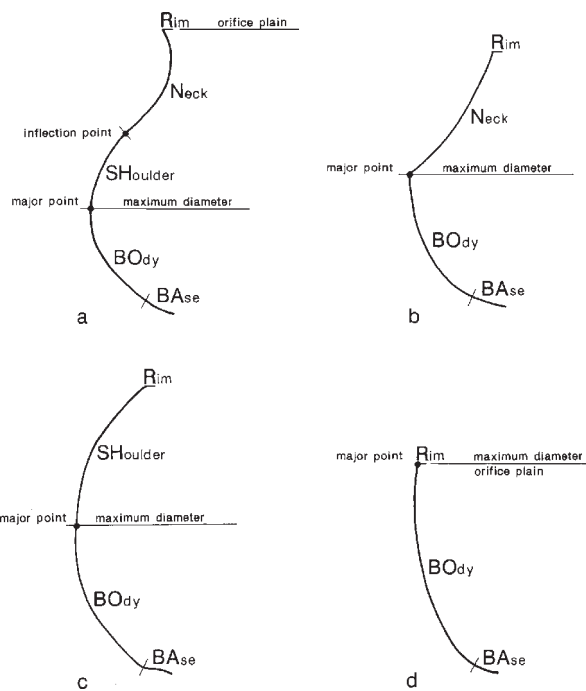


Fig. 6.1b (to the left). Pottery vessel shape models. a = independent restricted vessel, b. dependent restricted vessel, c = restricted bowl, d = open bowl (after Chami 1994).

- Category 1: R; Bo/Ba; Bo; Ba
- Category 2: R/N; N
- Category 3: Sh; Sh/Bo; Sh/Bo/Ba
- Category 4: R/N/Sh/Bo/Ba; R/N/Sh/Bo; R/N/Sh; N/Sh/Bo/Ba; N/Sh/Bo; N/Sh
- Category 5: R/N/Bo/Ba; R/N/Bo; N/Bo/Ba; N/Bo
- Category 6: R/Sh/Bo/Ba; R/Sh/Bo; R/Sh
- Category 7: R/Bo/Ba; R/Bo

Abbreviations: R = rim, N = neck, Sh = shoulder, Bo = body and Ba = base

In general, the types basically continue from Period I through the sub periods and sometimes without exhibiting significant signs of change to Period II.

Most illustrated pottery comes from stratigraphic context. Material from Period II has not been emphasized, since it comes from the surface levels that may not be chronologically secure. However, some examples from this later period and some good examples recovered from test pits in Unit M, dated by association with known pottery or other finds have been included and illustrated. The text following the illustration of the pots includes information on the pot size, and the diameter measurement is given from the outer edge of the vessel rim.

Period Ia:

The pottery from this period contains Types 1–2 and most patterns of decoration also found in the later periods.

Type 1 (Fig. 6.2 Nos.1–11) – These may be dependent or independent restricted vessels (Category 2) in the form of high-neck jars, and the vessels with the plainly distinguished S-shaped profile (Category 4). The fabric is coarse in texture and the exterior surface is not burnished but simply smoothed. The vessel wall is generally thick. The rim, usually everted, may be rounded and thickened or it may be tapered. Rim and neck are used as locations for incised and

Period Ia, Type 1

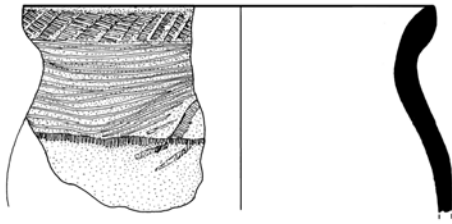


Fig. 6.2.1. Red (10 R 4/6) core and surface, fine fabric. Thickened rim. TH 10 mm, RT 12 mm, RD 180 mm. (UJ/12) Early Period Ia, common.

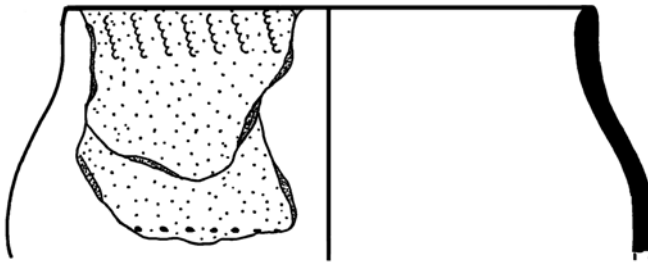


Fig. 6.2.2. Reddish brown (5 YR 7/6) core, coarse fabric. TH 80–10 mm, RTH 12 mm, RD 260 mm. (UB/14) Early Period Ia, rare.

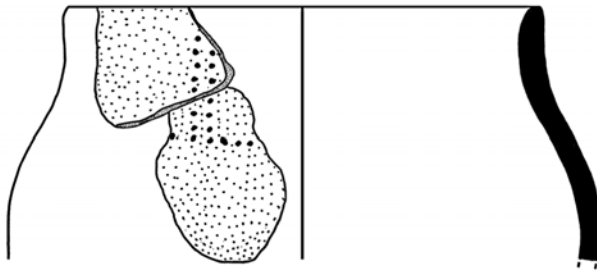


Fig. 6.2.3. Red (10 R 4/6) core and surface, coarse fabric. TH 10 mm. RTH 13 mm, RD 240 mm. (UM/5) Late Period Ia.



Fig. 6.2.4. Very pale brown (10 R 7/3) coarse fabric. TH 7–8 mm, RTH 9 mm, RD 130 mm. (UB/15) Period Ia.

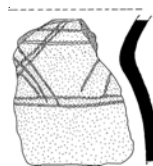


Fig. 6.2.5. Red (10 R 4/6) core and surface, coarse fabric. TH. 10–13 mm. Early (UJ/13) Period Ia, rare.

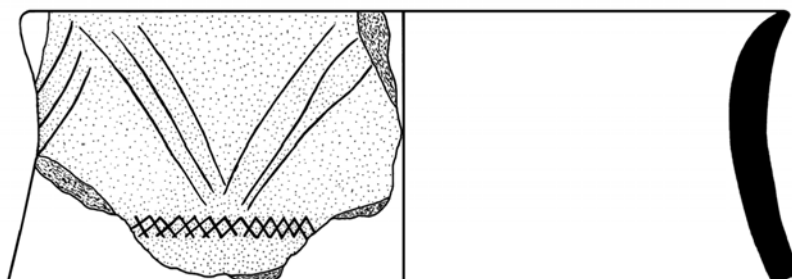


Fig. 6.2.6. Very dark grey (10 YR 3/1) core, very pale brown (10 YR 7/3) surface, coarse fabric. TH 13, TR 13 mm, RD 330 mm. (UL/16) Early Period Ia, common.

Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Period Ia, Type 1

Fig. 6.2.7. Reddish brown (5YR 7/6) core and surface, coarse fabric. TH 5 mm, RT 7 mm, RD 140 mm. (UB/7) Period Ia, rare.



Fig. 6.2.8. Very pale brown (10 R 7/3) coarse fabric. TH 6 mm, RT 5 mm, RD 120 mm. (UB/13) Period Ia.

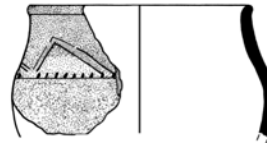


Fig. 6.2.9. Dark reddish brown (5 YR 3/3) core, grey (7.5 YR5/2) surface, fine fabric. TH 9–10 mm, RTH 8 mm, RD 190 mm. (UJ/15) Early Period Ia, common.

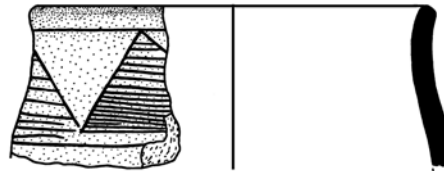
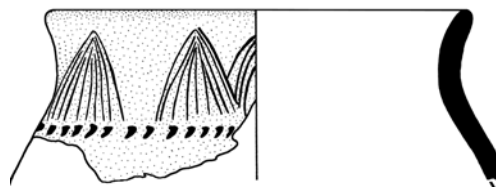


Fig. 6.2.10. Red (10R 4/6) core, dull orange (2.5 YR 6/4) roughly finished surface, coarse fabric. TH 11 mm, RTH 13 mm, D 300 mm. (UL/13) Early Period Ia, common.



Fig. 6.2.11. Red (10 R 4/6) core, grey (7.5 YR5/2) surface, fine fabric. TH 9 mm, RTH 10 mm, RD 200 mm. (UJ/15) Early Period Ia, common.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

impressed decoration. Motifs over the neck include shell, dot and other kinds of impressions, bundles of oblique lines in a zigzag pattern, narrow interlocking zigzag on rim or used as a delineating motif (Nos. 1–6), zigzag patterns in single, double or bundle lines (Fig. 6.4 Nos. 7–8), and triangles filled with lines and also protrusions on the neck (9–11). One example has a simple zigzag motif with the lower angles dissected (see Fig. 6.1 No. 15). Impressions in small vertical lines are used as delineating motifs, in a horizontal fashion using shell, dot or comma impressions, in bands of narrow interlocking zigzag patterns, or in horizontal panels of incised lines.

Type 2 (Fig. 6.3 Nos. 1–16) – consists of relatively wide-mouthed restricted vessels (Categories 2–5). It includes varieties displaying a slight angular profile with the body, or “step” neck-body junction (Nos. 12–15). The type includes comparatively thin-walled vessels mostly with rounded rims. The fabric is less coarse than Type 1. The exterior surface is finely finished or it may be burnished. Decoration motifs include dot impressions (Nos. 1–2), zigzag motifs in single, double or interlocking lines (Nos. 3, 4, 6, 8, 12 and 13), spaced bundles of oblique lines (9) and triangles (10, 14). Other examples have curvilinear patterns forming arcades in double lines or single dot impressions (Nos. 7 and 11). It is common to see the use of impressed dot, dash, comma and fingernail marks (Nos. 1, 3, 4, 6–15) in delineating the principal motifs. The type contains examples with rim and neck decorations (No. 13). An example has also been noted of a vessel with an appliqué decoration executed as small protrusions at the neck-body junction (Fig. 6.3 No. 7).

Fig. 6.4 (Nos. 1–8) illustrates neck and rim-neck fragments vessels indicating further decorations of this period. One is a unique example (No. 1) since the decoration occurs both the inside and outside of the rim in addition to the horizontal incisions on the neck that presumably represent hatched triangles. Other ornamentations include impressions and slashes on the rim (Nos. 1–3) as well as bundles of straight lines and triangles on the neck (Nos. 4–6). The neck fragment decorated with protrusions (No. 7) also shows that hatched triangles may be delineated below with comma form of impressions reflecting probably a vessel of Type 3 below.

Type 3 (Fig. 6.5) – Bowls with incurving rims and others completely wide open. The fabric is generally coarse but often compact and burnished. Two main varieties of these bowls have been distinguished following Wright’s (1984, Fig. 13 p. 32) division of the material recovered from the Dembeni Phase on the Comoro Islands.

The first variety (Nos. 1–6) (*cf* Dembeni phase group 1) comprises vessels that have the upper part forming curving junctures with the body and where the rim is rounded or bevelled. These are commonly decorated with shell impressions on the exterior side of the rim, or graphite painting and grooving (Nos. 3–5). The graphite may be painted as a band on the line of carination beneath the groove (No. 6). The example decorated with fine pencil *graffiti* on the neck (Fig. 6.4 No. 4) possibly belongs to this variety. Incised decorations such as hatched triangles (Fig. 6.4 No. 5) also occur though rarely. Deeper profiles also occur and the example illustrated here is decorated with oblique shell impressions on the exterior side of the rim (Fig. 6.5 No. 5).

The second variety of in-turned bowls, *Type 3b* (Fig. 6.6 Nos. 1–6) has an angular carination of the body (*cf* Dembeni phase group 2). Some examples are characterised by short necks. Different kinds of decorations occur. The rim may be bevelled, the inner lip thickened and rounded. On the outside the rim, graphite and red slip may be applied as bands (No. 1) and sometimes in combination with other kinds of ornamentation such as fine incised work or grooving (Nos. 2 and 3). Graphite may be painted all over the surface of vessel and also in combination with a fine incised decoration (No. 5). The variety includes examples of bowls with the angular carination located relatively low on the body (No. 6). These often have long necks, and even bevelled rims, and grooving on the lower part of the neck, while the others have the graphite on the surface and painted as bands either on the single flattened lip or below the neck (not illustrated).

The completely wide-open bowls variety, *Type 3c* (Fig. 6.7 Nos. 1–4) mostly have thickened rims during this early period. The first two examples here apparently belong to the Kwale tradition. If the rim is not thickened, the whole upper part of the vessel is broadened (Nos. 4).

Period Ia, Type 2

Fig. 6.3.1. Dark grey (10 R 3/0) core and surface, hard coarse fabric. TH 11 mm. (UL/16) Early Period Ia, rare.

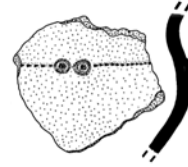


Fig. 6.3.2. Red (10 R 4/6) sandy fabric, well smoothed surface. TH 8 mm, RT 9 mm, RD 180 mm. (UL/13) Period Ia.

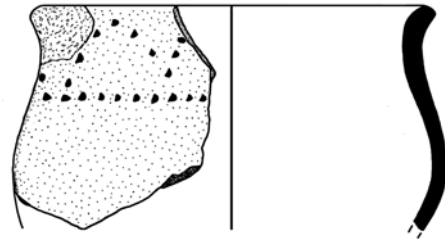


Fig. 6.3.3. Dark grey (10R 3/0) compact fabric, well-smoothed surface. TH 5–6 mm, RTH 8 mm, RD 200 mm. (UB/11) Late Period Ia.

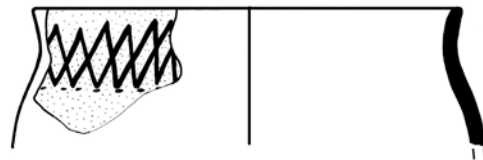


Fig. 6.3.4. Dark grey (10 R 3/0) fabric and surface. TH 8 mm, RTH 8 mm, RD 180 mm. (UB/9) Period Ib.

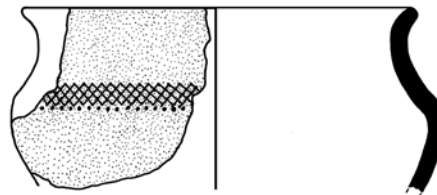


Fig. 6.3.5. Dark grey (10 R 3/0) friable fabric and surface. TH 6 mm, RTH 5 mm, RD 180 mm. (UJ/13) Period Ib, rare.

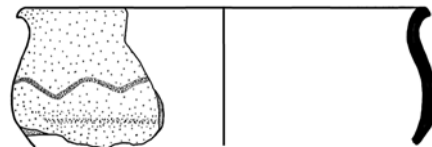
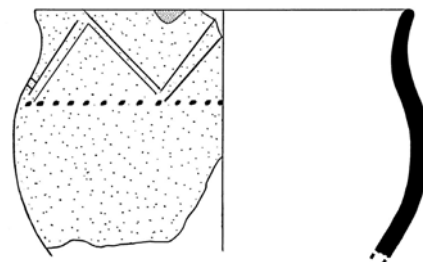


Fig. 6.3.6. Very pale brown (10 YR 7/3). TH 9 mm, RTH 7 mm, RD 180 mm. (UB/10) Period Ia, common.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Period Ia, Type 2

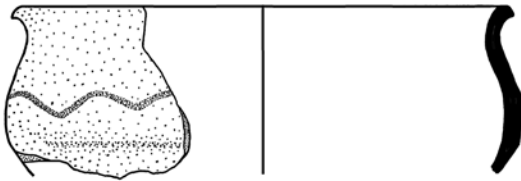


Fig. 6.3.7. Red (10 R 4/6) fabric and surface. TH 8 mm, RTH 7–8 mm, RD 220 mm. (UL/13) Period Ia, rare.

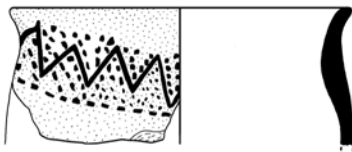


Fig. 6.3.8. Dark reddish brown (5 YR 3/3) core, dark grey (10 R 3/0) surface, compact fabric. TH 110 mm, RTH 9 mm, RD 160 mm. (UJ/13) Early Period Ia.

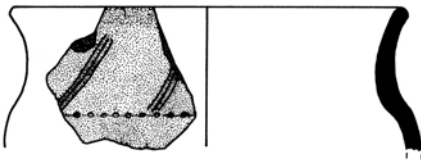


Fig. 6.3.9. Red (10 R 3/0) core and surface, well smoothed. TH 10 mm, RTH 7 mm, D 180 mm. (UB/9) Period Ia, common.

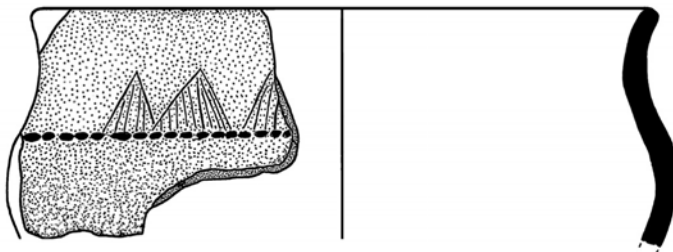


Fig. 6.3.10. Very pale brown (10 R 7/3) coarse fabric. TH 8 mm, RTH 8 mm, RD 270 mm. (UB/15) Late Period Ia, common.

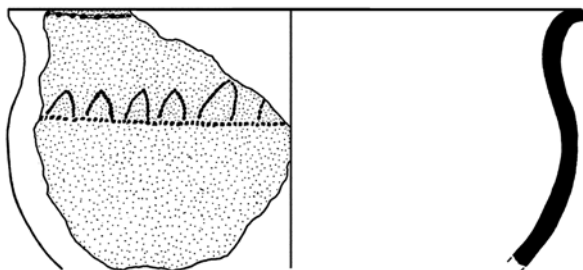


Fig. 6.3.11. Very pale brown core, dull orange (5 YR 7/4) surface. TH 8 mm, RTH 8 mm, RD 240 mm. (UL/15) Period Ia, rare.

Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Period Ia, Type 2

Fig. 6.3.12. Reddish brown (5 YR 7/6) core and surface. BoTH 6–11 mm, RTH 6 mm, RD 220 mm. (UB/13) Period Ia.



Fig. 6.3.13. Reddish brown (5 YR 7/6) fabric. TH 11 mm, RTH 8 mm, RD 220 mm. (UM/4) Late Period Ia, rare.

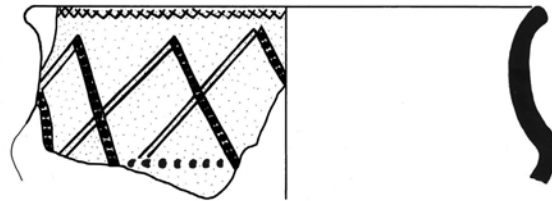


Fig. 6.3.14. Very dark grey (10 YR 3/1) core, well-smoothed red (10 YR 4/6) surface, coarse fabric. TH 6 mm, RTH 12 mm. (UMTP2/3) Period Ia.

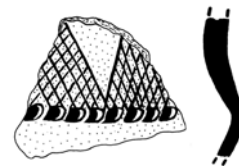


Fig. 6.3.15. Very pale brown (10 YR 7/3) fabric. TH 7.5–9.5 mm, RTH 9 mm, RD 220 mm. (UB/7) Period Ia, common.

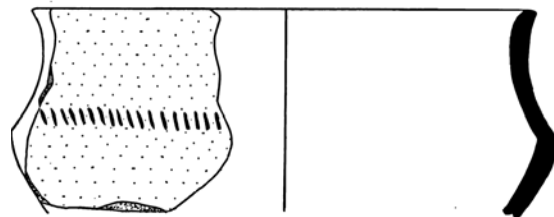
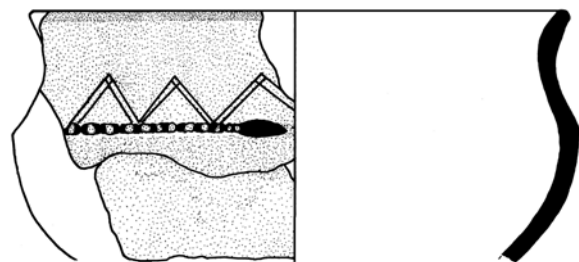


Fig. 6.3.16. Dark grey (10 R 3/0) coarse and compact fabric. TH 7 mm. (UB/11) Period Ia.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Period Ia, Type 2 Rim-neck fragments

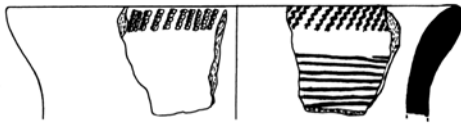


Fig. 6.4.1. Red (10R 4/6) core and smoothed surface, compact fine fabric. TH 9 mm, RTH 13 mm, D 190 mm. (UJ/13) Early Period Ia, rare.

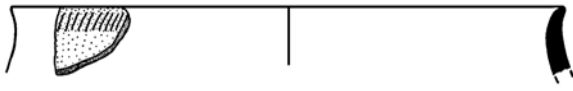


Fig. 6.4.2. Bright reddish brown (2.5 YR 5/8) core and surface, fine fabric. RTH 9 mm, RD 250 mm. (UL/14) Early Period Ia.



Fig. 6.4.3. Dark grey (10 R 3/0) core and well-smoothed black surface, compact fabric. TH 11–13 mm, RTH 12–13 mm, RD 500 mm. (UJ/15) Period Ia, common.

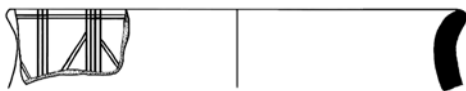


Fig. 6.4.4. Dark grey (10 R 3/0) compact fabric, well finished surface. TH 9 mm TR 9 mm, RD 190 mm. (UL/16) Period Ia, rare.

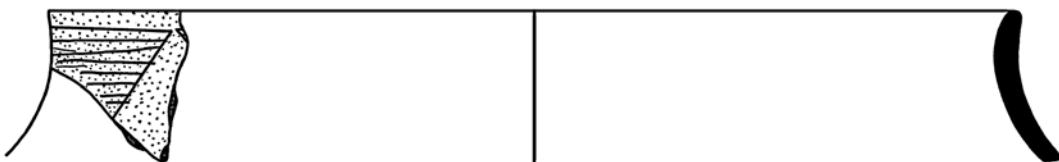


Fig. 6.4.5. Very pale brown (10 YR 7/3) compact fabric. TH 10–11 mm, RTH 10 mm, RD 430 mm. (UB/11) Period Ia, common.

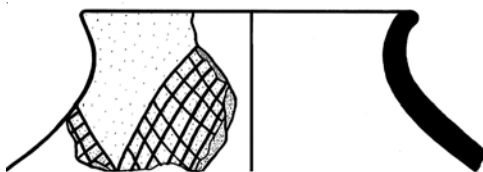


Fig. 6.4.6. Dark reddish grey (10 R 3/1) core and surface, coarse fabric. TH 8–9 mm, RTH 8 mm, RD 190 mm. (UB/15) Early Period Ia.



Fig. 6.4.7. Dark grey (10 R 3/0) compact fabric. TH 7 mm. (UB/11) Period Ia.



Fig. 6.4.8. Dull orange (5 YR 7/4) fabric. TH 7 mm. Period Ia.

Period Ia, Type 3a

Fig. 6.5.1. Dark grey (10 R 3/0) fabric. TH 16 mm. RTH 9 mm, RD 320 mm. (UM/8) Period Ia.

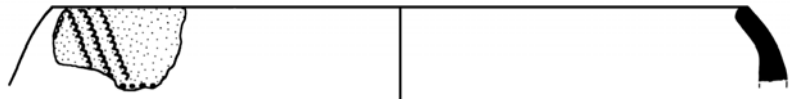


Fig. 6.5.2. Dark grey (10 R 3/0) burnished fabric. RTH 16 mm, RD 260 mm. (UL/14) Period Ia.



Fig. 6.5.3. Red (10 R 4/6) fabric graphited all over. RTH 9–11 mm, D 290 mm. (UL/16) Late Period Ia, common.

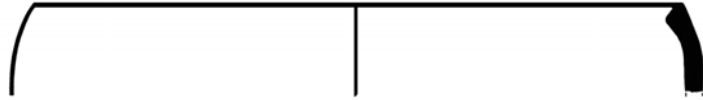


Fig. 6.5.4. Dark grey (10 R 3/0) fabric, TH 8–9 mm, RTH 6 mm, RD 180 mm (UL/14). Period Ia.

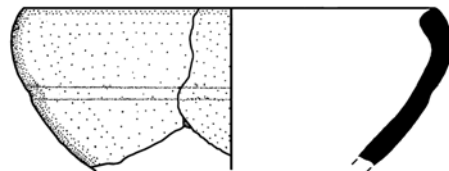


Fig. 6.5.5. Dark grey (10 R 3/0) compact fabric, TH 9–13 mm, RD 150 mm. (UB/14). Early Period Ia.

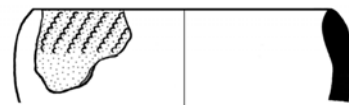
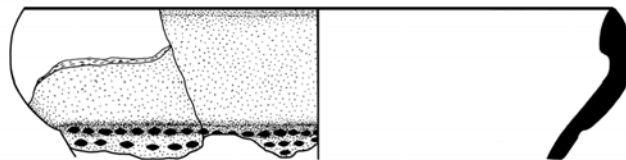


Fig. 6.5.6. Dark grey (19 R 3/0) fabric, graphited all over. TH 10 mm, 14 mm. RD 260 mm. (UL/13) Early Period Ia, rare.

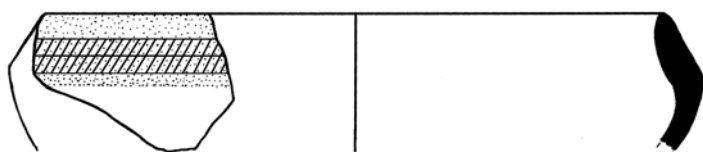


Period Ia, Type 3b

Fig. 6.6.1. Dark grey (19 R 3/0) core with white sand grits and flecks of carbon, red slipped surface and painted with graphite. RTH 8–10 mm RD 320 mm. (UL/16) Late Period Ia.



Fig. 6.6.2. Very pale brown (10 YR 7/3) fabric, red-slipped surface and a band of graphite around the grooving. TH 9 mm, RTH 8 mm, RD 280 mm. (UB/9) Late Period Ia.



Period Ia, Type 3b

Fig. 6.6.3. Very pale brown (10 YR 7/3) fabric. RTH 8–9 mm, RD 9–8 mm. (UB/14) Period Ia, rare



Fig. 6.6.4. Red (10R 4/6) compact fabric graphited all over. Rim is red-slipped. TH 9, RTH 12 mm, RD 220 mm. (UJ/15) Period Ia.



Fig. 6.6.5. Dull brown (10 R 3/1) fabric. TH 6.03–8 mm, RTH 8 mm, RD 170 mm (UB/11) Period Ia.



Fig. 6.6.6. Very pale brown (10 YR 7/3) fabric, red slipped all over the surface and graphited on rim. RTH 10 mm, RD 120 mm. (UB/11) Period Ia.

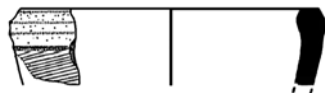
Period Ia, Type 3c

Fig. 6.7.1. Dull brown (10 R 3/1) fabric. TH 9 mm, RTH 14 mm, RD 140 mm. (UB/11) Period Ia, rare Kwale tradition, Period Ia.

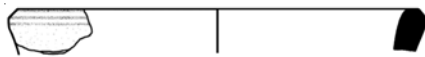


Fig. 6.7.2. Dull brown (10 R 3/1) fabric. RTH 12 mm, RD 170 mm. (UB/13) Period Ia, rare Kwale tradition, Period Ia.

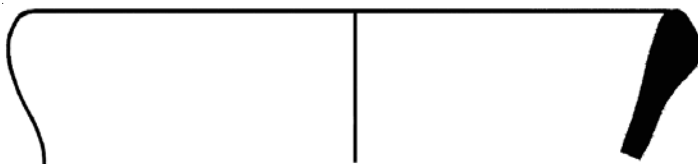


Fig. 6.7.3. Very pale brown (10 YR 7/3) fabric, black burnished surface. TH 6 mm, RTH 12 mm, RD 280 mm. (UL/15) Period Ia.

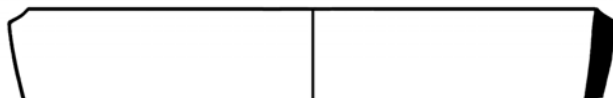


Fig. 6.7.4. Dark grey (19 R 3/0) compact fabric with white sand grains. TH 4 mm, RTH 6 mm. RD 250 mm (UB13) Period Ia, rare.

Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Period Ib:

The basic pottery types outlined above for Period Ia continue in Period Ib.

Type 1 (Fig. 6.8 Nos. 1–8): The type definition follows that given for Period I-a (Categories 2 and 4). The fabric texture and motifs of decoration are the same as for the earlier period but rim ornamentation is rare. Thick incised decoration occurs but the general decorative tendency is towards thinner incisions. The triangle (Nos. 3 and 4) and the zigzag patterns either single or double lined with infilling (No. 3, 2, 6–8) as well as shell impressions (No.5) are used repeatedly. Rim decoration on this type was still popular during this period despite the fact that a relatively greater proportion of the pottery has the decoration on the neck and for many examples it is limited to the lower section of the neck.

Type 2 (Fig 6.9 Nos. 1–2): The type definition, the vessel wall and the surface treatment follow that given for Period Ia (Categories 2–5). Most rims are rounded on one or on both sides. The zigzag motif of decoration is popular but also grooving, burnishing and graphite painting and the delineation of the principal motifs with dot impressions. Decoration with shell impressions is also popular and may be combined with protrusions on the neck.

Fig. 6.10 (Nos. 1–4) illustrates rim-neck and body fragments of the two types from this period

indicating further decorations. These include triangular-form stab impressions on the rim and curvilinear incision on the neck (No. 1), thickly incised simple triangles on the neck (No. 2), and also horizontal vegetable impressions on the neck (No. 3). One example (No. 4) representing a thin short necked vessel is painted all over the surface with graphite, decorated with a grooving along the rim on the outside and shell impression on the inside of the rim.

Type 3 (Fig. 6.11 Nos. 1–3): The type definition follows that given for Period I-a (mostly category 7 but also 3 & 6). At least two main bowl varieties noted earlier are present; graphite painting and grooving is common. Three examples of the first variety with the upper part forming a curvature with the body are illustrated. There is an example with globular shape or hole mouth pot painted all over with graphite and further decorated with a band of short horizontal lines below the rim as the principal motif and delineated below with a grooving (No. 1). Another example is a more open mouthed bowl painted with graphite all over the interior and exterior surfaces and further decorated below the rim with a fine grooving in the form of incision (No. 2). One example of the second variety of bowls with angular carination is illustrated here. This has a rounded rim, burnished surface with the appliqué above the carination and the incised grooving below it (No. 3).

Period Ib, Type 1

Fig. 6.8.1. Orange (2.5 YR 6/2) fabric, well-smoothened surface. TH 9 mm, RTH 10 mm, RD 220 mm. (UM/3) Period Ib, common.

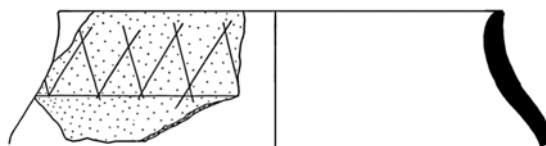


Fig. 6.8.2. Red (10R 4/6) compact fabric TH 9 mm, RTH 9 mm, RD 160 mm. (UB/6) Period Ib.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Period Ib, Type 1

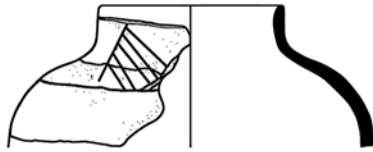


Fig. 6.8.3. Dull brown (10 R 3/1) core, reddish grey (7.5 YR 7/6) surface. TH 7–10 mm, RTH 9 mm, 150 mm (UB/6) Period Ib, common.

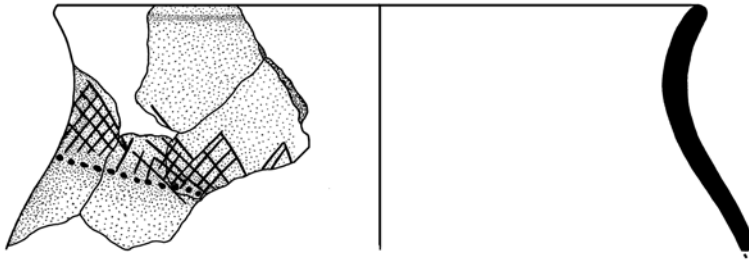


Fig. 6.8.4. Reddish grey (7.5 YR 7/6) fabric. TH 9–11 mm, RTH 11 mm RD 330 mm. (UB/2) Period Ib.

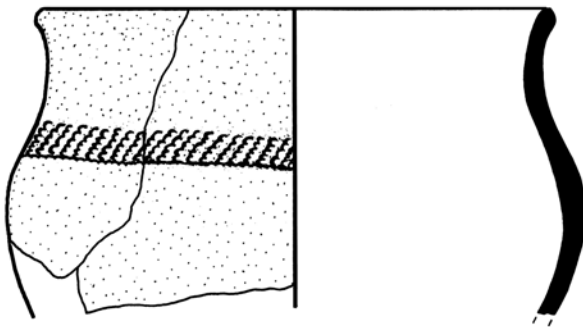


Fig. 6.8.5. Very pale brown (10 YR 7/3) fabric. TH 10 mm, RTH 6.03 mm. RD 240 mm (UMTP/2/2) Period Ib, common.

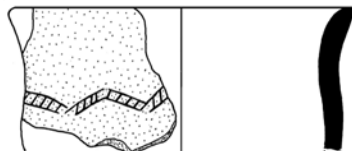


Fig. 6.8.6. Dark grey (19 R 3/0) core and brown surface. TH 8 mm, RTH 10 mm, RD 145 mm. (UM/4) Period Ib.

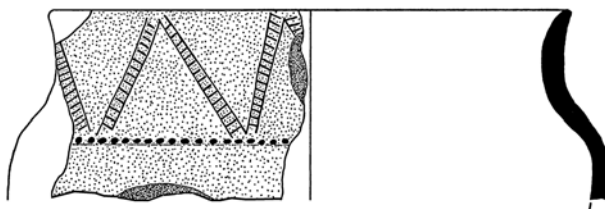


Fig. 6.8.7. Very pale brown (10 YR 7/3) fabric. TH 6–10 mm, RTH 10 mm, RD 240 mm. (UB/6) Early Period Ib, common.



Fig. 6.8.8. Red (10R 4/6) fabric and well smoothed surface. TH 9 mm, RTH 8 mm, RD 190 mm. (UM/1) Period Ib.

Period Ib, Type 2

Fig. 6.9.1. Reddish grey fabric (2.5 YR 3/1), well smoothed surface. TH 9 mm, RTH 10 mm, RD 300 mm. (UMTP/3) Period Ib, rare.

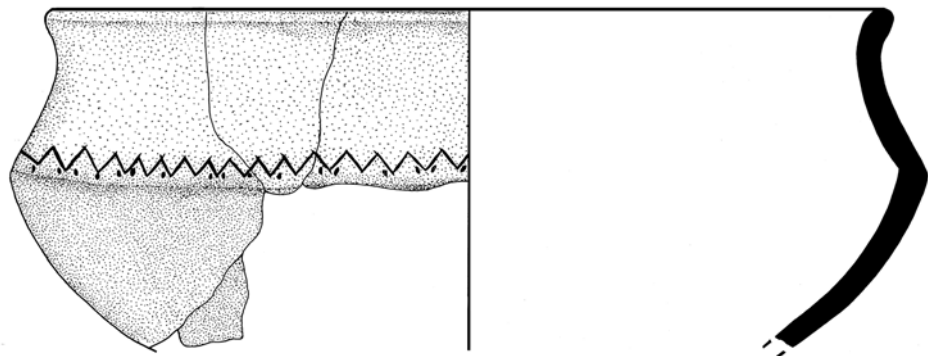
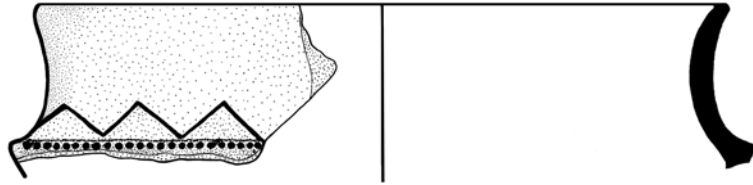


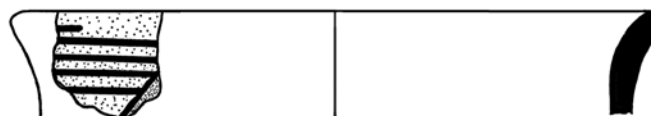
Fig. 6.9.2. Dark grey (19 R 3/0) core, red washed surface. TH 11–14 mm, RTH 12 mm, RD 380 mm. (UA/6) Period Ib, common.

Period Ib, fragments of rim-neck, body, and of other vessels, Types 1 & 2

Fig. 6.10.1. Red (10 R 4/6) fabric. TH 8 mm, RTH 8 mm, RD 190 mm. (UM/3) Period Ib, rare.



Fig. 6.10.2. Dull brown (10 R 3/1) fabric, orange (2.5 YR 7/8) surface. TH 8 mm, RTH 11 mm, RD 260 mm (UB/4) Period Ib, common.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Period Ib, fragments of rim-neck, body, and of other vessels, Types 1 & 2



Fig. 6.10.3. Dark reddish brown (2.5 YR 2/3) core and light reddish brown (10 R 2/3) surface. RTH 9 mm RD 200 mm. (UK/9) Early Period Ib.



Fig. 6.10.4. Dark grey (19 R 3/0) compact fabric graphited all over. Thin pot T 6 mm, RTH 12 mm, RD 210 mm. (UL/7) Period Ib, rare.

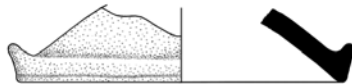


Fig. 6.10.5. Lid of unglazed vessel. Self-slipped orange (5YR 7/6) fabric. (MTP2/3) Period Ib.

Period Ib, Type 3

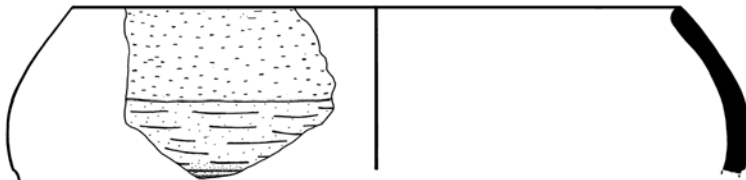


Fig. 6.11.1. Orange (2.5 YR 7/6) compact fabric painted all over with graphite. TH 15 mm. RTH 8 mm, RD 300 mm. (UM/5) Early Period Ib. Common.

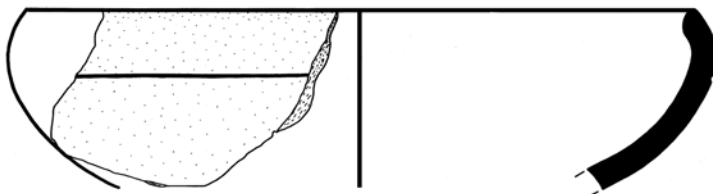


Fig. 6.11.2. Dull brown (10 R 3/1) core, dark grey (19 R 3/0) graphite painted surface. TH 10 mm, RTH 11 mm, RD 290 mm. (UM/3) Period Ib, common.

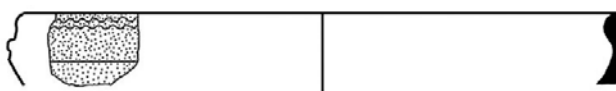


Fig. 6.11.3. Dull brown (10 R 3/1) compact fabric. Burnished surface. RTH 10 mm, RD 250 mm. (UM/8) Period Ib.

Period II:

The pottery shapes and decoration from this period show repetition of the earlier ones. Given the relatively light nature of occupations represented by deposits of the uppermost level, it is sometimes problematical to separate material between the two later periods. The principal types designated exhibit a limited range of diversity and most examples, especially of Type 1 and Type 2, appear with little or no decoration. I will first remark on the pottery from Period IIa.

Type 1 and Type 2 vessels are present and Fig. 12 (Nos. 1–2) illustrates the examples from Period IIa.

Type 3 (Fig. 6.13 Nos. 1–5) vessels are also confirmed and at least the two basic varieties noted in Period Ib continued to Period IIa. It is noted that most examples among the bowls with the upper part forming a curvature with the body are plain or undecorated and the incurving rim is generally tapered (No. 3). A bowl that is perhaps related to this conventional form also noted from this period can be described as a large special bowl that has a splayed wall, a flat pedestal base with the rim rounded and thickened. This food-serving bowl has a red slipped surface burnished with usually no further surface decoration. A near-complete example of these service bowls has been recovered (No. 2, see Category 7). Only a few fragments of these vessels have been recorded from Unguja Ukuu but constitute simi-

lar vessels reported from other coastal sites (Chittick 1984, Fig 119 p. 147 No.1; Wright 1984, Fig 15 Nos. f–o, p. 42).

