

TANZANIA

The 1996 Archaeological Reconnaissance North of the Rufiji Delta

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Introduction

This is a preliminary report of an archaeological reconnaissance conducted in the Rufiji district, Coast region in July and August 1996. The district of Rufiji comprises the whole of the Rufiji delta, some few off-islands near the delta, and the immediate hinterland of the delta extending to about 100 km into the interior. The district is on the central coast of East Africa, about 100 km south of Dar-es-Salaam, Tanzania from latitude 7°35' to 8°00' S and longitude 38°30' to 39° 20' E (Map 1). The archaeological research was organized by the Archaeology Unit of the University of Dar es Salaam as field training for archaeology students. The Archaeology Unit has annual field school sessions, which involve, apart from training, archaeological survey and excavations.

This area was selected for research in order to fulfil a long term campaign of surveying the entire central coastal area of Tanzania. The campaign was initiated in 1986 by the Archaeology Unit with a reconnaissance around Mkiu, in Kisarawe, today known as Mkuranga district (Schmidt et al. 1992; Chami 1988, 1992). To date, a large part of this area has been investigated, thanks to field schools (Chami and Kessy 1995) and individual researchers, particularly, Felix Chami and Paul Msemwa (Chami 1994; Chami and Msemwa 1997a, 1997b) and Emanuel Kessy. The previous results point to the Rufiji district as an area worthy of archaeological research. The littoral area of the district near the delta has been found to contain recent, Later Stone Age (LSA) and Early Iron Working (EIW) sites. These represent the earliest known settlements on the littoral of the central coast of East Africa. The excavation of an EIW site on the old shore, near the delta at Kivinja, yielded remains

of imported ceramics and glass bottles (Chami and Msemwa 1997a). This suggests that the Rufiji delta and the neighbouring area were connected to the ancient transoceanic trade early in the first millennium AD (Casson 1989).

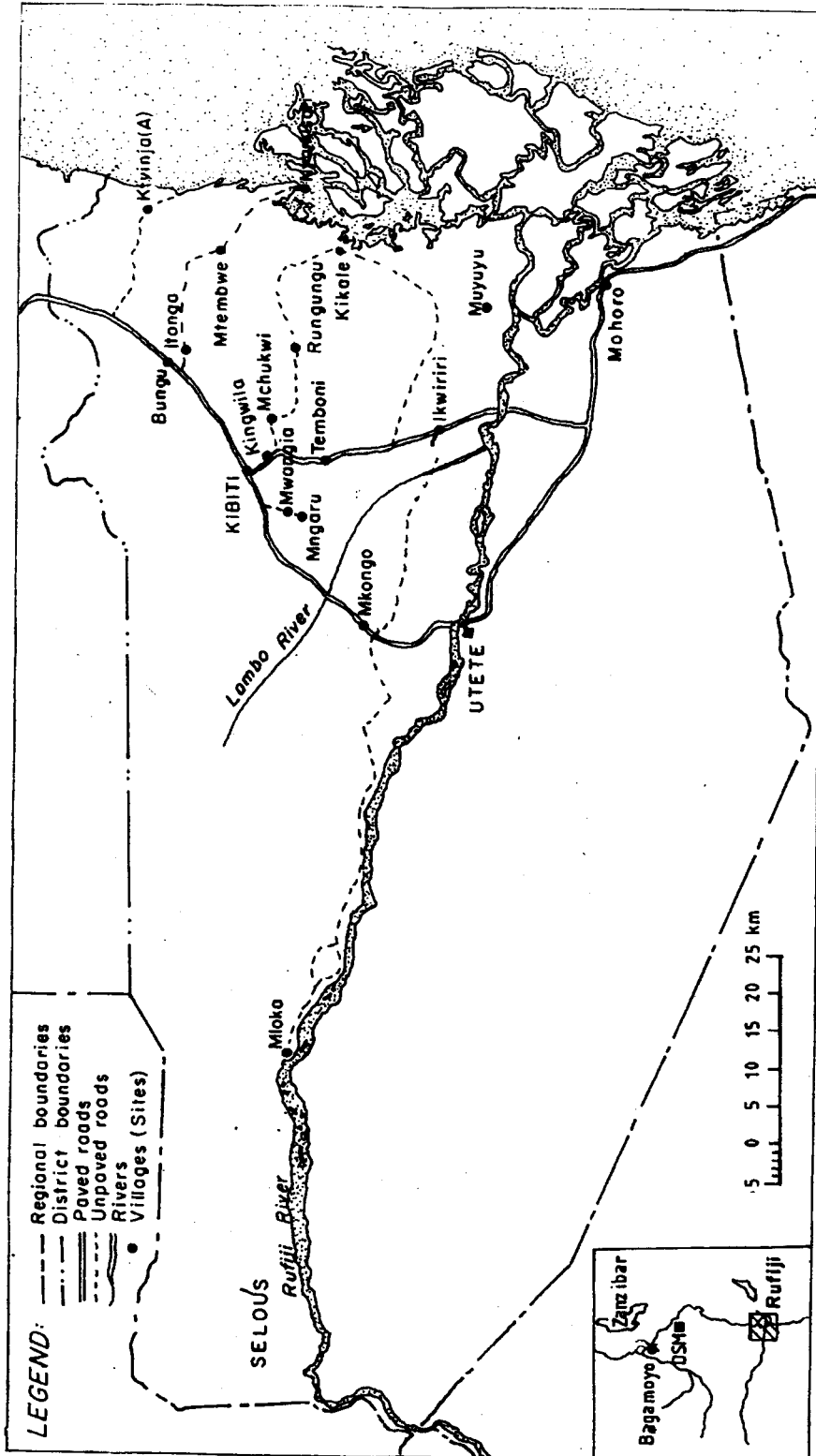
The presence of sites with similar cultural materials in the islands of Kwale, Koma and Mafia also suggests that the EIW people were widely spread over the region. Apparently they would exploit resources from the hinterland environment for local or long distant trade. The area near the delta and along the river was probably conducive for settlements due to abundant marine and riverine resources, particularly fish, shellfish, hippos and mangroves. Alluvial soils and scattered small lakes around the delta would also provide for agriculture and fishing. The 1996 archaeological study in the Rufiji district was therefore expected to further enhance the already established knowledge on the ancient culture of the central coast of Tanzania.

Archaeological Survey

The survey work took place between the 23rd and the 31st July 1996. Survey was extensive rather than intensive. The purpose was to cover as large an area as possible for the purpose of obtaining a good amount of data. In many places, however, we were hindered by dense vegetation. Only open places, e.g. farms (usually less than three acres), road, and foot paths were properly surveyed. Work concentrated on the northern half of the Rufiji district. This included Bungu Ward to the north, Nyamisati and Mchukwi to the East, Kibiti at the centre and Ikwiriri and Mkongo to the south. To the west the survey work reached Mloka and the eastern part of the Selous game reserve (Map 1). We also conducted a casual reconnaissance south of the Rufiji river particularly around Utete town and the free animal hunting zone south of Utete.

Three different survey techniques were employed based on the vegetation coverage of the area. First, driving slowly along motorable roads, observing for features and concentration of artifacts such as potsherds, slag, and lithics along the road, on the walls of road cuttings or further off the road where visibility allowed. We also paid attention to places disturbed by charcoal burners, borrow pits and dumping pits. Once materials were found, the car was

Map 1: Archaeological sites near the Rufiji Delta.



