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The transition from the stone age to Iron age in East Africa: excavations at Nkuba rock shelter, Bussi Island, Lake Victoria, Uganda

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ABSTRACT

The Stone to Iron Age transition in northern Lake Victoria Nyanza is typically associated with the spread of Bantu speaking people from Cameroon to east Africa in the first millennium BC. Here we present the results of excavations carried out in 2006 at Nkuba rock shelter on Bussi Island on Lake Victoria, Uganda, where both Late Stone Age lithic materials dating ca. 1411-1275 BC, and Early Iron Age (EIA) Urewe ceramics dating between ca. 1303-1123 BC and ca. 771-887 AD were found. The Urewe horizon is characterised by both ceramics and lithics, and represents an intermediate stage between the lithic dominated Later Stone Age (LSA) phase of occupation, and the Later Iron Age (LIA) phase that has ceramics but no lithics. Analysis of seeds and bones revealed no evidence of domestic agriculture or pastoralism at the site. The site was dated for the very first time and elements of continuity between occupation phases suggest gradual process of transition rather than abrupt transition / population replacement.

Keywords: Later Stone Age; Early Iron Age, Urewe ceramics, Agriculture

Introduction

In this paper, we report on archaeological excavation conducted at Nkuba rock shelter, Bussi Island, Lake Victoria in 2006. Nkuba Rockshelter is located on Bussi Island, Busiro County, Wakiso District, Uganda (0°0.02'S, 32°0.23'E) (Figure 1). The island is situated in the northern part of Lake Victoria; about 2 km south of Gulwe fishing port and is separated from the mainland by Mabamba Swamp. Bussi Island has a monsoonal equatorial climate, receiving heavy rains twice a year from March to May and October to December. The favourable climate means the island is well suited to various forms of agriculture, being renowned today for growing the sweetest pineapples, as well as beans, sweet potatoes, and cassava. A few animals such as goats, cows, and pigs are also reared while fishing is carried out early in the morning and in the evening. The Nkuba rock shelter is located on a low knoll of limonite (Figure 2), about 500m from the shoreline. It is a small shelter measuring 5 m wide and 5 m deep, with a height of approximately 1.6 m at the entrance that gradually gets lower towards the back wall.

New data on the transition from hunting and gathering to Iron Age at Nkuba rock shelter has been revealed. A lot is known about the hunting and gathering Later Stone Age and Early Iron Age farming communities in the Great Lakes region but little is known on how the former transitioned to farming and the relationship between hunter-gatherers and farming groups during the transition. The little that is Known comes from east, west and south of Lake Victoria and almost nothing from north in central Uganda. We also do not have enough information about the economic resources the Early Iron Age (EIA) Urewe using groups exploited and their settlement patterns. In addition, dating EIA sites has been problematic due to financial constraints associated with Ugandan field projects. As such, dating sites has largely depended on published works and on resemblance of ceramic traditions recovered from the site. This study therefore intended to cast light on these issues raised here through examination of 2006 excavations, analysis of cultural materials and the radiocarbon dating of 4 charcoal samples. In the section below, detailed background of the study is given.

Background

The origins and spread of farming in East Africa and sub-Saharan Africa has been examined. This has been done in relation to dispersals and interactions between three broad human populations: Cushitic-speaking people, Nilotic-speaking groups and Bantu-speaking people. The Cushitic-speaking people migrated to south and west from the Sahel region before the 3rd millennium BC and have been associated with the emergence of Neolithic farming and pastoralism in East Africa (e.g., Ehret 1974; Hassan 1987). Nilotic-speaking groups moved to south from the Sudan from the first millennium BC and are linked to the spread of pastoralism to southern Africa (e.g., Ambrose 1982). Bantu-speaking people migrated to east from Cameroon in the first millennium BC and are associated with the appearance of iron smelting, agriculture and pottery-making across vast swathes of East Africa (e.g. Posnansky 1961; Huffman 1970; Clist 1987; Grollemund *et al* 2015). Uganda sits at the cross-roads of all these migrations and is therefore a key area for studying these complex processes of dispersal, interaction and cultural transformation during the transition to food production. While a great deal of archaeological research has been done on the period between the Early and Later Iron Age in Uganda recently (e.g., Robertshaw 1994; Robertshaw & Taylor 2000; Reid 2002; Kiyaga-Mulindwa 2004; Ashley 2010; Reid and Ashley 2014), relatively little has been done on the transition between the Later Stone Age (LSA) and the Early Iron Age (EIA). Those that have worked on the LSA and EIA like MacLean (1994-95) concentrated on settlement patterns based on survey data. MacLean (1994-95) deduced that EIA communities pushed LSA communities out of productive agricultural areas. However, this line of thinking has been questioned by a number of studies (e.g. Lane *et al* 2007; see also Vansina 1994-5; Tibesasa 2021; Tibesasa & Jones 2021; Jones and Tibesasa 2022). Historical linguistic reconstructions also reveal a complex story, with localised and varied subsistence strategies emerging and developing during the EIA period (2500-1000BP) (see Schoenbrun 1998). In addition, archaeological evidence associated with the first appearance of farmers is also mixed, with clear indications that there is overlap with the Later Stone Age Kansyore hunter-gatherers (see Pearce and Posnaskay 1963; Lane *et al* 2007; also, Kyazike 2016; Kyazike 2019). In this paper evidence for the transition from LSA hunter-gatherers to Iron Age on Busi Island in the northeast of Lake Victoria is examined through excavations undertaken at Nkuba rock shelter in the year 2006. In many parts of East Africa, different LSA, Pastoral Neolithic, and Iron Age ceramics are often found together in the same deposits at some sites. For example, LSA Kansyore pottery has been found in association with pastoralist Neolithic Elementeitan and Akira, as