In this Period IIa, the second variety of bowl, those having an angular profile, include an exceptional example found with an interlocking zigzag pattern on the outside the rim, and bundles of parallel vertical lines on the body (No. 3). Two other examples display the common kinds of decoration for the variety. One example has a grooving covered with a band of graphite painting, while the other has a row of stab impressions and graphite which is painted all over the vessel surface (Nos. 4–5).

In Period IIb (Fig. 6.14 Nos. 1–4), some examples of modified Type 1 and of Type 2 occur (not illustrated). There is also a representation of at least the two varieties of pottery noted in Period Ib designated as Type 3. The first variety of bowls showing a profile with a continuous curvature displays the graphite painting, but the simple horizontal incisions around the vessels have replaced the grooving decoration (No. 1). There is also a continuation of the bevelled lip decoration with graphite painting observed among the second variety of bowl characterised by an angular profile (No. 2). Examples that appear to have been notably decorated during this period although which might well belong to Period IIa are well-burnished bowls with exaggerated carination revealing also an incised work and stab impressions (No. 3–4).

Period IIa, Types 1 & 2

Fig. 6.12.1. Dull brown (10 R 3/1) sandy fabric. RTH 7–10 mm, RD 150 mm. (UB/2) Period IIa, common.

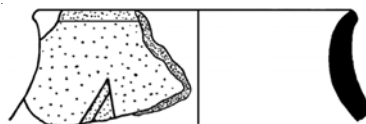
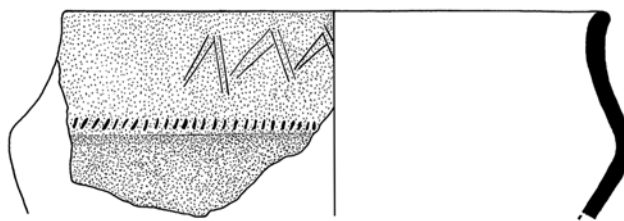


Fig. 6.12.2. Dark grey (19 R 3/0) fabric. TH 8 mm, RTH 9 mm, RD 250 mm. (UB/3) Period IIa.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Period IIa, Type 3

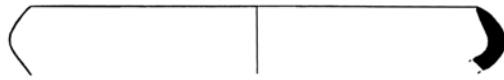


Fig. 6.13.1. Dull orange (7.5 YR 7/4) fabric. RTH 7 mm, RD 200 mm. (UK/11) Period IIa, common.

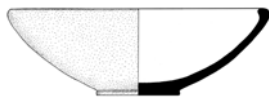


Fig. 6.13.2. Dark grey (19 R 3/0) fabric and red-slipped surface. TH 9 mm. RTH 15 mm, RD 105 mm, BD 17 mm. (UK/10) Period IIa, common.

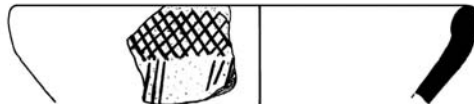


Fig. 6.13.3. Pale orange (5 YR 6/3) fabric and dark grey exterior. TH 7 mm, RTH 11 mm, RD 190 mm. (UK/6) Period IIa, rare.

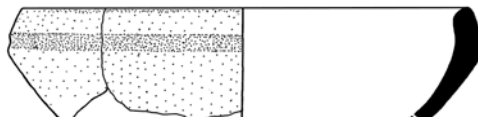


Fig. 6.13.4. Dark grey (19 R 3/0) fabric, red-slipped surface with a band of graphite in the groove outside. TH 5 mm, RTH 11 mm, RD 190 mm. (UK/11) Period IIa.

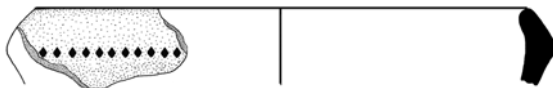


Fig. 6.13.5. Very pale brown (10 YR 7/3) fabric. TH 6–4 mm, RTH 15 mm, D 225 mm (UMTP5/1) Period Ib.

Period IIb



Fig. 6.14.1. Dark grey (19 R 3/0) compact fabric. RTH 8 mm, RD 120 mm. (UJ/4) Period IIb common.



Fig. 6.14.2. Dull brown (10 R 3/1) compact fabric, graphite-painted surface. RTH 10 mm, RD 220 mm. (UB/1) Period IIb common.

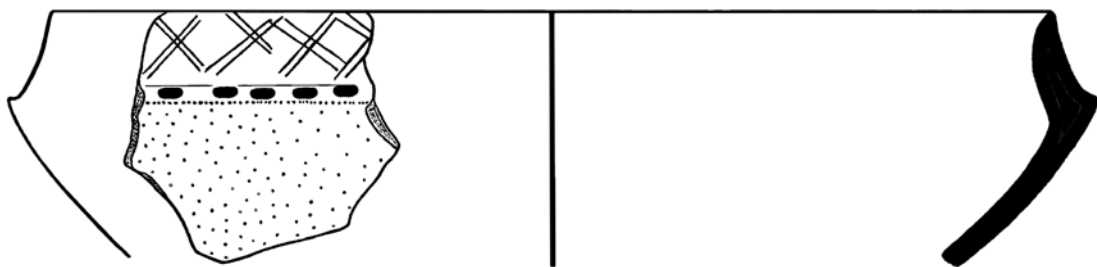


Fig. 6.14.3. Dull brown (10 R 3/1) sandy fabric, graphite painted on the lip. TH 9 mm, RTH 11 mm, RD 440 mm. (UA/5) Period IIb? common.

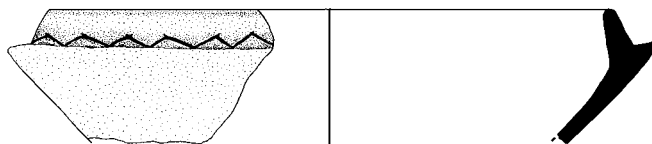


Fig. 6.14.4. Dull brown (10 R 3/1) compact fabric. TH 7 mm, RTH 9 mm, RD 260 mm. (UE/2) Period IIb? rare.

6.2 Inferring social behaviour from the pottery

Pottery reflects the behaviour of the makers and users. In our modern society, it has chiefly become a specialized craft of some villages and no longer serves as a proxy that can be used to define aspects of cultural complexity. However, this is not necessarily the case with early societies that relied on the pottery.

Structural differences of the pottery are perhaps derived from disposition and changes in social behaviour. A combination of restricted and unrestricted vessel types appear to provide a wide range of social utilities that possibly characterise modest and complex societies. These basic shape modules in the pottery of a society may reflect a long trend of their development. The constraints and advantages of the vessels can be evaluated from at least three functional and physical aspects (i) optimization of thermal conditions, (ii) the capacity of the vessels as containers, and (iii) the ease and security of handling against breakage of the vessels and scalding the user when vessels have absorbed much heat.

Maximum thermal capacity is important for even cooking and this can be better associated with a restricted vessel. The inward curvature of this shape module limits the size of the orifice. This helps to retain more heat than the wide orifice of the unrestricted vessel. The magnitude of the unrestricted vessel increases to accommodate large chunks of food by deepening the profile. This of course entails wall thickening and tends to make the vessel bulky, but enhances its mechanical strength, while in the restricted vessel this would be a quality of weakness.

The unrestricted vessel has such characteristic disadvantages but also some merits over the restricted vessel. The wide-angle exposure of the unrestricted vessel permits good visibility which makes it much easier to work with the contents of the vessel. This rules out the need for vigilance and proximity during the cooking required of the restricted vessel. The unrestricted vessel is a pot of general utility as it is also a convenient vessel for serving food.

As regards handling, features like neck and rim are important. A neck is a frequent feature of a restricted vessel that is easily gripped, which makes

the vessel more secure from tumbling over and reduces the risk of burning the holder. Rim thickening, more common among the early-unrestricted vessel is a design feature that also improves vessel grip, although barely matching the neck of a restricted vessel. The formation of rims is perhaps also associated with working with contents of the pot, regulating flow of the contents, and in some cases, provision of space for decoration. Following this analysis, it is possible to theorize a probable trend of structural development into primeval, transitional and ultimate pot modules. The material from Unguja Ukuu includes the two basic vessel shapes.

The unrestricted vessel (Category 7) appears to be the primeval pot given its simple shape and therefore fit for general or common cooking. This may be the vessel type produced by earliest communities and therefore endured in many societies with modifications of course to serve specific demands. Restricted vessels, particularly of the independent variety (Category 4), embody outstanding advantages of thermal capacity for rapid and even cooking as well as handling facility and therefore appear to be the ultimate innovative form.

I have already pointed out that Category 7 vessels have limited thermal capacity and this might have led to the use of pot covers for cooking. The early archaeological assemblage at Unguja Ukuu lacks pot covers. This may be explained by the fact that material other than pottery can be provisionally used, or that the community had not begun with primeval shapes of pottery modules but that hierarchies established rapidly from other places. In the case of wet cooking, the use of pot covers sets off high condensation, the effect of which can extinguish the fire. Design modifications of the vessels to improve heat retention were necessary. This might have led to the production of the restricted vessels at primary sites; hence jars and restricted bowls occurring at Unguja Ukuu (Categories 3, 5 & 6) might have been carried over by an already complex society. These vessel categories coming in between the unrestricted bowl (Category 7) and the restricted independent vessel (Category 4) may be regarded as representing the transitional types on the basis of this argument. As already mentioned, the restriction also improved the handling of the vessels.

Assuming the suggested trend of structural development of the vessels holds, the shapes can be related to social behaviour. This implies that open bowls are early forms of pottery and reflect general subsistence behaviour of the makers. Generally, this seems to reflect the situation for the makers of the Early Farming community, in whose pottery assemblage the unrestricted form predominate. Increase in cultural complexity is observed in a greater range of decoration and addition of graphite burnishing on the pottery associated with later farming communities. The decorative treatments went hand in hand with a great diversification of the pottery forms to contain the decorated open bowls for varieties of cooking, many jars but also restricted bowls as an important component of the assemblage. Such increase of the functional and decorative properties in the pottery is a factor that echoes an elevated stage of urban context.

The pottery of later Swahili communities will be discussed here to illustrate the point that restricted vessels alone are not adequate nowadays to meet the demand for diverse cooking and other specialized use of the pots. Special cooking is associated with two basic sub-modules of unrestricted vessels. One is a restricted vessel called *kaango*, reserved for cooking a relatively limited range of foods and requires a wide-angle view to work with the contents. The form occurs in all periods and is thus much older as already pointed on, although the designation, literally meaning “frying pot”, may be recent, reflecting experience of deep-frying with oil. The varieties of *kaango* can be used as fryers, but practical reasons impose restrictions. One variety is usually reserved for dry cooking or baking bread. The other, characterized by a deeper profile, is utilized for deep-water or saturated cooking with foodstuff like vegetables, fish and relish soups. It exhibits a strong lasting smell as a fish bowl, and it is customarily separated from bowls for cooking other kinds of foodstuff.

There is a receptacle for serving and processing food and not designed for cooking. It broadly emulates the unrestricted pot or open-bowl form but constructed with a much wider orifice, a robustly splayed wall for resilience, and a flat pedestal base for the utmost stability in dwellings with a flat floor (Fig. 6.13 No. 2). Red-slip is usually applied on the

surface to make it water proof and more elegant. Swahili people have traditionally used this vessel also for coconut preparation. It is designated as *mkungu wa nazi*, probably to distinguish it from a pot cover for baking, *mkungu wa tanu*. This differentiation demonstrates the need of a complex society to adopt various vessels for special use but perhaps also reflects the subsistence behaviour of the community, which they might have taken over from their predecessors.

Hence, the later Swahili urbanized society in east Africa might have been subject to a restricted appropriation of subsistence products from the forest and a large part of the population relied chiefly on single sources of high-calorific staple food. The monotony of a regular prepared menu naturally increased their demand for a range of different tastes and flavours. They produced restricted vessels in addition to the unrestricted varieties partly to achieve greater culinary efficiency. The latter were transformed from being vessels for general cooking to vessels of more specialized function. The vessel structure was slightly modified for this new purpose although the fundamental shape of an open bowl has been retained. The accompanying innovation can possibly be explained by culinary specialization.

Despite the consideration that the restricted vessels may be the ultimate ceramic form for a highly urbanized society in the region, the unrestricted vessels retain their functional importance in such urban contexts characterized by a range of subsistence behaviours. Fig. 6.15a shows the quantities of pottery from stratified contexts and through periods, while in Fig. 6.15b, the chart shows the frequency percentages of the vessels from the excavations of the site, in which the ultimate innovative form (Category. 4), the transitional form (Categories 3, 5 & 6), and the basic form (Category 7) are plotted together to reveal the trend of their development through Periods Ia, Ib and II. It shows that pottery production in Period Ia matches Period II only when data of the latter (two discrete periods) are combined. When these two periods are compared, the availability of the ultimate form (pot Category 3) is more or less analogous. The quantity of transitional forms (pot Categories 3, 5 & 6) available reached the highest in Period Ia and below the trend line (based on the ultimate form) in other periods; it

Fig. 6.15a. Quantities of shape-based categories of the pottery through periods

Vessel part	Period Ia	Period Ib	Periods II a&b	total	freq. %
Category 1					
R	259	136	847	691	78,88
Bo-Ba	1	6	21	28	3,2
Bo	100	23	19	140	15,98
Ba	1	2	14	17	1,94
<i>total</i>	361	167	348	876	
<i>freq. %</i>	41,21	19,06	39,73	100	100
<i>count/m³</i>	39	21	132		
Category 2					
R-N	173	101	221	495	38,02
N	470	144	193	807	61,98
<i>total</i>	643	245	414	1302	100
<i>freq. %</i>	49,38	18,82	31,8	100	
<i>count/m³</i>	70	31	130		
Category 3					
Sh-Bo-Ba					
Sh-Bo	2		7	9	42,86
Sh	11	1		12	57,14
<i>total</i>	13	1	7	21	
<i>freq. %</i>	61,91	4,76	33,33	100	100
<i>count/m³</i>	1,4	0,1	2		
Category 4					
R-N-Sh-Bo-Ba					
R-N-Sh-Bo	10	3	26	39	25
R-N-Sh	17	1	18	36	23,08
N-Sh-Bo-Ba	1		2	3	1,92
N-Sh-Bo	7	1	3	11	7,05
N-Sh	34	18	15	67	42,95
<i>total</i>	69	23	64	156	
<i>freq. %</i>	44,23	14,75	41,02	100	100
<i>count/m³</i>	8	3	30		
Category 5					
R-N-Bo-Ba					
R-N-Bo	24	2	38	64	45,39
N-Bo-Ba					
N-Bo	54	4	19	77	54,61
<i>total</i>	78	6	57	141	
<i>freq. %</i>	55,32	4,26	40,42	100	100
<i>count/m³</i>	9	0,7	18		
Category 6					
R-Sh-Bo-Ba			1	1	3,57
R-Sh-Bo			13	13	46,43
R-Sh			14	14	50
Total			28	28	
<i>freq. %</i>			7,5	100	100
<i>count/m³</i>			8		
Category 7					
R-Bo-Ba			1	1	0,185
R-Bo	208	13	291	512	94,64
<i>total</i>	208	13	320	541	
<i>freq. %</i>	38,45	2,4	59,15	100	100
<i>count/m³</i>	23	2	87		

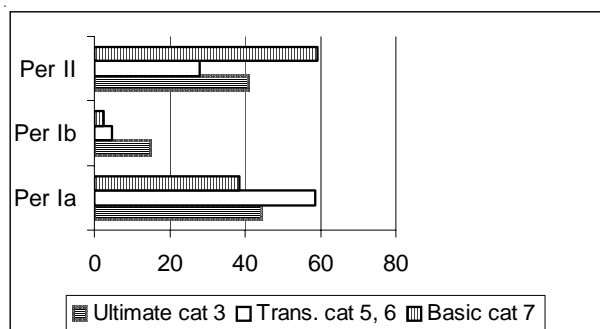


Fig. 6.15b. Chart based on frequency percentages of the vessels by categories comparing Periods Ia, Ib and II (a–b).

matches only the basic form (pot Category 7) in Period II. Hence the pottery data may be implying that a great innovation in pottery making occurred at Unguja Ukuu during Period Ia. The chart shows that pottery production generally waned during the primary Period Ib as the site might have been facing increasing competition from other sites in the region that challenged probable monopoly position from the early period.

The innovative phenomena in pottery could also result from several new households requiring new lifestyles in cooking and food preparation that sometimes raises a demand for new sets of vessel shapes and styles (Arnold 1985). This might also be a function of increased trade contacts or interactions over time. Given an uncertainty that may underlie these tentative inferences and the available data obtained from this study, I suggest that this would be an interesting topic to explore in future studies.

6.3 Imported pottery

Almost all imported pottery is wheel-thrown and the fabric is relatively granular in texture. The surfaces are either finished with glazing or left smooth and plain. Hues are usually orange, red, brown and buff, depending upon the provenance (Near East or the Far East) and also upon the firing conditions. Imported pottery has been ordered into major groups on the basis of their provenance. The material identified by the author has been also verified where relevant from publications of the excavations at Kilwa, Manda (Chittick 1974a, 1984) and Shanga (Horton 1996).

6.3.1 Pottery of the Far East (Fig. 6.16 Nos. 1–3, Plate 6 Nos. 1–13)

Most of the Far Eastern pottery consists of the Chinese glazed stoneware and starts to appear in the sequence before wares of the Islamic period. The excavated assemblage includes the following important categories of ware.

Coarse stoneware (Plate 6 No. 7)

This is coarse grey fabric is sand-tempered with visible air holes and glazed crackled uneven surface. These are generally thick-walled, olive green glazed vessels. The jars in particular were used in the maritime trade for transporting perishable goods such as sauces and spices and had a wider distribution in the Middle East, Iranian coast, Socotra and East Africa. They were traded to Indonesian sites where they were called “Dusun” during the Tang and Song periods of China (8th–10th-centuries AD) (Tampoe 1989). Very few fragments of these vessels have been found at Unguja Ukuu.

Coarse painted stoneware (Plate 6 No. 5)

This thin-potted and colour-painted stoneware manufactured from Changsha kilns in Hunan province of China has a coarse vitrified fabric fired to buff or light grey. The glaze may be cobalt green (copper effect) or yellow (iron effect) depending upon the iron content. Decoration consists of a simple abstract pattern in a yellow-green pigment etching on the inside near the bottom. A transparent yellow glaze is painted all over the surfaces of the vessel except the lower section on the outside

A few sherds of this stoneware have been recovered from the site and these are fine quality bowls with simple rim exported from China to other parts of the Indian Ocean world in the 9th century AD. However, the Changsha ware tradition developed from the 2nd century BC has thick walls and it is somewhat clumsy and relatively thick at the bottom, and impressed with small floral designs (Medley 1976, pp. 48, 78). The example recovered from the site in Period Ia and illustrated in Plate 6 No. 4 possibly represents a residual type of such early Changsha ware.

Fine, light green-glazed stoneware (Fig. 6.16 No. 2, Plate 6 No. 8)

This elegant thin-walled stoneware, termed Yue, is tableware. It has either a light grey or buff fabric finely applied with a shiny monochrome green glaze. The rim is usually foliate but provincial varieties may have lightly pointed and everted rims. The heavy foot ring with spur marks on the inside and the outside may be left unglazed. Two bowl rims of this ware were found. One is a body sherd with lighter green crackled glaze which appeared early in the sequence and dates before 700 AD. Elegant bowls introduced from the Tang period (7–9th centuries AD) became an important export product from China in the 8–10th centuries and spread to different parts of the Indian Ocean. It has also been reported at Sohar in Oman from deposits of this period (Kervran 1996, p. 42).

Yue is the earliest known Chinese celadon. Celadon developed gradually over thousand years from fine-grained semi-porcellanous grey fabric with unevenly painted semi-transparent pale green glazes of the Han period (3rd century BC), to the early North Sung wares (10–12th centuries AD).

Medium coarse green-glazed stoneware

This light grey (cement colour) stoneware has a lesser coarse fabric and comprises thick-walled bowls lightly painted with a translucent pale green glaze. One body sherd of this ware has been recovered at Unguja Ukuu but not from a Period I context.

White stoneware

This stoneware consists of open bowl of opaque white fabric (pure kaolin). The fabric is fired dead white and glazed on both surfaces. It is rare pottery from the site, being represented from our excavations by only two examples. One rim-body sherd (also called Ding ware, Period IIb) is an early Song product and consists of an open bowl covered with

a shiny light ivory glaze (Plate 6 No. 2). The other example is a body sherd of a thick vessel (15 mm thick) fired slightly greyish white and covered with a fine ivory glaze which comes from late Period Ia. Similar material has been reported at Siraf, Period 2 (Tampoe 1989, p. 207).

Crème stoneware

This white ware variety termed crème stoneware (Tampoe 1989) has buff clay tinged to yellow during firing. It has a smooth and granular fabric that contains fine black iron flecks. The shiny crackled glaze is originally crème in colour. A few body sherds of this ware have been found and seem to come from the heavy walled bowls of late Period IIb.

Longquan green celadon ware (Plate 6 No. 7)

These hard, fine, greyish bowls of a white fabric have an uncrackled glaze with green colour tones. They almost completely replaced the earlier types of celadon. Decoration consists of carved lotus-petals. Few examples from the early Ming period (late 14th century AD) have been found from Period IIb.

Blue-on-white porcelain

Small fragments of smooth shiny blue-on-white porcelain bowls occur with a blue-tinted white glaze on the outside. These vessels are rare from the site. One example illustrated has abstract design of *shou* character, combined in places with some greenish flecks. The potter's mark present on the inside at the center in the bottom is poorly preserved and not legible (Plate 6 No. 1). This porcelain ware belongs to Period IIb or even much later (Kirkman 1974, p. 109 pl. 37: 6,7).

The Far Eastern pottery occurs at a wide range of sites on the east African coast that include Kilwa and Manda (Chittick 1974a, 1986), Shanga (Horton 1996, pp. 303–10) and Pate (Wilson & Omar 1997, pp. 56–7).

Pottery from the Far East

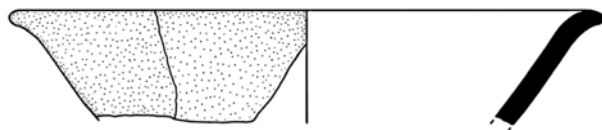


Fig. 6.16.1. Chinese vessel, a bowl fragment Tang ware glazed dead white with light vertical ridges on the interior surface. RD 240 mm. TH 8 mm. (UK/11) Period Ib.



Fig. 6.16.2. Fragment of Chinese stoneware (Yue). Greyish white fabric, glazed in greenish grey. RD 170 mm. TH. 14 mm. (UM/2), Period Ib.



Fig. 6.16.3. Fragment of Chinese stoneware, Dusun jar. Grey fabric, olive-green glazed surfaces. RD 170 mm, TH 70 mm. (UM/2) Period Ib.

Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

6.3.2 Glazed pottery of the Near East

The glazed pottery of the Near East has a soft fabric. Buff fabric is the most favourable for painting the glaze. The potsherds indicate that the vessels have a relatively thick wall. The material derived from this group is divided into at least four wares.

Blue-green glazed ware (Fig. 6.17 Nos. 1–6, Plate 6 Nos. 21–25)

This coarse glossy monochrome ware produced in the Near East is apparently distinguished by the bluish-green glaze surface. The glaze on the inside of the vessel may be grey or greenish grey in colour. The buff fabric contains vegetative material and crushed rock particles. Decoration usually consists of incised zigzag patterns and wavy lines, cable motifs and impressed motifs or bands of wavy lines applied in relief. Jars with ring bases and spur marks are the common shapes. Some moulded patterns like rosettes may be added on the shoulders. Strap handles are applied just below the neck. The assemblage of this ware observed at Unguja Ukuu also contains basins and flat bases and usually have everted rims.

The glazing technique of this ware dates from the first millennium BC when it was being applied on a stony fabric; the glaze became generalised during the Sasanian rule from the mid-3rd century AD when it was consequently applied on the soft buff fabric (Hitchcock 1956, p. 10). Wilding (1988) reported this kind of pottery from Aksum collections and indicated that this ware was already widely distributed c. 500 AD. Indeed, it occurs at Unguja Ukuu from the earliest occupation levels to the end of Period Ib. This ware continued to be produced appreciably unchanged from the Sasanian pre-Islamic period up to the early Islamic period and some writers have called it “Sasanian-Islamic” ware. It has been reported on the east African coast from 8–9th century contexts (Chittick 1974a, 1984, p. 71–82; Wright 1984, pp. 40–4; Horton 1996, pp. 274–96; Wilson & Omar 1977, pp. 49–50) and as far south as Bazaruto Island in southern Mozambique (Sinclair 1987). A few sherds have also been recovered from the coast of Natal (Maggs 1976) and Irodo in northern Madagascar (Battistini & Vérin 1996). A complete bottle (see front piece plate) recovered from this context at Unguja Ukuu is indeed similar to an example that Whitehouse (1979) excavated at Siraf. This ware comprises a larger proportion of the imported pottery recovered at Unguja Ukuu

Pottery from the Near East

Fig. 6.17.1. Blue-green glazed ware, upper part of a jar; note the miniature handle and rock zigzag relief impressions, RD 190 mm. (UJ/8) Period Ib.

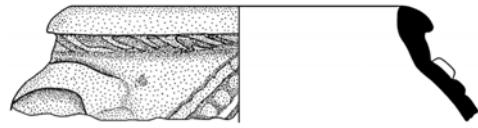


Fig. 6.17.2. Blue-green glazed ware, upper part of a jar showing miniature handle, horizontal grooving decoration on rim and chevron relief impressions on shoulder, RD 180 mm. (UI/3) probably from Period Ib.

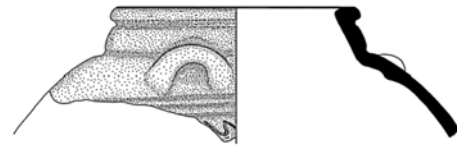


Fig. 6.17.3. Blue-green glazed ware, a near complete jar. Base D 71 mm, W. 142 mm. (UM/4, date: 800–950 AD) Period Ib.

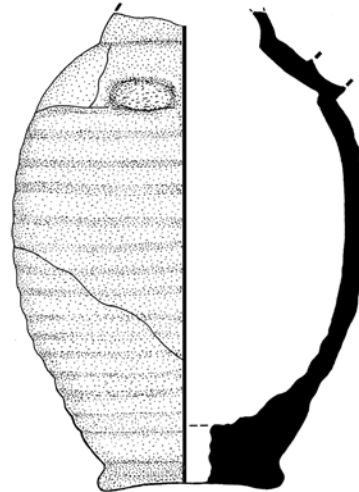


Fig. 6.17.4. Blue-green glazed ware, a bowl. Base D 130 mm. TH 10–17 mm. (UI/3) probably from Period Ib.

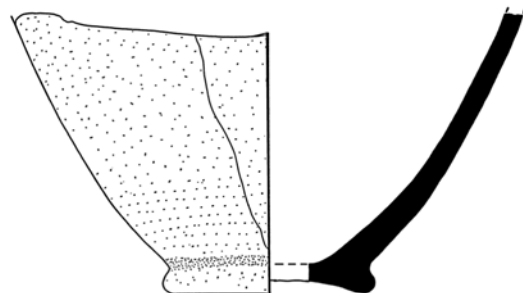
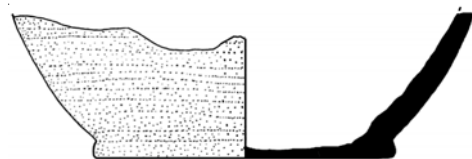


Fig. 6.17.5. Blue-green glazed ware, a bowl. Base D 80 mm, TH 8mm. (UM/2) Probably Period Ib.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

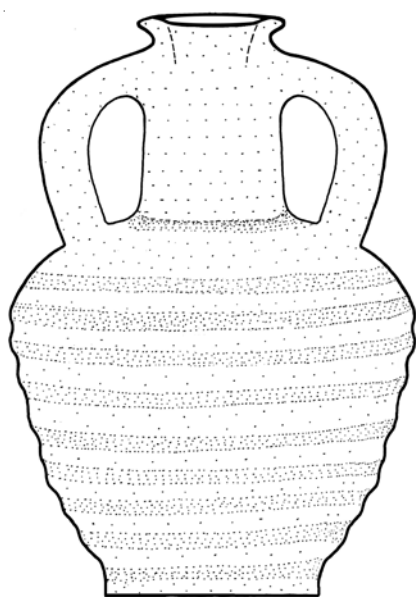


Fig. 6.17.6. Blue-green glazed ware, bottle (see endnote this chapter). RD 40 mm, Height 1650 mm, Ba-D 60 mm.(UM/3). Date: 8th century AD.

Opaque white-glazed ware (Fig. 6.17 Nos. 7–9, Plate 6 Nos. 17–20)

The opaque white-glazed ware produced during the early Islamic period is the next most common glazed earthenware ware from the site. It has a buff fabric made of well-levigated clay that contains some quartz and feldspar formerly mistaken for tin and called “Tin-glazed” ware. The vessels are relatively thin-walled and coated with an opaque-white bubbled glaze on all sides that flakes on the body with age. Fragments of small bowls and dishes that have slightly everted rims with shallow and recessed bases have been found. Delicate radial ridges run down the interior of these vessels being one of the features for which the makers are said to have emulated Chinese Tang pottery (Whitehouse 1979, p. 50).

Muslim potters produced plain vessels and these are abundant from the site. Later they experimented with coloured painting and splashes on the inside. The upper sequence of the site produced three fragments from the small survey test pits (UM3 and UM5) made on top of the ridge. One base fragment painted on the inside in a manganese blue colour and further decorated with a Kufic inscription (No. 18) appeared earlier in the sequence than the other colour-splashed pieces. The second is a

body sherd with green splashes which comes from a separate vessel in the same deposit (No. 19). The last piece is a base fragment that preserves a blue-painted motif at the center and green splashes off around it (No.20). Tampoe (1989) has suggested a chronology of between 800–1000 AD for all varieties of the white-glazed ware. The white-glazed ware is also well known from Kilwa Period Ib (Chittick 1974a), Manda Period I (Chittick 1984, p. 77), Comoro sites (Wright 1984, pp. 40–4), Shanga (Horton 1996, pp. 277–8), Pate (Wilson & Omar 1997, pp. 50–1, 56), and lower levels at Chibuene (Sinclair 1982, 1987).

Lustre ware

This type of opaque white-glazed ware is coated with a metallic pigment (silver and copper oxides). The “lustre painting” of the glaze involved a second firing of the vessel in a reducing atmosphere, resulting in a thin layer that creates an illusion of a lustre surface. The vessels were produced towards the end of the 9th century AD and in later periods (Horton 1996, p. 279; see Chittick 1984, pp. 77–8 for further description). One sherd from the site (Plate 6 No. 14) considered as representing a lustre ware has a frit fabric (4mm thick) coated inside and outside with a thick uneven deposit of rich pink flaking glaze. This seemingly unusual fragment appeared in a deposit dated not earlier than the late 9th century (Period II); it might well be a Saljuq variety (Mason & Keall 1988, p.461).

Lead-glazed ware (Fig. 6.17 No. 10, Plate 6 No. 16)

Lead-glazed earthenware of the Islamic period, generally called “sgraffiato” for being mostly decorated with *graffiti* in different varieties (styles), is white-slipped on both surfaces and covered on top with a glaze containing lead-silicate (Mason & Keall, 1998).

One among the recovered fragments of this ware (4–5 mm thick) appears to be the early type sgraffiato excavated from Unit B layer 7. It consists of fine-grained pinkish-buff fabric covered with a yellowish brown glaze, and preserves a green splash over the glaze on the inside (not illustrated). This may be a

Mesopotamian product judging from the buff colour of the fabric. Whitehouse (1968, p. 15) has illustrated good examples of the early sgraffiato from Siraf (Period 2) that appear decorated with lightly incised floral and abstract motifs also on the inside, and Tampoe (1989) has suggested that these date from the 8th century AD.

One base, a few rims and body sherds of typical later sgraffiato from southern Iran have been also recovered from the upper levels of Unguja Ukuu. These have a creamy white slip on a fine red fabric and a transparent yellow or yellowish-brown glaze covers the incised decoration. The base fragment excavated from Unit B layer 3 comes from a white slipped bowl covered on the inside with a light green glaze. One rim fragment of such a bowl has a neat simple incised floral *graffiti* of Kufic design executed in curling lines and set in a panel, and the background

is plain (Plate 6 No. 16). No example of hatched sgraffiato has been recovered from the site, but a fragment of *Champlevé* decoration on the pale yellow transparent glaze with a greenish touch covering the broad incisions was found (Unit K Layer 7) among the body sherds.

The sgraffiato pottery occurs widely on the early east African sites (e.g. Chittick 1974a, 1986; Wilson & Omar 1997; Radimilahy 1998, pp. 178–9).

Monochrome ware

This monochrome ware of the Islamic period in blue and green glazes occurs at Unguja Ukuu in very limited quantity. The examples with green glazes have a buff fabric easily mistaken for the glossy “Blue-green glazed” ware of the early period already discussed and the vessel form is reminiscent of the

Opaque white-glazed, and lead-glazed wares

Fig. 6.17.7. White-glazed ware, a bowl with a recessed base. Base D 100 mm. TH 6 mm. (UM/4) Period Ib.



Fig 6.17.8. White-glazed ware; bowl with a recessed base, the base is painted on the inside in blue landscape motif as shown. Base D 90 mm. TH 6 mm. (UM/5/3) Period Ib.



Fig. 6.17.9. White-glazed ware, plain bowl with flaking glaze. RD 210 mm, TH 5 mm. (UM/5) Period Ib.



Fig 6.17.10. Lead-glazed ware, fragment of *Champlevé* sgraffiato, red fabric, yellow-green glazed inside. TH 7 mm. (UK/7) Period IIa.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

Chinese pottery. It showed up relatively earlier in the Unguja Ukuu sequence – up to the mid-14th century AD – than the blue-glazed variety with a red fabric that appears from the early 15th century AD.

Examples of monochrome wares were recovered from Period IIb (Units A, J and L) but consist of body sherds of the buff fabric (not illustrated). One clear green glaze of the standard type (noticed in the bottom excavation of Unit I and would roughly parallel with “Unit J layer 3”) is similar to the fragments reported from excavations at Kilwa (Chittick 1974a, p. 304). Monochrome wares have been reported at various sites, for example, Shanga (Horton 1996, pp. 293–6), Pate (Wilson & Omar 1997, p. 54) and Mahilaka (Radimilahy 1998, p. 179).

There is also rarity of the polychrome wares of the Islamic period at Unguja Ukuu as only one fragment representing such vessels (Plate 6 No. 15) has been observed.

6.3.3 Unglazed pottery of the Near East (Fig. 6.17 Nos. 11–15, Plate 6 Nos. 26–37)

Many types of Near East unglazed pottery have a porous fabric and it is said that such vessels were intended as water-coolers. Quantities of this soft coarse fabric have been found at Unguja Ukuu showing fractures and many contain white flecks and black grits. The fabric colour may be buff or greyish brown (10 YR 5/3). Some fragments are thin-walled (up to 8 mm) while others are thick (over 8 mm). The former, possibly tableware, do not indicate the presence of bitumen coating, while the latter, possibly storage jars, often appear coated either on the interior, or on both surfaces.

Unglazed vessels are known from the pre-Islamic to the Islamic periods and appear at several sites including on Kilwa, Manda (Chittick 1974a, 1984, pp. 83–100), and on Comoro Islands (Wright 1984, p. 40).

These vessels are grouped here on the basis of fabric colour and thickness of the vessel wall.

Red or pink fabrics: One category of these fabrics consists of a rather thin-walled (6 mm) vessel with uniform pink colour (5 YR 7/4) and thickness. It is micaceous with visible black grits and indicate traces of white slip on the surface. Most examples

recovered consist of small size of the body fragments and the vessel shape could not be determined. This category is restricted to Period Ia.

The second category comprises fragments of massive jars with a self-slipped surface. There are many body fragments (e.g. No. 36). Some fragments show diagnostic features such as a band of square rim and profoundly decorated with broad incisions on the upper part. Similar examples have been reported at Siraf (Tampoe 1989, p.19) and parallels occur at Manda (Chittick 1984, pp. 84–6).

The third category of unglazed vessels consists of large carinated bowls that are also similar to examples reported at Manda (Chittick 1984, pp. 92–3 Fig. 49)

Buff fabrics: Most buff fabrics possibly had handles, although few remains of handles have been found. Incision at the upper part of the vessels or mouldings is a common kind of ornamentation. Most examples date from around the 8th century AD but some pieces are certainly earlier. Thick vessels tend to have decoration of a simple design like petals, parallel lines and other geometric motifs (Plate 6 No. 26–35). Abstract motifs enclosed in panels (Plate 6 No. 27) were common as early as the late 7th century AD when examples with petal decoration also appear (Fehervari 1973). The example illustrated here, carrying a sophisticated decoration of linear and twisted designs enclosed in vertical panels, comes from a succeeding context. One is an interesting sandy buff fabric (a toe of an amphora-like vessel) blackened on the interior, possibly showing traces of asphalt (Fig. 6.17 No. 13; cf. Chittick 1984, p. 89, Fig 45).

The “eggshell” ware is the most common type of thin-walled vessels and decoration consists of broad horizontal incisions on the exterior side of the rim (Plate 6 No. 29). One rim sherd of Period Ib (excavated from Unit L layer 11) was noted that has mending holes. Some other interesting fragments of unglazed thin-potted vessels were noticed with dot impressions and comb-like incisions. The eggshell ware occurs from Period Ia, but it has antecedents reported elsewhere going back to as early as the mid-1st century BC in the Achaemenid Mesopotamia (Fleming 1989, p. 174).

Sherds with a medium size wall (6–7 mm) are also present and decoration may consist of mouldings.

Unglazed wares

Fig. 6.17.11. Unglazed vessel, red (10 R 5/8) hard fabric, broad in-turned lip, tall neck, tempered with red grits, red (10R5/8) core; wheel marks inside, pale orange (5 YR 8/3) self-slipped surface decorated with wavy and oblique incisions, and horizontal grooving. RD 280 mm, TH 15–18 mm. (UI/4). Probably from Period Ib. (cf. Tampoe 1989, p. 19),



Fig. 6.17.12. Unglazed vessel, orange (7.5 YR 7/6) surface. Lower part of a crude vessel. Base D 115 mm. TH 24 mm. (UK/6) Period Ia (cf. Chittick 1984, local pottery type 39 Fig. 107, p. 135).

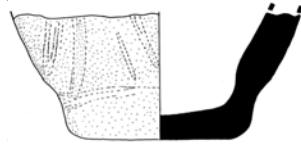


Fig. 6.17.13. Unglazed, flat-based vessel of sandy buff fabric, bitumen coated; no marks inside. Base D 28 mm. TH 17–32 mm. (UL/6) Period Ib.



Fig. 6.17.14. Unglazed, soft sandy buff fabric, thickened, out-curving rim of a basin. RD 33 mm. RTH 20 mm. TH 10 mm. (UL/17) Period Ia.

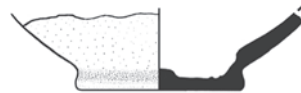
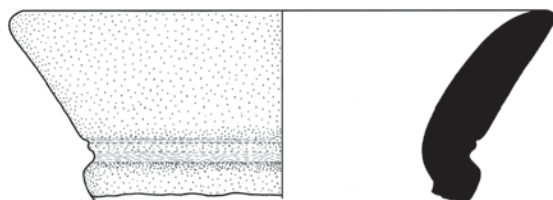


Fig. 6.17.15. Unglazed vessel, upper fragment of a storage jar. Orange (5 YR 8/4) porous fabric, two grooving in the lower part of the rim. RD 220 mm. TH 17 mm. (UL/14) Period Ia.



Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

6.3.4 Indian pottery (Fig. 6.18 Nos. 1–4, Plate 6 Nos. 38–44)

About 12 fragments from our excavations have been identified as the Indian pottery. All these are wheel-made unglazed vessels and a larger proportion appeared from Period Ia. The fabric is coarse, porous, red or reddish grey, and normally hard, containing black grains and sections show air holes. Horizontal wheel marks and diagonal straw impressions are clearly visible from the inside. Many vessels give a ringing sound when tapped, indicating that the vessels were fired to a relatively high temperature.

Two small interesting body sherds of such thin-potted (4 mm) vessels from Period Ia were observed with the grey fabric but the vessel shapes could not be established. In the early sequence, subsequently appeared a fragment with pale red (or brown) fab-

ric, and another of a jar that has a collared rim with a narrow concave neck and groov decoration (Plate 6 No. 38).

A spout with a hard red fabric covered with a white slip was found which probably comes from one such vessel.

Red micaceous fabrics with constricted neck, a flaring mouth and a characteristic rim profile are among vessels that appear in the early sequence. The rim is out-turned and has a fillet band (Fig. 6.18 No. 1, Plate 6 No. 42). Kervran (1996, pp. 38, 42–3) has reported from excavations of Sohar (Level V) in Oman, similar examples named “Red Polished Ware” with a neck that is typical of a metallic water vessel called *hando* (Swah) or *handi* (Arabic), which have been dated to the late Sasanian period (c. 600 AD). The vessels have an antecedent in a globular shape.