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Figure 1: Nkukutu site, trench 1, west wall profile.

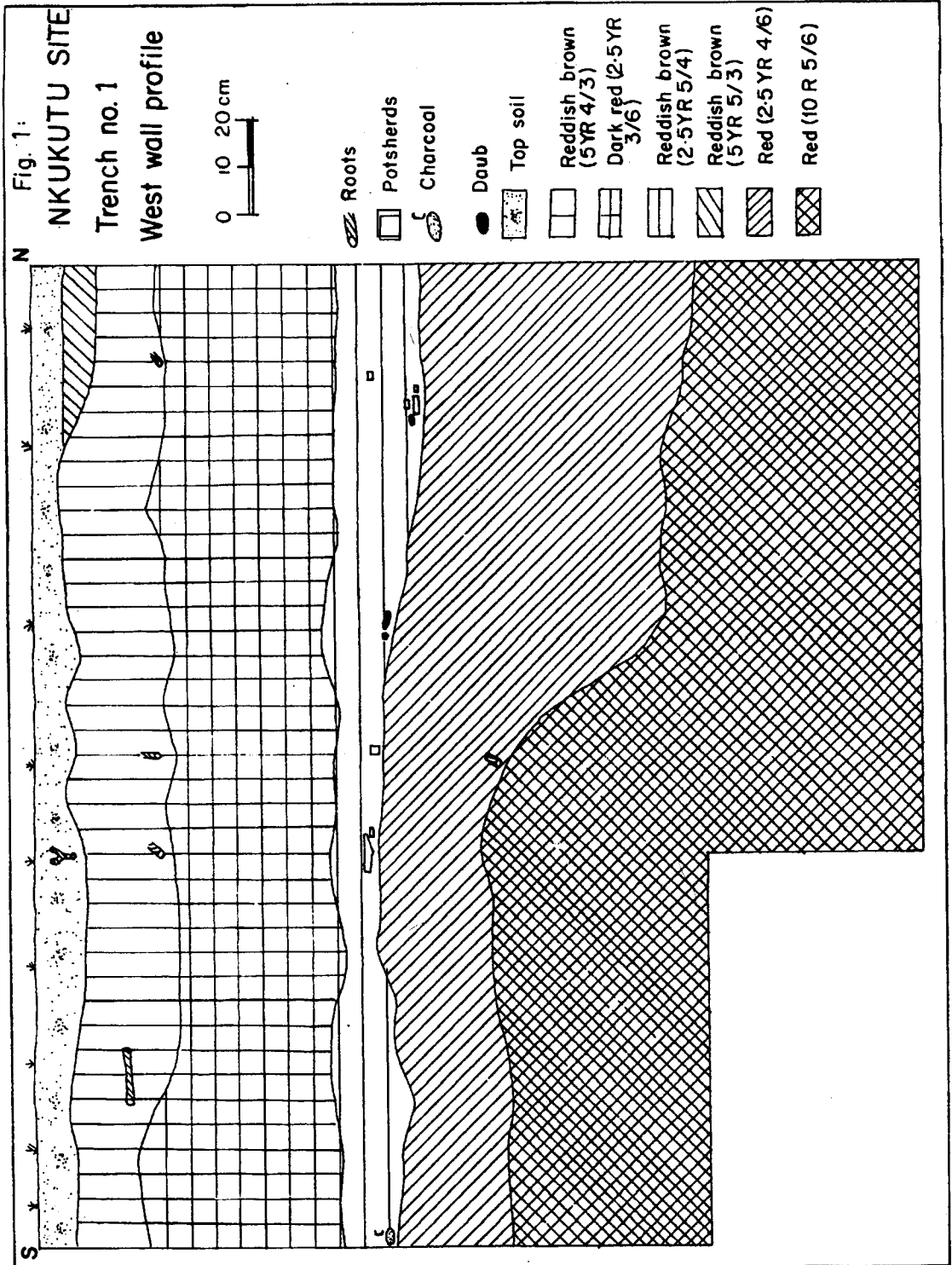
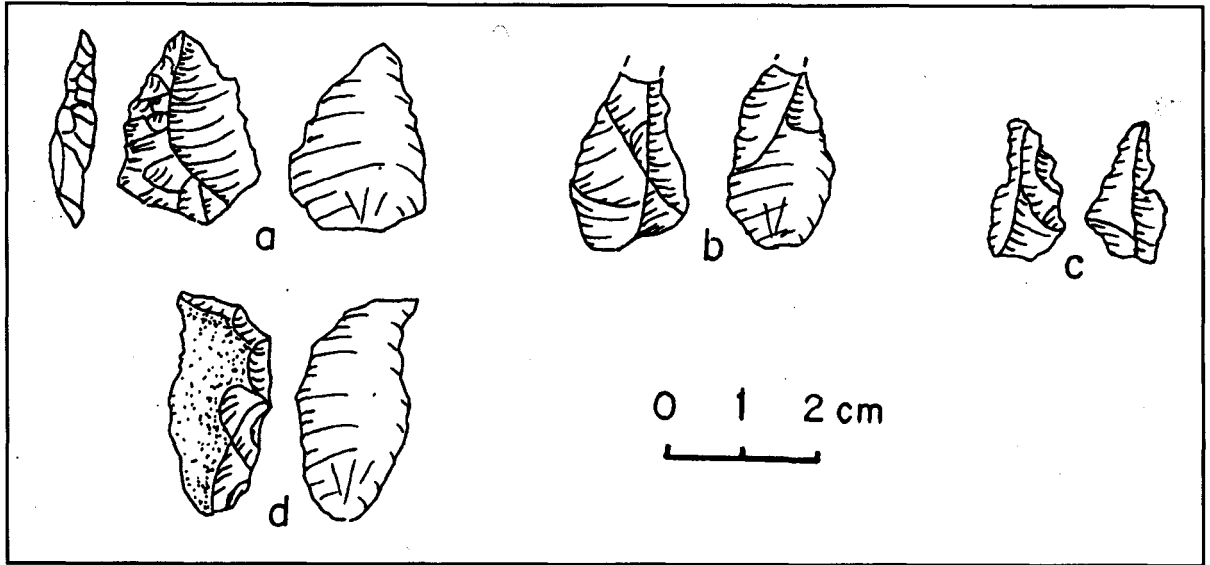


Figure 2: Late Stone Age artifacts from the lowest cultural layer of Nkukutu-Kibiti.



stopped for thorough examination and recording. When necessary a hoelshovel test was applied to examine the subsurface. This technique of driving slowly while observing was employed in three types of areas:

(i) Flat lands such as hill tops, hill bottoms, and plain land. Since gully erosion that could expose subsurface materials is minimal in such a landscape, walking along the road proved to be fruitless.

(ii) Areas with low visibility and accessibility. These included areas with dense forests, long grasses, itching runner plant (*Mucuna pruriens* or *upupu* in Swahili) and marshes /swamps.

(iii) Protected and dangerous areas such as military camps or wild animal reserves.