well as Early Iron Age Urewe pottery at Gogo Falls in western Kenya (Collet & Robertshaw 1980; Robertshaw 1991). At Wadh Lang'o, in western Kenya, Kansyore pottery was found co-existing with Urewe and Midle Iron Age pottery (Lane *et al* 2007:67). Kansyore was also found in the same deposits as Nderit and EIA pottery at Nyang'oma, Chole and Seronera in Tanzania (Soper and Golden 1969; Bower 1973); and in the same deposits as Iron Age Urewe pottery on the Kagera River, Kansyore Island, and Lwala in Uganda (Ponsnansky 1961; Chapman 1967; Kyazike 2016; Kessy *et al*. 2011). These co-occurrences were previously thought to be the result of depositional mixing of artefacts from successive occupations by different ethno-linguistic groups rather than as evidence of contemporaneity. However, new dating and interpretation indicate that the coexistence of different ceramic traditions likely reflects interaction (Karega- Múnene 1996; Karega- Múnene 2003; Kusimba and Kusimba 2005; Lane *et al*. 2007; Prendergast et al 2007; Kessy *et al* 2011). This has altered perspectives on the transition to farming in East Africa (Lane 2004; Kusimba and Kusimba 2005), with gradual and localised process of change being suggested for the shores of Lake Victoria in western Kenya (Lane *et al*. 2007).

Recent research on the northern shores and Islands of Lake Victoria, Uganda has concentrated on the extensive distribution of Urewe pottery, including transitional pottery types between Urewe and Later Iron Age pottery (Reid 2002; Ashley 2005; Ashley 2010; Reid and Ashley 2014). This research attempts to shed light on the transition from the LSA to the Iron Age on Bussi Island in northern Lake Victoria. In the section below excavation and artefact distribution are described to enable us a detailed information on the transition process, relationship between LSA and Iron Age through examination of 2006 excavations, analysis of cultural materials and radiocarbon dating of four charcoal samples.

Excavations at Nkuba rock shelter

A 2x1m test pit (TP 1) was sunk into the shelter to assess the archaeological integrity of the deposits. Based on the concentration of artefacts recovered from this test pit, a 3x1 m trench was excavated adjacent to the south-eastern corner of the test pit (Figure 3). The trench was excavated in two phases in July and November 2006: 2x1 m (TR 1) in the first phase and a 1x1m extension (TR 2) in the second phase (Figure 3). Excavation wasconducted in 5 cm spits with spits that crossed multiple contexts being subdivided to follow stratigraphy, and the excavated sediment sieved on-site through a 5 mm mesh.

Layer 1 was about 5 cm thick composed of levels 1(0-10cm) to 7(35-40cm) and was light olive brown (Hue2.5Y 5/3) loose sandy silt. It contained a 1966 Ugandan coin (Figure 4). Under layer 1 were several discrete patches of different coloured silty sands going down to about 40 cm deep, representing hearths and other discrete activities. These patches were light grey (Hue 10YR 7/2), red (Hue 10R 1/8), and olive brown (Hue 7.5 YR 5/4) (Figure 4). Cultural materials found in these patches included metals, cowry shells, Late Iron Age (LIA) Roulette Tradition pottery, and bones.

The second main layer was about 95 cm thick, composed of levels 8(40-45cm) to 29(140-145cm) and was a dark brown (Hue 7.5 YR 4/4), compact sandy silt (Figure 4). This layer contained LSA, and EIA cultural materials, together with recent Roulette Tradition ceramics (Table 1).

The lowest layer was about 35 cm thick, composed of levels 30(145-150cm) to 36(175-180cm) and was a dark yellowish brown (Hue 10 YR 3/4) sandy silt with abundant gravel inclusions (Figure 4). The cultural material from this layer was dominated by lithics but some fragmentary plain potsherds were recovered from the upper part.