Pottery from India

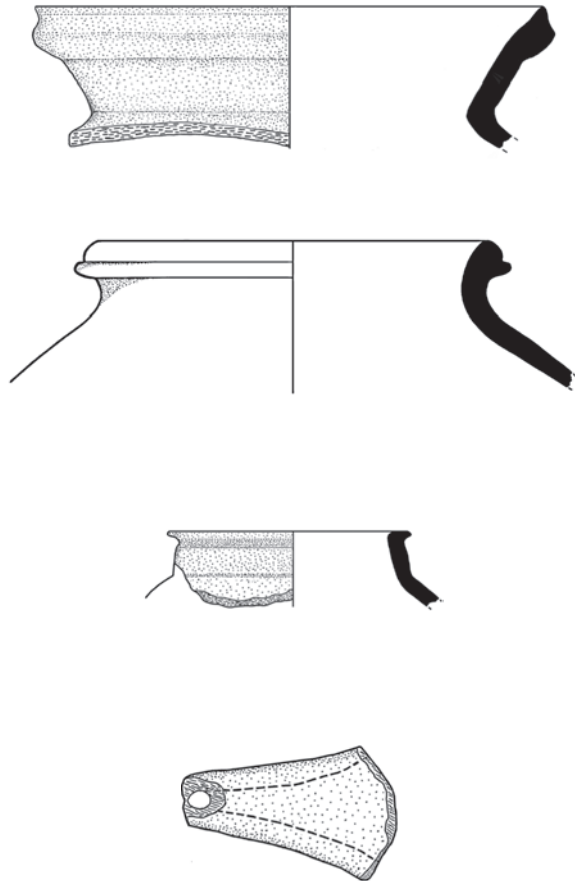


Fig. 6.18.1. Unglazed jar, orange (5 YR 8/4) porous fabric, white slipped, grooving on rim. RD 210 mm. TH 10 mm. (UL/13) Period Ia.

Fig. 6.18.2. Unglazed vessel. Coarse, pale brown (10 YR 7/3) fabric. RD 22 mm. TH 7 mm. RTH 12 mm. (UL/12), Period Ia.

Fig. 6.18.3. Unglazed vessel, sandy buff fabric. RD 120 mm. TH 7–9 mm. (UL/2) probably from Period II.

Fig. 6.18.4. Unglazed vessel, a spout, pale orange (5YR 8/4) fabric, self-slipped surface, greyish inner core (7.5YR 6/1), wider part D 70 mm. Period Ib.

Key: TH = thickness of body or part below rim, RTH = rim thickness, and RD = rim diameter.

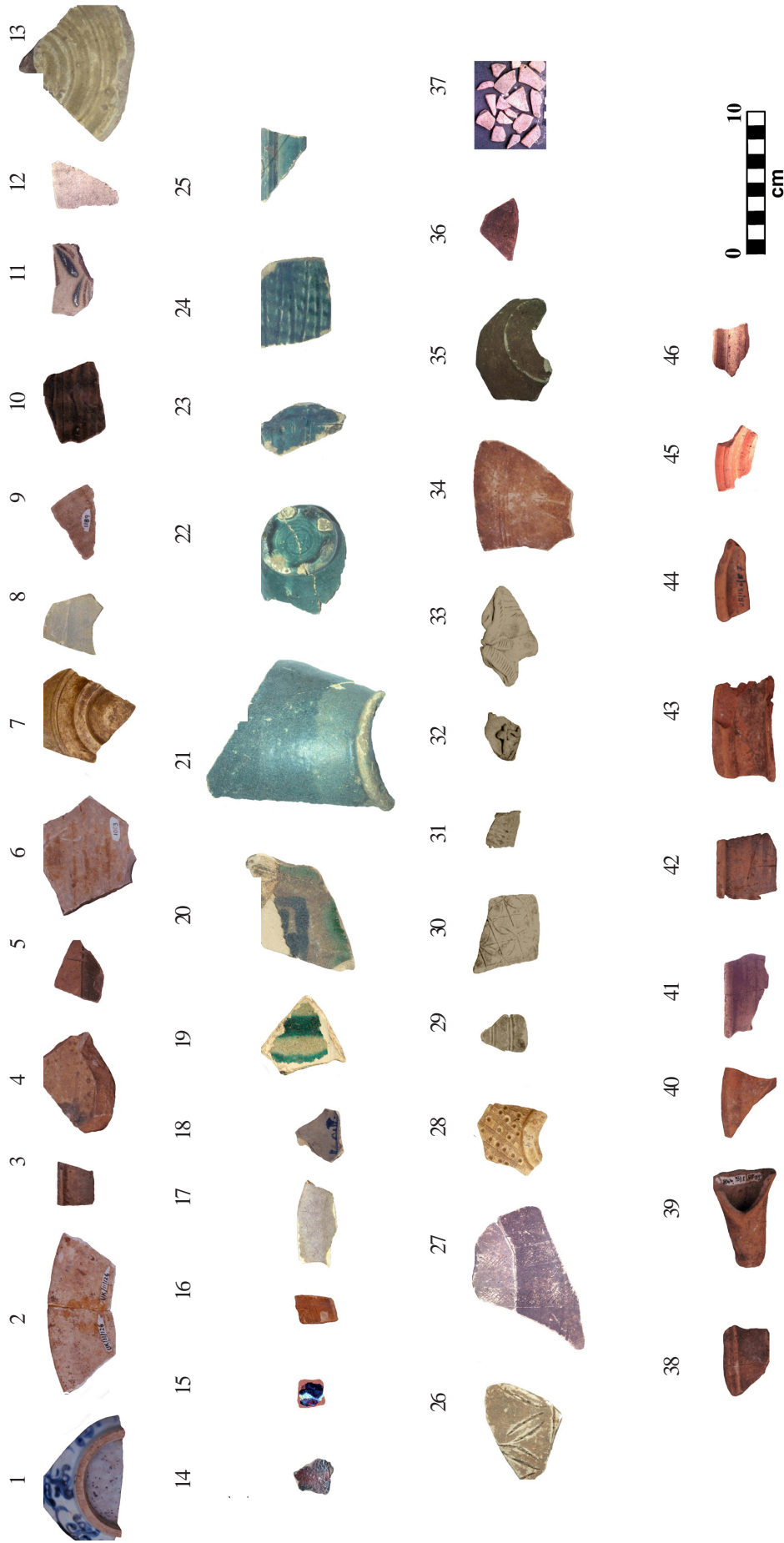


Plate 6. Imported pottery.

Plate 6.1. Imported pottery

Pottery from the Far East

- No. 1. Later Chinese ware, blue-and-white porcelain displaying shou character. TH 4 mm. BD 90 mm. UA/3, Period II.
 No. 2. Fragment of Ding white ware, thickened rim of a wide and shallow vessel. TH 6 mm. (UK/11), late 9th century AD.
 No. 3. Rim of jar, Chinese stoneware. Olive-green glaze "Dusun". TH 8-10 mm. (UB/3), Date: c. 9th century AD, Period Ib.
 No. 4. Jar base of a Chinese stoneware, perhaps early Changsha. TH 10 mm. (UB/14), c. 700 AD, Period Ia.
 No. 5. Fragment of Chinese stoneware. Painted in copper green and iron brown. TH 12 mm. (UL/1), c. 1050 AD, Period IIa.
 No. 6. Body fragment of Chinese stoneware. Light green glaze. TH 7 mm. (UB/4), Period Ib.
 No. 7. Base of Chinese stoneware. Greyish-green glaze. TH 7 mm. BD 75 mm. Longquan celadon. (UJ/4). Period IIb.
 No. 8. Fragment of Chinese stoneware. Yue. Shiny green glaze on light-grey fabric. TH 5 mm (UB/5), c. 700-800 AD, Period Ib.
 No. 9. Fragment of Chinese stoneware. TH 5 mm. (UB/8), Period Ib.
 No. 10. Fragment of Chinese stoneware. Perhaps Yue. Greyish-green glaze. TH 16 mm. (UL/1), Period IIa.
 No. 11. Fragment of Chinese stoneware, Changsha bowl. Painted with leafy or abstract motifs in green and brown. (UB/5), Period Ib.
 No. 12. Fragment of Chinese white ware. TH 6 mm. (UB/8), Period Ib.
 No. 13. Base fragment of Chinese stoneware, "Dusun". c. 15 mm. (UB/5) Period Ib.

Pottery from the Near East

- No. 14. Fragment of lustre ware. Fine buff fabric, gold-like painting of the glaze. TH 5 mm. (UL/2) Period IIa.
 No. 15. Fragment of polychrome ware. Red soft fabric. Painted in blue-and-white designs. TH 7 mm. (UA/4), Period IIa.
 No. 16. Fragment of sgraffiato ware. Red fabric. Yellow glazed and decorated with simple curling incisions. (UA/2), Period IIa.
 No. 17. Fragment of white glazed ware. Fine buff fabric. TH 5 mm. (UM/3), Period Ib.
 No. 18. Fragment of white glazed. Fine buff fabric. Painted with landscape motif in blue. TH 4 mm. (UM/5), Period Ib.
 No. 19. Fragment of white glazed. Fine buff fabric. Painted with motifs in green. TH 5 mm. (UM/2). Perhaps Period Ib.
 No. 20. Fragment of white glazed. Fine buff fabric. Painted with blue and green motifs. TH 4 mm. (UM/3). Perhaps Period Ib.
 No. 21. Fragment of blue-green glazed ware. Fine buff fabric. BD 80 mm, TH 14 mm. (UL/3), perhaps Period Ib.
 No. 22. Fragment of blue-green glazed ware. Fine buff fabric. BD 45 mm, TH 12 mm. (UL/3), perhaps Period Ib.
 No. 23. Fragment of blue-green glazed ware. Fine buff fabric. Decorated with small ridges. TH 10 mm. (UB/10), perhaps Period Ia.
 No. 24. Fragment of blue-green glazed ware. Fine buff fabric. Horizontal wrinkle decoration. TH 9-10 mm. (UB/10), Period Ia.
 No. 25. Fragment of blue-green glazed ware. Fine buff fabric. RTH 9-10mm. TH 10 mm. (UB/10), Period Ia. Unglazed wares.
 No. 26. Fragment of unglazed vessel. Fine buff fabric. Incised petal decoration. TH 7 mm. (UM/2), perhaps Period Ib (cf. Chittick 1984, Plate 40c).
 No. 27. Fragment of unglazed vessel. Fine buff fabric. Incised decoration in panels. TH 13 mm (UB/5), Period Ib.
 No. 28. Fragment of unglazed vessel. Fine buff fabric. Comb incisions and punctuates. TH 4 mm. (UM/2), perhaps Period Ib. (cf. Chittick 1984, Plate 39c).
 No. 29. Fragment of unglazed vessel. Eggshell ware. Fine buff fabric. Sets of parallel spaced double horizontal grooving. TH 4 mm. Period Ia.
 No. 30. Fragment of unglazed vessel. Fine buff fabric. Incised decoration. TH 13 mm. (UM/5), Late Period Ib or IIa (cf. Chittick 1984, Plate 41a).
 No. 31. Fragment of unglazed vessel. Fine buff fabric. TH 3 mm. Moulded ridges and carved decoration. (UI/3) Late Period Ib, or IIa.
 No. 32. Fragment of unglazed vessel. Fine buff fabric. TH 4 mm. Applied decoration. (UI/3) Late Period Ib, or IIa.
 No. 33. Fragment of unglazed vessel. Fine buff fabric. TH 3 mm. Applied decoration and incised work. (UI/3) Late Period Ib, or IIa.
 No. 34. Fragment of unglazed vessel. Lower part of a plain bowl. Soft, fine, buff fabric. BD 73 mm, TH 7 mm. (UB/14), Period Ia.
 No. 35. Fragment of unglazed vessel. Fine buff fabric. Triple set of parallel spaced horizontal incisions. TH 10 mm. (UM/2), perhaps Period Ib.
 No. 36. Fragment of unglazed vessel. Fine hard red fabric. TH 3-5 mm. (UB/14), Period Ia.
 No. 37. Body fragment of a thin vessel, white-slipped pink fabric. TH 2 mm. (UB/11) Period Ia.

Pottery from India, and South Mediterranean region

- No. 38. Fragment of unglazed vessel. Coarse pale brown, Period Ia. Indian origin (Fig. 6.18 No 2).
 No. 39. Broken spout of unglazed vessel. Pale orange, coarse fabric. Probably Indian origin. (UB/4), Period Ib (Fig. 6.18 No. 4).
 No. 40. Fragment of a rim, red soft fabric, broad rim. Indian origin. RD 180 mm, RTH 10 mm. (UL/15), Period Ia.
 No. 41. Fragment of unglazed vessel. Reddish brown fabric. Indian origin. RD 180 mm, Lip-TH 10 mm, NTH 5 mm. (UL/12), Period Ia.
 No. 42. Fragment of unglazed vessel. Hard brown fabric. Indian origin. Thin vessel displaying wheel marks. RTH 5 mm, RD. 160 mm, TH 3 mm. (UB/14), Period Ia.
 No. 43. Fragment of rim-neck, reddish orange fabric, broad grooved rim hando shape. Indian origin. RTH 10 mm, RD 210 mm, ND (internal) 130 mm, NTH 7 mm. (UL/13), Period Ia.
 No. 44. Fragment of rim-neck, soft red fabric, broad rim. Lip TH 16 mm, NTH 9 mm, RD 24 mm. (UB/15), Period Ia.
 No. 45. Fragment of unglazed vessel. Coarse orange fabric, grey core, and red slipped surface (2.5 YR5/8). Broad rim with grooving decoration. RTH 7 mm, RD 150 (UL/12), Period Ia. Mediterranean origin.
 No. 46. Fragment of unglazed vessel. Coarse reddish brown (5YR 5/3) fabric. Decorated with grooving and punctuates. TH 5 mm, RD 230-240 mm. (UJ/14), Period Ia. Mediterranean origin.

The pottery attributed to India appears at important sites that include Kilwa, Shanga (Chittick 1974a, 1986), and Pate (Wilson & Omar 1997, p. 57).

6.3.5 Pottery of the South Mediterranean region (Plate 6 Nos. 45–46)

Two sherds comprising this unusual ware imported to the east African coast were found in Period Ia. One consists of a dish with a flat base and burnished with red slip; the flat rim is decorated with a fine incised groove. The other consists of a carinated pot with grey fabric decorated on the neck with a row of impressed motifs and an incised groove. Detailed identification of these pieces of the late Roman period (late 5th century AD) imported from the eastern Mediterranean basin has been made elsewhere (Juma 1996b).

Overview

The principal groups of local pottery are similar to material widely distributed among early coastal sites (Chittick 1974a, 1975; Horton 1996; Chami 1996) in well-watered and forested areas of the east African interior (Soper 1967, pp. 24–7) and as far away as southern Mozambique (Sinclair 1982). It appears that there was social affiliation and continuity among coastal communities and also between them and the inhabitants of the hinterland and parts of the interior. The pervasive effects of urbanism may possibly also have contributed to the observed similarities. We noticed that the Later Farming communities produced pottery characterised by a wide diversity of utilitarian forms and of decoration motifs. Both the jars and the restricted bowls are important. For ornamentation, the community favoured sparse rectilinear motifs and passed up the dense rectilinear incisions typical for the pottery of their predecessors. In addition, the assemblages of the later farming community incorporate burnished pot varieties unknown in the assemblages of the Earlier Farming communities.

Some studies amplify differences that are known between this pottery of the later and that of the Early Farming communities to suggest the supposed

ethnic differences, and the reaction often leads to adopt a general strategy of redressing the legacy of the past. In this respect, I have particularly pointed out the work of Chami (1996), emphasising the stylistic similarities between the two traditions. I relate most differences between such pottery traditions with changes in the way of life of the community rather than reflecting an ethnic divide. First, the changes appear to reflect the extended distribution of the group into new areas and expression of a new common identity. Second, the diversity of shapes in the pottery of the Later Farming community suggests increasing differentiation of the social groups that is perhaps associated with a range of urban demands that led to innovation and culinary specialization.

The imported pottery dates the occupations of the site. The assemblage indicates the primary occupation of the site from to c. 500–750 AD (Period Ia) and the subsequent primary occupation from c. 750–900 AD (Period Ib). The diminished quantity and distribution of the sgraffiato wares on the site that probably imply introductory consignments to East Africa, and the absence of early lustre ware, available at some site from the 10th century, may be a further indication that Period Ib ended around 900 AD. The cultural assemblage also indicates the date of the later occupations of the site to c. 1100 AD (Period IIa) and 1400–1600 AD (Period IIb). The upper levels, associated with a later type of sgraffiato include the blue-green glazed pottery as Chittick (1984, p. 229) also noticed at Manda, possibly imply disturbance activities at the surface levels of the sites. Later type sgraffiato might have become a chief import to east Africa beginning from the 11th century AD. I have regarded all the sgraffiato from the site as dating from this period. However, the simple incised sgraffiato might have come at the end of Period Ib as it appears first from the site. What is remarkable is that the hatched type is apparently lacking at Unguja Ukuu; it might have arrived in east Africa during the 10th century at the earliest when Unguja Ukuu had been abandoned. The *Champlevé* sgraffiato subsequently appears from the site. From around 1000 AD, the simple incised and the hatched are present at Shanga (Horton 1996, pp. 288–9). Finds other than pottery are presented in the following chapter.

Note

The content of the pot was excavated in five separate layers. Each layer was analyzed as to contents of phosphates, lipid acids and macro fossils. Ascorbic acid was used for the phosphate testing. All layers had a high phosphate

content, but no lipid acids were found. The macro fossil analysis indicated that no seeds were present in the pot.

The analyses were done at the Archaeological Research laboratory, Stockholm University.

7. OTHER FINDS

Besides pottery, the excavations have revealed other finds including fragments of glass vessels, beads, metals, stone and terracotta, as well as organic objects such as ivory, shells and other faunal remains.

7.1 The glass vessels

Quantities of broken glass vessels turned up throughout the occupation sequence of the site. The fact that no glass wasters, ingots or culets were found suggests that all glass objects may have been imported from overseas. Thin-walled glass (less than 4 mm thick) is very common and the surfaces of the glass material have usually deteriorated.

Fragmented glass vessels of different colours and shapes have been recovered, although patination in some fragments makes it difficult to recognize the original vessel colour. The colours are green, light and bluish green, brown, yellow, blue and light blue, and dark grey. Plain or colourless glass occurs in Period Ib and some pieces have a greenish or bluish tinge. Light green is by far the most common colour of glass from the site and in all periods. Colourless and green glasses follow for the primary periods of occupation (Fig. 7.1.1).

Most glass material is fragmented and the present description relies on very small shards. Bottles and flasks (vessels with neck longer than mouth), beakers (neck shorter than mouth), as well as cups have been recognized from a few diagnostic forms such as rims, necks and pushed-in bases (Fig. 7.1.2–5).

Period Ia:

Coloured glass was popular from this early period but suffered most from deterioration. Nine colour

categories of glass have been identified from this period. Fragments representing light green vessels are most prevalent (about 60% of the total count). The next most common appears to be the colourless glass. Fragments of other colours are present in small quantities (Fig. 7.1.1).

A small number of exceptional quality glass fragments, also unusual at other sites on the east African coast, have been observed. The fragments are tiny but worth commenting upon. One is a rim neck of a dark green glass bottle (not illustrated). It has a thread moulding decoration around the body (Plate 7.1 No. 13).

The second piece is a near-complete bottle, only the base is not preserved (Plate 7.1 No. 1). The third is a fragment of green translucent glass that has a yellowish tinge (Plate 7.1 No. 7, Fig. 7.1.3 No. 6). This fragment is rather tiny and partially preserves its decoration that consists of loops of the same colour applied in relief. The widest part of the loop is the middle (about 6 mm in width). The diminished size of this fragment makes it difficult to determine the original shape of the vessel, although comparative sources indicate that such self-coloured relief trails are frequent kinds of ornamentation found on bell-shaped beakers, palm cups and bowls dating from the late Roman period. These popular vessels of the 6th century AD in north-western Europe continued up to the 7th century AD. A great similarity can be found between this basic decoration and vessels of the “early Merovingian” period (Lith 1988, p. 69; Herschend *pers. comm.*). Decoration consists of spiral trails on the main body, wound horizontally on the upper part and vertically on the lower part to form angles at the round base. The example described here compares well with a base of the

vessel that Lith (1988, fig 30–32 p. 69) has illustrated and is reproduced in black and white here (Plate 7.1 No 8, Fig. 7.1.3 No. 7).

The fourth is an interesting example of two thin joining fragments of light green glass associated with this period (not illustrated). This does not come from quality glass as the surfaces are weathered to brownish black and air holes are clearly visible from its broken section. Decoration consists of outward horizontal threads delineated below by a horizontal pin incision. The fifth piece is a quality green glass represented by a handle of possibly a cup (Plate 7.1 No. 13, Fig. 7.1.3 No. 8).

Rare and quality pieces possibly imported from Egypt during this period underline the connection of Unguja Ukuu with the ancient Mediterranean trading centres.

Period Ib:

The array of glass colours associated with this period is smaller, comprising about a third of the former period, although preservation is better so that shapes can be reasonably reconstructed from a variety of fragments (see Fig. 7.1.2–5). The light green is still prevalent (about 45% for the period). Other noticeable types of this period are green and blue glasses present in virtually the same extent. The colourless glass stained with a bluish or greenish tinge introduced from this period enriches the limited colour range of the vessels (see Fig. 7.1.1).

Period IIa:

The glass assigned to this period also demonstrates an interesting colour range. The material comes from surface levels. Its attribution to this period cannot be taken as absolute, but fairly reasonable, as doubtful pieces have been excluded. Colourless pieces appear to prevail in these upper levels, offsetting the dominance of light green glass observed from the primary occupation levels. Yellow glass vessels, rare in the former period, increase considerably against others in this later period (about 47% of the total).

Hence the relative quantity of glass vessels from the site, especially in the primary period of occupation, comprising mostly the valuable coloured varieties is remarkable (see Fig. 7.1.1).

7.2 Beads

Appreciable quantities of beads recovered include local, disc-shaped white beads made from marine shell, five cone tubular shaped copper beads also commonly considered to be of local provenance, and imported beads, mostly made of glass, although a few are semi precious stones (Plate 7.2).

Shell beads (Plate 7.2 fifth bottom row) vary in diameter between 0.3 and 9 mm and an individual bead weighs less than 0.5 grams. Some beads are not pierced through to provide for stringing and appear rough-edged, denoting unfinished products. A larger proportion of these beads (about 67%) is pierced with edges worked smooth, indicating that these are finished products. This difference suggests that shell beads were produced on the site.

Glass beads (Plate 7.2 first top-fifth rows) are present throughout the sequence of the site and over 400 come from stratified contexts. They have been recorded by attributes of shape, colour, size, weight, decoration, material and translucency. The attributes of opaque and translucency have not been examined under special light but simply decided at glance with the aid of a magnifying glass. Shape and colour are held to be the most practicable attributes for grouping glass beads (Abungu 1992, p. 100). Only 247 beads from the excavation Units A, B and L have been systematically analyzed through periods and presented here on the basis of such primary attributes (Fig. 7.2.1). The following different shapes have been recognized: spherical, tubular, cylindrical, elliptical, segmented barrel, melon, lenticular, convex bicone, bicone and hexagon (Fig. 7.2.2). Period IIb includes examples of large beads (Fig 7.2.2 No. 6).

Most glass beads are unicoloured. The charm of the beads lies when different colours are strung in combination for use. Polychromes are also present but not over-represented. Different hues include blue, green, blue-green, brown, orange, brown, and yellow. Translucent blue-green beads are most frequent (46%) and also clear blue beads. Opaque brown (or Indian red), yellow and colourless beads occur in small proportions. Beads of other colours are evenly represented through the sequence. In the description of beads from different periods, techniques of manufacture have been suggested.

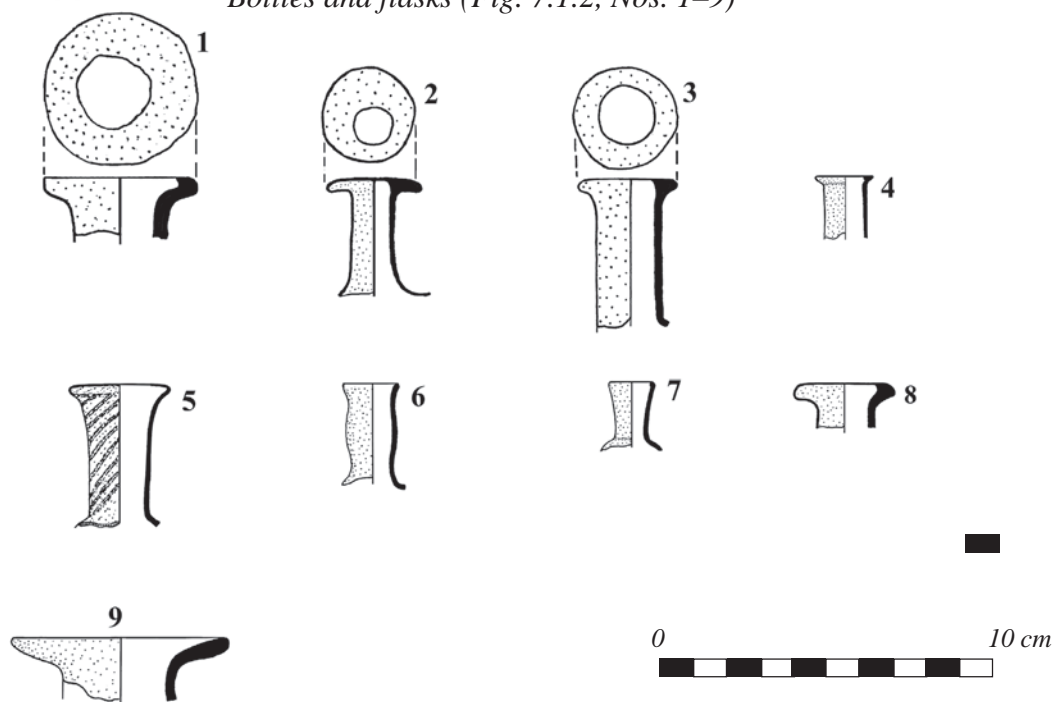
Fig. 7.1.1. Table showing quantity of glass vessels distinguished by colour

	Period Ia*		Period Ib		Period IIa		total count
	count	density ratio per m ³	count	density ratio per m ³	count	density ratio per m ³	
light green	473	56	212	26,4	9	2,4	694
green	39	5	76	10	2	0,5	117
brown	36	4	10	1,3	2	0,5	48
bluish green	2	0,5			1	0,25	3
yellow	1	0,1			12	3,2	13
colourless, bluish tinge			10	1,3			10
colourless, greenish tinge			6	0,8			6
colourless	196	23	45	6			241
blue	10	1,2	73	10			83
light blue	22	3	10	1,3			32
dark grey	16	2	14	2			30
total	795		456		26		1277
freq. %	62,25		35,71		2,04		100
count/m ³	127		57		7		55

*Period I-a comprises glass vessels from Units A and B only (excludes vessels from J-L).

Fig. 7.1.2–5 Glass profiles

Bottles and flasks (Fig. 7.1.2, Nos. 1–9)



No. 1 Rim D. 40 mm, green. (UA/5), Period Ib.

No. 2 Rim D. 25 mm, light green. TH 1 mm. (UB/5), Period Ib.

No. 3 Rim D. 30 mm, green. (UB/6), Period Ib.

No. 4 Rim D. 15 mm, green. (UI/4), Period Ia or IIa.

No. 5 Rim D. 27 mm, green. (UK/4), Period IIa.

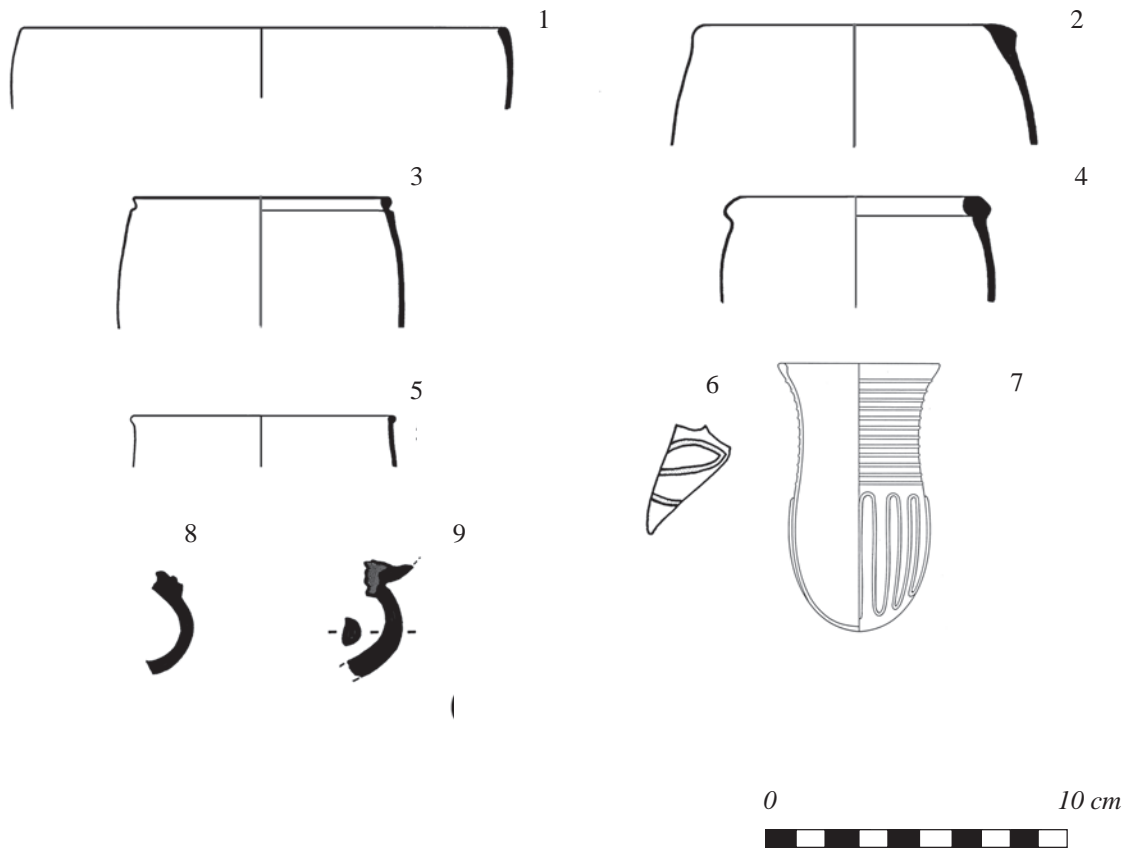
No. 6 Rim D. 45 mm, light green. RD 15 mm, Bo-TH 1 mm. From non-stratigraphic excavation, (UI/3).

Legend: D=Diameter, R=Rim, H=Handle, & TH=Thickness, Bo= Body, and Bo=Body.

No. 7 Rim D. 25 mm, (1 x 2), light green. (UI/2), Period Ib or IIa.

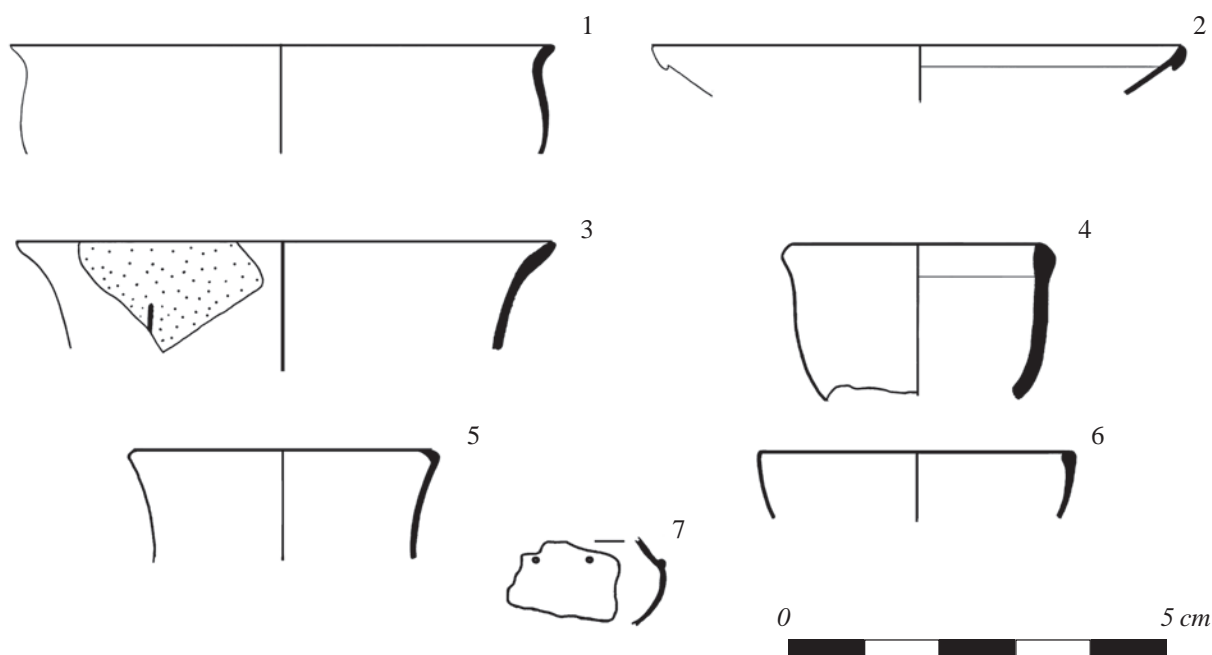
No. 8 Rim D. 30 mm, green. RD 33 mm. (UB/5), Period Ib.

No. 9 Rim D. 60 mm, colourless with greenish tinge. RD 60 mm, RTH 3 mm. (UI/2), Period Ib or IIa.



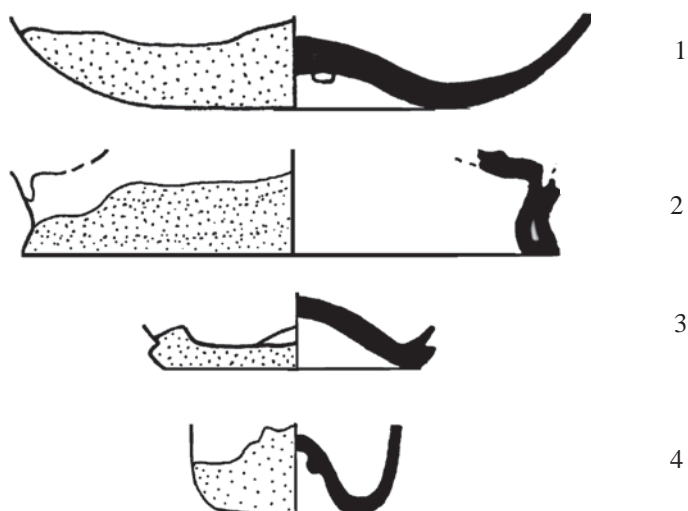
Profiles of beakers & handles (Fig. 7.1.3 Nos. 1–9)

- No. 1 Fragment of a light green vessel, covered with yellow patina. RD.130 mm, (UB/5), Period Ib.
- No. 2 Fragment of quality colorless glass vessel with a greenish tinge. RD.70 mm. RTH 5 mm, Bo–TH 3 mm. (UL/9), Period Ib.
- No. 3 Fragment of a colourless vessel. RD. 70 mm. Bo–TH 0.9 mm. (UE/1), probably Period IIa.
- No. 4 Fragment of a quality green glass vessel. RD 90 mm. Bo–D 2 mm. From non-stratigraphic excavation (UG/2).
- No. 5 Rim, D. 70 mm, colourless. Period Ib. (UL/4). Period Ib.
- No. 6 Fragment of a bell beaker. TH 2 mm. (UB/14), Period Ia.(Plate 7.1.3 No. 7)
- No. 7 Bell beaker, adopted from La Baume, Pl. 23, reproduced by Lith (1988, p. 69).
- No. 8 Handle, translucent green with a yellowish tinge. D 2 mm. (UB/14), Period Ia.
- No. 9 Handle, dark blue. TH 5 mm. (UF/1), Period Ib or IIa.



Bowls (Fig. 7.1.4 Nos. 1–6)

- No. 1 Fragment of a vessel, cobalt blue. RD 240 mm. (UL/2), perhaps Period Ib.
 No. 2 Fragment of a vessel, ocean blue. RD 235 mm, Bo–TH 2 mm. (UG/2), perhaps Period Ib.
 No. 3 Fragment of a green vessel. RD 70 mm. TH. 2 mm. (UI/3), perhaps Period Ib or IIa.
 No. 4 Fragment of quality colourless glass vessel with a greenish tinge. RD 120 mm. (UA/8), Period Ia.
 No. 5 Fragment of a light green vessel. RD 55 mm. Period Ib.
 No. 6 Fragment of a quality colourless glass vessel with a greenish tinge. RD 42 mm. (UL/6), Period Ib.
 No. 7 Fragment of medium quality colourless glass decorated with prunts. TH 1.5 mm (UL/2), Period IIa.



Profiles of bases (Fig. 7.1.5 Nos. 1–4)

- No. 1 Fragment of a colourless vessel with a brownish tinge. Ba–D c. 40 mm. (UL/8), Period Ib.
 No. 2 Base fragment of a green vessel. Ba–D 70 mm. From non-stratigraphic excavation, (UI/3).
 No. 3 Fragment of a green vessel. Ba–D 34 mm. (U/1) Perhaps Period Ib.
 No. 4 Fragment of green vessel. Ba–D 20 mm. (UI/3) Period Ib or IIa.



Plate 7.1. Glass vessels

Legend: D=Diameter, R=Rim, H=Handle, & TH=Thickness, and Bo=Body, N=Neck and W=Width.

- No. 1 Light green bottle with bubbles. Square body 22 x 22 mm, RD 17 mm, R-TH 2 mm, Bo-TH 3 mm, Bo-W 24 mm (UB/14, Period Ia).
- No. 2 Fragment of green bottle with a broad rim RD 17 mm, D 6 mm (top), TH 3 mm, Bo-TH 24 mm. (UB/14), Period Ia.
- No. 3 Fragment of green bottle with broad rim. Yellow patina deterioration RD 25 mm, Bo-W around 16 mm. Patinated. (UB/6), Period Ib.
- No. 4 Fragment of light green bottle with broad rim, (UB/14), Period Ia.
- No. 5 Fragment of green glass with broad rim. RD 31 mm, ND 20 mm. (UB/5), Period Ib.
- No. 6 Twisted neck of a bottle. Colourless glass with a greenish tinge. (UI/3), Probably Period IIa.
- No. 7 Fragment probably of a bell beaker partly preserving loop decorations. Dark green quality glass. TH 3.5 mm). (UL/13), Period Ia. (Fig. 7.1.3 No. 6)
- No. 8 Lower part of a bell beaker decorated with vertical loops, reproduced here from Lith (1988, p. 69).
- No. 9 Rim of a green bowl. RD. 80 mm. Silvery patination. (UM/3), Period Ib.
- No. 10 Fragment of a bowl with collar rim, ocean blue colour. From non-statigraphic excavation (UG/2).
- No. 11 Fragment of a green bowl. TH 1.2 mm. D 60 mm. (UA/5) Period Ib.
- No. 12 Rim of a colourless bowl with a brownish tinge. TH 1 mm, D 90 m (UF/1), perhaps Period IIa
- No. 13 Fragments of brown-tinted colourless glass vessel, dark brown (black?) horizontal threads wound around the body reflecting a Byzantine style. (UB/15) Period Ia.
- No. 14 Handle of a cup, quality dark green glass (D. 3 mm). (UB/14) Period Ia.



Plate 7.2. Beads

First row (Nos. 1–12) from top left:

No. 1 etched carnelian bead.

No. 2 cylindrical eyed glass bead with mosaic colours;

Nos. 3–12 unicoloured glass beads (UB/14). All are Period Ia.

Second row (Nos. 1–28):

Nos. 1–20 unicoloured glass beads. Nos. 21–22 is a polychrome glass beads (UB/11).

Nos 23–25 are unicoloured glass beads. Nos. 26–28 are carnelian glass beads (UB/9), Period Ia

Third row: (Nos. 1–9):

Nos. 1–4 unicoloured glass beads.

Nos. 5–9 carnelian beads (UB/5), Period Ib.

Fourth row: (Nos. 1–19):

No. 1 (UK/7), Nos. 2–4 (UK/8), and Nos. 5–17 (from non-stratigraphic excavations) unicoloured glass beads.

No.18 a round shaped eyed bead.

No.19 possibly a semi-precious stone bead. All probably Period IIa.

Fifth row: Marine shell beads (UB/14), Period Ia.

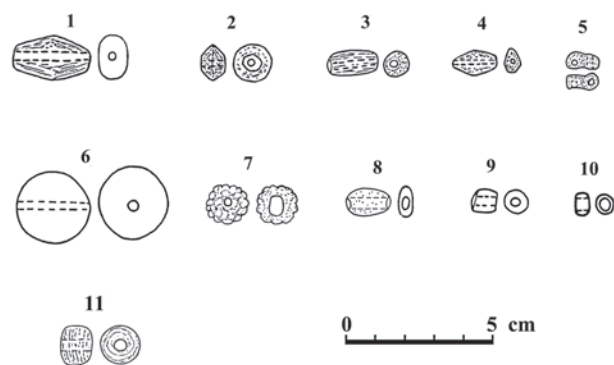


Fig. 7.2.2. Shapes of some imported beads.

a culture of elegance. Mostly barrel-shaped beads feature the primary period in the occupation. Beads coming from the shallow non-stratigraphic excavations constitute part of the collection and reveal a greater variety especially in terms of shapes, but are not included here.