Second, we walked along the road and foot paths. This technique was employed on three areas: (i) in and around density settled areas. In such areas we focused on the wall of wattle and daub houses because experience from other places has indicated that daub reveal artifacts such as pottery and slag that had been collected in borrow pits (Mapunda 1995). The assumption is that since the prehistoric times people have tended to settle near important resources such as water, food, raw materials for artifacts or easy trade connections. Some

settlements would occur where it is safe, administratively feasible or culturally appealing (e.g., strong spiritual connection with ancestors). For this reason, it is not unusual to find that some areas have been settled continuously for decades, centuries or millennia. So observing the soil disturbance by the modern dwellers can reveal the hidden past.

(ii) Areas with road-cuts and erosions. Road-cuts and erosion tend to expose materials lying under surface. Walking, rather than driving, enabled us to observe closely the gullies and road cuttings for both archaeological and geological phenomenon.

(iii) Areas found to have scatters of artifacts, features or sites. Such places needed close observation, including subsurface testing and recording.

Third, we walked along transects. This technique was used in open farms and grassland areas cleared by bush fires. In addition to observing the occurrence of archaeological materials on the surface, hoe/shovel tests were also used in such areas to check subsurface materials.

Results

Recent remains of local ware, dating probably between the 17th and the 19th centuries, were found and some collected from the towns of Kibiti,

Nyamakonga and Kinyaya. Associated with the local ware were Chinese sherds of the same period. The areas between Kibiti and the Mchukwi junction, about 6 km southeast of Kibiti as well as the vicinity of the Mchukwi town (Map 1) were the most productive survey areas. The first site, EIW, was found at Mkukutu, just 1.5 km from the centre of Kibiti. Cultural materials including potsherds, slag and lithic chips were observed eroding from the floor and the walls of a track made by bulldozers for lorries to fetch gravel quarried to the southwest of the site (Map 2). Part of this site is badly destroyed by this quarrying activity. A close examination of the potsherds both from survey and excavation revealed the site to be of Limbo tradition (Figure 3; see Chami 1988, 1992).

Further south, at Kingwila village, we found another EIW site composed mainly of pottery of the Kwale tradition (Figure 4a and 4b; see Soper 1967). It seems the major part of the site was destroyed by road construction activity. Had archaeologists surveyed the land before road construction the two EIW sites would have been discovered and studied before the aforementioned destruction. Unfortunately there is currently no such policy in Tanzania. Another site was found at Mchukwi 3 km from Kingwila. The pottery samples collected from the site indicate that they belong to the TIW period (Figure 5). Although no extensive survey was conducted over this gently sloping area, signs of house remain, slag and soil fertility suggest that the original site was extensive. A small lake and stream are located about 500 m to the north and east respectively. Another site was found at the Mchukwi hospital. Many Plain Ware (PW) sherds (Figure 5j) presumably dating to the 11th-13th century AD (Chittick 1974; Chami 1992), were observed scattered in an stretch of 400 m along the Mchukwi-Misimbo road.

The survey along the Ikwiriri road from Kingwila to the Rufiji ferry, the northern hinterland of the delta, was less fruitful. This is because only a stretch of 10 km from Kingwila was worthy surveying given its high elevation. But it could have attracted settlement in the past. The remaining stretch of 15 km consisted of sand and mud accumulated by the seasonal Rufiji tributaries. The area was also characterized by small lakes and swamps as well as heavy forest which hindered visibility.

However, one site was found at Temboni village, about 2 km from Kingwila. It is on a ridge oriented east-west. The site is deeply cut by the road, exposing a deep subsurface layer of quartz gravels. The top 30-60 cm below the surface consists of a concentration of pottery of the PW pottery tradition. The potsherds look like those of Mchukwi (Figure 5j), suggesting the 11th to the 13th century period occupation. Associated with the pottery were spindle whorls (Figure 6g and 6h) suggesting the practice of cloth making.

Archaeological survey on the Ikwiriri brownish soils yielded no substantial data, as did the search on lowlands further east towards the heart of the delta as far as Muyuyu village. A large portion of this lowland had too many streams and dense thicket abstracting free accessibility. A survey south and south west of Kibiti along the road from Kibiti to Mng'aru village, yielded two sites. The first was found at Mwangia village, about 2 km from the Kibiti-Mkongo junction. A scatter of potsherds, diagnostic of the terminal EIW period, was found eroding from the road (Figure 4c-g). The second site was found at Mng'aru village, overlooking a stream which separates the village from Mng'aru prison. The site yielded pottery similar to those found at Mwangia. A rocky ridge located about one kilometer east of Mng'aru village was found to be of both geological and archaeological interest. The area has been deeply cut by gold and oil prospectors exposing the ancient Rufiji river beds. However, archaeological remains, including Later Stone Age and Iron Age materials were located on the undisturbed, flat top of the ridge. The materials which await identification, include stone artifacts, bone, fragmented iron objects, beads and pottery. Some of the beads seem to be quite ancient. The hill top provides a nice view of the north-eastern areas of the Rufiji towards the ocean.

The reconnaissance up the Rufiji river, from Mkongo to the Selous game reserve, a stretch of 70 km, did not yield any useful results. This was unfortunate, because previously, Mr Jonathan Karoma (an archaeologist) told one of us that he had seen pottery of TIW tradition near the Mbuyu camp. The region north of Kibiti, between Bungu to the hinterland and Nyarnisati to the ocean, was one of the productive areas where three Iron Age sites were found. The first, located on a margin of a stream

Map 2: Nkukutu site map.