Excavation findings: Pottery

Pottery was the bulkiest and most frequent of the cultural finds at Nkuba rock shelter. 1,090 sherds were recovered from the excavations (TR 1 and TR 2). Of these 1,090 sherds, 185 (17%) were diagnostic of a particular tradition and included rims, decorated pieces, and bases. Three different ceramic wares were identified in the excavated material: Roulette, Entebbe, and Urewe (EIA). In addition to these wares, 47 internally incised potsherds were recovered that were not able to be associated clearly with any known ceramic tradition. These sherds had two decoration elements, horizontal incisions and zigzag incisions, which were placed on the inside of the body. No vessel shape could easily be identified for these sherds. They had a similar distribution throughout the sequence as the Roulette pottery and they may be part of this, or the similarly decorated Entebbe tradition. In the pottery description below, emphasis is put on decoration, shape and fabric because these are the variables that can enables information on time investiment, size of the community, function of the pot among others. All this afford us information on settlement and subsistence economies of the producers /users of these ceramics and the connections between them.

Out of 185 diagnostic potsherds, 90 were identified as belonging to the Roulette tradition (Figure 5), which is characterized by horizontal bands of twisted and carved wooden roulette; alternating incised hatched bands; oblique twisted impressions, especially on the lip; horizontal wavy impressions; and horizontal impressed lines or incisions (Robertshaw 1994). Vertical bands of strip knotted impressions; vertical zigzag impressions; alternating horizontal and vertical impressions; horizontal rectangular impressions; and a triangular incision with bands of string impressions were also identified in the Nkuba Roulette pottery assemblage. The majority of design elements were placed on the body (57%), followed by the neck (17%), rim/body (10%) and neck/shoulder (4%). Five vessel shapes were identified: restricted bowls, open bowls, independent restricted vessels, dependent restricted vessels and restricted jars that could have been either independent or dependent. Few rims were identified in this group and their diameter ranged from 12cm to 43cm. Thickened everted and flat/square rims were observed in this assemblage. Everted open-mouthed vessels have been known for easy access (Hendrickson and McDonald 1983; Rice 1987: 238 see also Ashley 2010). Based on our modern field observations of pot function, the larger pots with everted and open mouth could have been used for collecting rainwater from the roof and storing as well as brewing beer locally known as 'Mwenge Bigele'; medium pots may have been for drinking this beer, while small pots could have been used for boiling stew. Sand and clay pellets/ grog were the major inclusions in this tradition. The former seems to have been primary inclusions because they have fine (0.1 – 0.25mm) rounded and are very common (30-39%) inclusions. The later was likely intentionally added as temper but is moderate (10-19%) in frequency and medium (0.25-1.00mm) in size. Almost 90% of the sherds were oxidised on the interior and exterior but had unoxidized cores. Their textures ranged from smooth to sandy and were made by hand evidenced by their hackly fracturing.

Ten sherds of the Entebbe tradition were recovered from the stratified excavations and all were rims. Rouletted cord, Comb scoring decorations arranged in herringbone pattern, horizontal channels on some sherds distributed from upper part of the rim all the way down the outside the vessels were observed and in some sherds scores extended to the interior (Figure 6). Of the 10 entebbe sherds, seven were decorated on the rim/shoulder/body, two were decorated on the rim, and one on the body. Vessel shape was identifiable in 70% of cases with all forms being open and restricted hemispherical

bowls. The rim diameter ranged between 22-48cm and the rim types were flat/squared thickened on the interior and rounded rims thickened on the interior. Thick walls are known for their increased stability as well as their resistance to impact (Rice 1987:227) and are therefore good for storage and processing functions. However, given the open mouth of these vessels the storage function does not seem appropriate and perhaps could have been used for communal events as suggested by Ashley (2010: 155). The sherds were largely grey on the exterior and interior with exception of one piece that was black. The core all through was black in colour suggesting they were not oxidized. Rare (less than 3%) sub angular and very common (30-39%) rounded quartz sand plus sparse (3-9%) possible clay pellets/grog were observed. The inclusions were moderately sorted and sandy in texture. The sherds are hard and the manufacturing method used is not certain but they break unevenly. These have been dated to the late 1st to early second millennium AD around Lake Victoria Nyanza (Ashley 2005, 2010; Lane et al 2006) In addition, twenty five sherds of the Urewe tradition were identified at the site (Figure 7). They are characterised by wide and narrow cross-hatching, oblique incision, single horizontal lines and lines of punctuates as well as V-/triangular grooved lines. Most decorations were placed on the body (46%), followed by the rim (36%), neck, and shoulder (1%), by a stylus/comb implement on leather dry clay, making the lines very fine. Three pieces seem to have had black slip on them. As far as shape was concerned, 28% were restricted bowls, 20% were restricted jars, 2% were open bowls, and 50% were too fragmented to be identified. Three types of rims were identified; bevelled, rounded and flat/squared. The rim diameter ranged from 8-28cm, indicating a range of vessel sizes, but no bases were recovered. Sherd colour was black on both surfaces and the core indicating they were not oxidized, however it is unclear if this was intentional. One flat/squared rim had red slip on both exterior and interior. The inclusions on breakage of some of the smallest pieces ranged from fine (0.1 - 0.25mm) to coarse (1.0-3.0mm), well and poorly sorted, with a smooth and sandy texture. Moderate (10-19%) to common (20-30%), sub-angular quartz and rounded sand inclusions were observed but it was difficult to determine whether these were naturally included or used as temper. Interestingly, all the fine (0.1 to 0.25mm) well sorted with smooth texture and moderate inclusions sherds largely belonged to restricted bowls. The fabric and the decoration on a few of the sherds clearly suggests production by skilled potters. Based on the decoration and fabric of pottery recovered from this site it is clear that there was contact between Urewe and Enttebe traditions but there was no connection of the two traditions with roulette.