We noted that beads occur very early in the early archaeological sequence of Unguja Ukuu as we know from other sites on the east African coast. These places include the Rufiji delta in Tanzania that produced Roman beads, apart from such beads fortuitously discovered from other probably Rhapta-related sites. Perhaps the continuation of imported beads, similar to other widely traded exotic items, into the succeeding periods, shows their sustained importance to the trading networks and the exchange system connected to development of urbanism. On the other hand, there was of course parallel local contribution to this development for example provided from the marine shell beads that were possibly produced from women-controlled traditional industries at Unguja Ukuu and other sites on the east African coast.

7.3 Faunal remains

Large quantities of faunal remains were recovered from the excavations. A greater volume consists of seashells that recurred throughout the sequence so that it became necessary to limit the collection from the excavations. The huge concentration of the seashells was recovered from the largest pit of shell midden excavated from Unit K (Fig. 5.12). J. Kimengich of the National Museums of Kenya examined the rest of the faunal remains from the excavations. He identified about 1750 individual pieces excavated from the site and noticed no cut or bite marks by rodent or carnivores in the assemblage.

Four fragments are burnt. The identification list contains several marine and terrestrial species and also human bones. A greater mass of bones is fragmented and in most cases the remains could be identified to the family or genus and sometimes to the species level. Quantitative data by periods is provided in Table 7.3.

Period Ia:

About 293 fragments associated with this period could be identified. About 125 fragments come from marine organisms and are well represented throughout the sequence of the site. Four kinds of fish are evident. Two mandibles, two palatal fragments and singular specimens of dentary and lower pharyngeal fragments have been identified with parrotfish (*Scaridae*). These oblong, snapper-like fish with a relatively elongated snout and scaleless cheeks has unusual mouth formed by large teeth that are fused together. The species feeds on the polyps and com-

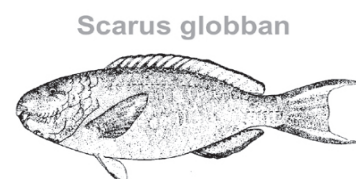
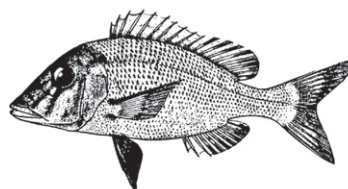


Plate 7.3 No. 1 parrot fish

prise among the most colorful fish inhabiting the coral reef, and greatly prized fish in east Africa and many other parts of the world (Plate 7.3 Inset 1).

One mandible and one left pre-maxillary fragment of emperor fish represent *Lethrinus* sp. (*Lethrinidae*). These long, slender Indo-Pacific fish, silvery-gray on top run in small schools, and inhabit vicinity immediate to the coast and offshore banks but also

Plate 7.3 No. 2 emperor fish



Lethrinus nebulosus

frequent open waters. They feed apparently day and night on various shrimps (perhaps their chief diet), crabs and other crustaceans, small mollusks, worms, and on young fish (Plate 7.3 Inset 2).

One right mandible of wrasses (*Labridae*) has been identified. This is the second largest marine fish family comprises carnivorous fish that feed on ectoparasites, invertebrates and small fishes. These cover a wide range of habitats from shallow coastal waters to reasonable depths where they feed on zooplankton and larger invertebrates. Wrasses become particularly vulnerable at night and spear fishers can easily capture the large types are asleep below boulders or in crevices and many smaller species beneath the sand.

Two teeth represent the grouper sea bass, *Plectropomus punctatus* (*Serranidae*). This genus is largely sedentary in behaviour with many species occupying a home range in which they shelter and feed (Plate 7.3 Inset 3).



Plate 7.3 No. 3 grouper fish

Crabs are also represented and provide an important supplement to the human diet (Plate 7.3 In-



Plate 7.3 No. 4 crab

set 4). Mangrove swamps are particularly favoured areas for fishing crabs and molluscs.

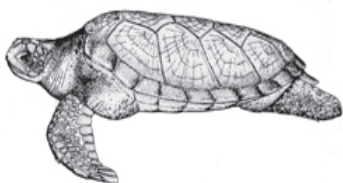


Plate 7.3 No. 5 sea turtle

There are also the remains of marine species (Fig. 7.3 Insets 5–7 respectively). One is the sea turtle (*Chelonia* spp.). An-



Plate 7.3 No.6 dugong

other is dugong (*Halicore* sp.). This herbivorous mammal that inhabits tropical waters and frequents sea inlets to feed on plants such as sea grass and algae is a great delicacy caught for flesh and its palatable oil is preserved underneath the skin. Another species represented is the pygmy whale (*Kogia*

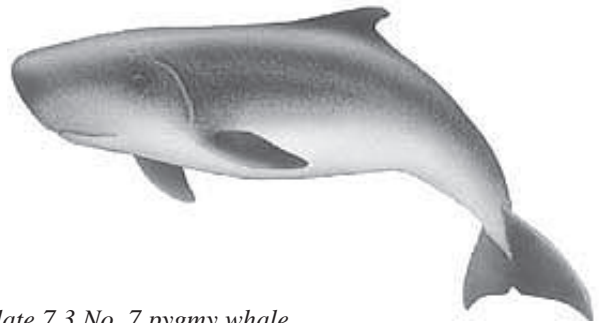


Plate 7.3 No. 7 pygmy whale

breviceps). This toothed whale is a deep-water pelagic species that feeds on small fish, crabs, shrimp, and squid. The few examples from Period Ia might have been washed ashore or caught from a boat.

A range of domestic and wild terrestrial species including cattle, goat/sheep, bovid, Suni and chicken are also represented. The remains of cattle (*Bos*), although not heavily represented, come from two different excavation units.

The sheep/goat, identified as ovicaprids for being almost impossible to separate unless the bones of the skull or ankle are available, comprise the faunal remains well represented in the assemblage of the site. At least three fragments have definitely been identified as representing goat. All the remains probably represent goat rather than sheep, since the former are browsers more adaptable to the prevail-

ing CLA in the southern part of the island. This might have prompted mixed farmers to keep goats as desirable and versatile stock mostly for meat. It is not apparent if some few fragments that could not be identified represent Bovid-1 or Suni/dik-dik, Bovid-2 or *ovicaprid* and Bovid-3 or cattle.

The remains of suni (*Neotragus moschatus*) are not unexpected since the dry bushy CLA is an ideal habitat for such browsers (Plate 7.3 Inset 8). However, these very shy and small antelopes with robust



Plate 7.3 No. 8 suni

body and thin legs, that live in dense cover, are represented by small quantities of fragments in the assemblage.

The remains of chicken are also interesting and perhaps represent the domestic fowl (*Gallus gallus*) bred for meat and eggs.

Dik-dik (*Madoqua* spp.) is represented by considerable quantities of remains and uniformly distributed in this and the subsequent periods (Plate 7.3 Inset 9). The dry CLA bush country is an ideal habitat for dik-dik that does not require much water but needs vegetative cover for food and shelter



Plate 7.3 No. 9 dik-dik

(Kingdon 1982; Parker 1990). On Zanzibar, man is the chief predator of dik dik rather than the rare leopard.

Three fragments are suspected to be the remains of suid. It is not obvious whether the remains represent the wild pig (*Sus potamochoerus nyassae*) that wanders on Unguja Island. The other type of pig found on Zanzibar, *Sus scrofa* is confined to Pemba Island and historians have asserted that was introduced by the Portuguese. Pig is represented from this pre Islamic period by three fragments suggesting that it might well have been a dietary component of the community.

Giant rat (*Cricetomys gambianus*) (Plate 7.3 Inset 10), dog (*Canis* sp.), cat (*Felis* sp.) and hyrax have also been identified. Rat is also represented though it is not evident if the remains refer to the house mouse (*Mus domesticus*), black rat (*Rattus rattus*?) or perhaps the shy nocturnal bush rat (*Rattus fuscipes*).



Plate 7.3 No. 10 giant rat

Monkey (*Colobus kirki*?), bush baby (*Galago* sp.) (Plate 7.3 Inset 11) and leopard (*Panthera pardus*) constitute other categories of forest animals

whose remains have been recovered. We noticed earlier (Chapter 2) that these are still present on Zanzibar (Ingrams 1967, p. 297). In addition, bones of cat (*Felis lynx*?) and dog were identified. Seven human bones were also recorded from this period.



Plate 7.3 No. 11 bush baby

Fig. 7.3a . Unguja Ukuu faunal remains by quantities and type of animals through periods

animal identity	Period Ia		Period Ib		Period IIa		Period IIb		Totals	
	count	per m ³	count	per m ³	count	per m ³	count	per m ³	count	freq. %
human	7	0,76	1	0,2	52	14	10	4,6	70	6,3
monkey	5	0,55	2	0,3			1	0,46	8	0,63
leopard	2	0,22					2	1	2	0,15
carnivora	3	0,33					1	0,46	5	0,4
elephant									1	0,07
pig?	2	0,33	1	0,2					3	0,27
cattle (bos)	2	0,22			2	0,53			4	0,3
goat	19	2,07	11	1,6	15	4,4	4	1,8	49	3,77
bovid	20	2,2	6	0,74	19	5			45	3,5
sunii	1	0,12			16	4,3			17	1,3
dik-dik	19	2	10	1,3	17	4,6	1	0,46	47	3,7
dog	1	0,12			4	1,1			5	0,4
cat	2	0,22	3	0,4			14	6,4	19	1,5
bush baby	1	0,12							1	0,03
dendrohyrax	7	0,77			24	6,4	1	0,46	32	2,5
giant rat	2	0,22			1	0,23			3	0,23
rat	2	0,22	1	0,3			1	0,46	5	0,4
bird	15	1,63	3	0,4	13	3,48	8	3,6	39	3
chicken	1	0,12	4	0,5	6	1,6			11	0,86
fish	146	16	42	5,2	373	100	72	33	633	49,5
dugong	1	0,12	1	0,3	3	0,8			5	0,4
pygmy whale	1	0,12			1	0,23	2	1	4	0,3
turtle	32	3,5	143	18	49	13	42	19,3	266	21
crab	1	0,12			2	0,53			3	0,23
gastropod					1	0,23			1	0,07
total count	292	32,08	228	29,44	599	160,66	159	64,68	1278	100
freq (count)%	23		18		47		12		100	

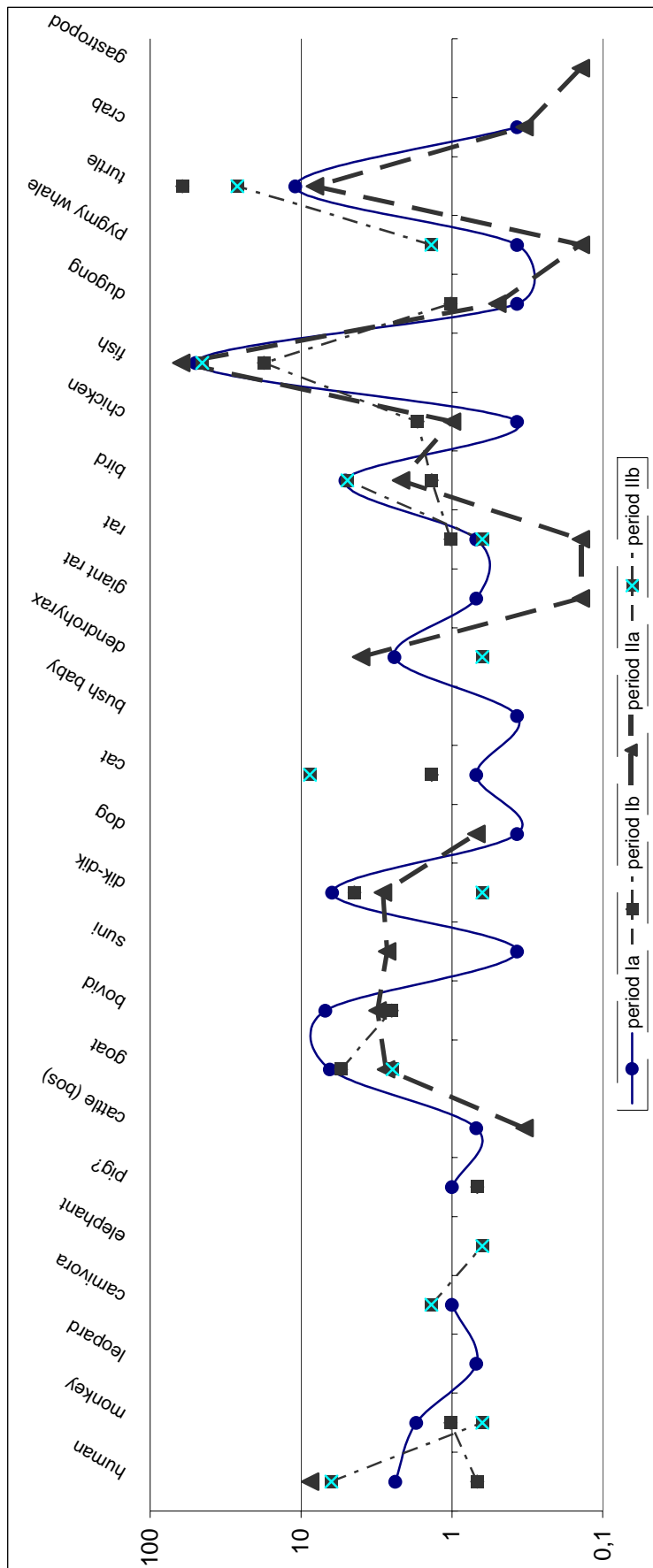


Fig. 7.3b. Trend of faunal variations through periods

Period Ib:

About 345 bone fragments from stratified contexts are associated with Period Ib. Animals represented in 228 fragments could be identified (66%). Identifiable remains indicated that fish, turtle and dik-dik continued in abundance. One fragment represents the pig and this Islamic period may suggest a neglect of this species as important for the community source of subsistence. There are unidentified fragments and might include bush baby, cattle, hyrax, dog, giant rat, leopard, pig, pygmy whale and suni.

Period IIa and IIb:

About 758 bone fragments could be identified from these two periods and fish bones are most common in this as in all other periods (see Fig. 7.3). A relatively similar range of fauna present in the collection as in the earlier periods shows occurrence of the animal resource on Zanzibar Island for exploitation by the community over a long period.

Period IIa shows the greatest deposition of faunal remains and a relatively small quantity (about 12%) could not be identified. The fauna inventory (See Fig. 7.3) shows particularly the highest number of suni and hyrax, possibly indicating that the forest had become more widespread compared to the earlier periods.

In Period IIb the osteological sample derives from the broad non-stratigraphic excavations (Units F, G, H, I in Zone L2) at “the site of the mosque.” Game such as hyrax, dik dik and suni, and domesticates such as sheep/goat are among the animals represented. A relatively greater quantity of rat and cat perhaps suggests increased availability of food. Monkey is also present while turtle and cat increase along with carnivores and birds. This period includes the remains of one fragment of an elephant tusk, a probable trade item from the mainland. We cannot be sure if the unidentified range of fauna assemblage assigned to this period does not include cattle, chicken, dugong, bush baby, giant rat, leopard and pig.

The faunal data from the excavation shows a range of activities in which the early communities engaged in and also the varied ecological niches such as marine and terrestrial environments, which they exploited to support their subsistence strategy. These functions include animal husbandry, hunting wild game

and fishing and demonstrate some growth capacity of the local economy.

There are obvious variations in the density of species through periods (Fig. 7.3a and 7.3b).

In Period Ia we note that most faunal categories identified from the site were present (95%). There is a greater density of remains of fish, turtle, bovid, dik-dik, goats and birds than other species. The peaks show that this increase ranges between 5% in the case of birds, and nearly 50% in the case of fish. The density variation for the rest of the faunal categories ranges between 0.37% associated with the pygmy whale, crabs, dugong, chicken, bush baby and dog on the one hand, and 2.4% for dendrohyrax on the other. The presence of chicken bones from this period broadens our view on their importance to the menu of the first millennium AD communities in east Africa. Monkey (1.7%), pig (1%) and a lower representation (0.69) of cattle, leopard, cat, rat and the giant rat also occur.

In Period Ib (Fig. 7.3), the range of fauna decreases (54%) and some species are not represented. However, the faunal categories largely parallel the peaks characteristic of the earlier period. This perhaps indicates that the basic pattern of local subsistence exploitation continued. As recognized for period Ia, there is a high density of fish, turtle, bovid, dik-dik, and goats observed. However, there are variations. The first is the low density of remains of birds, cat, chicken, dugong, rat and monkey. Second, turtle show a large increase (85%) compared to Period Ia. This anomaly demonstrated by turtles from the site is interesting, as it may suggest that the species was perhaps over-exploited during this period to satisfy an external demand. Third, pigs reflect a relatively low representation during this period, comprising less than 1%; the rest of the the faunal categories occur in relatively higher densities than in Period Ia

In Period IIa (Fig. 7.3), the range of fauna increases slightly (62%). In Period IIb, it declines (25%). The tendency that some species completely lack representation continues through out these periods. There are also notable variations for the faunal categories identified and represented between these two periods. The categories of fauna exhibiting decrease comprises cattle, goat, chicken, birds, did-dik, suni, turtle, crabs, monkeys and rat. The lowest representation of turtle from Period (IIa) pos-

sibly reflects the impact of the over-exploitation during the earlier period as suggested above, while it appears that the turtle population began to recover in Period Ib. The rest indicate an increase, namely: cattle, bovid, fish, dugong, pygmy whale, dendrohyrax, carnivores, cat, dog and the giant rat.

The CLA around Unguja Ukuu presented a rich hunting ground for the subsistence needs of the community. There are also grounds for a contextual inference that the extensive agriculture possibly practised from the early period of the site also contributed to the subsistence strategy of the community, although this study has not been able to provide a direct evidence for this.

7.4 Objects of iron

A number of different iron artefacts have been recovered from Unguja Ukuu. These were documented, photographed, x-rayed, and conserved through routines established at the iron conservation laboratory in Kiruna, northern Sweden by courtesy of Docent Hans Åke Nordström. Conditions of temperature and humidity of the tropical climate of Zanzibar were taken into account. The objects include finished products such as nails, arrowheads, hollow pipes (Fig. 7.4.1 Nos. 1–5), pin-like objects, curved rods, rings and small pieces of iron that could be knives (not illustrated). The first two mentioned are the most common, while nails and points follow next (Fig 7.4.2).

Iron slag is present and most fragments from the site have rusty, light to dark brown weathered surfaces. Few fragments have smooth dark grey surfaces, possibly indicating either recently broken fragments or relatively resistant material to weathering. Some examples have a roughly round and bowl-like shape on the underside. The non-stratigraphic excavations in the low-lying area of the site near the seashore produced large concentrations (over 500 kg) .

Period Ia:

The large amount of material recovered includes about 60 identifiable objects. Arrowheads and hollow pipes are most prominent (Fig. 7.4.1 No. 3, 5, Fig. 7.4.2.). Iron slag is particularly abundant in this period; about 58 kg was recovered (Fig. 7.3).

Period Ib:

Only 11 identifiable iron objects were found during this terminal period of primary occupation. These include a pin-like object and arrowheads, while the nails are dominant (Fig. 7.4 Nos. 1, 4; Fig. 7.4.2). Iron slag is present in lesser amounts than in Period Ia (Fig. 7.4).

Period IIa:

This period was characterised by an even lower rate of recovery of iron objects. Few identifiable iron objects came from a fairly reliable stratigraphic context, one of them a complete finger ring (not illustrated). Other interesting objects include an arrowhead, a nail (Fig. 7.4.1 No.2) and a lock.

The range of iron objects recovered from the excavations indicates involvement of the society in iron working at the site. In Period Ia, the obvious abundance of objects may suggest this was the most industrially dynamic period of the site. Arrowheads superseded all other metallic objects, presumably had wooden shafts and perhaps reflected an expanded demand as a result of hunting.

In Period Ib and later, iron objects tend to decrease. Either industrial activity at the site slowed down or it was partly moved to other locations. In Period IIa, the density of iron slag in the deposits indicates increases but it is not clear whether the considerable quantities of iron slag from the site come from forging, smelting or both technical processes.

The site does not seem to have produced considerable quantities of finished iron objects matching the slag material. The abundance of the iron slag may alternatively reflect a high degree of occupancy of the site by people from other places (*cf* Kusimba 1999). In either the case, the profusion of slag leads us to consider the environmental impact of such technical activities, particularly in the area of Unguja Ukuu, where the CLA does not have the substantial wood resources. Mangrove may not have been considered suitable as fuel for iron working but were, together with other trees, very likely to have been used for a host of other important activities such as cooking, building construction, boat building and perhaps for export. Traditional societies are known to

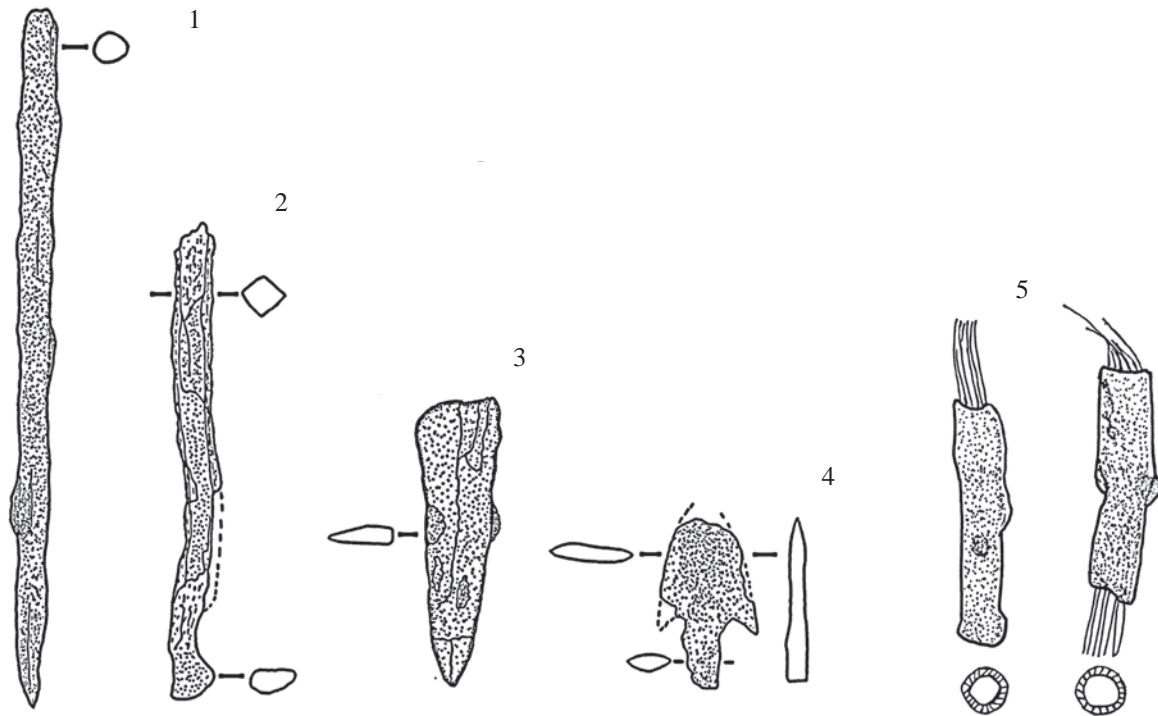


Fig. 7.4.1. Examples of iron objects:

No. 1 Nail, L 190 mm. (UB/6), Period Ib.

No. 2 Nail (?), broken, L 158 mm. (UI/3), Period Ib or IIa.

No. 3 Arrowhead, L 75 mm. (UB/10), Period Ia.

No. 4 Arrowhead, L 50 mm, W 27 mm (max). (UL/3), Period Ib.

No. 5 Hollow pipes, fibre inside, D 4 mm (UB/10), Period Ia (cf Chittick 1974a, p. 439).



Fig. 7.4.2. Distribution of iron objects through periods

Item	Period Ia			ratio per m ³	Period Ib			ratio per m ³
	g/wt	count	freq %		g/wt	count	freq %	
arrowhead	68.51	13	21.6	1.42	16	1	9	0.12
arrow-head, plain sided	15.9	7	12	0.76				
arrow-head like	11.44	2	3	0.22				
arrowhead, spiral	5.9	1	1.7	0.11				
rod, curved	5.8	1	1.7	0.11				
fragments	76.8	6	10	0.65	14.9	2	18	0.25
fragment, triang. shape	3.99	1	1.7	0.11				
pipe, hollow			25	1.63				
pipe, hollow	87.31	16	1.6	0.11				
nail, round	38.38	2	3.3	0.22	83.1	6	55	0.75
nail, angular	6.13	1	1.7	0.11				
object, pin-like					0.86	1	9	
points	25.77	7	11.7	0.76				
rod, broken	12	2	3.3	0.22				
sheet, small					1	1	9	0.12
rim of vessel	4	1	1.7	0.11				
total	361.9	60	100		116	11	100	
per m³	38.6	6.5		6.54	14.4	1.37		1.24

Fig. 7.4.3. Distribution of iron slag through periods

	kg	freq. %	kg per m ³
Period Ia	58	54.2	7
Period Ib	25	23.4	3
Period IIa	24	22.4	7
Total	107		17

have avoided stretching environmental resources through a limited use of tools and labour. With a relatively large population, quite possibly the subsistence and industrial demands of Unguja Ukuu on natural resources adversely affected the meagre wood resources of the surrounding environment. Not only food but also fuel wood resources could have been collected from distant places and transported to the site.

7.5 Non-ferrous objects

Metallic objects other than iron such as copper, bronze and lead have also been recovered. Most of the non-ferrous material comprises copper but several items are deeply corroded lumps and fragments that cannot be identified. These include coins (Plate 7.4.1) but a large proportion of objects recognised consists of workshop products for example rivets and large needles (awls), or objects of adornment such as rings, bracelets and a stick for applying kohl as make-up on the eyelid. One fretwork object has a small handle and was perhaps a cover of an incense burner. A small jewellery chest key was found as well as the copper beads already mentioned. Four fragments of lead and a rim of probably a bronze casserole were observed. Pins were probably mounted on hafts to work with leather (Ingrams 1967) and the long needles were used in the production of basketry, mats and sails. An object which is possibly a rattle was recovered from the upper levels in the excavations which are not strictly stratigraphic. Some objects are illustrated in Fig. 7.5.1.

Period Ia:

Several objects of copper and fragments recovered from stratigraphic excavations are assigned to this period (Fig. 7.5.1 Table A, Plate 7.4.2). These in-

clude solid bracelets and spiral shapes, ear rings, a small chain, a key and a necklace. In addition, foils pierced at the ends for riveting, nails, and relatively large curved fragments, possibly rims of a relatively large casserole were also recovered. One fragment of lead was found (see Fig. 7.5.1 Nos. 3–4, 6, 8–9, 12 and 18).

Period Ib:

A number of fragments of copper was found from this period (Fig. 7.5.2 Table B). These include washer-like objects, spiral wire filled with fibre, foils, and pointed objects (see Fig. 7.5.1 Nos. 2, 5, 11 and 20–21).

Period II:

Non-ferrous metallic objects thought to belong to this period do not come from the strictly stratigraphic excavations (Fig. 7.5.2 Table C). Most of the examples illustrated here come from Period IIa (see Fig. 7.5.1 Nos. 1, 7, 10, 13–14 and 22). These copper objects and fragments include earrings, a small container, rods and rivets, as well as three lead fragments recovered from Unit E.

The investigations of the site recovered four local minuscule silver coins, seven local copper coins, and one Chinese bronze coin attributed to this period (Plate 7.4.1). A total of six old copper pieces (Nos. 5–10) were excavated from Unit B, while the seventh recent local copper coin minted for Sultan Barghash and the other Chinese old coin come from the surface survey using the magnetometer. No Islamic gold coins like ones accidentally discovered from the site in 1866 appeared.

The four minuscule silver coins of fish-scale thickness were excavated in Unit J (c. 40 cm below the surface) and have a floriated Kufic inscription displaying circles and stars (Nos. 1–3). Part of the inscription is a motto, the ruler's reiteration of the Islamic faith, and uses one of God's ninety-nine attributes as known in the Muslim practice of devotion that rhymes with name of the minter (or ruler) on the reverse side of the coins. These earliest known variety of Swahili coins, also reported at other important sites on the east African coast such as Kilwa, Mafia, Shanga in the Lamu archipelago, and

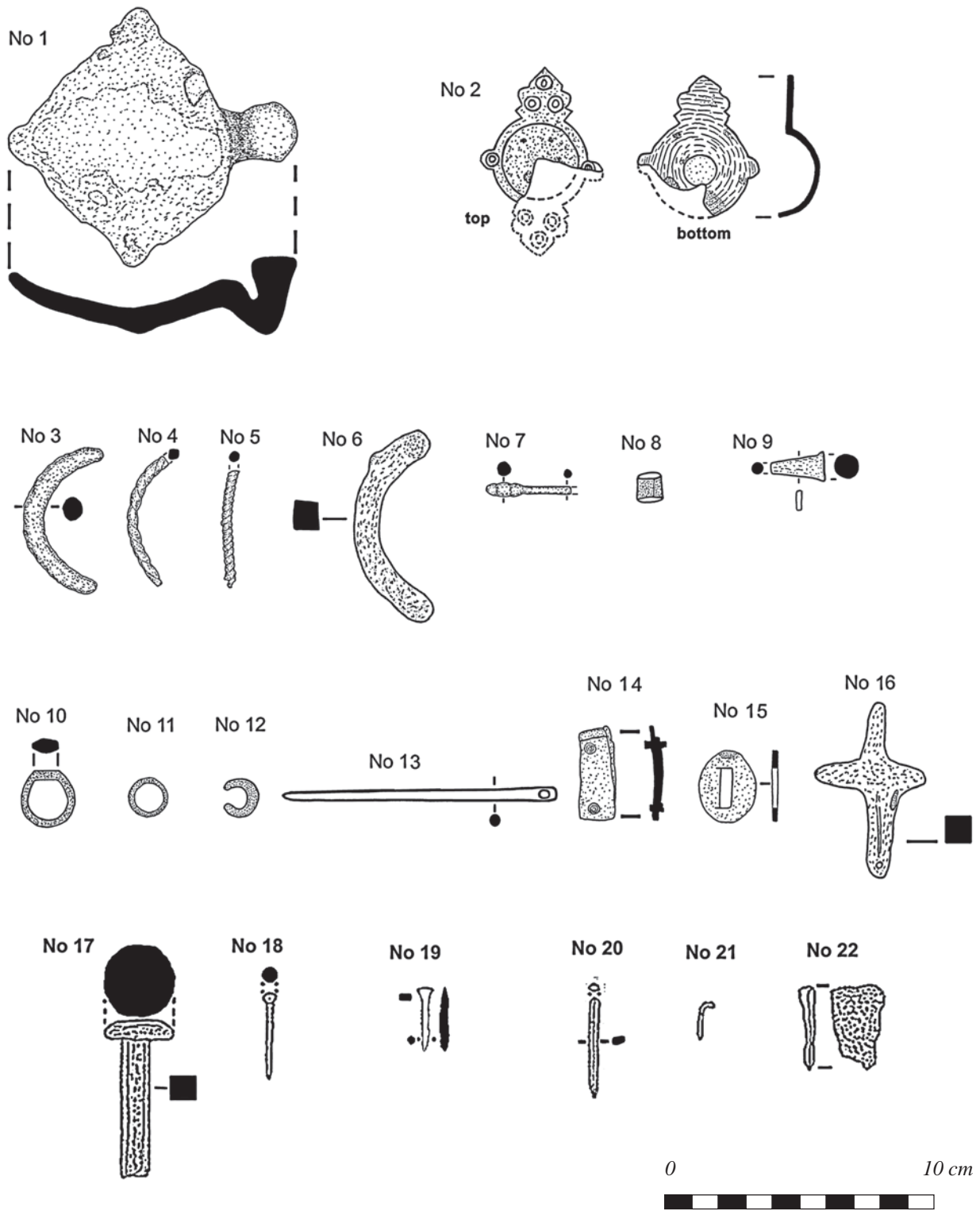


Fig. 7.5.1. Examples of non-ferrous objects.

Fig. 7.5.1. Examples of non-ferrous objects:

- No. 1 Dish-like perforated object, copper. Inside L 110 mm, W 95 mm. (UI/3), Period Ib or IIa.*
- No. 2 Dish-like object, copper (for burning incense?), or probably a lamp. W 105 mm. (UB/5), Period Ib.*
- No. 3 Bracelet, copper, rounded. D 54 mm, TH 5 mm. (UJ/13), Period Ia.*
- No. 4 Bracelet, copper, spiral TH. 4 mm. (UB/11), Period Ia.*
- No. 5 Wire, copper spiral, TH 4 mm. (UL/8), Period Ib.*
- No. 6 Bracelet, copper. TH, 9 mm. (UB/11), Period Ia.*
- No. 7 Kohl stick, copper, broken, moulding decoration. L 33 mm. (UE/4), Period Ib or IIa.*
- No. 8 Bead made of copper, broken, 20 mm. (UB/12), Period Ia.*
- No. 9 Bead made of copper (?), broken. TH 20 mm. (UB/12), Period Ia.*
- No. 10 Finger ring made of copper. D 20 mm. (UI/3), Period Ib or IIa.*
- No. 11 Finger ring made of copper. D 15 mm. UI/4, probably Period Ib.*
- No. 12 Ear ring made of copper. D 15 mm. (UB/11), Period Ia.*
- No. 13 Awl made of copper. L 100 mm. D 5 mm, eye 2 mm. (UI/2), Period Ib or IIa.*
- No. 14 Foil for rivet, pins in situ, copper. L 35 mm, W 14 mm. (UI/3), Period Ib or IIa..*
- No. 15 Medallion alloyed. D 27 mm (max). (cf. Chittick 1984, Fig. 155g) (UI/2), possibly Period IIb.*
- No. 16 Cross alloyed. L 65 mm, W 42 mm. (UI/1), Probably Period, Period IIb.*
- No. 17 Copper nail, large with domed head and broken. L 80 mm, D 2 mm. (UI/2), probably Period IIb.*
- No. 18 Nail of copper with a head. L 42 mm, (UB/9), Period Ia.*
- No. 19 Nail of copper with a head. L 30 mm (Unstratified).*
- No. 20 Nail of copper, broken. L 50 mm. (UB/5), Period Ib.*
- No. 21 Nail of copper, bent. L 26 mm.(UB/5), Period Ib.*
- No. 22 Blade of copper, broken, W 25 mm. (UI/2), Period Ib or IIa.*

Mtambwe Mkuu in Pemba, has the characteristic style that resembles Egyptian Fatimid issues. It is believed that rulers of major towns on the east African coast emulated the concept of coinage from issues of early Islamic period produced in the Middle East from such variety made available to the east African coast (Brown 1992, p. 86, 1993, p. 14). I am greatly indebted to Mrs H. Brown, formerly of the Ashmolean Museum laboratory in Oxford, for cleaning and reading the information from the silver coins presented below.

Coin No. 1 (Plate 7.4) *Obverse*: the motto is around the centre of the field, one star lies on top and the other beneath. *Reverse*: the name Muhammad bn Is haq is around the centre of the field and two stars are in position similar to the obverse. The flan (10 mm thick) is clean and has two outer circles.

Coin No. 2 (Plate 7.4) *Obverse*: the motto and

the two stars are placed similar to the position described in *Coin No. 1*. *Reverse*: the name (Muhammad bn Is-haq) is in the place similar to *Coin No. 1*; the star supposed to be present beneath is perhaps not preserved. The flan (11 mm thick) has one outer circle; it is irregular and crackled probably from reuse of the specimen.

Coin No. 3 (Plate 7.4). *Obverse*: the motto is in a place similar to that in specimens above. The star above is visible. There was perhaps an other star beneath but it is not preserved. *Reverse*: the name (Muhammad bn Is-haq) and the two stars are placed as usual with the upper star being partially preserved. The flan (11 mm thick) has a broken edge probably from reuse.

Coin No. 4 (Plate 7.4). *Obverse*: the motto is in the same position as described above, only the upper star is visible and the one below is uncertain.



Plate 7.4.1. Coinage

- No. 1 Coin of Muhammad bn Is-haq, silver. Local and weighs 0.14 g. Date: 11th century AD.
- No. 2 Coin of Muhammad bn Is-haq, silver. Local and weighs 0.6 g. Date: 11th century AD.
- No. 3 Coin of Muhammad bn Is-haq, silver. Local and weighs 0.15 g. Date: 11th century AD.
- No. 4 Coin of Bahram bn Ali, silver. Local and weighs 0.11 g. Date: 11th century AD.
- No 5–10 Plain copper pieces, probably used as local coins (UB/6), date: perhaps the 11th century AD.
- No. 11 Fragment of Chinese coin, bronze. Date: c. mid-12th century AD (North Song Dynasty).



Plate 7.4.2. Other non-ferrous objects

- No. 1 Dish-like perforated object of copper. Use uncertain. (See also Fig. 7.5.2 No. 1). Scale 1/2.
 No. 2 Dish-like object of copper (incense burner) or probably a lamp (See also Fig. 7.5.2 No. 2). Scale 1/1.
 No. 3 Hook and chain of copper. (UL/16), Period Ia.
 No. 4 Finger ring of copper (See also Fig. 7.5.2 No. 10).
 No. 5 Finger ring (?) of copper, solid with molded sides, and circular in section. (UB/8), Period Ia.
 No. 6 Bead of copper, hollow and pyramidal in shape (see also Fig. 7.5.2. No. 9).
 No. 7 Kohl stick, moulding decoration (see also Fig. 7.5.2 No. 7).
 No. 8 Awl, broken. (UB/8), Period Ia.
 No. 9 Spatula, small and broken. Moulding decoration at center. (UI/1), Period Ib or IIa.
 No. 10 Spetula, large and thick, broken. (UJ/6), Period IIa.
 No. 11. Foil of copper for rivet, pins in situ (See also Fig. 7.5.3 No. 14).

Fig. 7.5.2. Table showing quantities of non-ferrous objects through periods

Class	Description	gm-wt	qnt.
bangle	half (UJ/13)	24	1
bar	slightly encrusted bar (UB/12)	0,02	1
earring	fragment, coiled around a wire, slightly worn (UB/11)	0,53	1
foil	rectangular (UB/12)	0,7	1
fragments	flat, irregular edges, slightly worn (UB/ 8)	110,03	1
fragments	irregular pieces, slightly worn (UB/10)	2,21	1
fragments	Irregular unidentifiable object (UB/10)	4	6
fragments	Irregular workshop debris (UB/11)	3	1
fragments	heavily corroded flat object(UB/12)	15	1
fragments	(UB/12)	4	3
hollow point	hollow point, narrower one (UB/12)	0,85	1
hook-chain	tarnished green, 20 parts (UL/16)	5	1
incense container?	small, shallow, decorated object (UB/ 9)	16,89	1
fragment	highly encrusted (UB/ 9)	13,82	1
fragment	encrusted (UB/12)	0,15	1
fragment	copper encrusted (UB/12)	13,8	1
fragment	encrusted (UB/14)	0,82	1
key	small, rectangular (A/9c)	2	1
lead object	corroded (UB/9)	15,82	1
nail	slightly worn (UB/9)	1,83	1
object	long narrow, encrusted (UB/12)	0,86	1
neckless	spiral, hollow (UB/11)	53	2
sheet	double-punched rectangular (UB/8)	11,8	1
sheet	thin, polygonal, punched (UB/8)	1,82	1
object	thin sheet, bent edges (UB/9)	9,68	2
object	thin, longated sheet (UB/9)	1,49	1
object	irregular pieces (UB/9)	6,62	1
object	round, punched end (UB/11)	0,87	1
fragment	narrow, long, bent horizontally (UB/11)	1,49	1
object	thin, hollow, ring-shaped (UB/12)	2	1
object	ball-shaped (UB/12)	2	1
object	punched rivette (UB/12)	1,69	2
object	rounded (UB/12)	5,04	3
object	spear-shaped (UB/12)	1,8	2
strip	corroded (A/9)	2	1
strip	slightly corroded (A/9)	1,8	1
strip	broken (A/9)	1,6	1
vessel rim	thin, copper? (UJ/15)	5,7	1
Total		346,53	51

Table B

class	description	gm-wt	qnt
object	irregular, encrusted (UB 5)	0,7	11
fragments	irregular (UB 5)	1,02	1
object	pointed end, bent (UB 5)	0,87	1
object	circular, washer-like (UB 5)	0,87	1
object	weak, narrow one (UB 6)	0,81	1
sheet	thin, small, bent ends (UB 6)	0,86	1
foil (weight?)	rectangular, punched (UB 6)	0,14	1
wire	spiral (UB 6)	2,1	1
wire	spiral, fibre-filled (UL 8)	1,8	1
foil	(UL 9)	1,2	1
wire	spiral (UL 9)	0,7	1
Total		11,07	21

Fig. 7.5.2. (continuation) Table showing quantities of non-ferrous objects through periods

Table C

Class	Description	gm-wt	qnt
weight?	(UJ 5)	6	1
fragment	(UJ 5)	4	2
foil	(UL 1)	0,2	1
vessel rim (bronze?)	(UL 1)	4	1
foil	punched (UL 2)	0,8	2
wire	spiral fragments (UL 2)	0,18	4
fragment	(UL 2)	0,6	1
bead	rattle (UL 2)	0,2	1
spoon	miniature, pointed end, broken (UJ 6)	1	1
	Total	16,98	14

Reverse: the name Bahram bn Ali is displayed. Both stars are in position but the upper star is only partly preserved. The flan (12 mm thick) has the double outer circles at both sides, it is broken probably also from reuse.