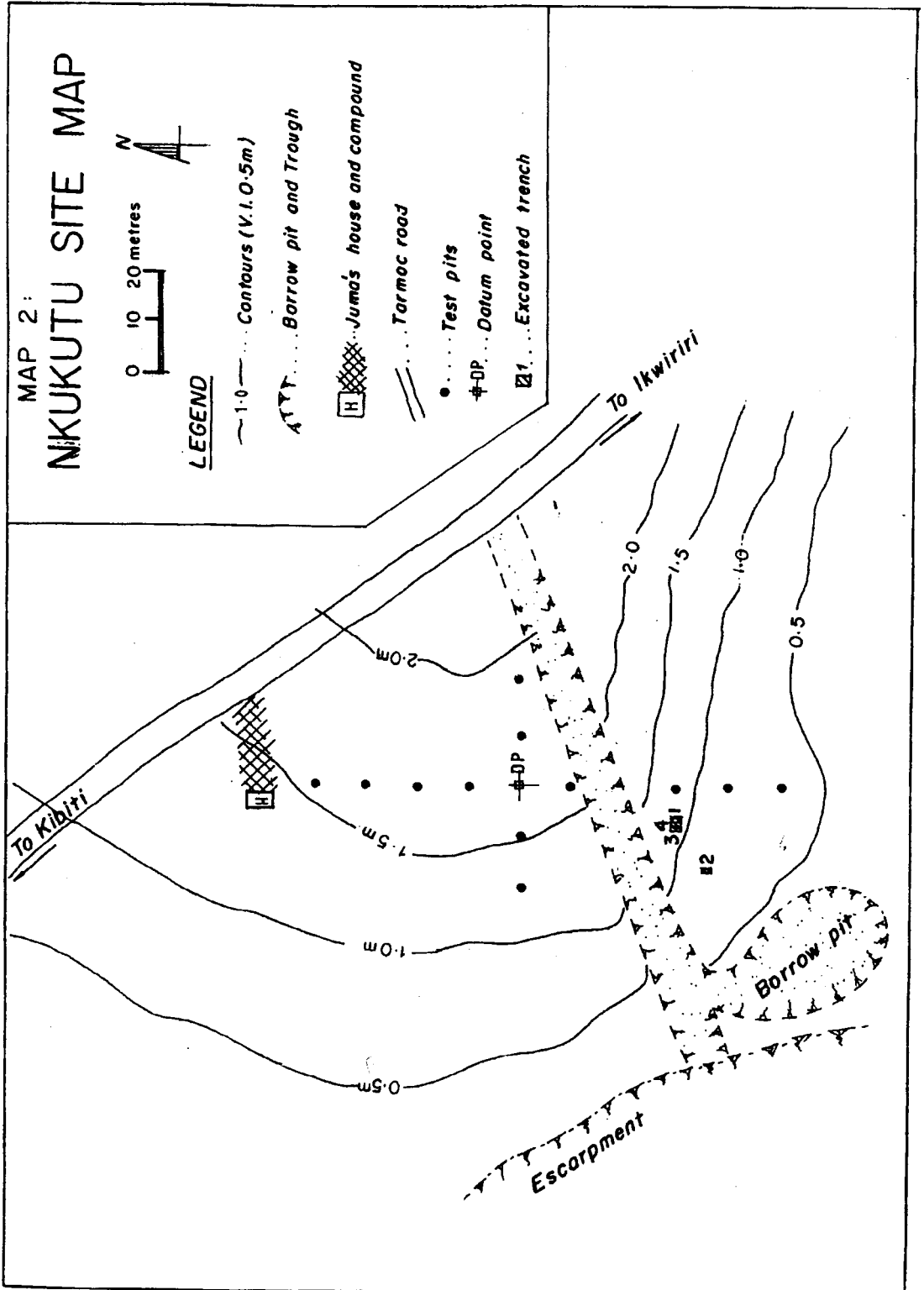


Figure 3: Limbo type EIW potsherds from Nkukutu-Kibiti.

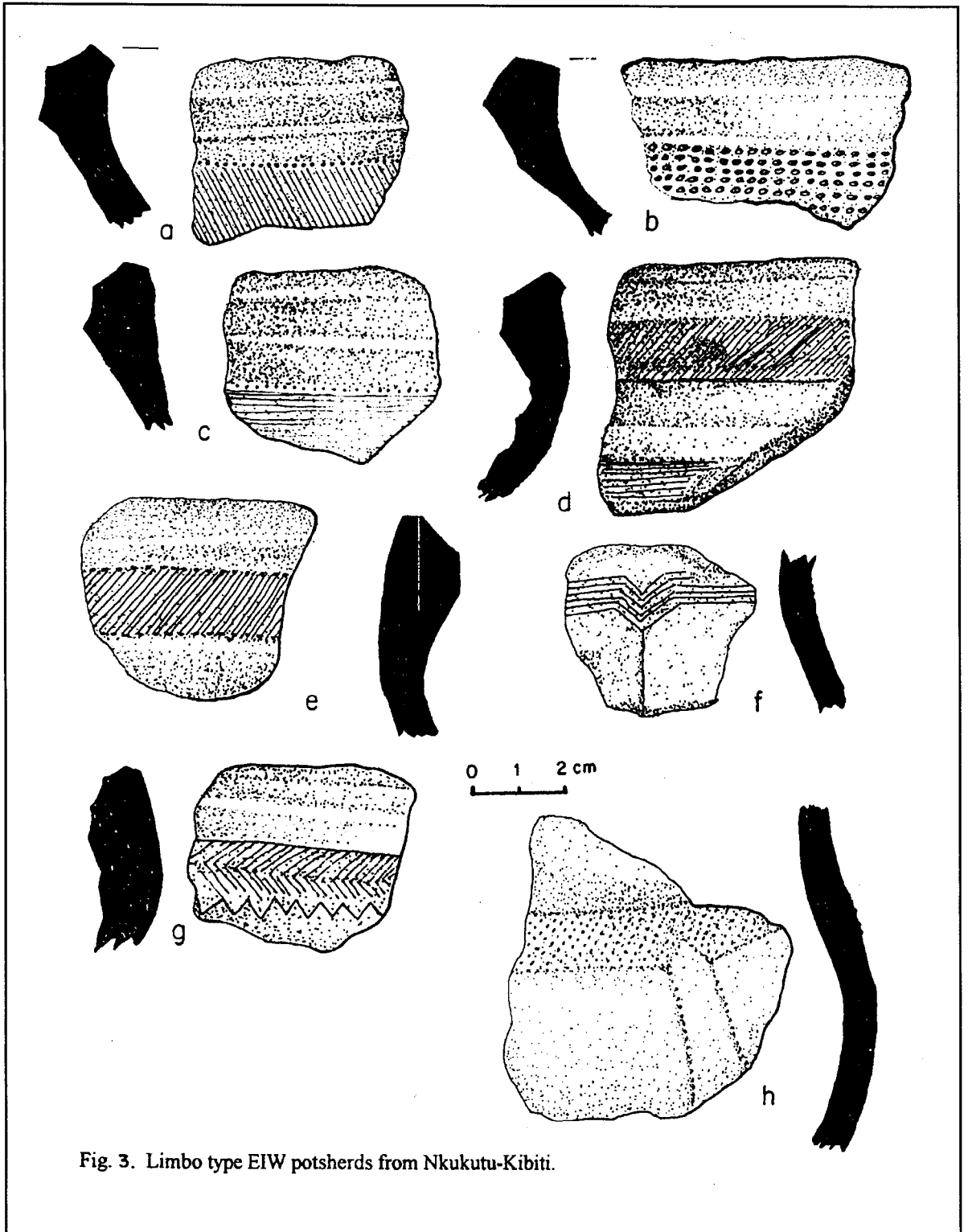


Fig. 3. Limbo type EIW potsherds from Nkukutu-Kibiti.

about 3 km from Bungu, had abundant TIW pottery (Figure 5) as well as some slag. These materials were eroding from a wall of a sand quarry. The site covered about four hectares.

The second site was found at Kipenya village, about 4 km east of Bungu. This consisted of potsherds similar to those found at Mwangia village, belonging to the terminal EIW period (Figure 4c-g). The potsherds were found scattered on the eroded road about one kilometer long. The third site found further east at the valley of Mtembe village on the western side of a stream, was a multi-composite site. It consisted predominantly of Kwale type pottery (Figure 4a and 4b) exposed by road erosion as well as a fair amount of slag, a tuyere fragment and metallic iron. The presence of slag, tuyere and metallic iron suggests that iron working was conducted at the site. However, the thick vegetation cover, and especially the itching plant mentioned above, prevented us from intensive investigation to determine whether this was a smelting, refining or forging site. Based on the size and morphology of the slag, however, we suspect that this was a smelting site.

Excavation

The remaining three weeks were used for excavation of Nkukutu and Mwangia. Nkukutu contained Limbo tradition cultural materials, thus being the second earliest EIW site ever found on the region; the first being the Limbo site in Kisarawe District 30 km to the north (Chami 1992, 1994). Surface materials from Mwangia site indicated that the site belonged to the intermediate period between Kwale and TIW traditions. Its excavation therefore, was expected to reveal transitional patterns between Kwale EIW and TIW traditions (Chami 1994). The excavation work was by trowel following arbitrary levels of 10 cm. All excavated soil was sieved through a 5 mm mesh. Soil colors were measured by Munsell colour chart.