Lithics

The flaked stone tools occurred throughout the sequence and were made on a restricted range of materials, principally crystal and milky quartz. Forty-three diagnostic lithics were selected for detailed analysis. They were small, with a mean debitage weight of just 1.97 grams. Fifty-three percent of complete flakes (n=34) displayed crushed platforms and/or terminations, consistent with their production through the bipolar technique. This supposition is confirmed by the four cores from the sample, which are all bipolar (Figure 8). The two retouched artefacts were a notch and a side scraper. Relatively low levels of cortex for quartz, 67% of artefacts have no cortex on them; coupled with the presence of two rejuvenation flakes in the small sample, indicate long reduction sequences. The cores have a mean length of just 23 mm but with an average of 10 scars per core (Figure 10), further indicating long reduction sequences and perhaps production by mobile people. One of the bipolar cores is a particularly exquisite example that demonstrates that bipolar here (at least in the LSA levels) was not an ad hoc strategy, but a well-used method that the knappers were adept at (Figure 8). There was no discernible change in material, size, or technique across the sequence. Bipolar quartz lithics are characteristic of the LSA, but have also been

found in association with Iron Age ceramics at other sites in East Africa (e.g. Eren *et al*. 2013; Walz 2010; Crowther *et al*. 2014).

Other Finds

A range of other cultural materials were also recovered from the excavations, including carbonized *Canarium* nuts, bones, slag, metal pieces, rubbing pestles, ochre, and two cowry shells (Table 1). A total of 322 carbonized *Canarium* endocarps, known locally as "*mpafu*", were found throughout the Nkuba sequence, but concentrated in the lower half (Table 1). These seeds were also identified at Ruhanga Rockshelter on the southern side of Lake Victoria Nyanza, where they were associated with Kansyore pottery (Kwekason and Chami 2003). Archaeological data from the north-western parts of Lake Victoria suggest that *Canarium* seeds were gathered not cultivated (Reid 2004). Their presence at this site indicates that groups in this area supplemented their diet with collected plants since they are well distributed in all levels. In addition to the plant remains, a total of 236 bones were also recovered from the site. No bones of domestic animals were found, only those of small wild animals. These were also concentrated in the lower half of the sequence (Table 1). This suggests that Nkuba rock shelter was occupied by people who hunted and trapped, though they may have carried out agropastoral subsistence elsewhere.

Small pieces of slag and metal objects were recovered at the site. Metal objects included arrowheads, hooks, bars, and round and ring shaped pieces. Some of these metals occurred with small slag pieces, but no furnace remains were found, suggesting smithing activities were taking place in this area.

The Material Culture Sequence

Comparison of the frequencies of ceramics and lithics found throughout the Nkuba sequence (Figure 9) indicates that there are three broad phases of occupation. In the lower part of the sequence lithics dominate, with the three ceramics below 150cm likely introduced through bioturbation. The phase is represented by one radiocarbon date ca. 1411-1275 BC (**AMS#028796**) (**Table 2**). In the middle of the sequence Urewe ceramics occur alongside lithics, Canarium, and wild animal remains. The middle phase is represented by 3 radiocarbon dates ca. ca. 771-887AD (**AMS#028793**), ca.1303-1123 BC (**AMS#028794**) and ca. 541-405 BC (**AMS#028795**) (**Table 2**). In the upper part of the sequence LIA ceramics occur alongside metal objects and slag, while lithics and wild foods drop off in frequency, although they are still present. At a depth of 50cm, there appears to be a late dip in ceramics and a peak in lithics, which could reflect a different functional use of the shelter and/or temporary occupation by a different group.