Bahram bn Ali and Muhammad bn Is haq are the recurring names in these silver coins from Unguja Ukuu and also from other Zanzibar collections of the old coinage. For example, the names are also known from a larger hoard of coins found at Mtambwe Mkuu on Pemba Island, in which 458 specimens of the former name and 459 specimens of the latter name have been reported (Horton *et al.* 1986, pp. 115–23). Dating of the coins has usually been by association with other material, as the coin-minting rulers of the early Swahili towns did not include date in the inscriptions of their coinage. Imported pottery or gold coins minted by the early Islamic Caliphates in the Middle East have conventionally been used as chronological markers for these local coins. Early gold coins reached the east African coast and other trading centres elsewhere in the world through a network that perhaps operated in two chief cycles, during the Abbasid rule (the late 8th to 10th centuries AD) in Arabia, and later during the Fatimid rule in Egypt (11th century AD). The local silver pieces are frequently reported in association with early foreign gold coins of the Abbasid period and date prior to *c.* 1000 AD. However, it appears that local rulers continued to produce silver coinage from 1000 AD to the Fatimid period when sgraffiato pottery spread and became the chief im-

port to the east African coast. The silver coins discussed from Unguja Ukuu date from Period IIa and are found in association with fragments of sgraffiato pottery from this site. The coins are therefore contemporary with those reported at Mtambwe Mkuu (Horton 1986).

I remarked (in Chapter 5) that the six old copper pieces are possibly coins formerly buried in that level of deposit and convey no chronological relevance to the deposit in layer 6 of Unit B. Such variety of coinage has great similarity to those known from other sites on the east African coast such as Tumbatu and Kilwa, and are therefore likely to belong to Period IIa. They have plain un-inscribed surfaces; possibly the inscriptions were rubbed off as part of a treatment for skin disease as suggested by later oral traditions collected from the people of Tumbatu.

The Chinese bronze coin detected from surface levels by electro magnetometer consists of a quarter fragment and belongs to the North Sung dynasty (960–1127 AD).

The relatively larger piece of recent copper coin (not illustrated) minted by Barghash bn Said (Zanzibar Sultan (1870–1888) appears to represent activity on the site during this time when the Arab house (now a ruin) was established.

Period IIb did not yield many artefacts as shown in the record of stratified deposits. Few examples assumed to be products of this period include a medallion, a cross and a copper nail (see Fig. 7.5.1 Nos. 15–17).

7.6 Miscellaneous objects

7.6.1 Objects of ivory

Very few objects of ivory have been found. These consist of two bracelets, one 8.86 gm (Fig. 7.6 No. 1), the other weighing 3 gm (not illustrated), and also a small fragment of elephant tusk as already mentioned. It is very likely that these are trade items originating from African mainland.

7.6.2 Grooved objects

Many grooved objects have been found from the site. Chittick (1984, p. 15) initially proposed that these were “bead grinders” but later admitted this is not to be a convincing designation for their function. Apparently, the shell beads linked to these grooved objects are confined to the early period, while the grooved objects continued for a long time in later periods. They could have been used for leather working (Sinclair *pers. comm.*). The grooved objects recovered from the site are mostly of imported pottery (Plate 7.5 Nos. 1–4). Ones of local pottery are less than 40%, and a few of these are sandstone (Plate 7.5 Nos. 5–6).

7.6.3 Terracotta objects

Two terracotta objects have been recovered and both appear to belong to Period II. One consists of a small, thick square and open container and brick red in colour. It has a shallow recess on top and a bulge at the center on the underside (Fig. 7.6 No. 2). The other (Fig. 7.6 No. 3) was excavated from Unit H. It may be similar to what Chittick (1974a, p. 429 Plate 165a) also found at Kilwa and suggested that it might be interpreted as a mould.

7.6.4 Stone objects

Few types of stone artefacts have been found from the excavations and these comprise two fragments

of chlorite schist vessels, pieces of slates, a quern and grooved objects.

One piece of the chlorite schist vessel (not illustrated) consists of a dark greenish grey body from a vessel with slightly out-curving contour and that was recovered from the broad excavation Unit I. This is apparently the usual type of vessel with a rim moulded in square fashion, or decorated with grooving and normally believed to have originated from north-eastern Madagascar. Chittick (1974a, pp. 421–3) suggested such examples that he found at Kilwa and Manda date from the 9th to the early 11th century AD.

The second fragment chlorite schist vessel is a partial base of an unusual stone jar that appeared in layer 9 of Unit B (Period Ia). This differs in shape and also in decoration from the common type. It is engraved with double circles and a dot at the centre (Plate 7.5 No. 7). No parallel of it is known from published sources on the east African coast. Soapstone vessels were traded between north-western India and the Persian Gulf through the town of Tepe Yahya before the 6th century BC and continued to be produced until the Islamic period, when communities in the north-east Madagascar imported the tradition of work (Vérin 1986, p. 29). This example comprises firm evidence for trade of the pre-Islamic period at the site. A distant parallel of the example in the decoration technique achieved by drill with a point and an outer tube is known from far sites in the Oman peninsular and in other Gulf countries where the form has been described as “short-canister-shaped” jar and some examples are provided with lids (Potts 1990, pp. 100–10). Miro-schedji (1973), who also illustrated this type of vessel (reproduced here as Plate 7.5 No. 8), has classified the vessels as *série récente* and dated them back to the 2–3rd century BC.

The slate consists of two smooth, grey-green fragments incised with three lines, which have been excavated from Unit I (Fig. 7.6 No. 4, Plate 7.5 Nos. 9–10). The function of these objects is not immediately clear.

The quern, indicating processes of grinding grain food, consists of two joining fragments of limestone recovered from surface levels in ridge area of the site (Fig. 7.6 No. 5).

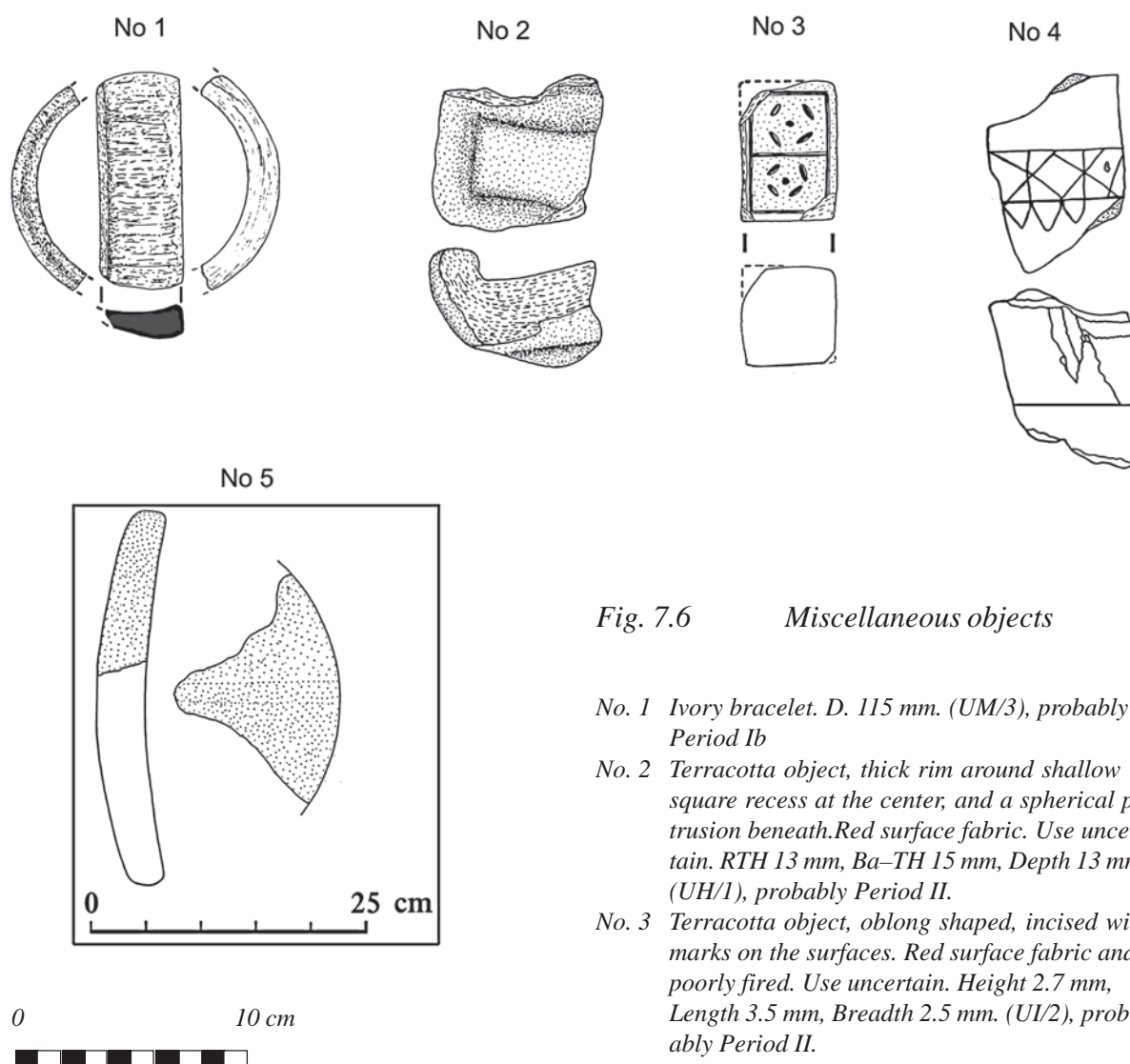


Fig. 7.6 *Miscellaneous objects*

- No. 1 *Ivory bracelet. D. 115 mm. (UM/3), probably Period Ib*
- No. 2 *Terracotta object, thick rim around shallow square recess at the center, and a spherical protrusion beneath. Red surface fabric. Use uncertain. RTH 13 mm, Ba-TH 15 mm, Depth 13 mm. (UH/1), probably Period II.*
- No. 3 *Terracotta object, oblong shaped, incised with marks on the surfaces. Red surface fabric and poorly fired. Use uncertain. Height 2.7 mm, Length 3.5 mm, Breadth 2.5 mm. (UI/2), probably Period II.*
- No. 4 *Slate marked with rectilinear incisions. Use uncertain. L 55 mm. (UI/1). (Plate 7.5 No. 9).*
- No. 5 *Rotary quern, a fragment of upper grindstone. Unstratified.*

7.6.5 Organic substances

Two kinds of fine organic substances were recovered in minute quantities from Later Period II. One consists of yellow platy crystals. I am indebted to Dr. Per Nysten of the Swedish Institute of Earth Sciences in Uppsala for identifying this substance as Auri pigment (As_2S_3), an arsenic ore usually used as a pigment. The identity and function of the other substance could not be established.

Overview

The evidence of glass vessel articles including perfume bottles shows that precious commodities were popular and also demonstrates the affluence of the early community. The few excellent early pieces from the Mediterranean and the bead evidence revealing the artistic lifestyles of the community both indicate the early external trade links of Unguja Ukuu. Molluscs dominating the faunal assemblages, together

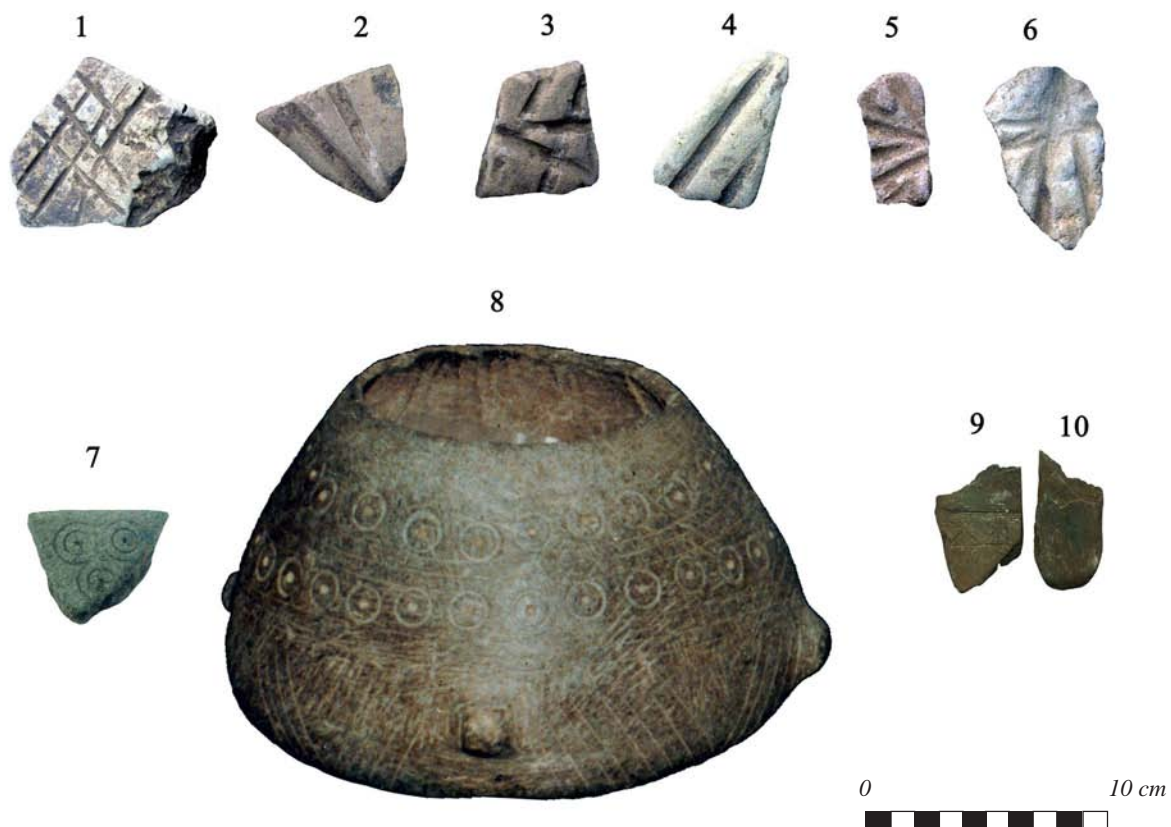


Plate 7.5. Miscellaneous objects

- No. 1–4 Grooved objects of sandstone, (UB/11) Period Ia.
 No. 5–6 Grooved objects made from imported pottery of fine, soft buff fabric. (UB/11) Period Ia.
 No. 7 Base of ancient chlorite schist bowl. TH 8 mm. (UB/9), Period Ia.
 No. 8 Chlorite schist bowl of the ancient time similar to the type represented by the base fragment (No. 7) reproduced here from Miroshedji (1973).
 No. 9–10 Fragments of slate, grey green in colour. TH 4.3 mm W 30 mm, L 40 mm, and about 13 gm. (UI/1) perhaps Period IIa. (Fig. 7.6 No. 4).

with inshore and pelagic species of fish show the importance of these marine sources to the diet of the coastal community. The wild variety of terrestrial animals from the forest and CLA show quite a wide range of wild animals available to the community for food. A more widespread forest has been suggested from the faunal evidence for period IIa.

From the evidence of iron material, I have suggested an intensification of iron working and hunting as well as a high occupational density of the site. The range of copper objects does not exclude the possibility of some items having been obtained through trade. Those produced locally illustrate the opera-

tions of copper, leather, basket and boat sail industries and provide indications of an interest in body decoration, and even spiritual needs in the case of the holder for incense burning. Inter-site relations and growth of trade have been suggested from the discovery of the copper coinage. Other objects reinforce some attributes already mentioned including the ivory bracelets exemplifying a concern for body decoration; the elephant tusk depicting late trade relations with the Mainland, and the grooved objects demonstrating leather working. In the later period, querns confirm the use of grain in the diet. Auri pigment was perhaps used for decorative purposes.

8. INTERPRETATION OF THE SITE

8.1 Introduction

This chapter discusses the nature of the settlement on the basis of evidence laid out in the preceding chapters. The discussion brings together the information on past environments that shaped the society and the evidence for development of specialist activities at the site. An attempt is made here to synthesise the results of the different investigative procedures used at Unguja Ukuu.

8.2 Environment

Cycle II communities initiated the major change in the region that shows the environment provides a crucial set of factors that guided decisions of early societies about where and how they could live. They expanded and colonized new lands in the central, northern and southern coast of east Africa and established settlements along the coastal plain and the offshore islands. Their north-bound movement was checked on the mainland coast, possibly by Galla pastoralists at the Tana River, but spread south to the vicinity of Zanzibar and as far as northern Mozambique. Agricultural sections of the community found areas suitable for production on the coastal plain while trade-oriented communities on the mainland aiming at higher profits selected locations such as river mouths and estuaries on the coast, convenient for long-distance trade and communication with the interior. Island sites were probably preferred for reasons of security and centrality within the maritime route system that provided easier and less costly transport.

Changes in sea level that peaked around 100 BC (Chapter 3) put large areas close to the present shore

under brackish water and could have instigated widespread resettlement. Cycle I communities like Rhapsa were apparently located quite far away from the present seashore (Casson 1989) and probably used inland watercourses or channels for access to the open sea. Reduction in sea level along the east African coast in the first centuries of the Christian era converted parts of the shore to dry dunes and sand spits, and the low-lying drowned valleys into estuaries. Models of precipitation history show that wet conditions prevailed during this period. Agriculture must have been very productive, as wetter conditions along the Tanzanian coast possibly increased the supply of ecological resources. This might have supported the revival of the transoceanic trade and the Later Horizon Cycle II urbanism. The pumice stones recovered on natural sand at Unguja Ukuu from Unit A may be a possible indication of these changes in sea level that influenced the environment and location of sites in the region. This evidence shows that the site is located to exploit the advantages of maritime trade during this time at the seaside on well-drained soils.

Different kinds of environment (Chapter 3) provided a basis for development of the traditional economy and evidence from the excavations suggests the importance of the environment. The occupants of the site participated actively in the exchange network and emphasized craft production that partly depended on resources obtained from the local environment. They also developed the subsistence economy by exploiting resources from the local environment. They used fresh water available at the surface or from wells in caves (Chapter 3).

8.3 The site and society at Unguja Ukuu

The low-lying area of the site contains extensive and relatively deep deposits mostly dating to Period I, suggesting that this was the locus of major activities and dense population during the primary occupation. Unit B reached a depth of 2.7m owing to the mound accumulation.

There is an interesting alternative viewpoint concerning the original inhabitants of the Zanzibar Islands. This relates to the recent evidence from the Machaga cave (c. 5 km from Unguja Ukuu) containing the Late Stone Age material. Shell beads, potsherds, animal bones including the remains of domesticated chicken and cat date to at least the end of the first millennium BC (Chami 2001b, pp. 84–97). The excavator has emphasized that the animals in the cave are more likely to have been consumed by prehistoric people rather than by animal predators. In addition, Chami (2001b, pp. 90–3) refers to an ancient historic source (Iambuluz) suggesting a hunting-fishing community on an East Coast Island from c. 300 BC that could possibly be Zanzibar. The community engaged in craft activities during this time and Chami has related this to the evidence of bone harpoons and needles excavated from the cave deposit.

The question is: how, if at all, did the prehistoric community become the primary inhabitants of Unguja Ukuu? Ingrams (1967, p. 70) speculated about the presence of a Neolithic community on Zanzibar, later replaced by Bantu speakers. So far, investigations on Zanzibar have not recovered any concentrations of Kwale tradition pottery similar to those known on the mainland (Soper 1967), e.g. at Kivinje near the Rufiji delta and on the islands of Kwale, Koma and Mafia (Chami & Msemwa 1997). Two potsherds noticed in the basal level of Unguja Ukuu possibly imply that the makers of the Kwale tradition pottery arrived ashore on Zanzibar, but perhaps they did not expand over the Islands, or the fragments represent residual vessels from the mainland conveyed to the Islands by an advanced party of the Later Farming community that initially joined the settlement. These are questions for future research and presently we must content ourselves with

the possibility that the descendants of the prehistoric society participated in the later complex developments at Unguja Ukuu together with people from other areas in the region and also from around the Indian Ocean.

The material culture of the site is undoubtedly an expression of the Later Farming community. The chronology derived from the radiocarbon determinations demonstrates their continuing presence from c. 470 AD. This provides a conclusive argument for rejecting the notion that Unguja Ukuu and other key sites in the southern part of the Swahili coast were founded by ex-pastoralists of the 8th century AD from the Lamu archipelago (Chapter 2). Foreign merchants might well have contributed to the development of the Unguja Ukuu settlement. It is most likely that these early discrete elements were gradually absorbed into the local population, as there is no evidence to suggest that such ethnic minorities preserved their identity over long periods. The earlier instance narrated in the *Periplus* that foreign merchants freely interacted with the local community sheds light on the amicable attitude of the early coastal societies, and provides no grounds to imagine that at this time local inhabitants denied new settlers from other parts of the Indian Ocean the right to settle if they decided to do so and abided by the local regulations.

Period Ia:

The results of the drilling and the excavations (11 m³ of deposits) indicate clusters of occupation during this period (c. 500–750 AD) and that the settlement covered about a quarter (4 ha) of the entire site.

This also suggests a smaller population than in Period Ib. It has been estimated from an ethno-archaeological model (see below) that during this period, the site had an adult resident population of around 1600 people.

The material culture shows a vibrant society and economy. Clay floors, traces of daub and intermittent post-holes observed from excavations are indicative of the structures and point to a building tradition of mud-filled timber structures. No further information was obtained on whether these were free-standing or aggregated dwellings.

a) Subsistence economy

The remains of fauna indicate the diversity of animals eaten to supplement the subsistence needs of the community and imply the acquisition activities involved, namely hunting in the surrounding CLA, fishing in the sea and husbanding domestic stock. The range of animals exploited includes marine fish and turtles, game from the forest as well as domestic cattle, ovicaprids and chicken. Evidence for fruits, vegetables, root crops, rice and other high-calorie crops has not been recovered. However, it has been shown that these and grain food are presently available and leave no doubt that the early society on the Islands and on the nearby mainland coast grew and consumed most of these crops.

Early cultivators certainly also produced food crops in the CLA in the vicinity of the site and quite possibly used a variant of the *kivungu* system of farming staples (Chapter 3). However, this form of shifting cultivation would have limited cultivators to engage in all year round agricultural production. Evidence shows that Unguja Ukuu was a smaller community during this period than in Period Ib, but that it was expanding and therefore presented growing demands for subsistence resources. It is not hard to imagine that neither wealth from commercial investment nor slave labour that was possibly available to the settlement could be efficiently deployed to intensify local agricultural productivity in such a low-productivity area as the CLA. Despite this element of insufficiency in the local economy, evidence shows that the community continued to expand in later periods. This reinforces the idea that intensification of the exchange sector was among the activities at Unguja Ukuu bringing in agro products from other areas of the Islands and possibly also from the mainland. Environmental conditions were generally favourable during this period. Precipitation prevailed in the region that nourished soils and boosted village food production over and above local requirement. The sea-faring community worked the supply lines in the coastal area while communities on the African hinterland and the interior managed the caravan routes. It is probable that the regional exchange network connected the agricultural production areas and supported subsistence requirements of the caravans and major coastal settlements such as Unguja

Ukuu. Hence, intensification of the exchange sector stabilized the supply system of agro products and supplemented the subsistence needs of local craft specialists.

Fishing is among the most important activities of the community judging from the large quantity of the remains recovered from all periods.

b) Craft industry

The significance of the non-agricultural sector is indicated by the unmatched quantities of articles and craft diversity reported from this period. The amount of craft material does not only imply household use but large-scale production, possibly geared to local use and regional exchange. The articles include shell beads as well as iron tools, weapons and other utility objects (84%). Abundant remains of iron slag (58%) parallel the volume of iron finds. The point that no remains of furnaces or tuyères turned up from the excavations may indicate a lack of smelting. Activities at the site might have focused on forging and distribution of finished products. There is a possibility that smelting was carried out elsewhere. It is not unusual for African ritual systems to feature a taboo that demanded physical isolation of smelting activity away from the gaze of productive women at the residential sites (Childs & Killick 1993).

The range of iron objects with a considerable representation of arrowheads shows that people had knowledge of iron that helped with forging and improving methods of resourceful exploitation of the local terrain e.g. fishing, hunting and farming. Technological diversification is indicated by the presence of non-ferrous metallic objects, almost all of copper (39%). The copper material also occurs in considerable quantities from this period and includes workshop debris, items for body decoration and for other functions. Lead is represented from this period by one fragment. Other craft articles not preserved in archaeological record undoubtedly served the economy and everyday life. These include wood, hides, boats for transportation as well as palm-woven products in which it is likely judging from ethnographic evidence that women played an important part in producing. Traditions emphasize the importance of training young girls prior to marriage to acquire a competence of making such articles for their

homes. Leather working suggested from the presence of the grooved objects might have been among those important craft activities.

The pottery of the Later farming community is predominant. It was the new standardised pottery during this period following the break of the Early Farming community networks that produced the earlier pottery tradition. A range of different shapes and elaborately incised decorative motifs occur. The forms include shallow bowls handsomely burnished with red or black graphite. The changes demonstrate the innovation for a widespread culinary preference of the people occupying the settlement. No pots clearly associated with ritual practices have been identified from the site.

The density of artifact debris recovered at Unguja Ukuu is remarkable. There are a number of pits containing dense concentrations of pottery, shell beads, bones, metal fragments and glass beads that indicate long-term use.

c) Exchange

I have already emphasized that the exchange system was probably significant for alleviating deficits of food in the settlement and securing raw materials for local industries. The coastlands furnished more or less similar products and African inland merchants injected into the regional exchange mostly the bulky raw materials for craft production, as well as the merchandise for direct trading. Ivory bracelets (Fig 7.6.1) recovered from this period are among objects from the African mainland that provide direct evidence of exchange with Zanzibar.

Exchange of this early period is not associated with coinage; apparently it operated through a barter system. Grain-food, shell beads, wires, and perhaps some of the imported items like glass beads and pottery may have been taken in as media of exchange. Perhaps cowrie shells were also collected for use as “money” and transported into the African interior, since such material is readily available on the coast. Clothing may be another product available from this period, being traded to consumers and circulated as an exchange product but that is not easily traceable in the archaeological record. Ceramic spindle whorls for spinning cloth from the wild cotton *Gossypium arboreum* are lacking from

Unguja Ukuu and the early levels of other coastal sites; these appear at other sites from Later Horizon sites of Cycle II from c. 1100 AD. Unguja Ukuu operated a coastal trade and the Mainland networks carried the exchange far into the African interior. It has been suggested that some cloth might have reached the east African coast through such inland system that connected the northern part of Africa at the Mediterranean basin along the Nile valley corridor (Chapter 1). Allen (1993, pp. 59–67) speculated that inland merchant marketed “misiri” clothing from Egypt, and the chronology of Unguja Ukuu supports his guess that this occurred from at least the 6th century AD. The practice of identifying the cloth variety by place of origin is reminiscent of the Swahili convention (19th century) of calling “*marekani*” the cotton fabric imported from the United States.

A great motivation for the revival of the exchange network and sites of the Later Farming communities was perhaps the changing pattern of the monsoon winds that bestowed a good moisture regime to the region and permitted the increase of agricultural and ecological resources. Trading with inter-regional networks provided communities sharing common cultural attributes glimpses of an avenue of broader economic opportunities, and this appears to be the principal motive for founding Unguja Ukuu. The Later Farming community succeeded to reorganize their settlement systems to take advantage of the new situation at sites such as Unguja Ukuu and others found in this period. It reflects the typical situation over centuries that might have continued to the 19th century parallels when Nicholls (1971, p. 23) refers to situation that the Swahili “largely depended on their function as middlemen” in articulating the exchange networks of the region.

Finds of glass vessels, foreign beads and other exotic objects in the basal levels partly indicate a trade motive. The items are found from this period in remarkable density (67% and 57% respectively). Glass pieces are mostly coloured. This is an indication of highly valued objects acquired by the inhabitants. Beads are other objects of high status and their different colours appeal particularly to women as jewellery on wrists, ankles, neck, head and round the waist next to the skin (Ingrams 1967, p. 311). The polychrome and eyed glass beads, etched car-

nelian bead, and the base fragment of a chlorite schist bowl with dot-and-double incised circles indicate not only that these are objects of value but that the site picked up the tail of an ancient exchange system. Reports in the Oman peninsula and the Arabian Gulf associate some of these objects with funerary contexts of the 2–3rd millennium BC (Vogt 1985, Vogt *et al.* 1987, p. 42) and it is perhaps reasonable to consider these objects as residual. It is remarkable that two small wheel-made pots comprising a red-slipped dish with a flaring wall, and a carinated cooking pot indicate Egyptian origin. The white-slipped, thin walled pottery is almost certainly also from the Mediterranean area. These are among goods from the classical world via the Red Sea ports traded on Zanzibar by either Axumite or Persian merchants who controlled the trade in the western part of the Indian Ocean at this time (Juma 1996). The local section of the network may have extended far south. Fragments of Early Farming community Monapo II pottery traditions known from Mozambique occur from this period along with some unglazed “egg-shell” and blue-green glazed wares.

The trade motive explains the uniqueness of the site location at Unguja Ukuu. Apparently, the basic ecological infrastructure with trade potential was needed for residential site and comprised a beach anchorage affording a rapid contact with the opposite mainland by boat, sandy terrain for physical convenience of living, and quite possibly located in close proximity to a reliable fresh water source. Matching these conditions, Unguja Ukuu served the region during this time as a node of trade; its location in the CLA landscape limiting year round agricultural productivity mattered very little.

e) Implications

Developments in Period Ia carry major implications for understanding the fundamental functions of the site. Despite ecological conditions of low agricultural productivity that circumscribed the community, archaeological evidence demonstrates a social system that succeeded and prospered.

Regional markets were necessary for articulating these networks. The exchange between the coast and the interior and also between the region and the Indian Ocean network provided a diverse range of

products. Unguja Ukuu has shown appreciable quantities of local and foreign objects, suggesting that the site optimised conditions of resource accumulation from the region. Few other sites are known from the coastal area during this period. These remained relatively small sites, indicating lesser involvement in the external trade through containing a comparatively small quantity of exchanged objects (Chittick 1974a, p. 483). The general indication suggests the probability that Unguja Ukuu grew up as a major market in the region during this period, redistributing goods destined to the hinterland and the interior. This required the site to have a considerable surplus of labour. Unguja Ukuu manifests this condition from the range of craft activities and other non-agricultural sectors. It is most likely that the slaves mentioned by Buzurg reached Unguja Ukuu via the regional network connected with the interior.

The wider networks not only supplied food resources and raw materials but also transmitted information, ideology, technologies and other cultural innovations (Blanton 1972, p. 15). Thus, these may have provided extra stimuli at Unguja Ukuu for the development of a complex social hierarchy and the ruling strata necessary to co-ordinate various social groups and other elite groups as well as the socio-economic functions.

A central hierarchy or ruling strata to control social relations and enforce political order would be necessary to co-ordinate the market workforce and other important functional relations of the site. The existence of an administration can be inferred firstly from the general organisation. The sheer scale of economic activities strongly suggests that such a central paramount authority was established. Secondly, the higher returns that spilled out from the wealth in circulation and increase in the output from craft production and transportation must have provided adequate stimuli for wealthy and elite groups to exercise their control over these sectors and consequently promote the growth of social hierarchy and differentiation.

The economic welfare from exchange, craft production and natural fertility observed from the site are opportune situations for the Unguja Ukuu society to organise itself around rituals of a ceremonial centre and animal sacrifices (Friedman & Rowlands 1982, pp. 212–6). The investigations at Unguja

Ukuu have not recovered any indications of elaborate ritual ceremonies, but this does not necessarily mean that they did not occur. The suggestion made on the basis of the place-name Unguja Ukuu (Chapter 1) considers that the site functioned as the primary ceremonial centre. The beads recovered from the site served as protective by some sections of the community. Oral tradition on Zanzibar has documented a ritual practiced until recently of leading a cow around the town before the animal was finally sacrificed (Pearce 1920). We also noticed the agrarian community ritual of “seating the spirits” in pre-colonial society when land in the CLA is prepared for cropping during the dry season. It seems likely that this was more elaborate during the pre-Islamic period. In addition, there has been a long sustained use of some underground caves for complex rituals that continued to the present (Chapter 3). The community quite possibly engaged in a cultic belief system that provided the basis not only for ritual and inspiration but also for the general course of communal action.

Social groupings of this time would have included the ruling elite, ritual leaders, merchants, transportation workers, artisans and their apprentices, as well as captured slaves. The inclination of the elite towards elegant and sophisticated lifestyles during this period can be seen from the luxury articles produced locally, such as bracelets, ear rings, necklaces of spiral wire and a small chain and other jewellery. Perhaps these are some status objects defining the wearer’s rank. The external network added other status-defining luxury items such as beads and glass vessels for domestic use. Some glass material consists of perfume bottles. Judging from the glass receptacles and one small copper object that I think may be an incense container, Unguja Ukuu society held fragrance in high esteem. The tradition of perfumed fumigation for fragrance has played an important part for instance in the highly urbanized Egyptian society for birth, marriage and funeral rituals. A small copper key, probably for a jewellery chest, is another indicator of the accumulated wealth that the elite community possessed.

The site has not demonstrated evidence of major break off in the functions during this period and the complex development continued through into Period Ib.

Period Ib:

Changes discernible from this period (c. 750–900 AD) include the size of the site and the building tradition. Surveys, coring and excavations have revealed an expansion of the occupation area (17.2 ha), suggesting a 75% increase of the site. On the ridge and the slope, erosion took its toll, but the stratigraphy is preserved in the lowermost level of the deflated profiles. About 15 m³ of cultural material of this period are spread over the entire archaeological site. Evidence for the introduction of stone buildings at the end of this period refers to the large building erected on the ridge at the eastern side of the site (Fig. 4.2). The structure reveals the elite’s concern for taking advantage of the new building technology in the region to enhance status and security.

a) Subsistence economy

The quantity and range of fauna recovered from Period Ib is smaller than from Period Ia. The basic subsistence economy apparently continued as seen in the occurrence of the small domestic stock. There is a notable lack of evidence for cattle in Period Ib at Unguja Ukuu that is also reflected in contemporary levels at Shanga (Horton 1996), but there is strong increase in marine turtles that have both food and exchange values. We also notice a general decrease in the range and quantity of terrestrial hunted animals. Fishing continues to be an important subsistence activity. Evidence for fruits, vegetables and other agricultural crops has not been recovered, but it may be assumed that such food resources including grain were available to the community. Intensification of the exchange sector to increase the flow of extra food resources to the site was critical during this period more than ever before, since it has been estimated that the population increase reached an adult population of about 4900 (see Section 4.3.7).

b) Craft industry

The general density of craft artifacts is lower, compared to the earlier period. This is obvious in the representations of iron (16%) and copper objects (10%) in the assemblages, despite the fact that a range of durable metallic articles has not been pre-

served. The density of iron slag is the lowest (18%) of any period. However, the community taste for artistry and rank definition continued, as indicated by articles such as spiral rings of copper wire for body decoration as well as industrial items such as round nails, that are well represented. Marine shell beads are represented in negligible quantities. A relative increase in the number of unrestricted pots observed from this period might indicate a greater interest in specialized food preparation.

c) Exchange

The slowing down of the internal output in Period Ib was perhaps due to the fact that the economy increasingly relied upon the African mainland for most basic requisites such as feeding the local population, keeping up specialized activities and sustaining an elite interest in status goods and acquiring external trade products. The exploitation of turtle appears to be one of the important local activities geared to the external trade of the site. We noted from Al Jahiz that during this time, Unguja Ukuu exported slaves, ivory and ambergris; probably this merchandise was not all locally produced in Zanzibar. The organization of raids and wars of conquest might have become a permanent institution, suggesting the possibility that during this period, Unguja Ukuu was organized with a military that could also be used for territorial expansion, not simply for slave raising, but also for capturing and controlling some important centres of production, markets and even the strategic trade routes on the mainland coast.

The external trade involved the use of gold coins from the early Islamic world. These did not turn up from our investigation of the site but were accidentally dug out from the site during the 19th century. We note the decline in craft output in this period. For example, the general quantity of glass beads had declined (35%) but we see the introduction of yellow beads, and a stained variety of coloured glass vessels. Blue and green ones were important, although the quantity (11%) and scope of colours available for these luxury items indicate a decline. A similar trend can be observed with most other items of interregional trade. The external trade might well have contributed to the decline in craft production.

d) Implications

Although the productive capacity of the site dropped during this time, craft production and exchange continued at Unguja Ukuu. These activities generated surplus wealth and reinforced the status of the groups in the upper levels of social hierarchy, enabling them to have a lavish lifestyle. The noticeable decline in the import and internal output of this period set against the expansion of the site and population is an expression of increased complexity that may imply a division of labour that relocated the centres for craftwork to elsewhere, away from the Unguja Ukuu site as the public core area for political functions, administration and defence. This must have overtly distinguished Unguja Ukuu as a seat of urban conduct with an aggregation of buildings, groups of immigrants bringing in the old coinage, a market for subsistence resources from the periphery, and providing services to the population within the site territory and beyond. All these are quite likely to have existed at the site during this time. The structures comprising mud timber buildings have not survived. The observed clay floors represent some of these site buildings and the high occupational activity is probably reflected in the numerous pits used for a long time and also the results of the phosphate testing. Only the remains of one large elaborate building have been observed from the excavations, containing an outer veranda that was built of stone at end of the primary occupation.

There is no clear evidence for ascribing the religious orientation of the settlement. If Shanga, a relatively smaller town, had a Muslim community from around the 8th century AD, it is probable that at larger site like Unguja Ukuu, the community had embraced Islam during this period, providing social unity and a code of conduct governing not only the religious practice, but also commercial transactions and other areas of daily life. The probability for an early mosque of a mud-filled timber structure can be deduced during this period from the remarkable successive cultural layers shredded with lumps of daub observed in Unit J between features J1 and J4. It was rather unsafe in the unconsolidated sand of the area to expand the excavation for detailed exploration. The spread of Islam during this period might imply that the pre-Islamic cult simply shifted away from the primary centre.

Unguja Ukuu was subsequently abandoned at the end of this period and the reason for this collapse is not very clear. The militarised state and social division comprising a complex dependency social structure of status groups reaping surplus wealth and engaged in a lavish lifestyle could have been a fertile ground for internal power struggles that destabilised the society leading to crisis, civil war and the final collapse of Unguja Ukuu. With the strategy of intensifying the exchange sector, the central bureaucracy could have heavily depended upon the externally oriented strategy to run the basic economy of the settlement and cover the expense of maintaining the status quo. Inescapable collapse could be triggered by persistent shortages in the supply line for resources such as food or raw material for keeping up some specialized activities or by an external assault such as launched by the piratical Waqwaq. One of these factors or a combination of them may provide plausible reasons for the demise of Unguja Ukuu.

Periods IIa and IIb:

Later periods (IIa 1050–1100 AD and IIb 1450–1600) are not the primary foci of this study. The cultural material occurs particularly around the main harbour and on the ridge. This represents a significant reduction in the spatial extent of the site when compared with Period Ib. The investigated deposits total 22 m³ from the stratified excavations. The material from these periods presents useful parallels to that of the earlier periods. It has been collected and analysed using the same approach as for the earlier material presented and will be discussed here to broaden our understanding of the site. One general problem is that the deposits of these later periods are distributed as lenses near and on the surface levels. Caution has been exercised to avoid suspected mixed contexts but no pledge of absolute precision can be given.

Period IIa is relatively brief and it is associated with a few events and a fragment of stone, Feature K2 that appeared from excavation of Unit K and which indicate continuation of stone building through this period. The complete skeleton of a juvenile observed in the basal level of the same excavation, Feature K3, has been attributed to this period.

Faunal evidence showed the continued extraction of resources from the sea, the forest and the use of domesticated animals. A fragment of grindstone associated with this period affirms the use of grain as food. This osteological evidence also provides some insight into the environmental conditions. Animals whose consumption is proscribed by Islamic region, such as rat, pig, monkey, and carnivores as well as forest animals such as birds, show a dramatic increase. This perhaps indicates an increase in forest. Among the remains of fauna recovered from this period is a tusk fragment indicating the continuation of exchange with African inland.

Numismatic evidence points to network connections in the coastal area. Four silver coins excavated from Unit J highlight the settlement relation with other sites. These silver pieces are associated with sgraffiato pottery, the chief imported ware of the Later Horizon (Chittick 1984, p. 79). Quite a few fragments of this ware turned up from the investigation of the site and reinforce the chronology of occupation for the site during the brief period of c. 1050–1100 AD. Two names of the minters identified from the coins, Muhammad bn Is-haq (three coins) and Bahram bn Ali (one coin) may have been among rulers during this period. Muhammad could be the grandfather of Is-haq bn Hassan, a ruler whose coin issues dominate in the collection reported from the Zanzibar Museum (Freeman-Grenville 1957). Unguja Ukuu is the second site in Zanzibar where silver coins have been found. The hoard of about 2000 specimens reported from Mtambwe Mkuu on Pemba revealed eight names, including the two names that appeared on the pieces found at Unguja Ukuu (Horton *et al.* 1986). Coinage widens the elite accumulation of power, as wealth in exchange like gold and other valuables could be received as money. The numismatic evidence corroborates a contemporaneous period of occupation for the two sister sites, where rulers of the period minted and exchanged the silver coinage to perhaps achieve this end, or the evidence may be simply an expression of regional activity.