Nkukutu

Four excavation trenches, each measuring 2 x 1 m, were excavated at this site. The trenches were opened in places with high concentration of cultural materials. Trenches 1 and 2 were situated 10m apart, while trenches 3 and 4 extended from trench

1; therefore, at the end the excavation pit measured 2 x 3 m (Map 2). Table 1 provides details of the excavated materials while Figure 1 presents a sample wall profile from this site. The top three levels (0-30 cm) at trenches 1, 3 and 4 were disturbed by cultivation. This was suggested by the find of 5 EIW potsherds in level 2. The following three levels did not yield cultural materials except for 6 TIW sherds from the bottom of level 5. Level 6 (50-60 cm) yielded mainly pottery and daub, many pieces of the latter had wood impressions. The associated pottery which in fact extend further down to level 7 (60-70 cm) was of the TIW tradition (Figure 5a-e). Forty-nine EIW sherds were collected from level 7.

Levels 8-10 (70-100 cm) yielded EIW materials, mainly potsherds of the Limbo tradition (Figure 3). Other materials included 11 iron objects ranging in length from 1 to 9 cm and in thickness from 0.2-0.5 cm. None of these iron bars was complete, each had at least one broken end. One of the longer pieces was curved (C-shaped) and has been interpreted as a hook and the other pieces were straight with sharp ends (Figure 6d and 6e). When complete, these bars were probably used as harpoons. These levels also yielded 3 beads (Figure 6a-c). The presence of beads in the hinterland of the Rufiji delta indicates some early trade contacts with the north Indian and probably the Mediterranean communities (Casson 1989; Chami and Msemwa 1997a).

Apart from artifacts, trench 1 revealed a hearth on the western edge. This feature started to appear from level 10 (100 cm). We decided to excavate it separately in order to assess its function. Its separate excavation down to 170 cm yielded EIW potsherds, pieces of iron slag, iron objects similar to those described above and grooved sandstones (Table 1; Figure 6f). The grooving on the sandstones are reminiscent of those on coral stones found on the TIW sites on the coast interpreted as bead grinders (Chittick 1974:plate 158; Chami 1994:63). We are convinced that the grooved sandstones which are found in an EIW context are not bead grinders. Since we suspect that the feature found at trench 1 is a black smith's hearth, we think that the grooved sandstones were used for smoothing and sharpening harpoons and hooks found in their association. The width of the grooves match in size with the thickness of the harpoons and hooks found in these trenches.

Figure 4: EIW potsherds: a and b are Kwale type potsherds from Mtembwe; c to g are Mwangia type potsherds from Mwangia.

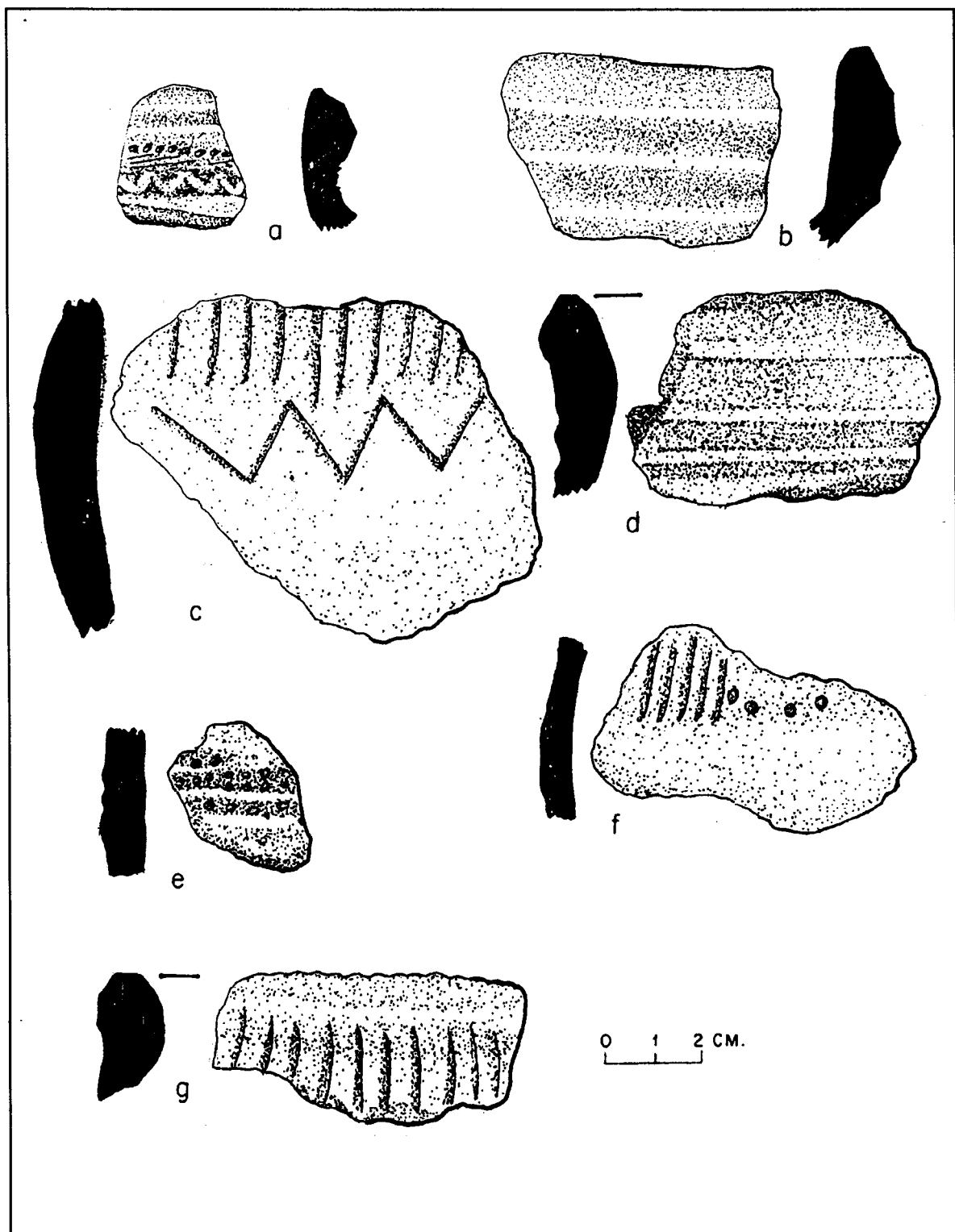


Figure 5: Potsherds of TIW and PW traditions. A to e are from Nkukutu-Kibiti; f to h are from Itonga; i is from Mchukwi darajani, j is a PW tradition sherd from Temboni.