Dating

Four charred seed samples collected from the upper part, middle and lower part of layer 2 and layer 3 respectively (Table 1). Dates for the thick layer 2 span ca.1303-1123 BC, to ca. 771-887AD and layer 3 dates ca. 1411-1275 BC (see Table 2). From the dates available, a pre –Iron Age occupations at Nkuba rock shelter is observed at around ca. 1300 BC. An invasion of dates is observed in thick middle layer where the lower part (140-145cm below the surface) date young than the middle part (120-125 cm below the surface) (Table 2). The invasion could be a result of disturbances evidenced by ant burrows (see Figure 4) or slopping stratigraphy at this site. That aside, Urewe phase at this site (Table 1) represents an initial contact when Urewe users were still using stone tools quite a lot and not necessarily relying

on Iron. The dates at this site represent the earliest radiocarbon dates for Urewe sites on the northern shores of Lake Victoria and Uganda large. Early dates of ca. 502- 462 BC (Pta-9010) have been obtained at Malanga Lweru but were refuted on the basis of few Urewe sherds that could not represent a meaningful site occupation(Ashley 2005:184). The refusal of this date could also be attributed to the belief that the earliest Urewe sites were supposed to be west of Lake Victoria in areas around Buhaya, Rwanda and Burindi. Instead, Ca. AD85 (141) 238 (Pta-9030) was preferred as the earliest date for the whole of Uganda (see Ashley 2005). With the current dates however (Table 2), and many more dates from northern shores of Lake Victoria, eastern Uganda (Tibesasa pers.com; Tibesasa 2021; Tibesasa and Jones 2021; Jones and Tibesasa 2022), it's possible that Urewe using communities occupied the northern shores earlier than previously thought. It is also possible that Ashley's (2005) date (ca. 502- 462 BC (Pta-9010) is not erroneous as earlier thought.

Discussion

The goal of this research was to develop a sequence of ceramic traditions and associated material culture from the LSA to the Iron Age period in the northern islands of Lake Victoria Nyanza, Uganda. It has been suggested previously that Uganda in general, and the northern Lake Victoria Nyanza islands in particular, were first settled by hunter-gatherers who were later replaced by people who used metal and Urewe pottery (Pearce and Posnansky 1963; Soper 1971; Posnansky *et al.* 2005). The Nkuba sequence has cast light on this transition. It suggests interaction between LSA and EIA communities that gradually resulted in a shift to farming and this is through assimilation, rather than replacement. This seem to be in agreement with the findings from western Kenya findings (Lane *et al.* 2007)

The Urewe pottery at Nkuba rock shelter was associated with lithics, a rubbing pestle, carbonized seeds of wild *Canarium* nuts, and the remains of wild small mammals and fish. Together, these finds suggest that the Urewe-using group occupying Nkuba subsisted on hunted and gathered foods, or at least practiced these activities while using the shelter. There is no evidence in any occupation phase, including the Urewe layers, for the keeping of domestic animals or the exploitation of cultivated plant foods, although it should be noted that archaeobotanical flotation recovery methods were not used during the excavation. The continuity in lithics from the LSA phase suggests the use of Urewe pottery may have entailed some adoption by a local population, rather than a wholesale replacement of incumbent hunter-gatherers. The occurrence of rubbing pestles and polished artefacts at other sites in East Africa has been associated with seed grinding (Leakey 1931), but this could be for wild or domestic grains.

Urewe pottery has received a lot of archaeological attention in Uganda, owing to its presumed association with the movement of Iron Age Bantu-speaking people through the region (Vansina 1995). In Trench 2, there is a lag between the earliest Urewe and the appearance of slag. While a few lithics continue to occur higher up the sequence, there is a sharp decline in their frequency at the point where slag comes into the sequence, perhaps because stone cutting tools were replaced by iron.

Entebbe pottery was found above the Urewe bearing levels, with little overlap between the two in either of the trenches, although there was a single piece of pottery sharing characteristics with both traditions. Entebbe pottery dates regionally from the late 1st to early 2nd millennium AD and has been described as transitional between Urewe and Roulette ware (Reid 2002; see also Ashley 2010; Marshall 1954).

In conclusion, Nkuba sequence begins with a bipolar quartz lithic industry typical of the East African LSA (e.g. Eren *et al.* 2013). This is followed by the introduction of Urewe ceramics when there is an intermediate period of lithic and ceramic use. After the introduction of metal, lithic use declines dramatically and the ceramics change to the LIA Entebbe and Roulette traditions. The transition from the Stone Age to the Iron Age thus appears to have been a two-stage process in which first ceramics were introduced and only later was this followed by iron. These findings mirror those from elsewhere around Lake Victoria with evidence for iron scarce at most Urewe sites, while continuity with the LSA in terms of the use of rockshelters, foraging, and lithic technology are apparent (Pearce & Posnansky 1963; Nenquin 1967; Gabel 1969; Nelson and Posnansky 1970; Lane 2004; Lane *et al.* 2007). The two stage nature of the transition at Nkuba, as opposed to a more abrupt wholesale change, coupled with the continuity in lithics and wild produce through the sequence suggests the beginning of the Iron Age, and the likely concomitant introduction of Bantu languages, was a process of assimilation rather than replacement in northern Lake Victoria.