Finds excavated from Unit C (c. 40 cm depth) are also associated with sgraffiato pottery. The large-sized bowl of local pottery that appeared from Unit C (see Plate 5.3) reflects the quantity since it is capable of serving many people at once. Thus it is dis-

tinguished it from bowls for everyday cooking or eating. This is a sign of a generous host indicating institution of the potlatch. Individuals took the opportunity to feast their neighbours in consequence of either successful seasonal surplus or simply to commemorate significant events in their collective life. Bowls that have bulges or reverse-curve neck are possibly braziers (Chittick 1974a) and express connections with rituals involving incense burning.

Period IIb refers to the last reoccupation period. It picked up the height of cultural revival of this time witnessed in many parts on the east African coast and marked by the rising trade with Cambay, best known from Mombasa, an amplification of the stone-carving tradition and monumentality. This period at Unguja Ukuu is associated with outgrowth of stone buildings, and also burials. The stone well still preserved on the site, and the fragment of stone mosque that Pearce (1920) reported possibly both belong to this period of the site. Village elders claim that “Wadebuli” built the well and the existence of a ruined Portuguese fort on the site. Archaeologists have not explicitly confirmed the Wadebuli tradition remembered from the oral traditions of people in the southern part of the Swahili coast, but historians have suggested that they were probably Muslims of Arab descent from Daybol or Bhanbore in India (Pearce 1920, Gray 1954). A metal cross (Fig. No. 7.5.1 No. 16) recovered from the deposits of this period may be possibly linked to the Portuguese presence.

A stone feature noticed from the upper levels of Units A containing coral blocks and traces of lime has been interpreted as representing the remains of a collapsed tomb, while that of Unit B has been interpreted as representing the stone mosque mentioned by Pearce (1920) and marked as such in the 1984 initial survey of the site.

Burials are associated with the same southern part of the site close to the main anchorage. The area is much disturbed, possibly by stone robbers, and it may be the result of activities ordered by Sultan Majid (1856–1870) to dig this area of the site in search of further gold coins (Pearce 1920). At least two human skeletons of Muslim individuals laid together in the same grave appeared partially exposed from a grave pit below the rubble feature in Unit A. Bone fragments gathered in the area further indicate that “the site of the mosque” was indeed used for burial. Out of 333 (2587 g) fragments recovered from the

site, about 84% are derived from the wide shallow excavations (Units F, G, H, I) and the upper levels of Unit-J in the area and the greater proportion of this consists of human bones. The burial of two people in the same grave is a significant observation and possibly a mausoleum rather than a simple tomb had been built over the grave, decorated with the fragments of Chinese porcelain bowls observed in the rubble (Fig. Plate 6.1 No. 1).

We may look for the answer of the mass burial from Muslim traditions which are explicit in that people who have died of epidemic or from warfare can be buried in the same grave (Juma 1996a). A regular-shaped hole observed in the skull of one deceased individual (see Plate 5.2) is possibly a cranial infliction caused in warfare. The grave is close to the mosque and the fact that a tomb was consequently built over it may suggest that the community attached some significance to the deceased person.

Implications

The stone relics observed from this period are mostly confined to the area close to the main anchorage, and do not in any sense suggest a widespread distribution of stone structures over the site during this time. It can be solidly maintained that most of the residential area as late as Period IIa were largely built with mud-timber structures. At the two different periods, the inhabitants of the site also continued to exploit the local environment.

In Period IIb, the increase of the forest might have produced bounties, part of which were gifted through the institution of potlatch reflected in the material culture. Ritual activity was important based on incense burning. In Period IIb, the reason for the abandonment of the site is apparent from the burial evidence.

Overview

The implications for the development of the site and the cultural sequence are apparent from its functions in different periods as discussed in relation to subsistence, craft and the exchange activities. The population estimates of the site provide a secondary index for assessing an increased cultural complexity of the site during the early periods of occupation. The broader conclusions of the investigations at Unguja Ukuu are presented in the next chapter.

9. CONCLUSIONS

In examining the general problem of the archaeological characterisation of early urbanism on the east African coast, this study has documented the non-stone primary occupation at Unguja Ukuu on Zanzibar and proposed an inferential approach for interpreting the former existence of urbanism at the site. This contribution has tried to bridge the intellectual gap in the methods used in previous studies of early urbanism that have focused on single decisive criteria, such as stone remains on a site (that may also be recovered from excavations) or particular ethnic agents in the past, supposed to have heralded changes leading to urbanism. The study has demonstrated the inappropriateness of using the physical form, the high density of structures for defining urban complexity in the Later Horizon Cycle II (the second millennium AD) or the earlier periods. It has been shown that scholars applying such criteria to the early period have unanimously assigned all sites of pre-stone phases of occupation in the region to village status. This study has avoided such an assessment at Unguja Ukuu and rejects in theory its application at other early key sites in the region, but has not ruled out its validity for the later period. The methodological contribution has also challenged the vague assumptions in the recent shift of attention to sites of non-stone structures but which do not give an intellectually satisfactory answer to the old suspicion that scholars have failed to recognize urbanism in the non-stone phases of occupation.

We can define a town as *a sizeable settlement unit of a stratified society that concentrates and centralizes resources and that has achieved a level of social and economic organisation per-*

mitting it to rely on relations of production beyond its immediate vicinity. A workable archaeological frame of inference for recognizing a town unit of settlement and developments of complexity beyond a village level proposed from this study entails the consideration of at least two sets of characteristic attributes. The first is examining the degree or concentration of resources in terms of functions and goods at the site. This draws on empirical observation of the changing character and composition of the deposits at the key sites of the Early Horizon Cycle II, revealing the effects of the concentration of resources and socio-economic functions at such loci in the region. At Unguja Ukuu, this observation was made on the basis of the surveys and drilling, and similar data is now available from other sites investigated in the region. The second component of an inferential frame for urban attribution admits the critical relevance of examining the dynamics of the site surroundings. This study has inferred this from the location of the early key sites in the region that contain fresh water sources but which are not necessarily located on land favourable for intensive agriculture. I have not suggested that the agricultural base is unimportant for the explanation of urbanism, but the sites that developed organisational and interactive capacity are located in areas where fresh water was available and had good access not only to strategic goods for trade, industrial raw materials and other items but also to additional agro-supplies if needed. The location of Unguja Ukuu and other key sites in the region verifies this point. The two sets of attributes suggested for urban attribution in the study comprise the minimal material traces, the

effects of which can be discerned long after the town is gone.

Another conclusion is based on an assessment of empirical evidence from different sites. It is possible that towns of the Early Horizon Cycle II were quite rapidly established, most probably as a result of expanding frontiers of trade matched by favourable local environmental conditions. The towns of the period, such as Unguja Ukuu and other important ones in the region were born out of the need to benefit from exchange rather than for agrarian intensification. At the intra-site level, such a conclusion is inferred from the distribution of the urban deposits in the lowest occupation levels of the sites. This has a corollary that the sites should not be interpreted as representations of urban transitions from village units of settlement, as the rapidity of the urban formation quite possibly limited the formation of any pre-urban archaeological deposits rendering them hardly recognisable.

Three principal aims were set for this study in assessing urban attribution of Unguja Ukuu as a site of the Early Horizon Cycle II based on the inferential framework outlined above. The study has achieved the aim of documenting the spatial extent of Unguja Ukuu and its functions. Results of the site investigations, in particular the drilling survey, have provided a firmer basis for determining the depth and lateral extent of the occupational deposits. This has provided a reasonable estimate of the occupational extent even of Period Ia (about 4 ha). The occupation expanded over time and subsequently covered an area of 17.2 ha (Period Ib). The site size estimates have provided indications that with the aid of ethno-archaeological data can be used to approximate populations for the primary occupations. In Period Ia, the site had a population of about 1600 adults and this expanded in Period Ib to about 4900 adult individuals.

Results of the excavations have provided data on the functions of the site useful for assessing its character. As discussed in Chapter 8, Unguja Ukuu concentrated a considerable amount of resources in terms of functional diversity and range of goods. Evidence from the subsistence patterns indicates a population that relied on a wide range of food acquisition strategies, and interacted with a variety of environments. Among the available evidence, pottery has

suggested specializations in food preparation. The technological base of the community was also diversified. It included skills of working with metals, especially iron and copper, shell beads, wood and palm products, hides and pottery. This indicates a marked division of labour as a significant component of urbanisation. The exchange system involved relations with the mainland and helped the accumulation of extra resources, skills and experiences, surplus wealth, luxury items and food and facilitated the participation of key groups of merchants and artisans as well as demonstrated a level of social and economic organisation beyond the site level. The subsistence, technological and exchange functions, and other activities relating to the construction industry, ritual organisations and the state administration, cover both the early periods (Ia and Ib). The existence of evidence for these functions provides a basis for ranking the site and shows that Unguja Ukuu was a locus of resource concentration and a seat of cultural conduct with a developed capacity to live in and transform the environment so as to satisfy social needs. Unguja Ukuu also certainly had a central hierarchical administration to manage the degree of the functional scale and organizational diversity as well as to maintain political order. Both the proximity to and the distance from the African mainland were important factors for the prosperity and welfare of the community at Unguja Ukuu.

In Period Ia, religious cults might well have occupied an important place. The town may have been centred on ritual also used in the reconciliation of social, economic relations and political allegiance between Unguja Ukuu and other production areas on the Islands and significantly, sites like Misasa on the mainland and others still unknown. The evidence from the site leads us to the conclusion that in Period Ia, Unguja Ukuu was an urban centre and a regional market that served the population within its territory and beyond.

In Period Ib, Unguja Ukuu represented a higher plane or limit of urban expansion overtly reflected by the settlement size and the estimated population and a different situation is now portrayed. It is likely that Unguja Ukuu was governed as a state with territorial interests during this period. The exchange was more commercialised, perhaps mostly incorporating food, products for foreign trade such as turtles

from the site and goods from the mainland. Formal currency was used; the previously reported foreign gold coins dating to this period at Unguja Ukuu provide the testimony. Perhaps as discussed in Chapter 8, slave raiding led to the administration becoming transformed into a powerful state. We do not know the impact of such activities on the hinterland settlements.

The second aim of the study was to provide a chronology of the site. This has been accomplished with the developmental sequence using mainly the imported pottery and the radiocarbon determinations. The town of Unguja Ukuu is dated from *c.* 500–750 AD (Period Ia) through *c.* 750–900 AD (Period Ib) with the later occupations *c.* 1100 (Period IIa) and *c.* 1500 AD (Period IIb). Period Ia marks the incipient wave of the early urbanism for the Early Horizon Cycle II (the second part of the first millennium AD) and a totally new chronological contribution to east African urbanism. Unguja Ukuu did not survive to the end of the Early Horizon Cycle II (1000 AD). It appears that the settlement was forsaken abruptly and perhaps it was assaulted. The Waqwaq failed to attack “Qanbalu”; they might have succeeded with Unguja Ukuu.

The third aim of the study was to suggest a conceptual framework for early urbanism on the east African coast that will provide a better comprehension of the African contributions to the economic and cultural developments in the Indian Ocean region. As coastal archaeology is breaking new grounds into the early period, it is no longer wise to ignore a careful integration of the information from other sources such as the available historical accounts into archaeological frames of explanation. This leads to a better comprehension of early urbanism as a broad based and ancient development. Information from such sources has been used in this study to help reconstruct early urban development cycles in the region that theoretically bring archaeological sites such as Unguja Ukuu and other key sites of the east African coast into a broader urban matrix of the west-

ern margin of the Indian Ocean. Some pottery, stone vessels, and glass material and beads of antiquity recovered at Unguja Ukuu are identified as coming from India, the Arabian Gulf and the Mediterranean world, and even north-western Europe. This demonstrates the need to conceive and integrate our thinking about urban frameworks beyond the limits of the east African coast. A chronological framework of early urbanism has been suggested in the present study. The proposition links the classical sources and the recently-discovered archaeological finds on the Tanzanian coast with the more widespread evidence from the later part of the first millennium AD, modifying and consolidating the existing chronological frames of Kusimba, Sinclair and others. Further research on early urbanism is needed to integrate the Indian Ocean region and the African interior.

The proposed framework of archaeological inference comprises general sets of criteria that may be tested on early key sites in the region from the northern to the southern parts of the coast, on the archipelagos of Zanzibar, Lamu, Comores and Madagascar. Using the inferential framework, the villages of sedentary communities and camps of hunting band communities are small-scale settlements units (Smith 1972; Hirth 1978) that can be reasonably distinguished from town sites of gateway communities on the east African coast. This is another sphere requiring conceptual refinement and more empirical research. The parameters of the site location and organisation derived in the present study seem broadly relevant, but these might be modified on the basis of future research. We have noted a relocation of the urban site system from the impact of environmental change for the Cycle I urbanism and also a shifting of the capitals on Unguja Island during the Later Horizon Cycle II, perhaps for security or other social reasons. All these fluctuations add to challenges that need to be carefully considered in formulating plausible archaeological approaches to early urbanism.

AFTERWORD

There is a general realization that archaeology can no longer be performed and understood solely for and within the academic world. The “Urban Origins Follow-Up” programme supported by Sida aims at engage the general public including children in archaeological investigations and to share the results of research leading to a more broadly based knowledge of past human cultures. This also offers an opportu-

nity to communicate the need for conservation and protection of the cultural heritage against destruction, through ignorance and neglect. The strategy for the Zanzibar project is to use results from the archaeological investigations at Unguja Ukuu for public education, involving organised site visits as well as producing brochures and books for adults and children. The archaeology of Unguja Ukuu in its local and regional contexts will be displayed in the museum constructed at the site.

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Appendix A

Type of soils at Unguja Island

Main type	Sub-type	Description	Distribution
Kichanga Mostly <i>Acrisols</i>		Poorly drained, takes properties from non-calcareous parent rock	Central part of Unguja Island, lower part of ridges, in shorelines
	– <i>Areni-Dystric</i>	Sand with 50 loamy soil	
	– <i>Rhodi-Haplic</i>	Reddish variety	
	– <i>Haplic</i>	Brownish variety	Unguja Island, upper part of slopes
	– <i>Ferric-Gleyic</i>	Imperfectly drained with blue-grey mottling	
	– <i>Cambic, Arenosols</i>	Sandy clays	
Kinongo Mostly <i>Cambisols</i>		Come from mature sequence. Rich in phosphates and these contain traces of Calcite	Unguja Island, on ridges
	– <i>Calcaric</i>	Shallow profile, around 500mm Brown (10R4/6) due to vegetative decay	In flat country, half-grass half-bush to the southeast Unguja and in upper slopes of the ridge
	– <i>Chromic</i>	Shallower profile, around 1000mm.	
	– <i>Rhodic-Ferralsol</i>	Deep profile around 3000–6000mm. Heavy loam, red (10R3/6) due to Kaolinite with traces of iron-rich Goethite. Weathered, perhaps of Late Tertiary time (about 10 million years ago). Has a uniform profile, content and minerals.	Western side of the Zanzibar Islands. Also found as low ridges on Unguja Island
Uwanda-Maweni <i>Mollic-Leptosols</i>		Humic, slightly alkaline & dark reddish in colour. Profile 300mm. Similar to Shallow Kinongo in other properties.	Coral limestone area (CLA) with bush and scrub on Unguja Island
		One vestigial member (Semi-Wanda) is dark brown.	In pockets on rocky areas of Unguja Island
	– <i>Rendzic & Lithic Leptosols</i> (Maweni).	Loamy, humic, dry, dark brown (7.5YR3/2) or black in colour. Neutral & sluggish, low content, detrital minerals, high exchange Ca content, high pH and organic carbon (10 or more). Clay content has 0.5 Brochmite, the rest is Vermiculite and Kaolinite.	
Kinamo Mostly <i>Vertisols</i>		Heavy sandy clays derived from marly parent material. Cracking when dry	Unguja Island, patches in the north and in other areas
	– <i>Eustric & Calcic</i>		Unguja Island, on the plain of Cheju in the north, as residual hills at Muyuni/Kizimkazi in the south
	– <i>Areni-Gleyic Cambisols</i> .	Protected from cracking when dry by a surface layer of sand.	High-ground areas with high precipitation
	– <i>Haplic & Gleyi-Haplic, Nitisols</i>	Not cracking when dry, high calcic content	Unguja Island north, on the hills of Pangeni
Bopwe <i>Ferralsol Cambisol</i>		Organic, homogenous, very fertile, reddish yellow in Colour. Profile truncated into thin coarse sand silts and clays due to restricted drainage. Contain some Goethite, pH 5.5–6.0	Pemba Island, on the plateau in the western hilly area

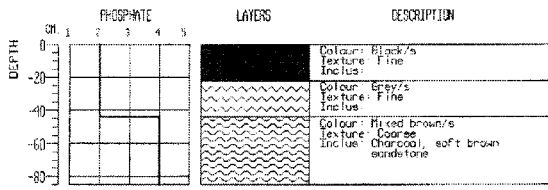
Type of soils at Pemba

Main type	Sub-type	Description	Distribution
Utasi. <i>Humic Cambisol</i>		Grey, sometimes with a brownish tinge Low organic content, pH 5.5. Clay composition containing much kaolinite, some round coarse.	Pemba Island, on the remnants of the plateau
	– Semi-Utasi <i>Dystric Cambisol</i>		Pemba Island, on undulating country to the east of the remnant plateau
	– Ndamba <i>Stagni-Dystric Planosol</i>		Pemba, level slopes, widespread
	– Mtifutifu <i>Areni-Dystric Cambisol</i>		Pemba Island. On low-level topography on whole block of high topography, northeastern and south of the Island.
	– Kinako <i>Vertisols & Gleyic Cambisols</i>		Pemba Island, eastern strip southern half of the Island the lowest part of the plateau between coral flatland and slope areas, in and around Chake Chake district.
	– Makaani <i>Mollic & Redzie Leptisols</i>		Pemba, pocket areas of coral stone on the narrow strip at the eastern side of the Island and on the north-western tip, on small out-lying Islands, and on raised platform of Pleistocene coral.

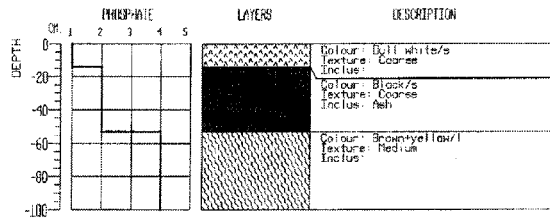
Appendix B

Phosphate values of the core profiles

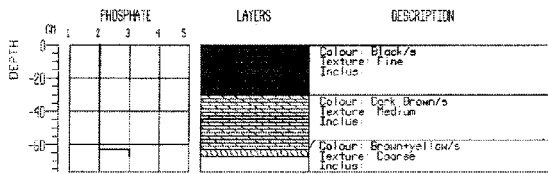
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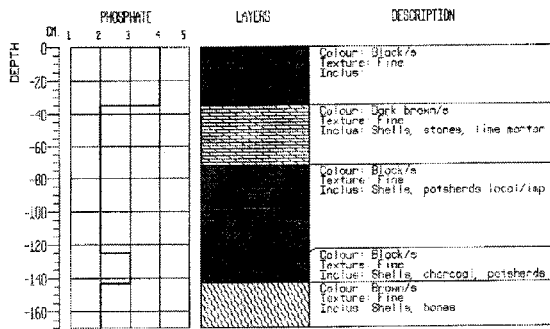
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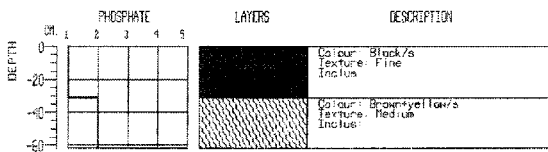
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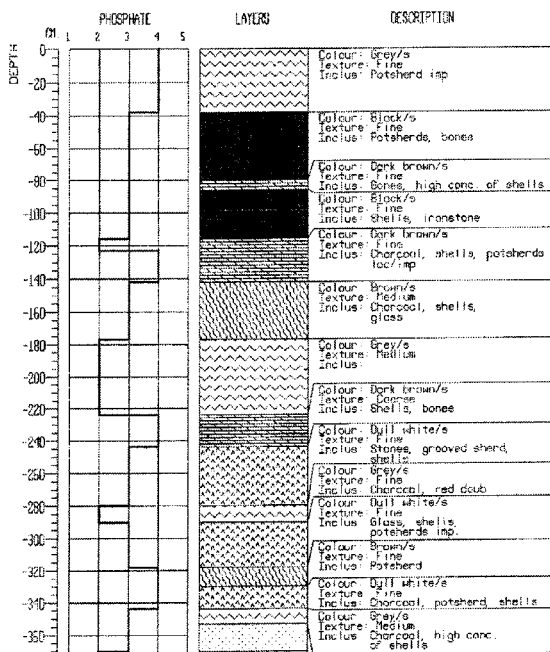
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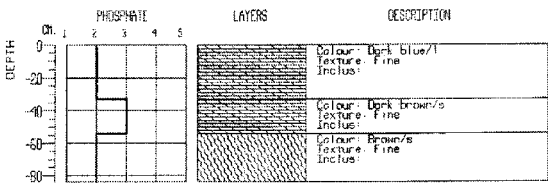
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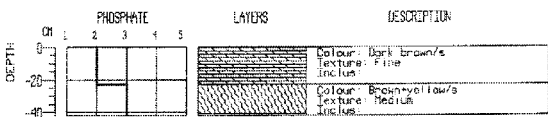
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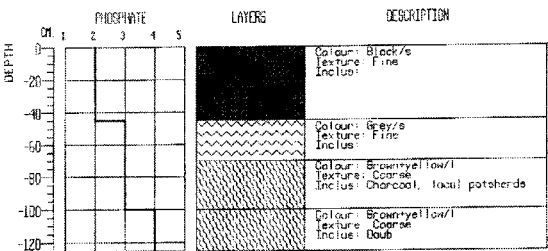
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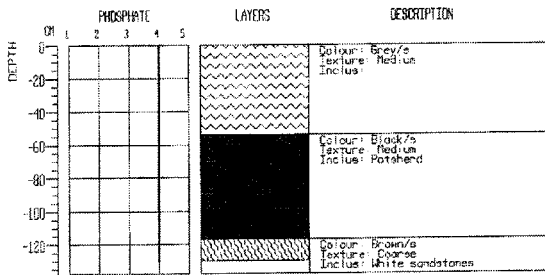
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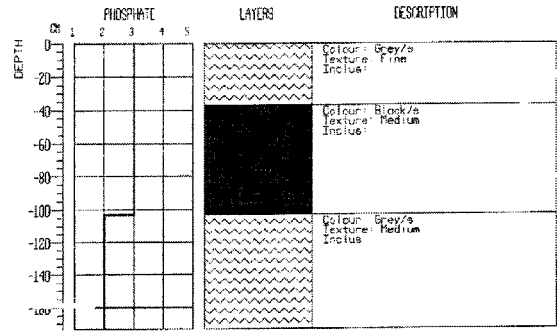
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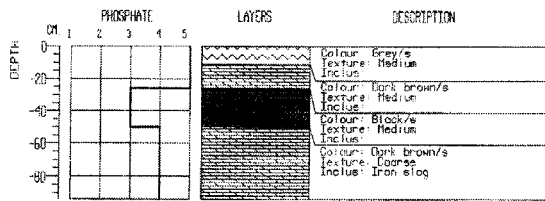
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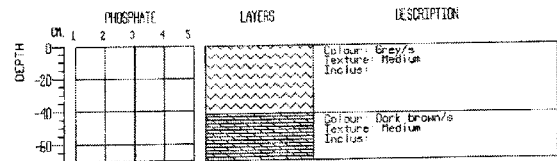
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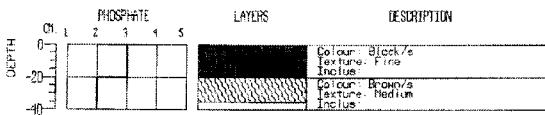
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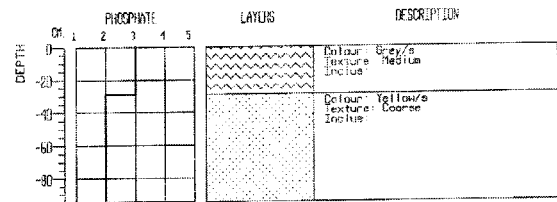
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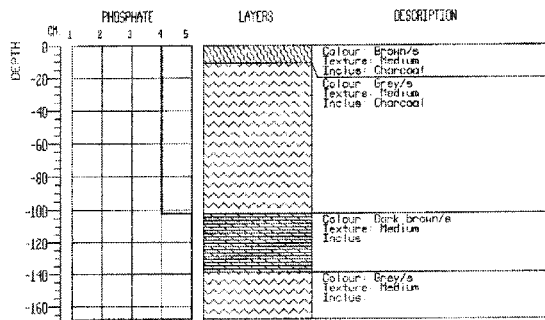
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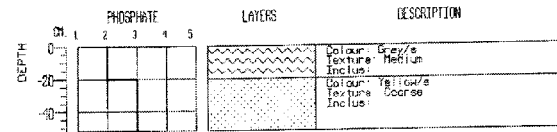
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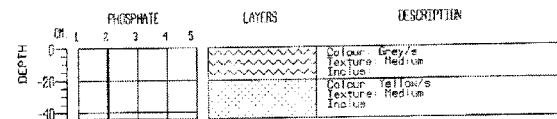
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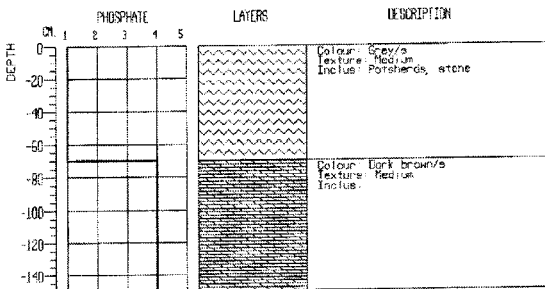
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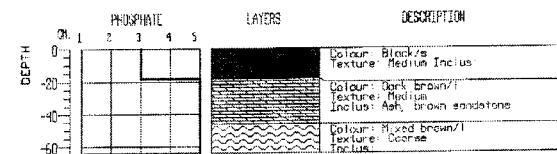
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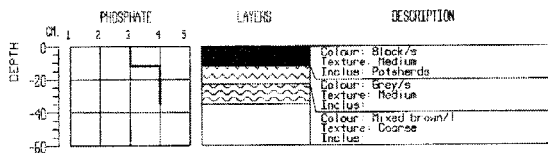
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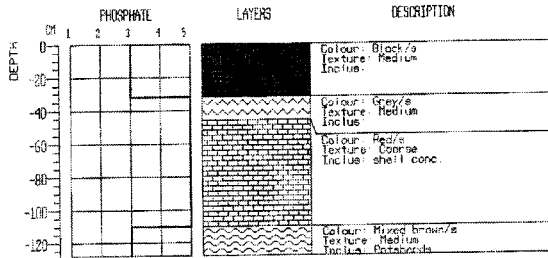
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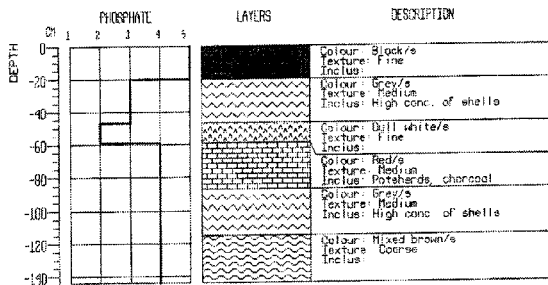
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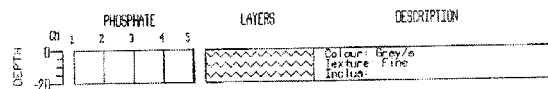
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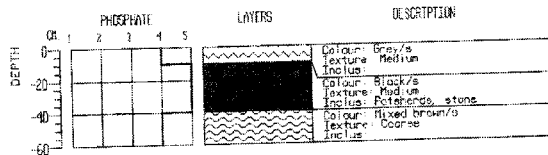
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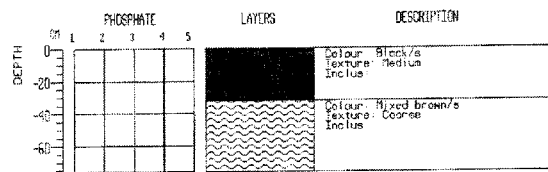
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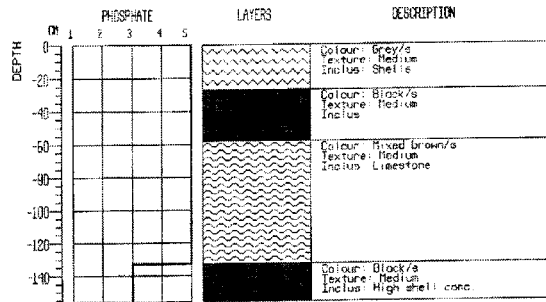
Core *26 N 930191 E 54143 Alt 917