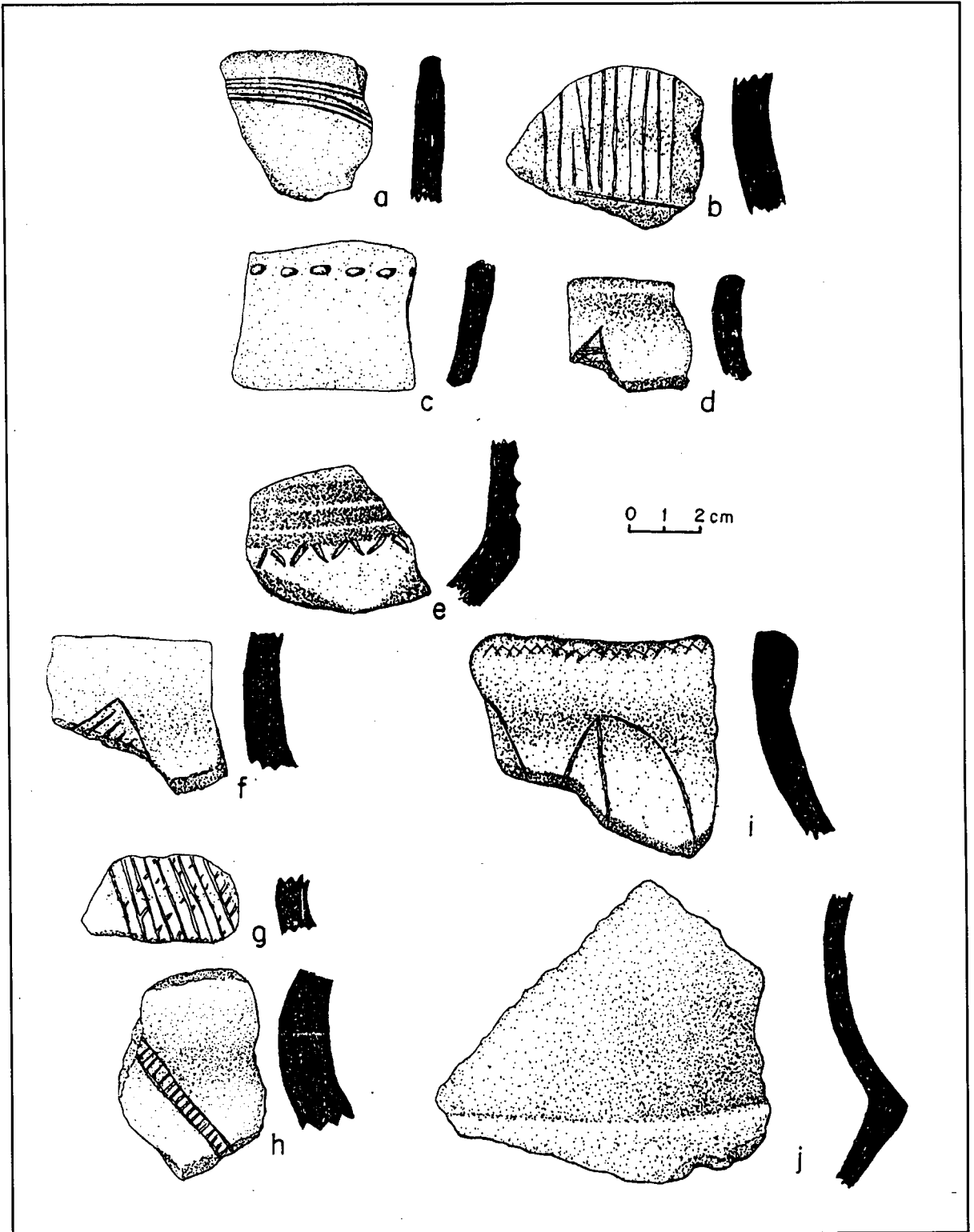
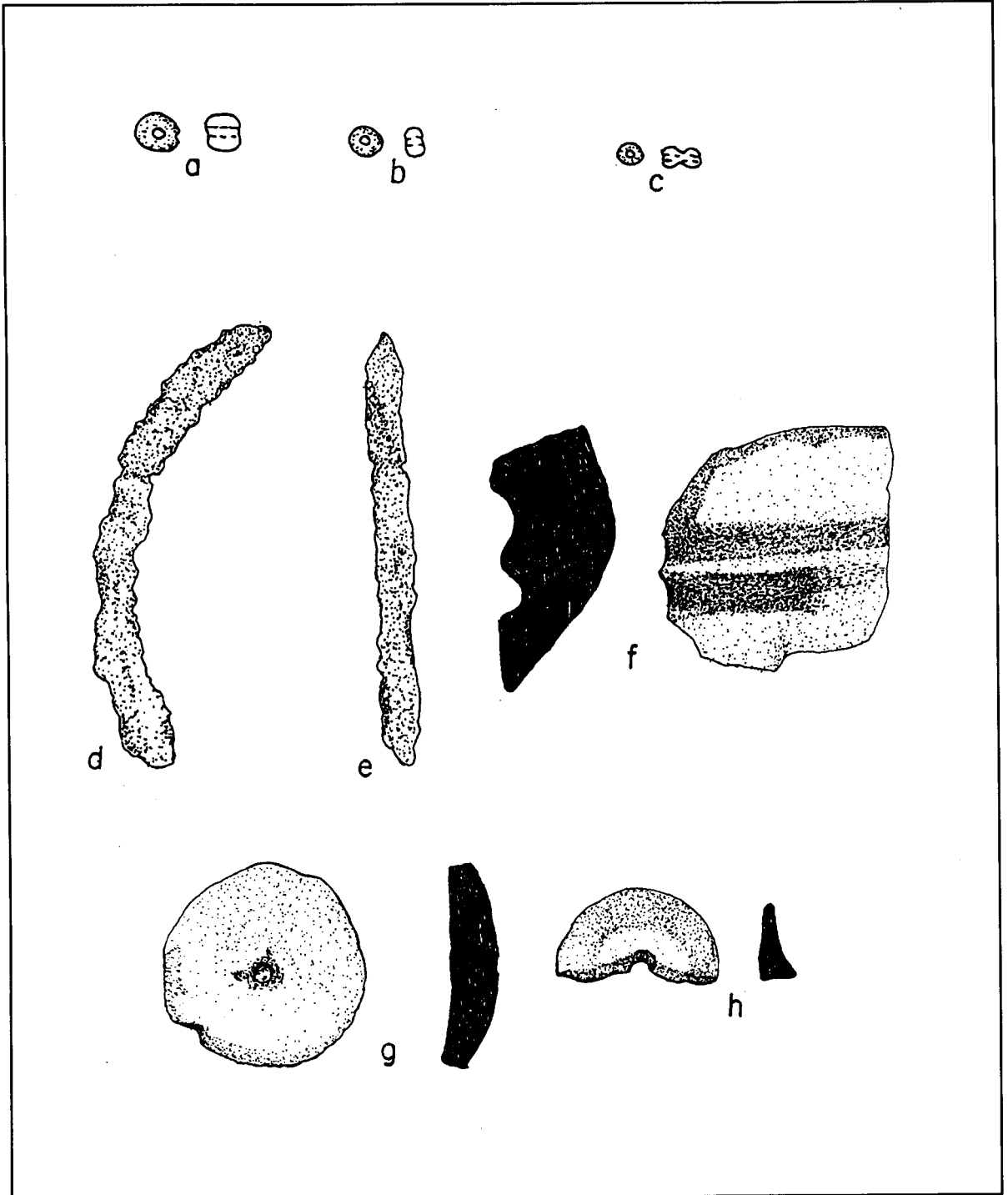


Figure 6: Objects from different archaeological contexts: a and b are dark blue wound glass beads from the Nkukutu TIW cultural horizon; c is a drawn (caned) glass bead from the Nkukutu EIW cultural horizon; d and e are pointed iron objects; f is a grooved red sandstone from the Mkukutu EIW cultural context, and g and h are spindle whorls from Temboni in a PW cultural context.