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Table 1. Combined finds total by spit for Trenches 1 and 2. UR = Urewe Ware; EN = Entebbe Ware; RO = Roulette Ware; IN = internally incised ware; Un = undiagnostic ceramics. Three pieces of ochre were found at 40-45 cm, 60-65 cm and 65- 70cm. Pestle fragments were found at 20-25 cm and 50 to 55cm. Two cowry shells were found in the top 10cm.

Layers	Levels	UR	EN	RO	IN	UN	Total Ceramics	Lithics	Metal and slag	Bones	Canarium
L1	0-10cm					3	3	0	8	8	
	10-15cm					9	9	0	4	4	
	15-20cm					6	6	1		5	1
	20-25cm			1	1	14	16	2		9	
	25-30cm		1	3	3	20	27	1			
	30-35cm		2	5	5	39	51	0		2	
	35-40cm		1	8	3	105	117	5			2
L2	40-45cm			17	2	53	72	2		1	
	45-50cm			8	1	21	30	22		1	4
	50-55cm		1	10	4	45	60	3	1	1	3
	55-60cm		1	11	2	85	99	3			2
	60-65cm	2	1	7	2	32	44	5	3		
	65-70cm			5	3	40	48	5	1		
	70-75cm			2	3	104	109	4			1
	75-80cm	3		10	6	107	126	3	2		22
	80-85cm			8	5	41	54	2		3	12
	85-90cm		2	5	2	20	29	1			7
	90-95cm	13		1	4	57	75	1		7	21
	95-100cm						0	17		6	19
	100-105cm	3		1		29	33	24		16	16
	105-110cm	1				14	15	35		42	29
	110-115cm	2			2	22	26	16		7	26
	115-120cm					3	3	20		10	20
	120-125cm	1				11	12	53		19	26
	125-130cm					9	9	55		17	28
	130-135cm					5	5	25		9	5
	135-140cm					4	4	81		17	3
	140-145cm					3	3	32		14	30
L3	145-150cm						0	62		13	30
	150-155cm					1	1	75		10	19
	155-160cm						0	60		12	13
	160-165cm					1	1	32			13
	165-170cm						0	15			
	170-175cm					1	1	3		3	
	175-180cm						0	1			

Table 2. Radiocarbon dates from Nkuba rock shelter.

Layer	Depth in cm	Material	Radiocarbon age	Error	Lab Code: D-AMS#	95.4% probability calibrated range
2	90-95	Charred seed	1198	20	028793	771-887 AD
2	120-125	Charred seed	2996	30	028794	1303-1123 BC
2	140-145	Charred seed	2413	19	028795	541-405 BC
3	160-165	Charred seed	3075	23	028796	1411-1275 BC

Figure 1. The distribution of sites mentioned in the text with Bussi Island indicated by the star.