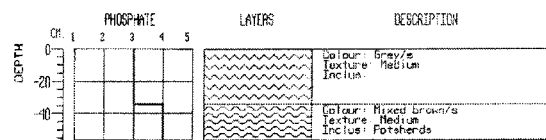
Core *27 N 930195 E 54143 Alt 905



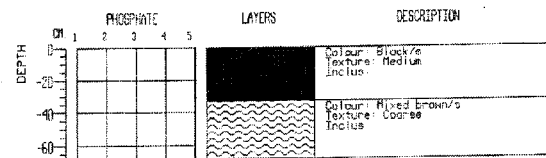
Core *28 N 930195 E 54141 Alt 856



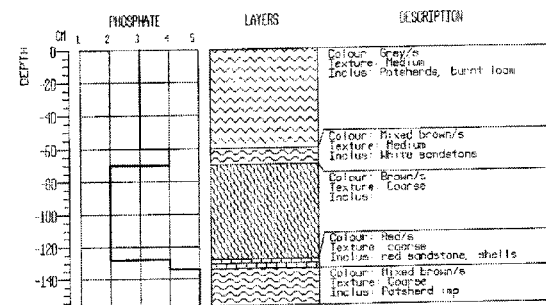
Core *29 N 930195 E 54145 Alt 938



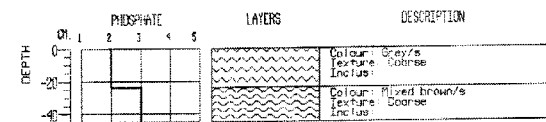
Core *30 N 930195 E 54147 Alt 971



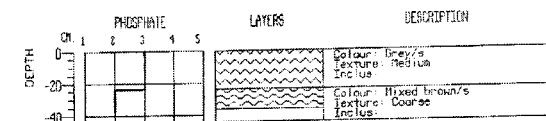
Core *31 N 930195 E 54149 Alt 979



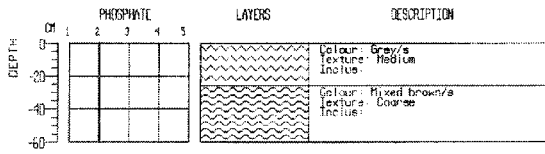
Core *32 N 930193 E 54149 Alt 1017



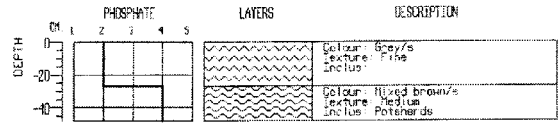
Core *33 N 930191 E 54129 Alt 1051



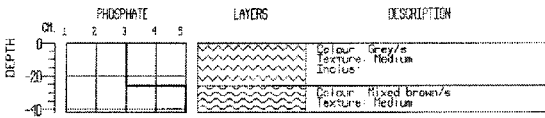
Core *34 N 930187 E 54149 Alt 1051



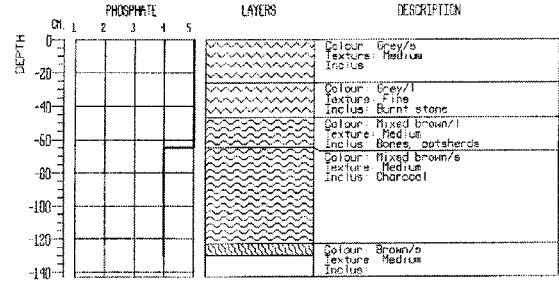
Core *41 N 930183 E 54151 Alt 921



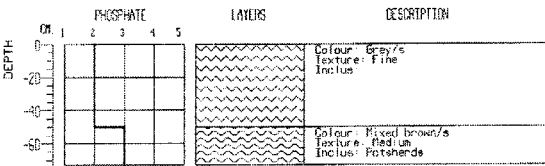
Core *35 N 930185 E 54149 Alt 1048



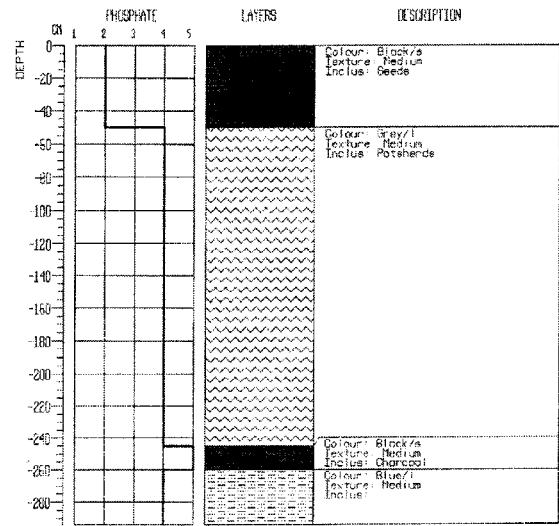
Core *42 N 930183 E 54153 Alt 584



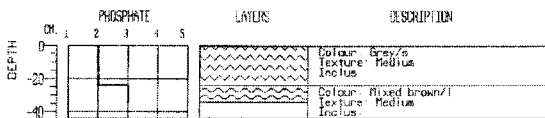
Core *36 N 930183 E 54149 Alt 1005



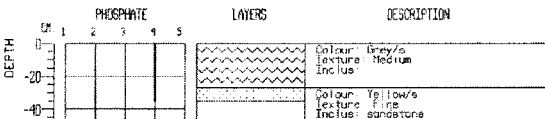
Core *43 N 930183 E 54153 Alt 400



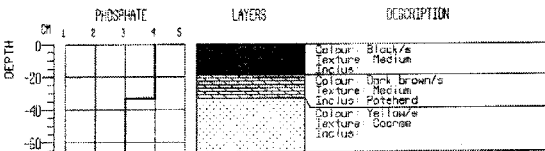
Core *37 N 930193 E 54151 Alt 1028



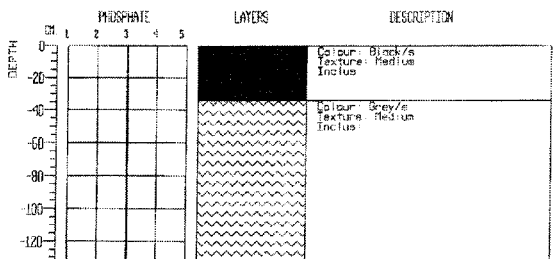
Core *38 N 930191 E 54151 Alt 1017



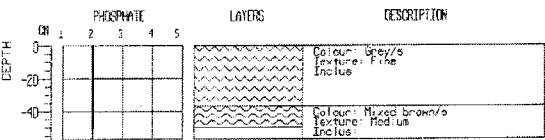
Core *39 N 930187 E 54151 Alt 1044



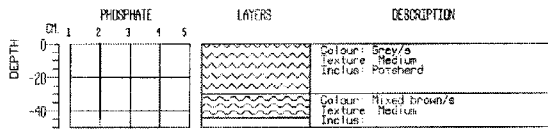
Core *44 N 930179 E 54153 Alt 261



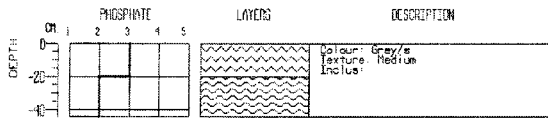
Core *40 N 930185 E 54151 Alt 975



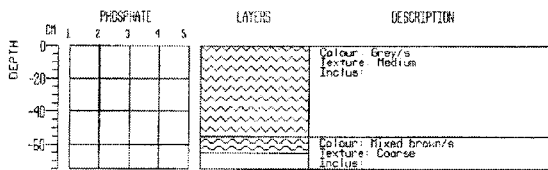
Core *45 N 930181 E 54151 Alt 801



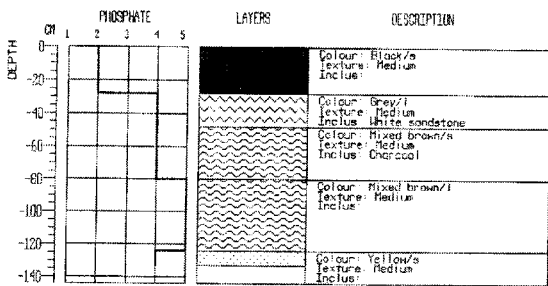
Core *46 N 930179 E 54151 Alt 656



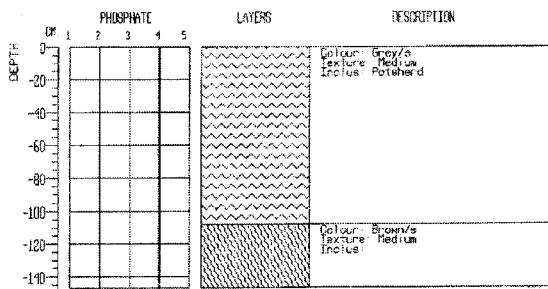
Core *47 N 930179 E 54149 Alt 775



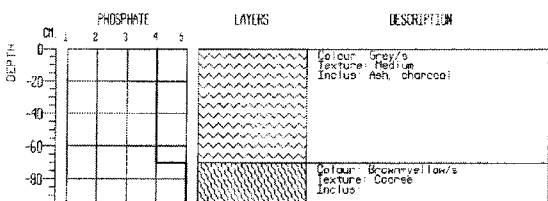
Core *48 N 930181 E 54149 Alt 839



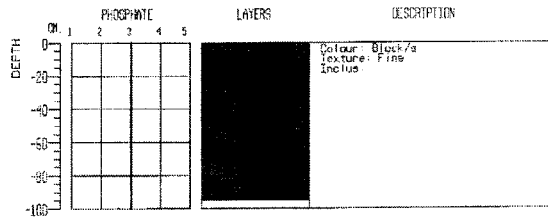
Core *49 N 930185 E 54155 Alt 396



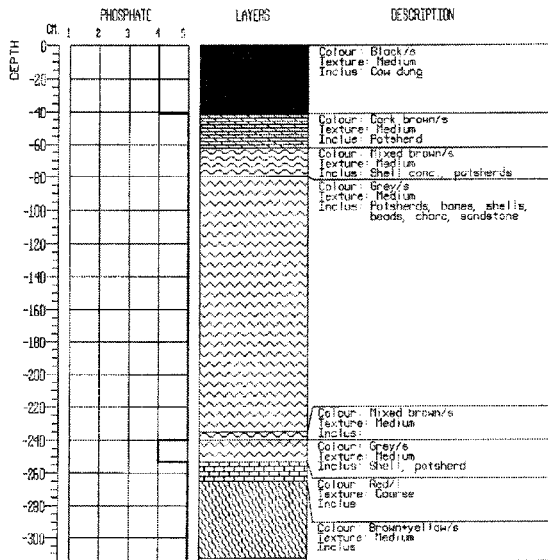
Core *50 N 930187 E 54155 Alt 491



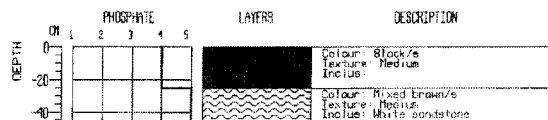
Core *51 N 930187 E 54157 Alt 290



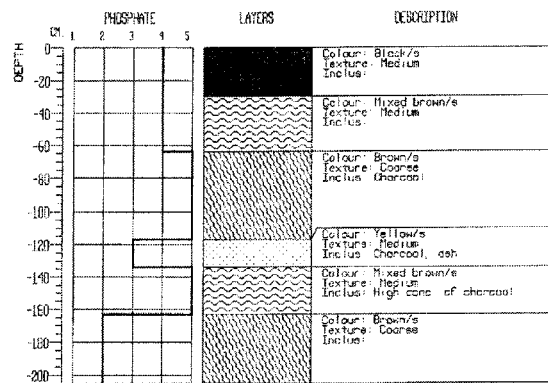
Core *52 N 930191 E 54159 Alt 532



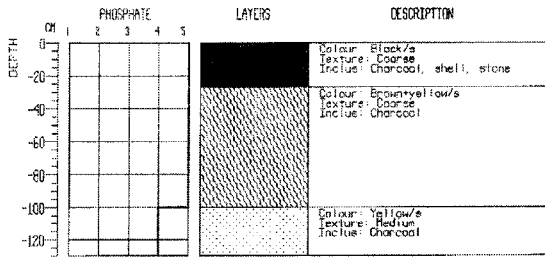
Core *53 N 930193 E 54147 Alt 1004



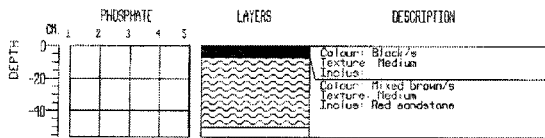
Core *54 N 930191 E 54147 Alt 1026



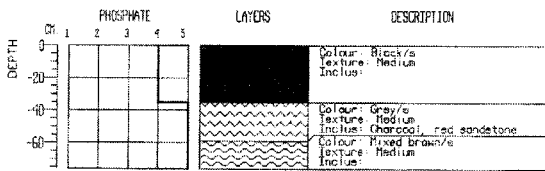
Core *55 N 930191 E 54145 Alt 921



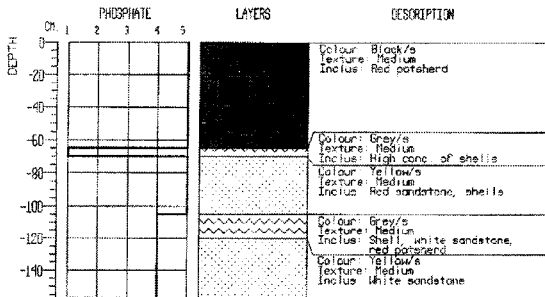
Core *56 N 930193 E 54145 Alt 934



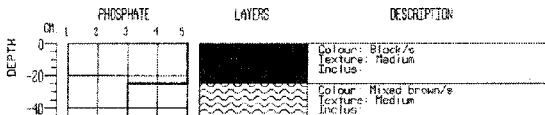
Core *57 N 930187 E 54147 Alt 999



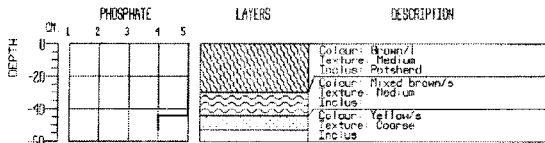
Core *58 N 930185 E 54147 Alt 999



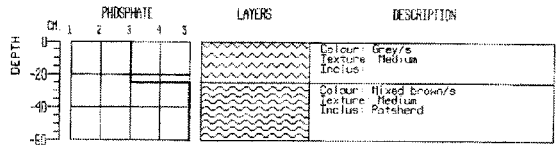
Core *59 N 930183 E 54147 Alt 969



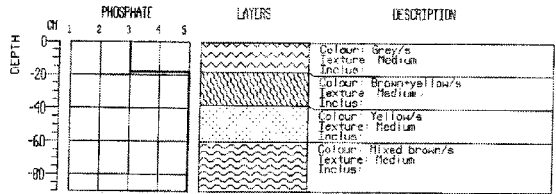
Core *60 N 930181 E 54147 Alt 891



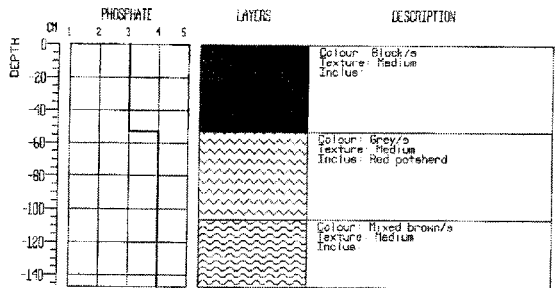
Core *61 N 930181 E 54145 Alt 853



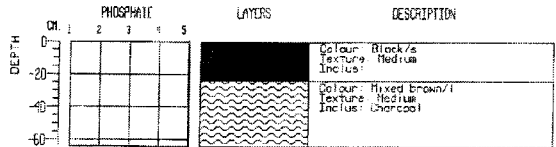
Core *62 N 930181 E 54147 Alt 814



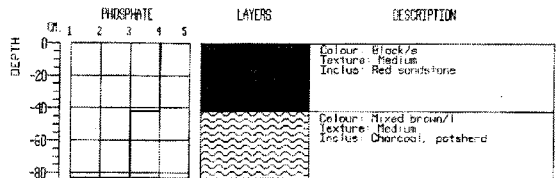
Core *63 N 930179 E 54145 Alt 795



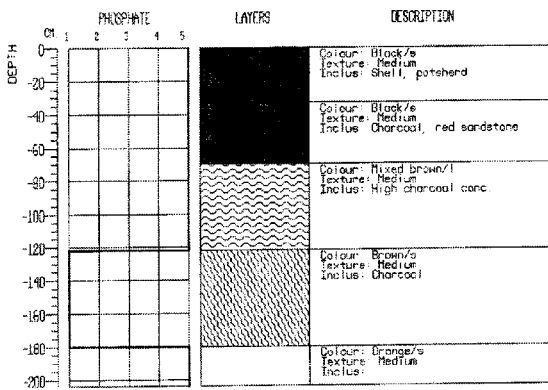
Core *64 N 930185 E 54145 Alt 962



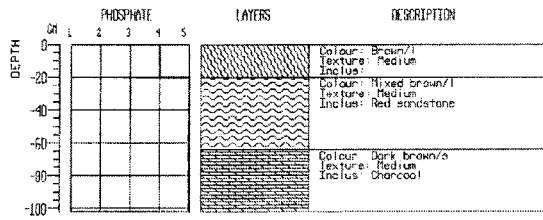
Core *65 N 930187 E 54145 Alt 929



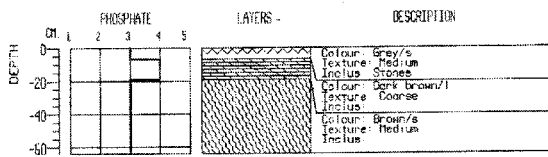
Core *66 N 930187 E 54143 Alt+ 831



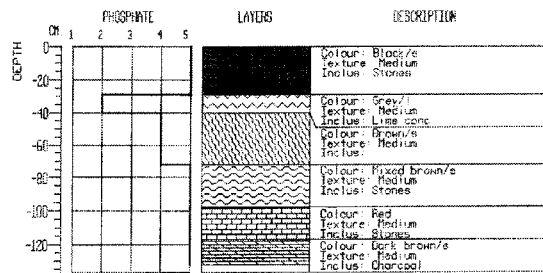
Core *71 N 930179 E 54143 Alt+ 731



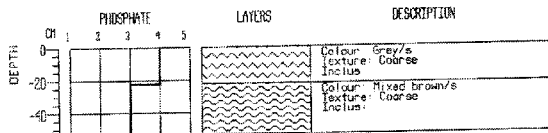
Core *67 N 930185 E 54143 Alt+ 945



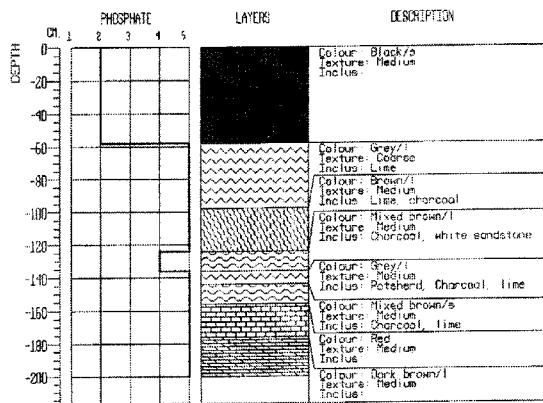
Core *72 N 930177 E 54143 Alt+ 570



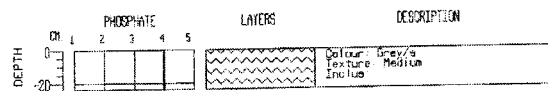
Core *68 N 930183 E 54145 Alt+ 911



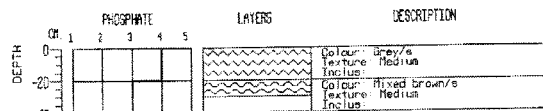
Core *73 N 930183 E 54141 Alt+ 636



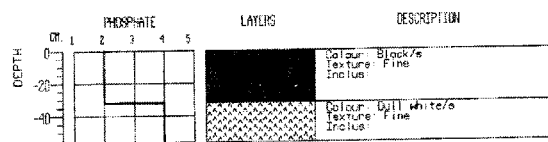
Core *69 N 930183 E 54143 Alt+ 754



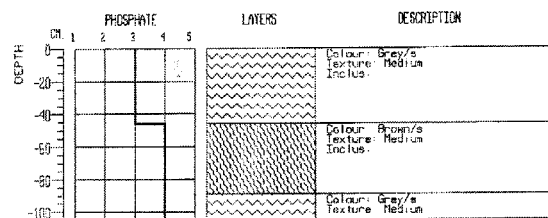
Core *74 N 930181 E 54141 Alt+ 697



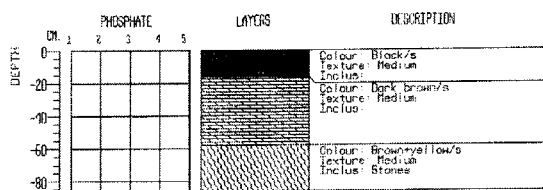
Core *78 N 930173 E 54141 Alt+ 345



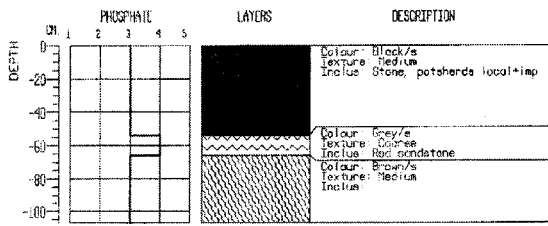
Core *70 N 930181 E 54143 Alt+ 773



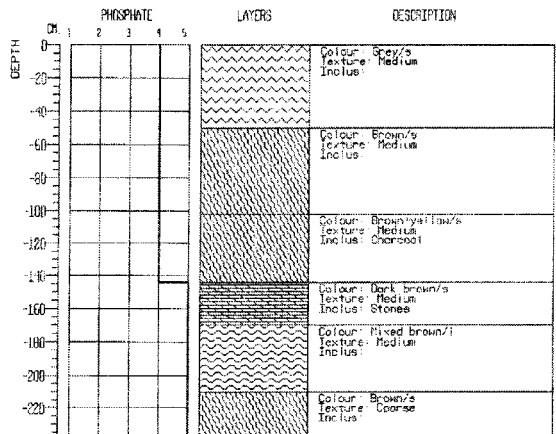
Core *75 N 930179 E 54141 Alt+ 563



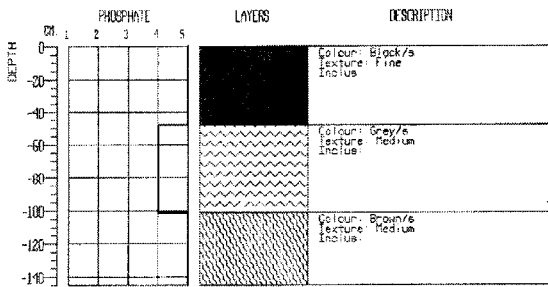
Core *76 N 930177 E 54141 Alt 470



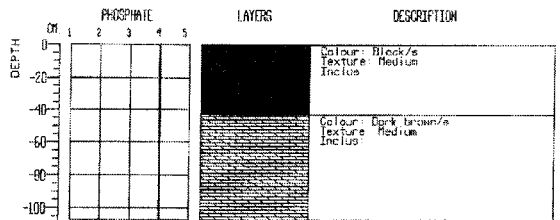
Core *81 N 930179 E 54139 Alt 469



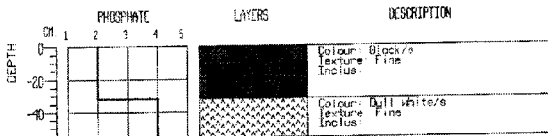
Core *77 N 930175 E 54141 Alt 403



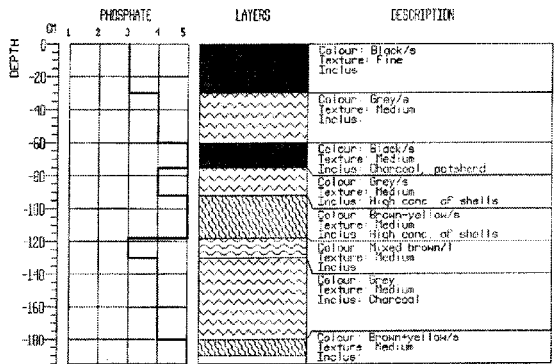
Core *82 N 930181 E 54139 Alt 500



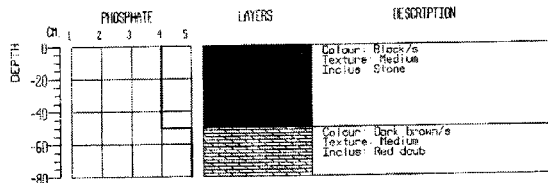
Core *78 N 930173 E 54141 Alt 345



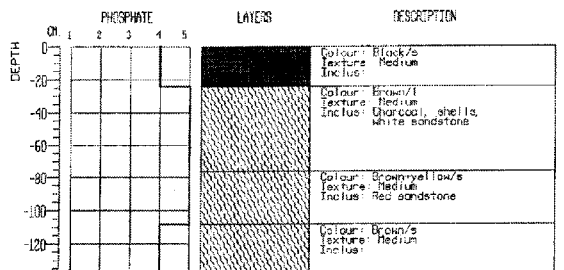
Core *83 N 930183 E 54139 Alt 551



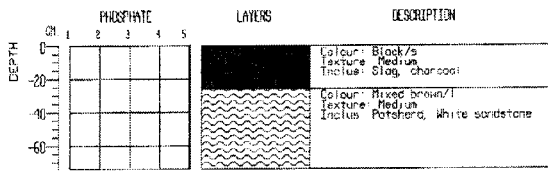
Core *80 N 930177 E 54139 Alt 388



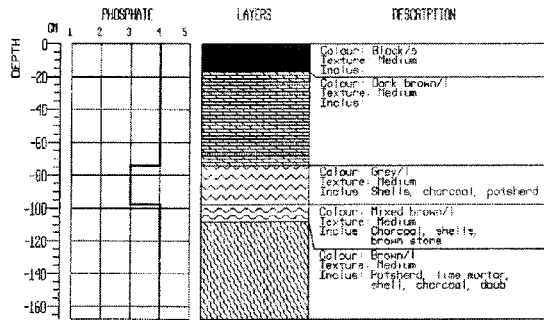
Core *84 N 930185 E 54139 Alt 607



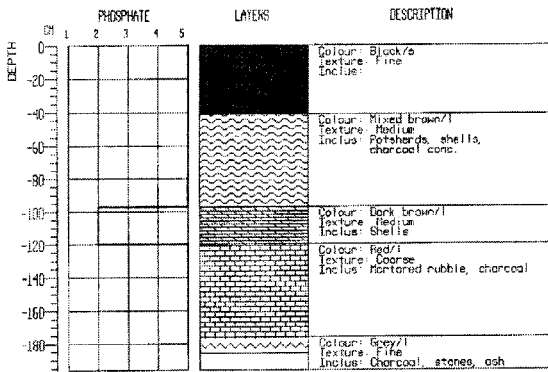
Core *85 N 930185 E 54141 Alt 718



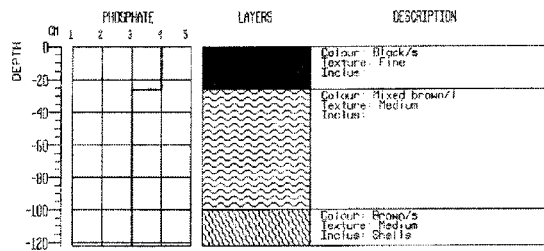
Core *90 N 930189 E 54137 Alt 612



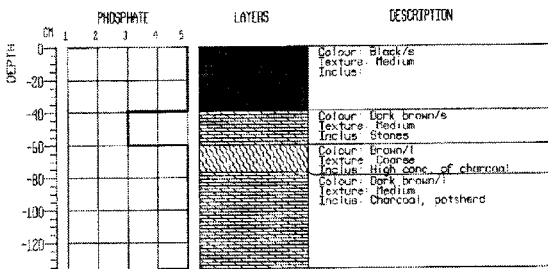
Core *86 N 930187 E 54141 Alt 713



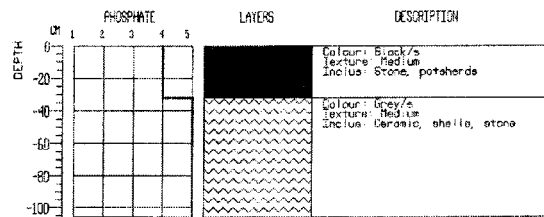
Core *91 N 930187 E 54137 Alt 578



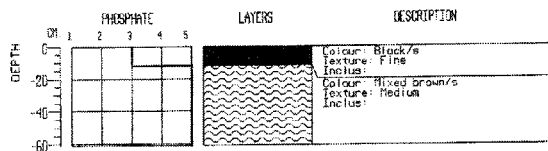
Core *87 N 930189 E 54141 Alt 757



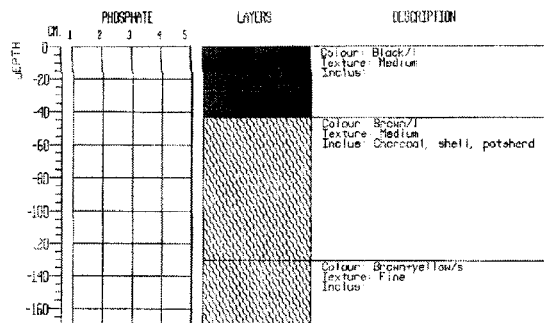
Core *92 N 930185 E 54137 Alt 578



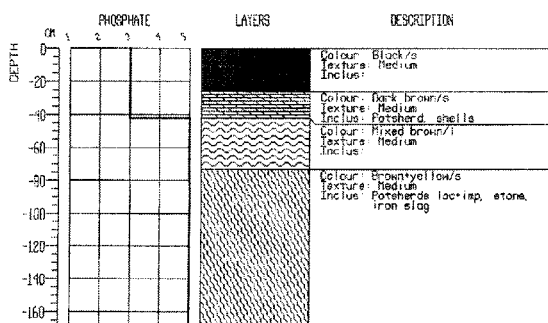
Core *88 N 930189 E 54139 Alt 678



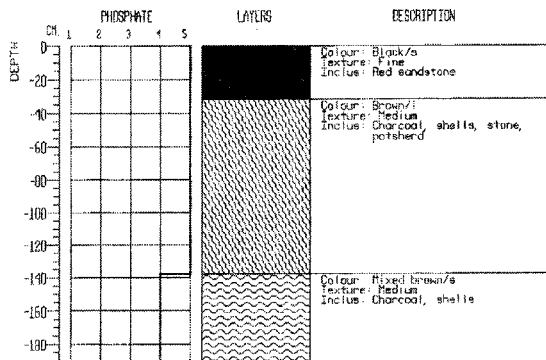
Core *93 N 930185 E 54137 Alt 517



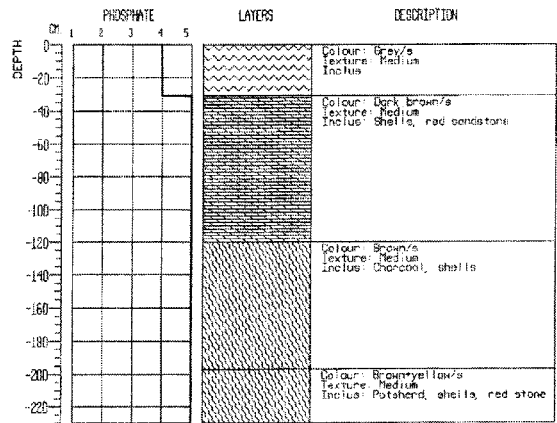
Core *89 N 930187 E 54139 Alt 643



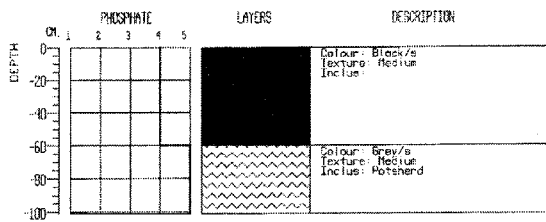
Core *94 N 930189 E 54137 Alt 468



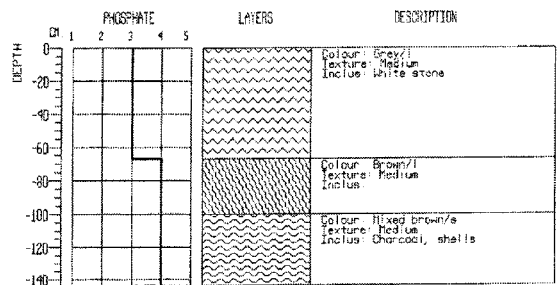
Core *98 N 930183 E 54135 Alt 494



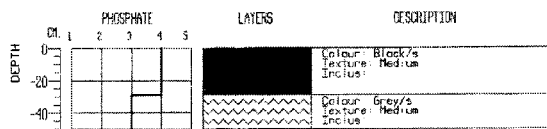
Core *95 N 930179 E 54137 Alt 388



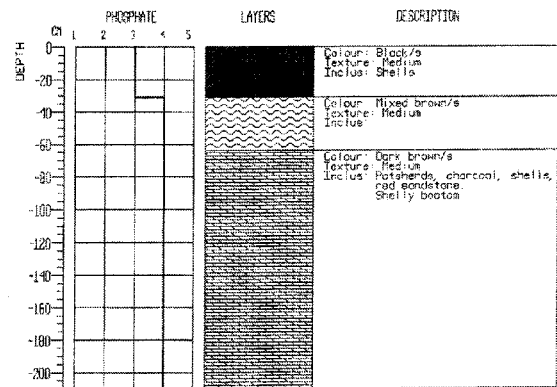
Core *99 N 930185 E 54135 Alt 481



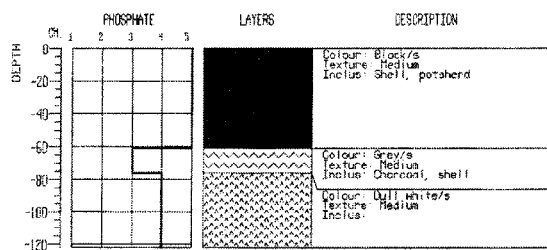
Core *96 N 930179 E 54135 Alt 324



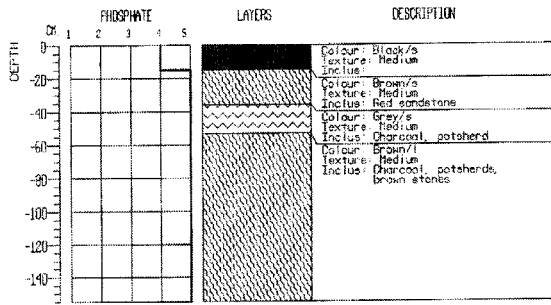
Core *100 N 9301872 E 541352 Alt 521



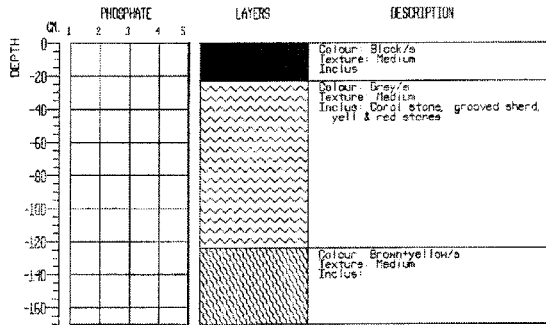
Core *97 N 930181 E 54135 Alt 325



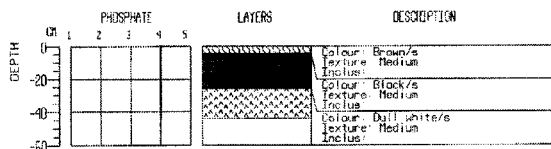
Core *101 N 9301892 E 541352 Alt 589



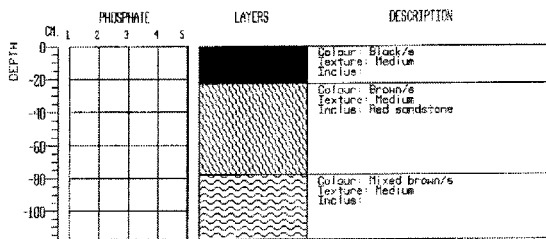
Core *107 N 9301852 E 541332 Alt 436



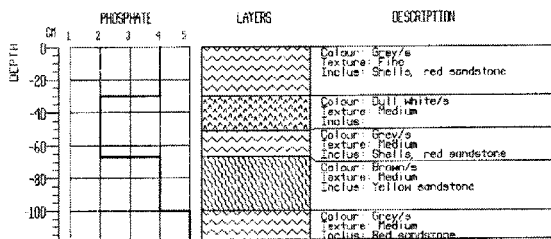
Core *102 Alt 345



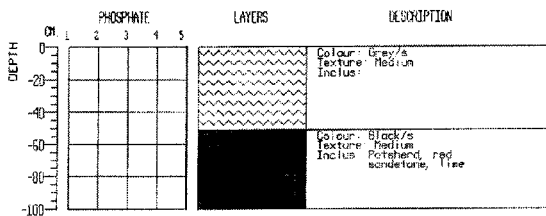
Core *108 N 9301872 E 541332 Alt 491



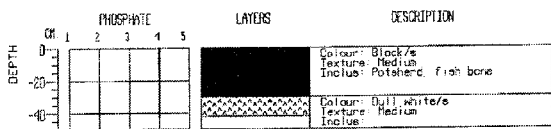
Core *103 N 9301832 E 541332 Alt 413



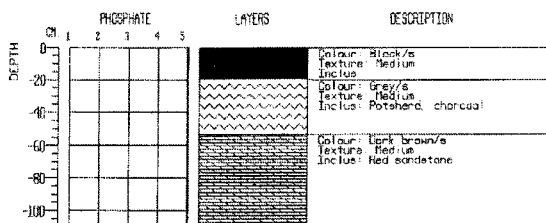
Core *109 N 9301872 E 541312 Alt 414



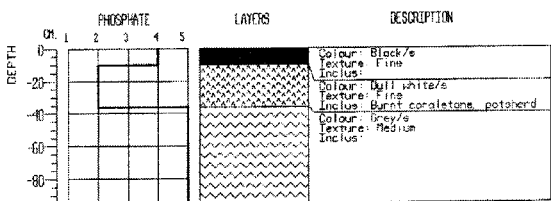
Core *104 N 9301832 E 541312 Alt 333



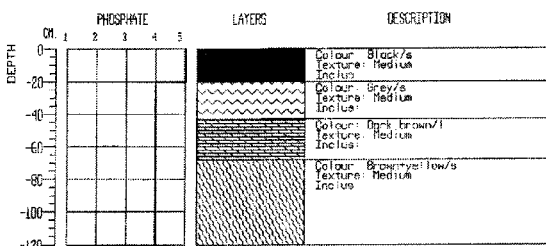
Core *110 N 9301892 E 541312 Alt 459



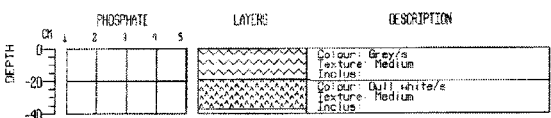
Core *105 N 9301852 E 541312 Alt 369



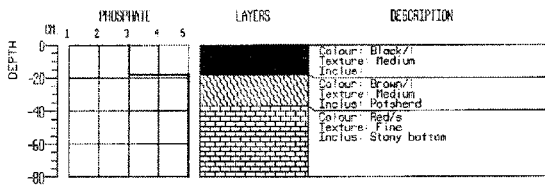
Core *111 N 9301912 E 541312 Alt 484



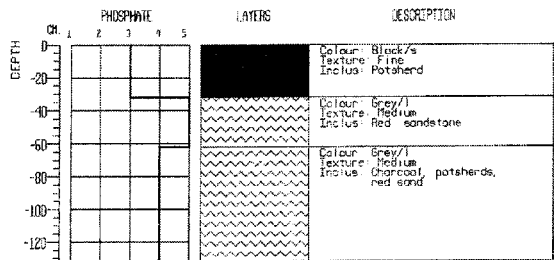
Core *106 N 9301852 E 541332 Alt 347



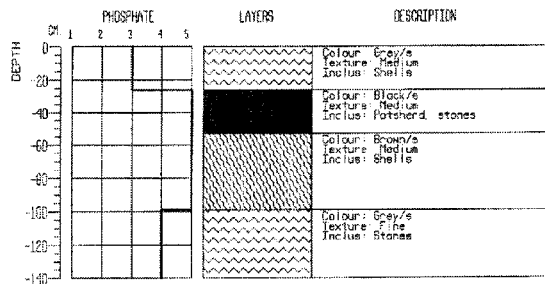
Core *112 N 9301912 E 541332 Alt 548



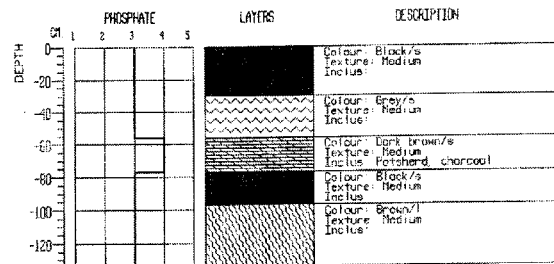
Core *116 N 9301872 E 541292 Alt 370



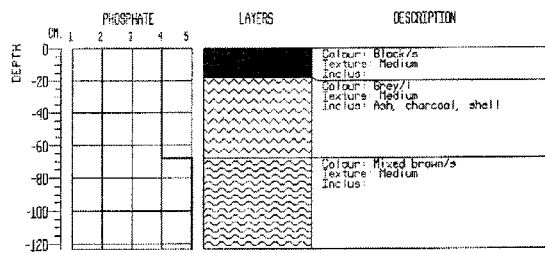
Core *113 N 9301912 E 541352 Alt 597



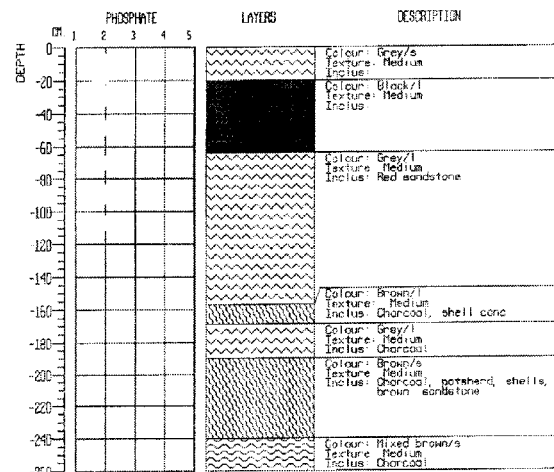
Core *117 N 9301912 E 541292 Alt 454



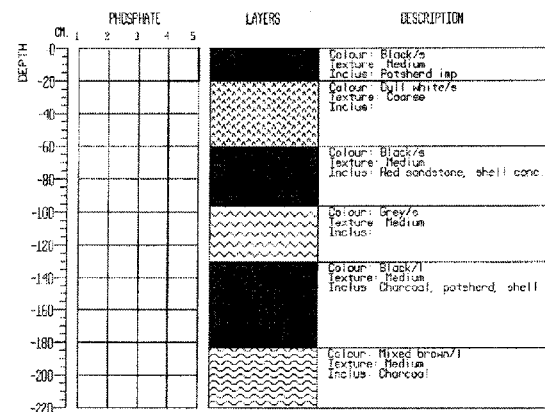
Core *114 N 9301892 E 541332 Alt 512



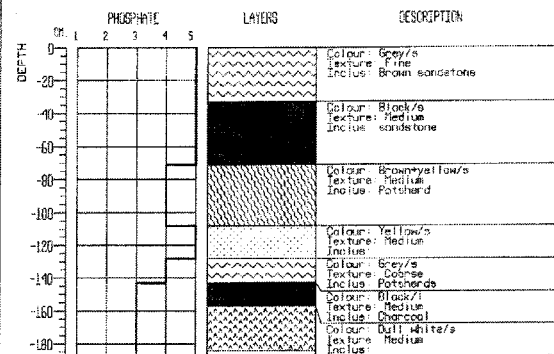
Core *118 N 9301912 E 541272 Alt 440



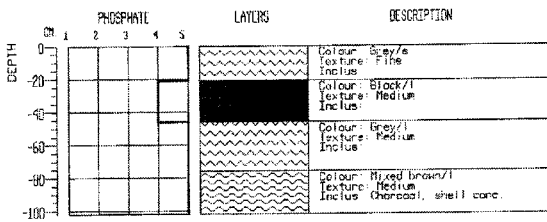
Core *115 N 9301892 E 541292 Alt 455



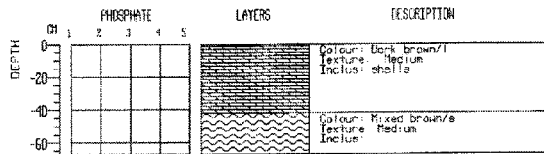
Core *119 N 9301892 E 541272 Alt 387



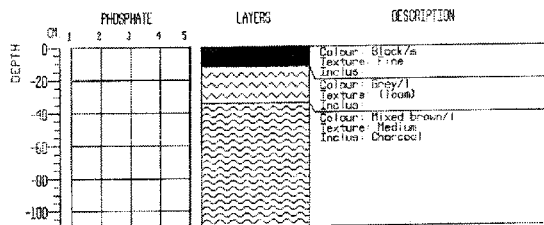
Core *120 N 9301912 E 541392 Alt 680



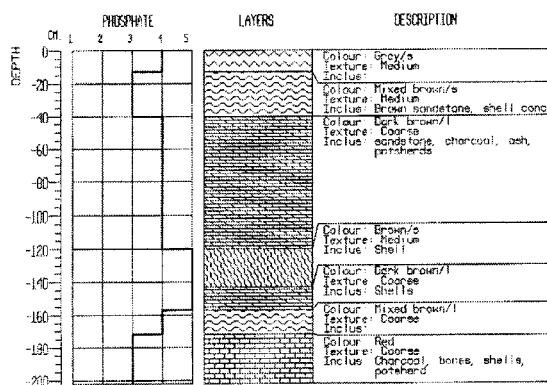
Core *124 N 9301952 E 541372 Alt 712



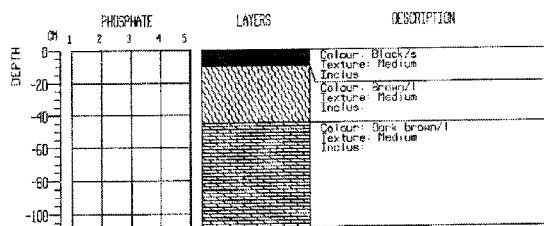
Core *125 N 9301952 E 541352 Alt 617



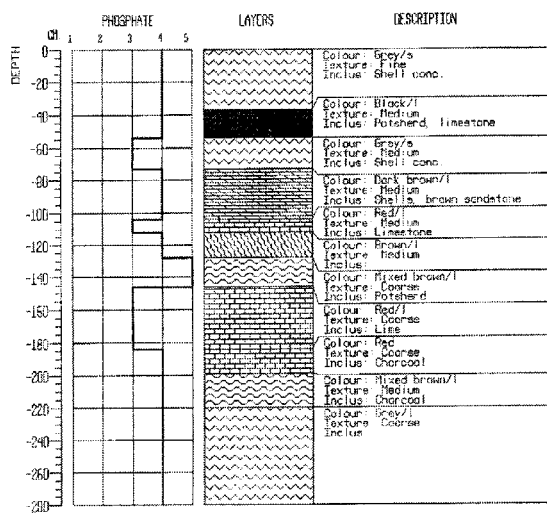
Core *121 N 9301912 E 541392 Alt 803



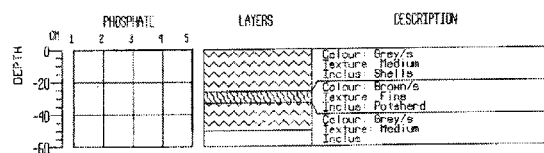
Core *126 N 9301952 E 541332 Alt 574



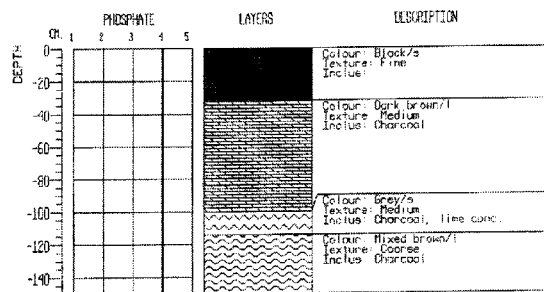