The remaining area of trenches 1, 3 and 4 between 100 - 130 cm was dominated by lithic fragments, mostly waste flakes and cores (Table 1; Figure 2). This indicates that the site had been occupied first by LSA people. However, a small amount of EIW pottery was found in association with the lithic materials. This association is very likely an indication of postdepositional disturbance by the earliest EIW occupants on the Late Stone Age layers. Since the natural layers do not have raw materials for stone tools the find of the lithic chips in the area indicates that they were brought in the site by its occupants. Excavation below 130 cm did not yield any cultural material.

Trench 2 was excavated about 10 meters south-west of the main concentration area (Map 2). The area seemed to have been disturbed by a bulldozer activity, at least down to level 5 (40-50 cm). This is indicated by the fact that one glass bead similar to those found in the EIW context (in trench 1, 3 and 4), was found at 20 cm, as well as thirteen potsherds, including EIW ones. Additionally the soil was mottled, indicating that it had been mixed up. The levels between 50 and 110 cm yielded EIW pottery similar to those found in trenches 1, 3 and 4. Levels 11 and 12 (110-130 cm) produced microlithic fragments. One iron object was recovered from level 11 (100-110).

Mwangia

Only two trenches were dug at the Mwangia site (Map 3), each measuring 2 x 1 m. The trenches were located adjacent to the areas of concentration of cultural materials exposed by erosion along the road. Apart from a few diagnostic sherds appearing in level 3 and 4 (20-40 cm) of both trenches, the concentration of EIW sherds was at 60-80cm. No other cultural materials were found (Table 2). Five shovel test pits (0.5 x 0.5 m) were dug on the west side of the road where the land slopes gently (Map. 3) towards a valley with water stream. The purpose here was to establish the extension of site and spatial distribution of cultural materials. Mainly potsherds were found (Table 2).

Discussion

The 1996 Field School of the University of Dar es Salaam can be said to be one of the most

productive Field Schools since the founding of the Archaeology Unit in 1985. Before this, the 1987 field season was the most notable due to the discovery of the Limbo and Misasa sites which contributed to the development of new perspectives on the first millennium A.D. coast of East Africa (Schmidt et al. 1992; Chami 1994, 1995/96). The 1996 Field School has identified and excavated a second Limbo-type site at Nkukutu. The study of the materials from Limbo site have helped us to realize that Limbo-type materials represent an early phase of EIW culture on the coast of East Africa. Although Nkukutu site is yet to be dated, the dates from the Limbo site to the north have now been confirmed. They fall into the last centuries BC and into the beginning of the first millennium AD (Chami and Msemwa 1997a).

The presence of beads within a Limbo tradition horizon at Nkukutu provides the earliest evidence of maritime trade contacts between the East African coast and the northern civilizations. This relates, probably, to the commerce reported in the Graeco-Roman document of the *Periplus* in the 40-70 AD (Casson 1989). Other seemingly ancient beads found at Mng'aru hill, five km south of this site, await to be identified. Rufiji district seems to have been connected to the ancient Indian ocean trade system reported in the Graeco-Roman documents (Freeman-Grenville 1975; Casson 1989). This, coupled with the find of remains of ancient glass and ceramics on the near shore Kwale type site at Kivinja in the same district, have necessitated a more comprehensive discussion about the ancient commercial links between the East African (Azanian) coast and the north Indian Ocean and the south-east Asia communities (Chami and Msemwa 1997a).

The discovery of a smithing hearth and a large amount of iron objects is another interesting component of the Nkukutu site. Generally speaking, it is difficult to find iron materials, particularly of the EIW period in wet climates such as the Rufiji delta which tend to catalyse its corrosion. Therefore, the presence of a relatively large amount of iron objects at this site indicates that this was a large scale forging industry. Since no smelting site has been found so far in this area we are inclined to postulate that the Rufiji delta was one of the main consumers of the iron produced at Limbo, 30 km to the north. We have also indicated that the majority of the recovered iron objects are harpoons and hooks; indicating a strong dependence on aquatic resources.

Table 1 Nkutu excavation materials inventory. Note that trenches (Tr.) 1, 3 and 4 are combined in one table.

| Trench | Level | Depth | EIW pottery | TIW pottery | cores | flakes | grooved sand-stone | other sand-stone | iron | slag | tu-yere | glass beads |
|--------------|---------|---------|-------------|-------------|-------|--------|--------------------|------------------|------|------|---------|-------------|
| | | surface | 23 | | | | | | | | 1 | |
| 1, 3, 4 | 1 | 0-10 | | | | | | | | | | |
| | 2 | 10-20 | 5 | | | | | | | | | |
| | 3 | 20-30 | | | | | | | | | | |
| | 4 | 30-40 | | | | | | | | | | |
| | 5 | 40-50 | | 6 | | | | | | | | |
| | 6 | 50-60 | | 43 | 2 | 2 | | | | | | |
| | 7 | 60-70 | 49 | 23 | | | 1 | 4 | 4 | 4 | | |
| | 8 | 70-80 | 121 | | 1 | | 3 | 8 | | 3 | | 3 |
| | 9 | 80-90 | 211 | | 3 | 1 | 2 | 6 | 7 | 4 | | |
| | 10 | 90-100 | 33 | | | 2 | 1 | 6 | | | | |
| | 11 | 100-110 | 23 | | | 1 | 1 | 7 | | | | |
| | 12 | 110-120 | 8 | | | 20 | | 2 | | | | |
| | 13 | 120-130 | 2 | | 2 | 17 | | | 1 | | | |
| 1 | feature | 130-170 | 8 | | 1 | 2 | | | 11 | 2 | | |
| 2 | 1 | 0-10 | | | | | | | | | | |
| | 2 | 10-20 | | | | | | | | | | 1 |
| | 3 | 20-30 | 6 | | | | | | | | | |
| | 4 | 30-40 | | | | | | | | | | |
| | 5 | 40-50 | 4 | | | | | | | | | |
| | 6 | 50-60 | | | | | | | | | | |
| | 7 | 60-70 | 2 | | | | | | | | | |
| | 8 | 70-80 | 3 | | | | | | | | | |
| | 9 | 80-90 | 4 | | | | | | | | | |
| | 10 | 90-100 | 12 | | | | | | | | | |
| | 11 | 100-110 | 1 | | | 24 | | | 1 | | | |
| | 12 | 110-120 | 2 | | | 8 | | | | | | |
| Total | | | 517 | 72 | 9 | 76 | 8 | 33 | 24 | 13 | 1 | 4 |

Map 3: Mwangia site map.