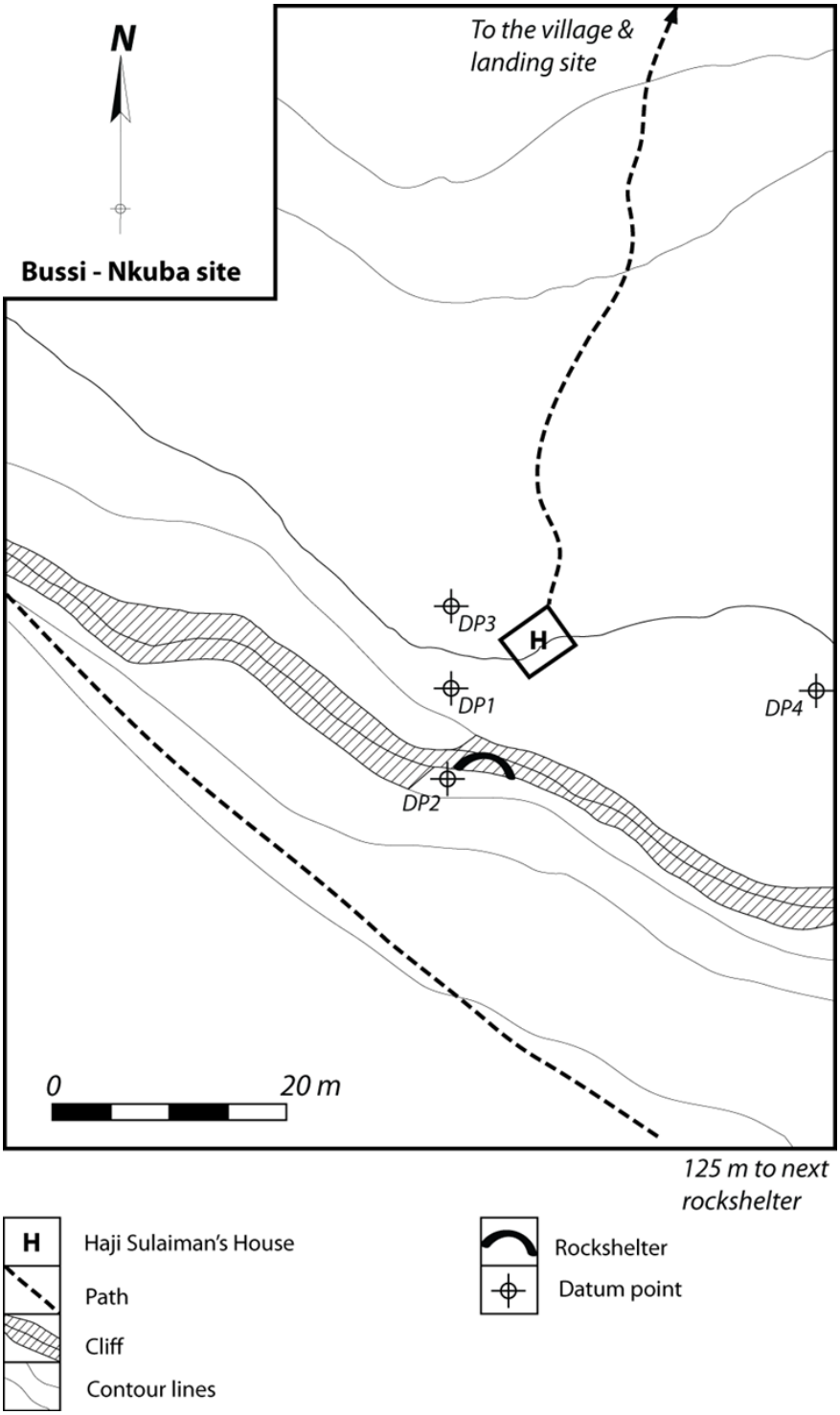

Figure 2. The Nkuba Rockshelter locale.