Core *122 N 9301912 E 541372 Alt 629



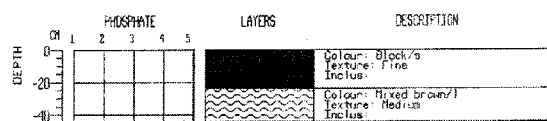
Core *127 N 9301952 E 541312 Alt 545



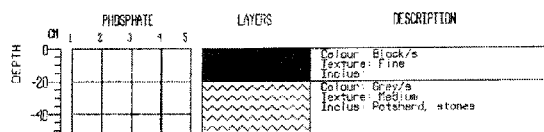
Core *128 N 9301952 E 541292 Alt 540



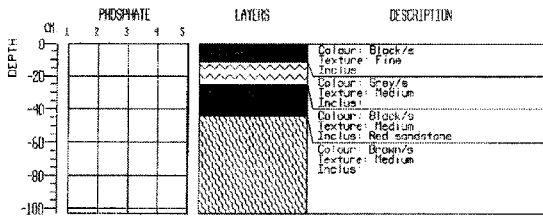
Core *123 N 9301952 E 541392 Alt 752



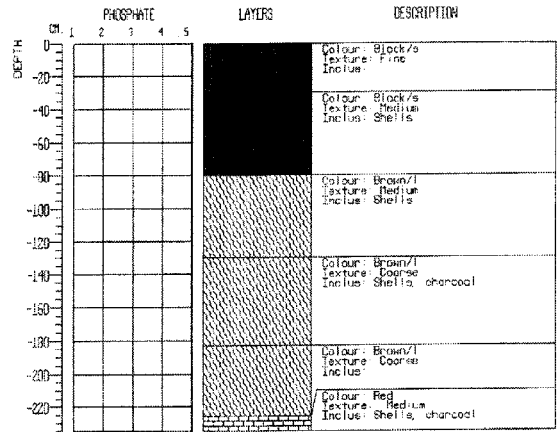
Core *129 N 9301932 E 541272 Alt 455



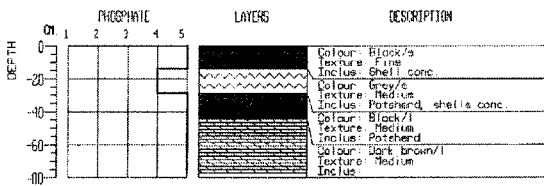
Core *130 N 9301932 E 541292 Alt 461



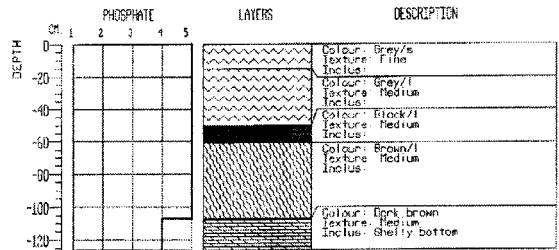
Core *134 N 9301932 E 541372 Alt 658



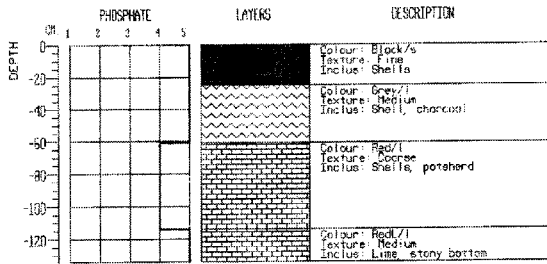
Core *131 N 9301932 E 541312 Alt 503



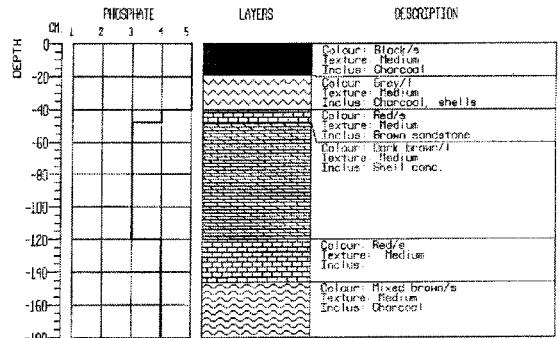
Core *135 N 9301932 E 541412 Alt 724



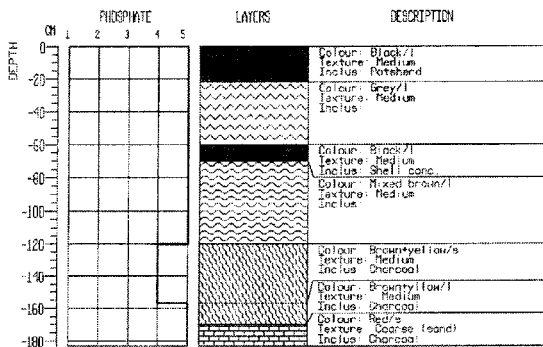
Core *132 N 9301932 E 541332 Alt 549



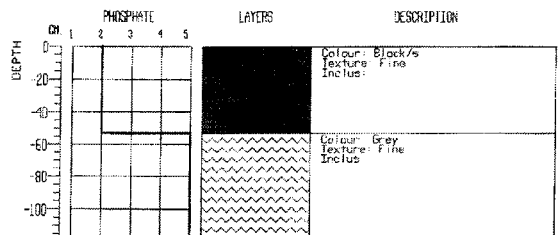
Core *136 N 9301652 E 541542 Alt 837



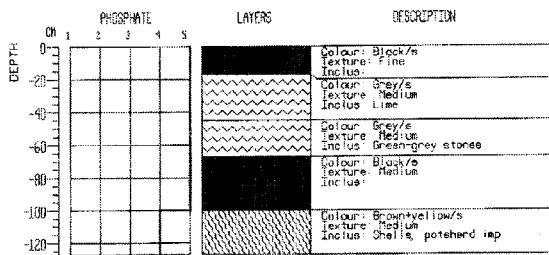
Core *133 N 9301932 E 541372 Alt 607



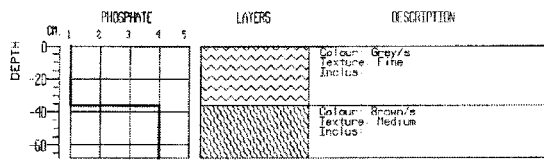
Core *137 N 9301652 E 541452 Alt 379



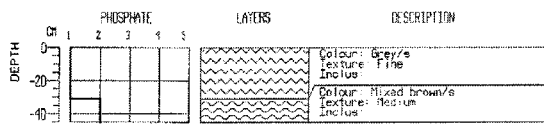
Core *138 N 9301672 E 541452 Alt 441



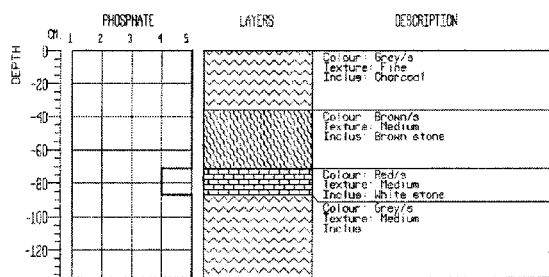
Core *143 N 9301732 E 541432 Alt 450



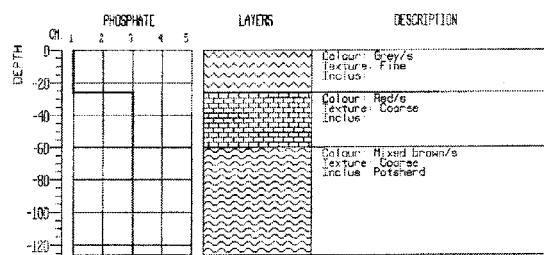
Core *144 N 9301732 E 541452 Alt 553



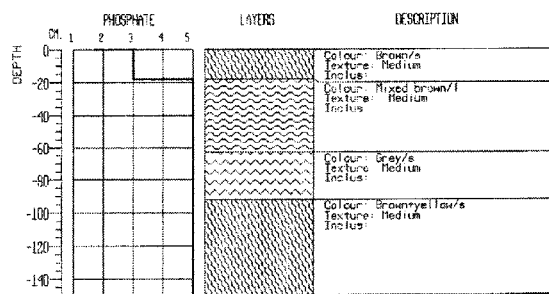
Core *139 N 9301692 E 541452 Alt 499



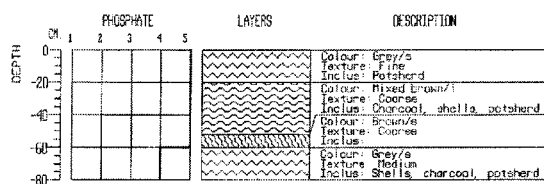
Core *145 N 9301752 E 541452 Alt 608



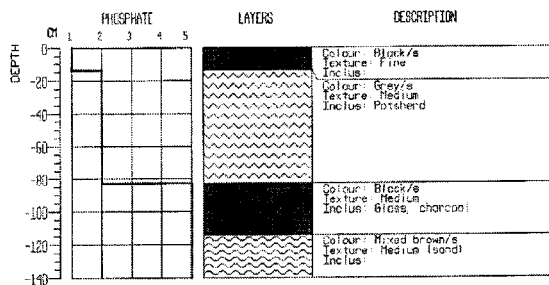
Core *140 N 9301712 E 541452 Alt 511



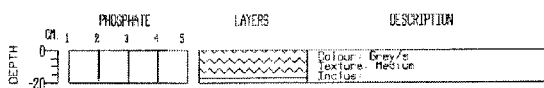
Core *146 N 9301772 E 541452 Alt 651



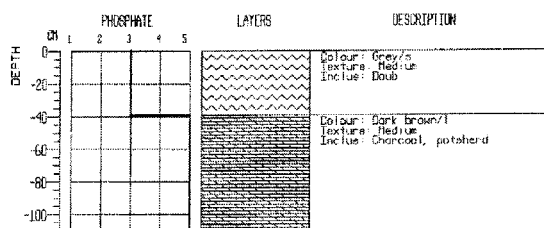
Core *141 N 9301712 E 541432 Alt 413



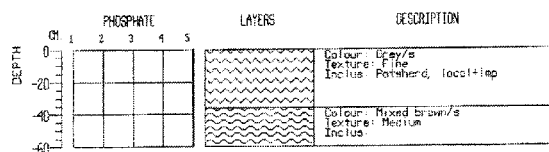
Core *147 N 9301772 E 541472 Alt 759



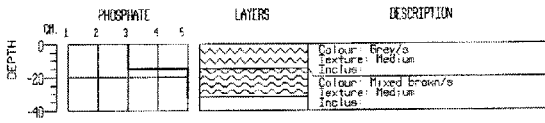
Core *148 N 9301752 E 541472 Alt 671



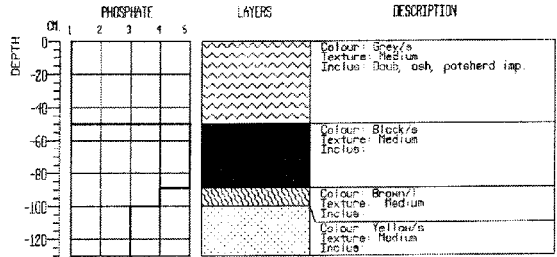
Core *142 N 9301712 E 541432 Alt 359



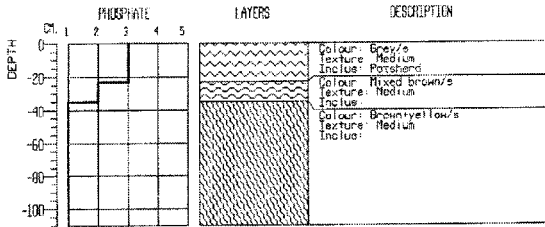
Core *149 N 9301752 E 541492 Alt 592



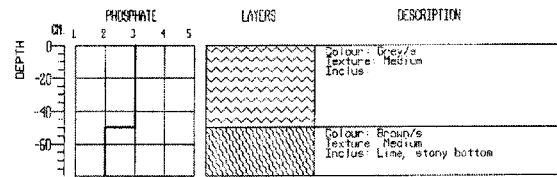
Core *154 N 9301712 E 541472 Alt 558



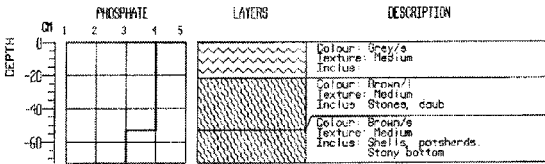
Core *150 N 9301772 E 541492 Alt 761



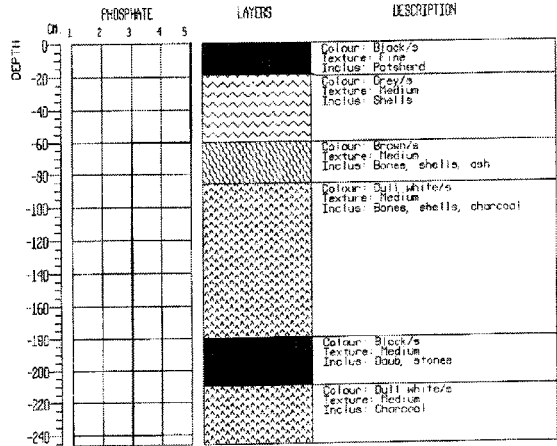
Core *155 N 9301712 E 541492 Alt 363



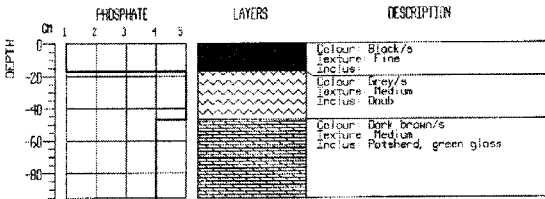
Core *151 N 9301772 E 541512 Alt 73



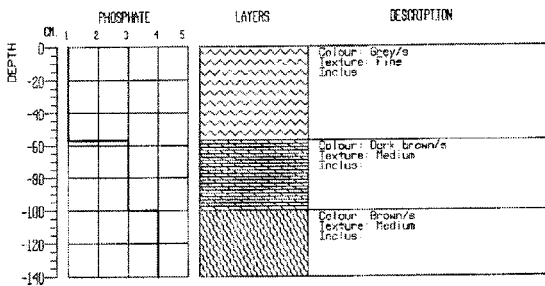
Core *156 N 9301712 E 541472 Alt 515



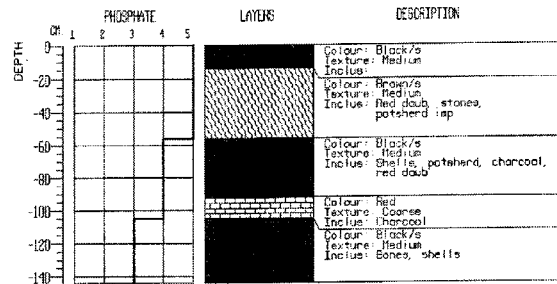
Core *152 N 9301732 E 541492 Alt 407



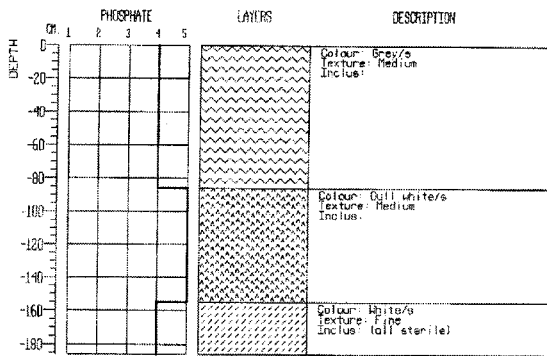
Core *153 N 9301732 E 541472 Alt 599



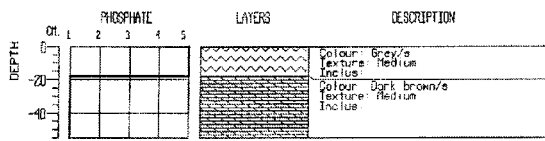
Core *157 N 9301672 E 541472 Alt 485



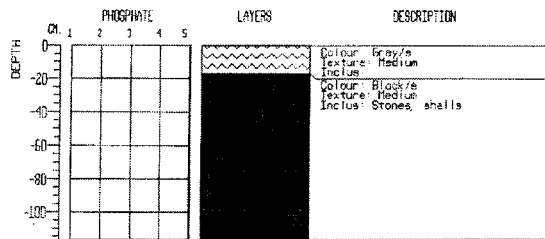
Core *158 N 9301652 E 541472 Alt 441



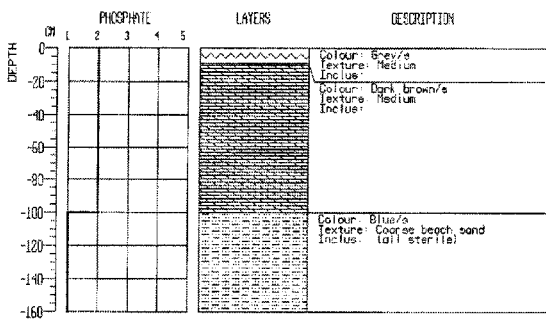
Core *162 N 9301912 E 541212 Alt 313



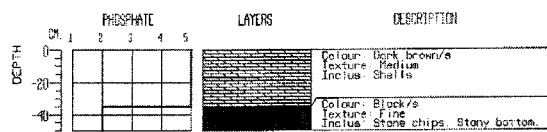
Core *163 N 9301932 E 541212 Alt 360



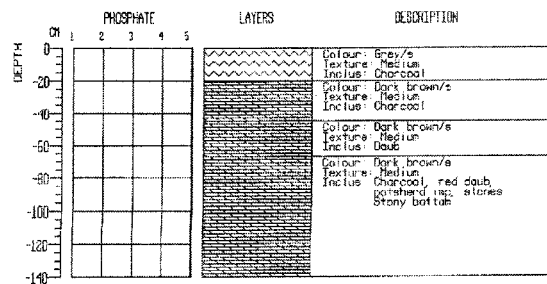
Core *159 N 9301652 E 541492 Alt 260



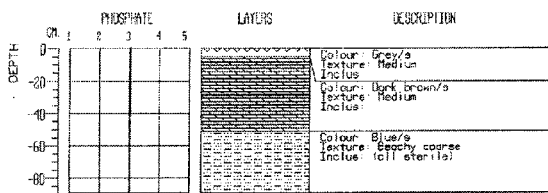
Core *164 N 9301932 E 541232 Alt 400



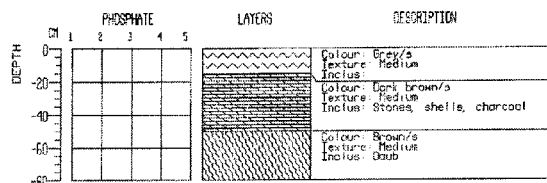
Core *165 N 9301932 E 541252 Alt 416



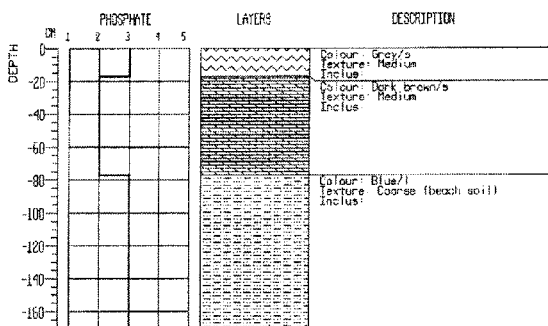
Core *160 N 9301672 E 541492 Alt 254



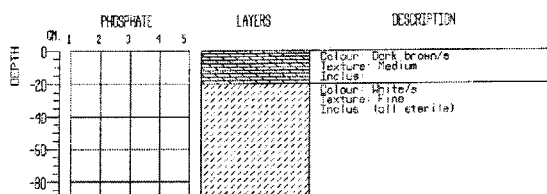
Core *166 N 9301912 E 541252 Alt 400



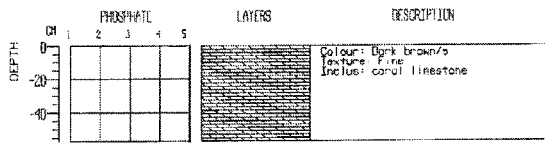
Core *161 N 9301692 E 541492 Alt 263



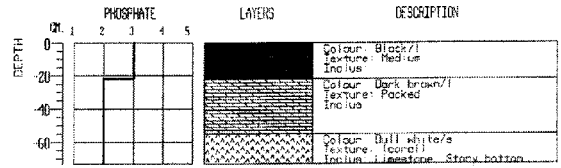
Core *167 N 9301912 E 541232 Alt 318



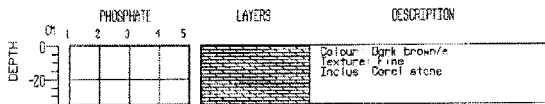
Core *168 N 9301912 E 541252 Alt 340



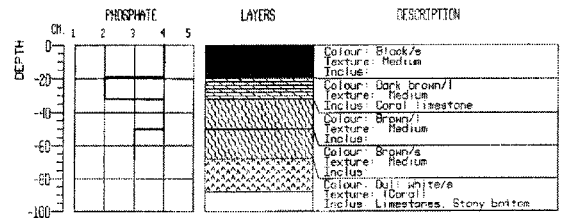
Core *174 N 9301952 E 541212 Alt 214



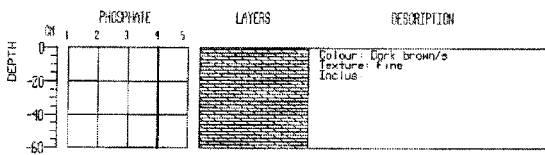
Core *169 N 9301952 E 541192 Alt 330



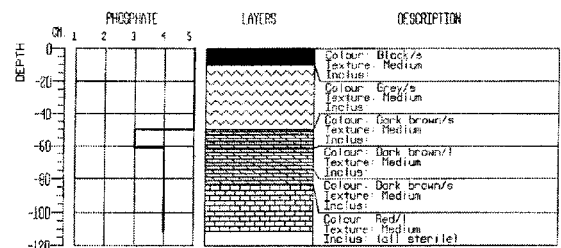
Core *175 N 9402132 E 541212 Alt 230



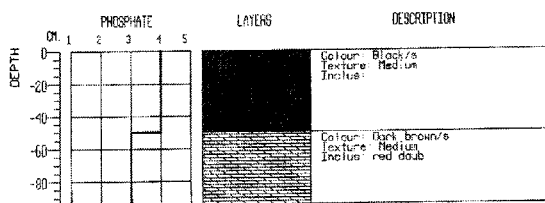
Core *170 N 9301952 E 541212 Alt 360



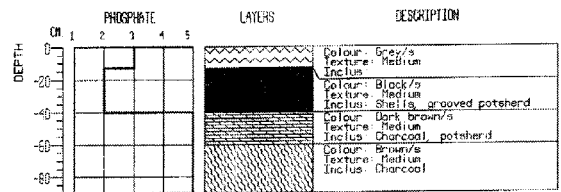
Core *176 N 9302112 E 541212 Alt 244



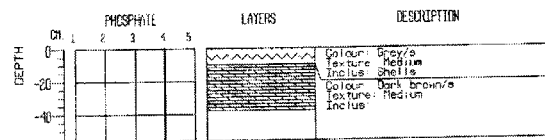
Core *171 N 9301952 E 541232 Alt 406



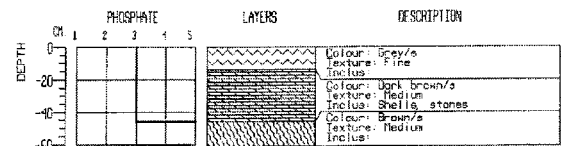
Core *177 N 9302092 E 541212 Alt 318



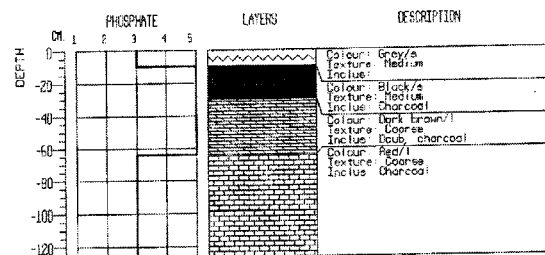
Core *172 N 9301952 E 541252 Alt 472



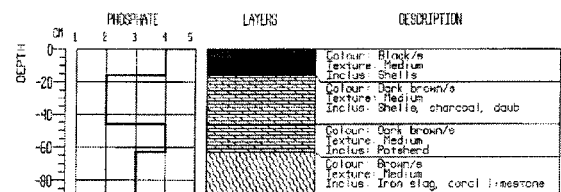
Core *178 N 9302092 E 541152 Alt 375



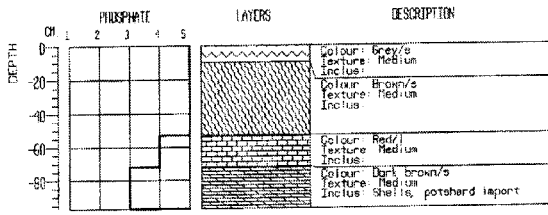
Core *173 N 9301952 E 541272 Alt 504



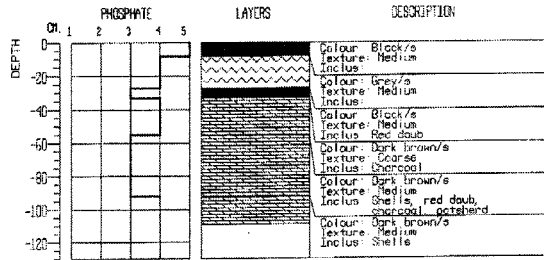
Core *179 N 9302072 E 541212 Alt 374



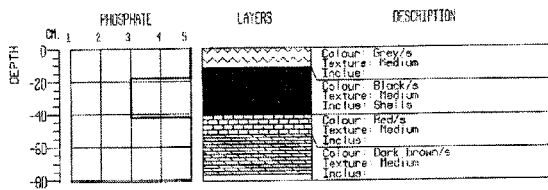
Core *180 N 9302052 E 541212 Alt 477



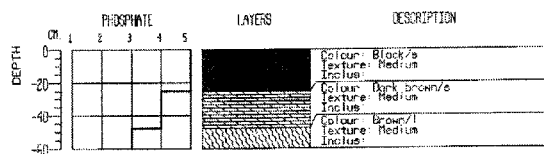
Core *185 N 9302032 E 541172 Alt 503



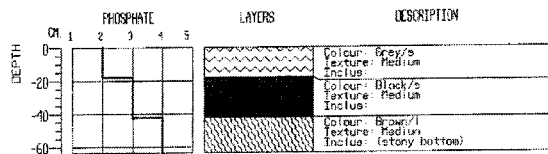
Core *181 N 9302032 E 541212 Alt 514



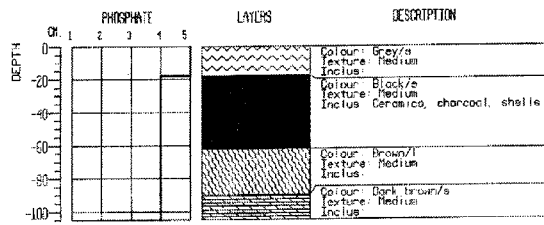
Core *186 N 9302152 E 541412 Alt 1093



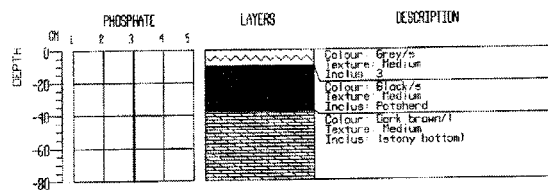
Core *182 N 9302013 E 541212 Alt 478



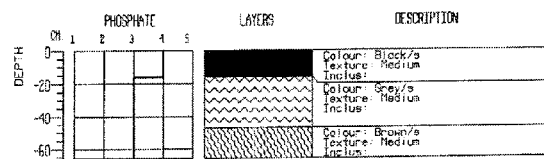
Core *187 N 9302132 E 541412 Alt 1103



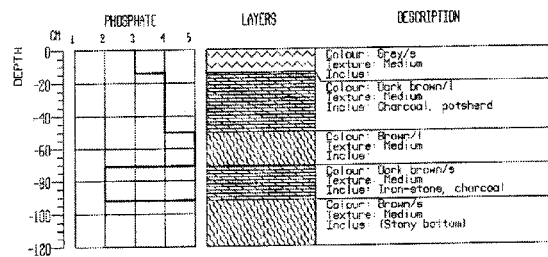
Core *183 N 9301992 E 541212 Alt 447



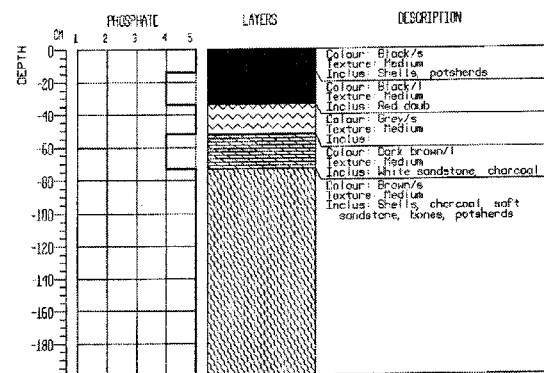
Core *188 N 9302112 E 541412 Alt 1083



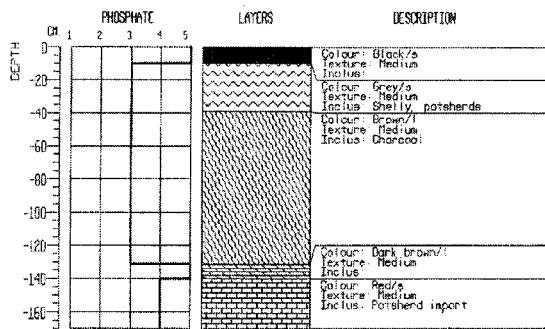
Core *184 N 9301972 E 541212 Alt 403



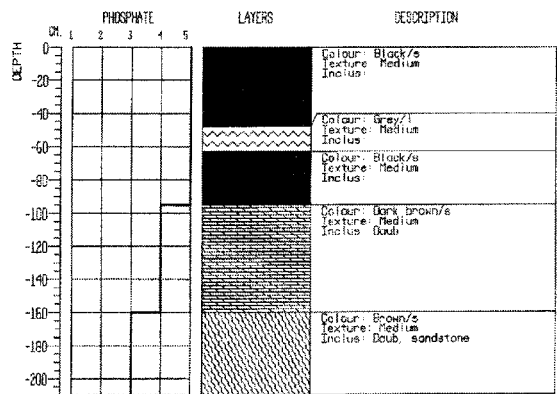
Core *189 N 9302092 E 541412 Alt 1069



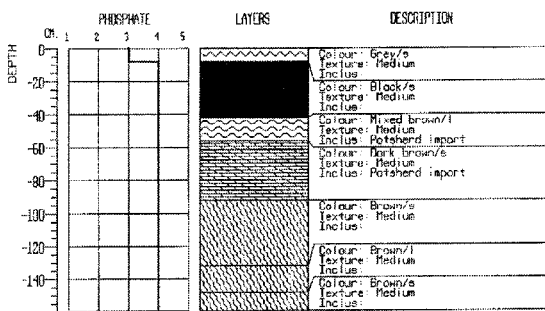
Core *190 N 9302092 E 541352 Alt 768



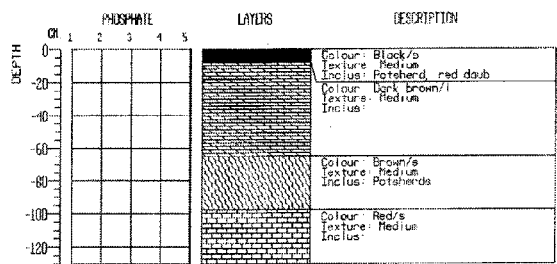
Core *194 N 9302012 E 541412 Alt 767



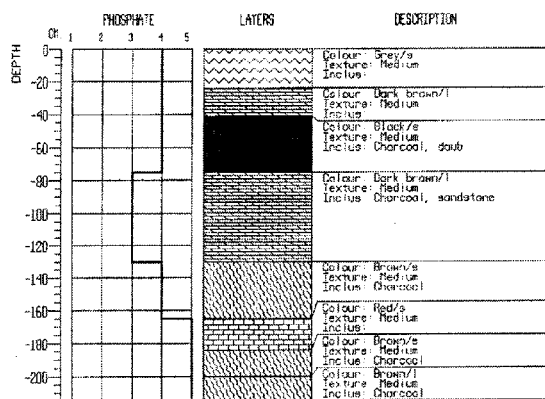
Core *191 N 9302072 E 541412 Alt 1021



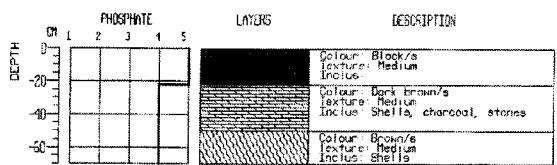
Core *195 N 9301992 E 541412 Alt 760



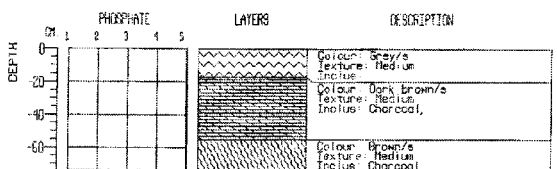
Core *192 N 9302052 E 541412 Alt 974



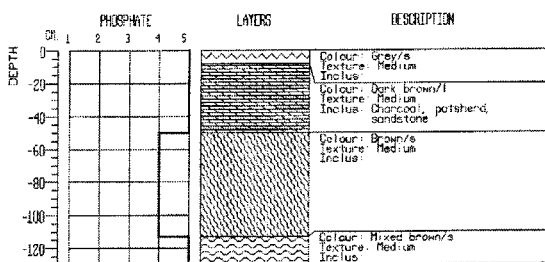
Core *196 N 9301992 E 541352 Alt 662



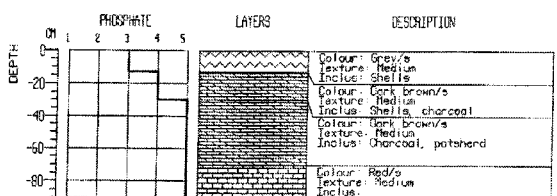
Core *197 N 9301972 E 541412 Alt 772



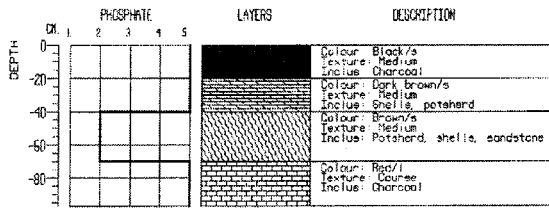
Core *193 N 9302032 E 541412 Alt 854



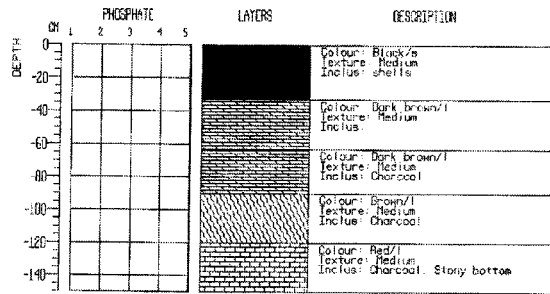
Core *198 N 9301972 E 541312 Alt 577



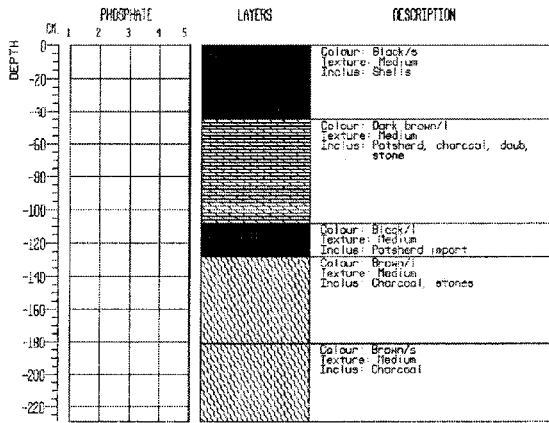
Core *199 N 9301992 E 541312 Alt 595



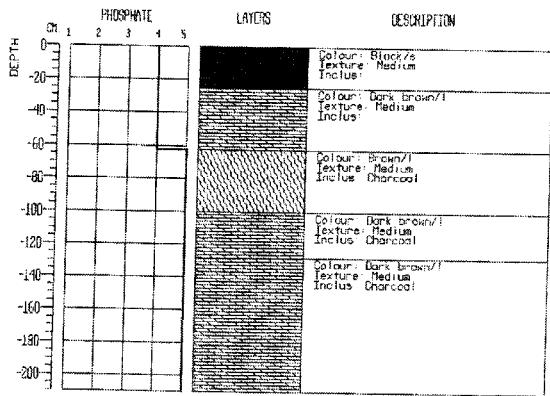
Core *203 N 9302072 E 541312 Alt 526



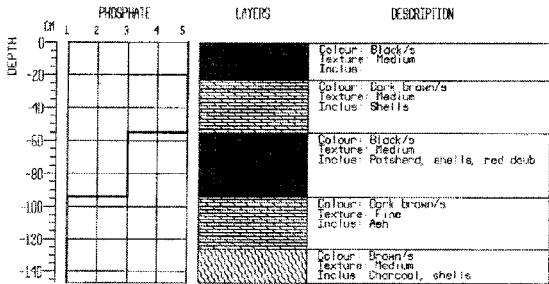
Core *200 N 9302012 E 541312 Alt 610



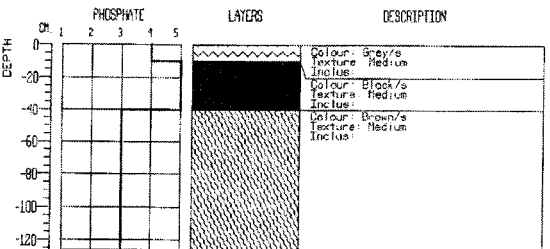
Core *204 N 9302092 E 541312 Alt 398



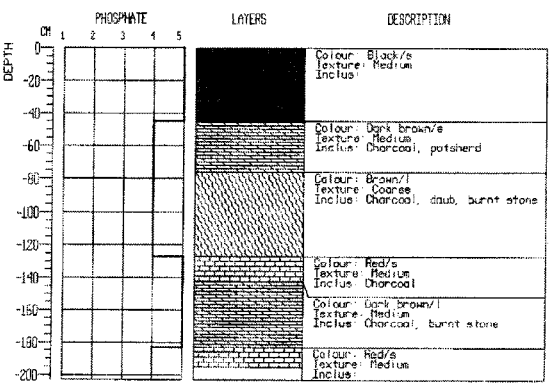
Core *201 N 9302032 E 541312 Alt 599



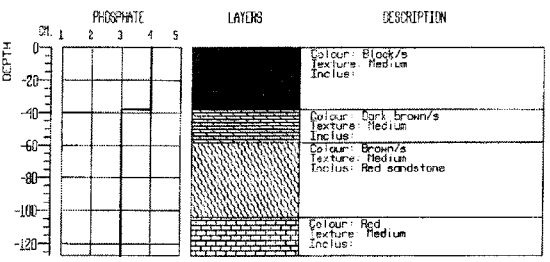
Core *205 N 9302112 E 541312 Alt 324



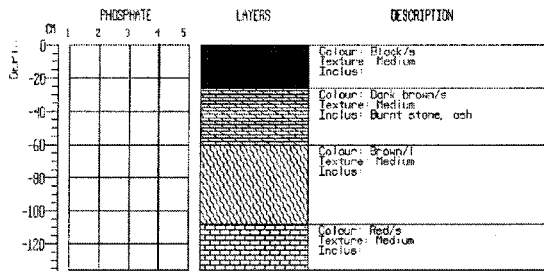
Core *202 N 9302052 E 541312 Alt 567



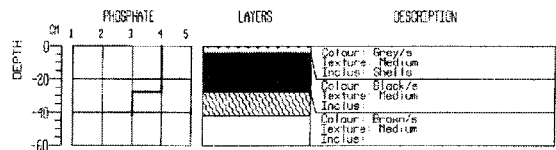
Core *206 N 9302132 E 541312 Alt 328



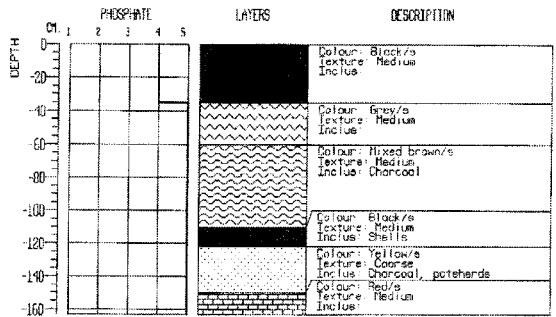
Core *207 N 9302152 E 541312 Alt 344



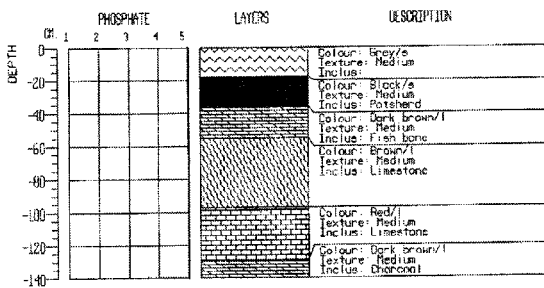
Core *213 N 9302132 E 541512 Alt 1088



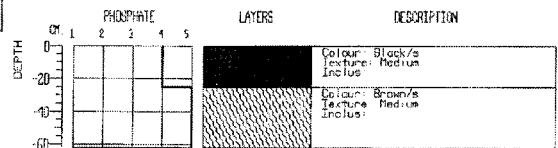
Core *214 N 9302052 E 541512 Alt 1034



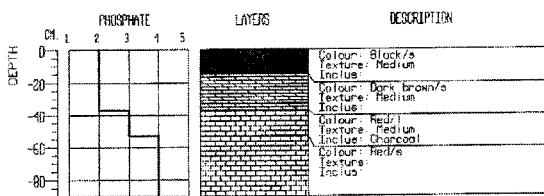
Core *208 N 9302052 E 541272 Alt 503



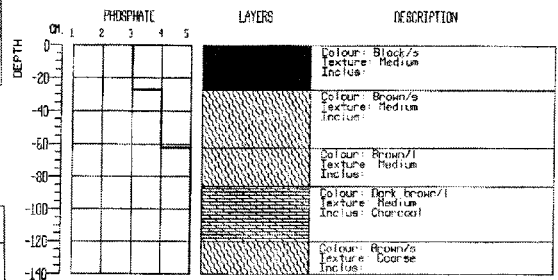
Core *215 N 9302032 E 541512 Alt 1004



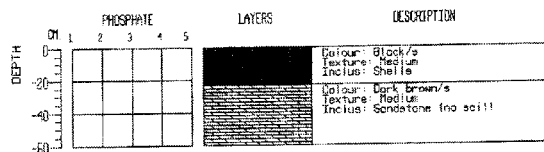
Core *209 N 9302112 E 541512 Alt 1045



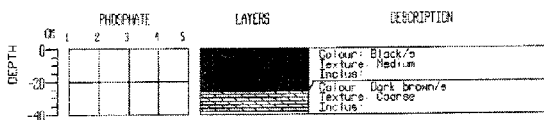
Core *216 N 9301992 E 541512 Alt 1015



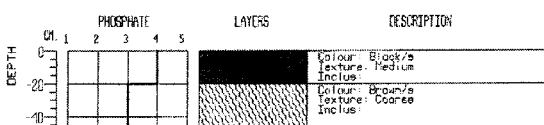
Core *210 N 9302092 E 541512 Alt 1011



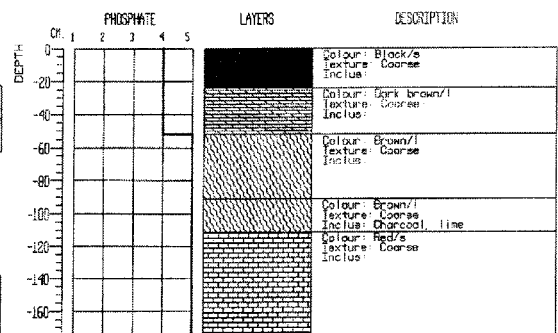
Core *211 N 9302072 E 541512 Alt 1045



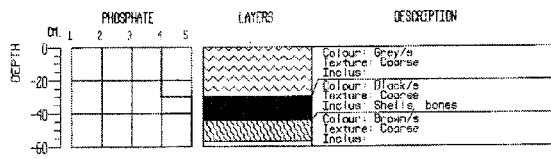
Core *212 N 9302152 E 541512 Alt 983



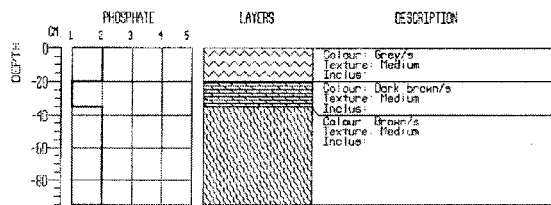
Core *217 N 9301992 E 541512 Alt 1035



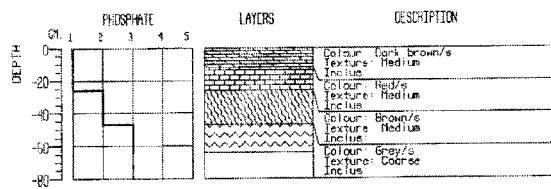
Core *218 N 9301972 E 541512 Alt 1001



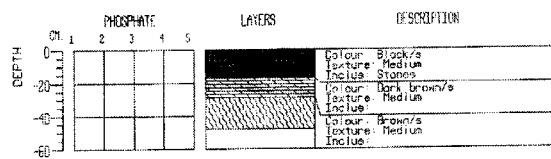
Core *219 N 9302012 E 541552 Alt 939



Core *220 N 9302092 E 541572 Alt 801



Core *222 N 9302012 E 541472 Alt 880



Core *221 N 9302092 E 541452 Alt 1014