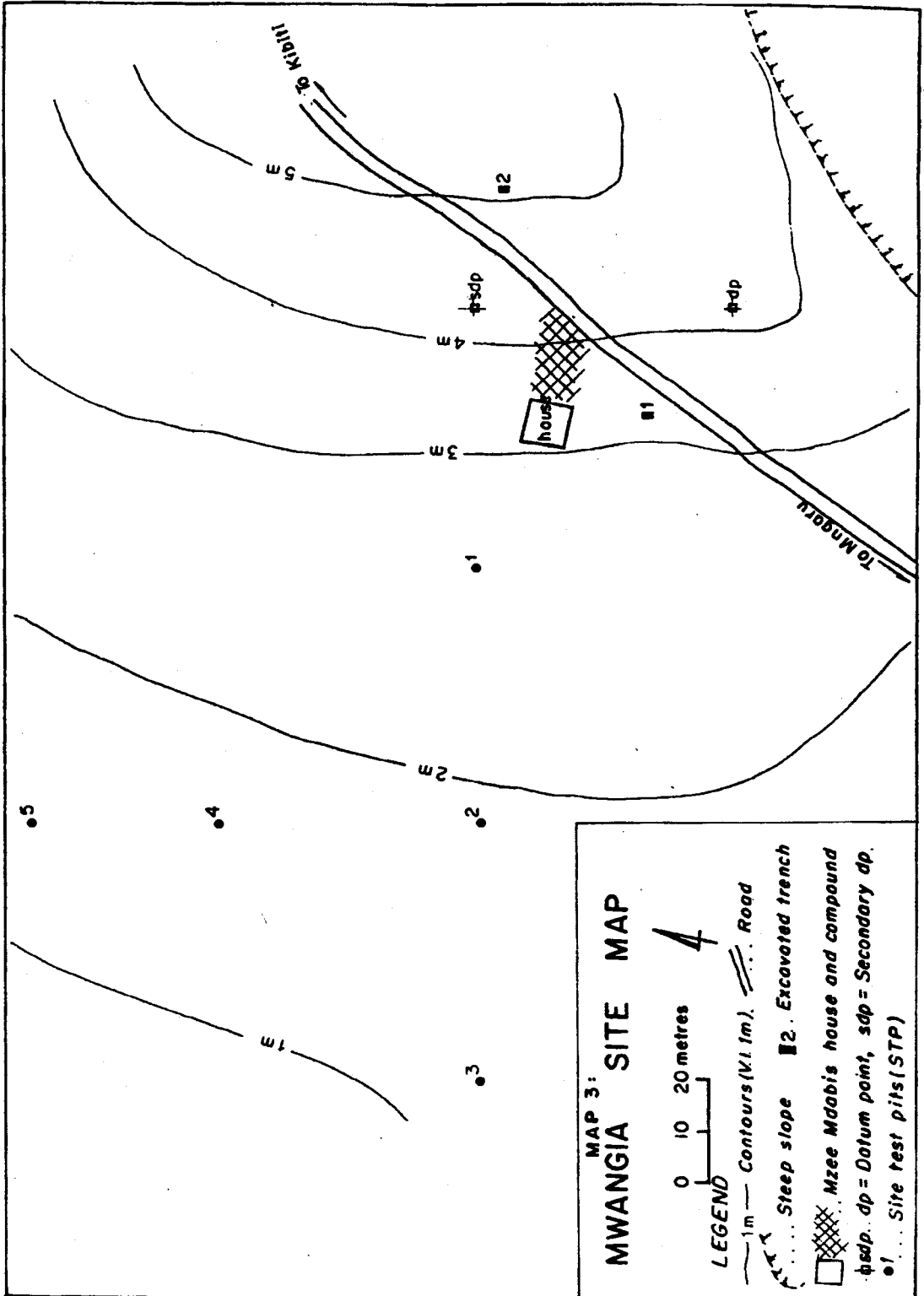


Table 2. Mwangia excavation materials inventory. Also material collected from site test pits (STPs).

| Trench | Level | Depth | Pottery | Slag | Iron | Stone | Bone | Sandstone |
|--------|-------|--------|---------|------|------|-------|------|-----------|
| 1 | 1 | 0-10 | | | | | | |
| | 2 | 10-20 | 7 | | | | | |
| | 3 | 20-30 | | | | | | |
| | 4 | 30-40 | 4 | | | | | |
| | 5 | 40-50 | | | | | 1 | |
| | 6 | 50-60 | | | | | | |
| | 7 | 60-70 | 11 | | | | | |
| | 8 | 70-80 | 45 | | 1 | 29 | | 5 |
| | 9 | 80-90 | | | | | | |
| 2 | 3 | 20-30 | 3 | | | | | |
| | 6 | 50-60 | 7 | | | | | |
| | 7 | 60-70 | 9 | | | 1 | | |
| | 8 | 70-80 | 1 | | | 1 | | |
| | 9 | 80-90 | | | | 1 | | |
| | 10 | 90-100 | | | | 1 | | |
| STP | 1 | 50-70 | 15 | | | | | |
| STP | 2 | 50-70 | 6 | | | | | |
| STP | 3 | 50-70 | 11 | 1 | | | | |
| STP | 4 | 50-70 | 26 | | | | | |
| STP | 5 | 50-70 | 20 | 1 | | | | 2 |
| TOTAL | | | 165 | 2 | 1 | 33 | 1 | 7 |

The survey identified two Kwale-type sites of which one close to the ocean (10 km) seem to have smelted iron. This is because a relatively large amount of slag was found, as well as a piece of oxidized tuyere. Although no Kwale site was excavated in this field season, other excavated Kwale sites on the littoral and islands (Chami and Msemwa 1997a and b) indicate that the central coast and the area around the Rufiji delta have a high concentration of Kwale sites. These are dated to the 3rd and 5th centuries AD. The presence of Kwale type site on the islands of Mafia and Koma off the Rufiji delta also indicate that the EIW people were advanced in maritime technology, enabling them to venture into the deep sea. Equipped with iron tools they could make large vessels in the model of our modern dhows (Chami and Msemwa 1997a).

The excavation of Mwangia throws light on the late phase of the EIW culture. Radiocarbon dates from excavation on a similar site at Ziweziwe near the Kisiju port dates the tradition to the 6th century AD overlapping with the early TIW phase (Chami and Kessy 1995). Two other sites with Mwangia type of pottery were found during this field research. Given the number of the EIW sites now known on the central coast of Tanzania one could hypothesize that the population of the EIW people was fairly high. The percentage of the surveyed area, compared to the unsurveyed, is in fractions, yet we have more than 14 EIW cultural sites.

It has been proposed elsewhere that the TIW cultural tradition was derived from the earlier EIW tradition (Chami 1995-96). The Nkukutu site provides the best evidence for the stratification of the TIW materials above the EIW cultural horizon. A similar occurrence but yet unreported has been observed on the Kwale type site of Kivinja where TIW materials are stratified on top of the Kwale EIW cultural materials (Chami-forthcoming). This is enough evidence to put to rest the idea that the people of TIW tradition were earlier than the EIW people on the coast of East Africa (Horton 1990). The TIW tradition represents a culture which temporarily covered the period from the 6th to the 10th centuries and spatially covered the islands of the East African coast all the way to the far hinterland (Halgsud 1995-96; Mapunda 1995).

This research indicate that there is an area which awaits a further research and that is the

coastal Stone Age. The find of pre-EIW period occupation at Nkukutu site show that the coast has had Later Stone Age population whose cultural materials are yet to be properly identified.

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