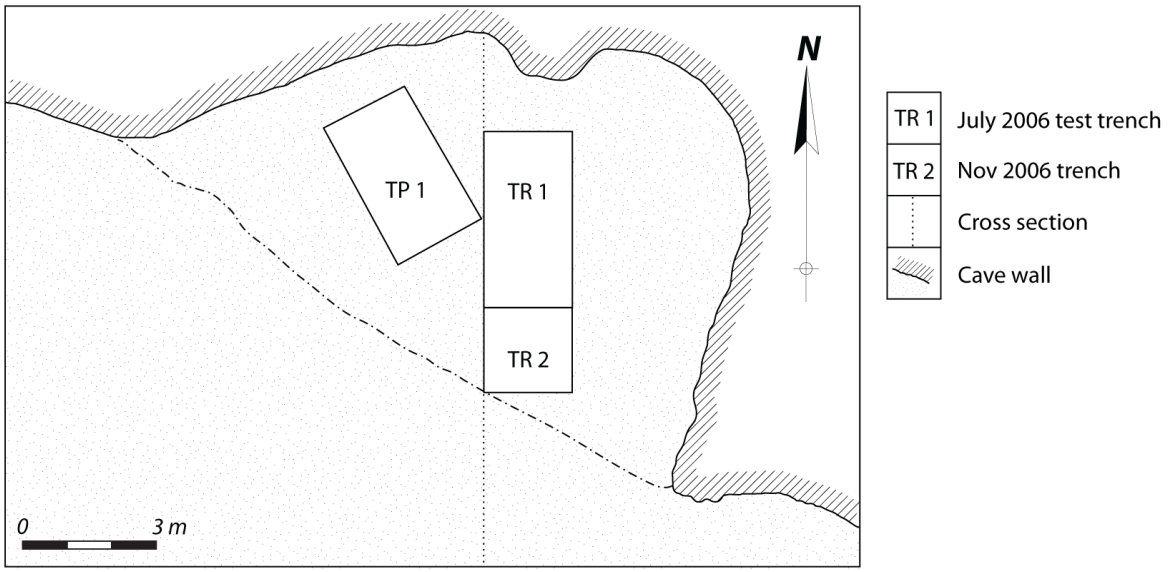

Figure 3. Plan of the site showing the location of the trenches

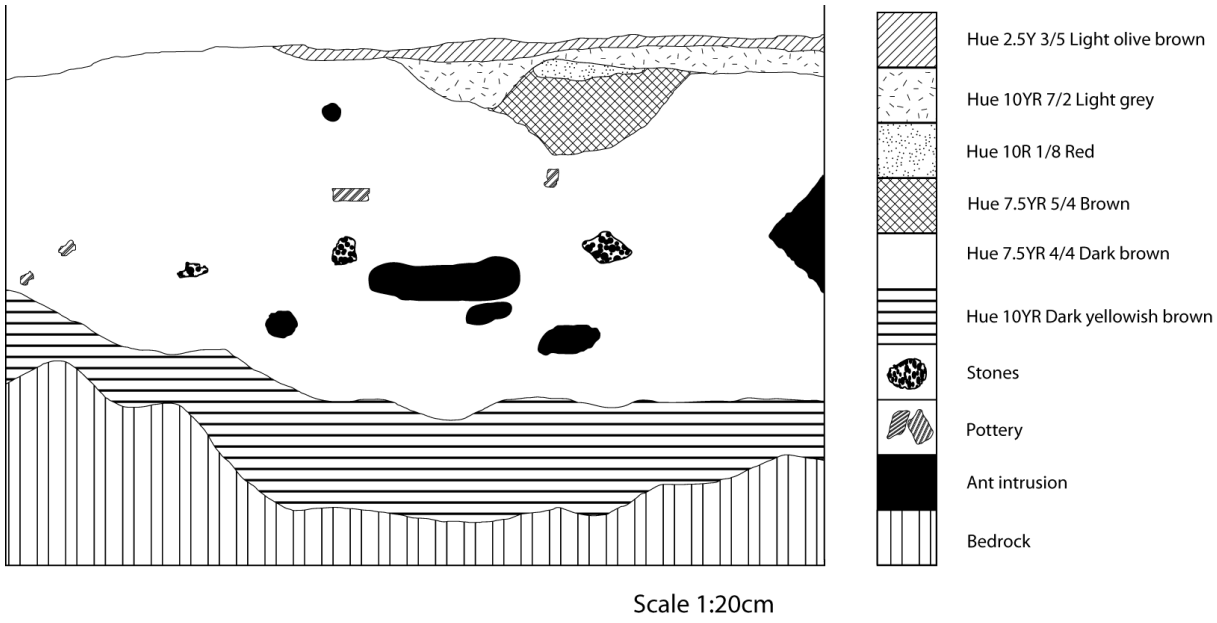

Figure 4. Profile of Trench 1 and 2 western walls

Figure 5. Roulette ceramics from Nkuba

Figure 6. Entebbe ceramics from Nkuba

Figure 7. Urewe ceramics from Nkuba

Figure 8. LSA bipolar quartz core from Nkuba. Note that the core has been completely decorticated; it is exceptionally thin; its two platforms run across the entire width of the core; and it has many flake scars on it.

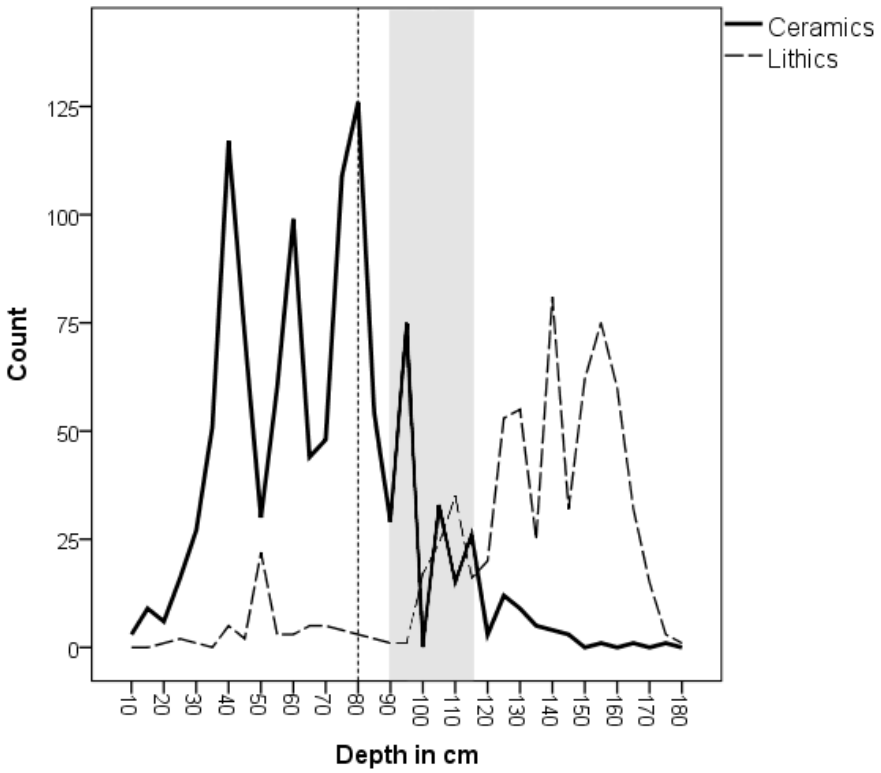

Figure 9. Frequencies of lithics and ceramics in the Nkuba sequence. The shaded zone denotes the Urewe dominated horizon, while the dashed line denotes the lowest metal/slag.