
ARCHAEOLOGICAL INVESTIGATION OF HERITAGE RESOURCES IN UMUOYO NRU, SOUTHEASTERN NIGERIA

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Abstract

This paper presents heritage resource from archaeological sites in Umuoyo Nru Southeastern Nigeria. The study tends to identify early human history and activities in the study area based on heritage resource and iron-smelting sites. The approach used in this study consists of ethnographic, archaeological excavation and slag analyses. Slag analysed and ore point to haematite as the major raw material used for smelting, which was possibly sourced within the environment. The technology revealed the period of human settlement. It further highlighted the human behavioural and subsistent pattern within the study area.

Keywords: *slag, heritage resources, activities.*

Introduction

Material culture studies as a field emerged in the late 1990s and early 2000s with a focus on the recursive relationship between people and objects. Within Africa, associated methodologies were originally ethnographic and historical which seek to overcome earlier treatments of African objects as art that led to an overstated emphasis on connoisseurship and authenticity. It was in the latter half of the twentieth century that more contextual, anthropological approaches examined the roles of objects in shaping identities and societies within modern African communities, thereby rejecting the notion that African objects and their value could be most authoritatively defined by an external art market or art historical community (Arnoldi and Hardin, 1996: 5, 8). This turn did not reject historical approaches to material culture but largely sought to bridge them with anthropological ones. Studies emerged that featured long-term, ethnographic fieldwork while emphasizing an agenda that included indigenous classification schemes and forms of knowledge about objects and technologies, the shifting meanings of objects, and how those meanings could produce modes of exclusion and inclusion (Arnoldi and Hardin, 1996: 11). More recent study show that material culture can be treated as a piece of knowledge that can be used, celebrated, protected, and commodified (e.g. Rowlands, 2006: 443). Material culture studies in Africa have expanded to consider the roles of objects and technologies in the politics of recognition that characterise the related field of African heritage studies.

Heritage studies fundamentally focus on the role of the past in the present. Whether as a tangible object, discourse, commodity, or something else, they have produced a veritable wave of scholarship from archaeology, history, anthropology, art history, and other fields over the past few decades. Both heritage studies and public or community archaeology have foregrounded the centrality of disciplinary self-reflection in articulating what archaeology can do in modern Africa, in terms of providing useful information to support people's livelihoods and illuminating lived experiences that had gone unnoticed under earlier disciplinary paradigms (e.g. the archaeology and heritage of urban spaces and of diaspora communities Mire, 2007; Weiss,

2014). Archaeologies of the modern world in Africa have focused on the spread of global mercantilism (supporting global slavery and colonialism) not as bygone periods or finished projects but as ongoing processes; in this, these perspectives resonate with those of historians and anthropologists who have long suggested that we reject the idea of distinct ruptures separating pre-colonial, colonial, and post-colonial present. Within anthropology, popular culture studies similarly reject a hard division between traditionalism and modernism. They also examine how diverse genres engage with different conceptions of time and materiality.

Background Information

Umuoyo autonomous community is a suburb located in Nsukka town. The study area is one of the three autonomous communities that make up Nru Nsukka Town: Iheagu, Ezema/Edem and Umuoyo hence, the name *Nrunaato*.

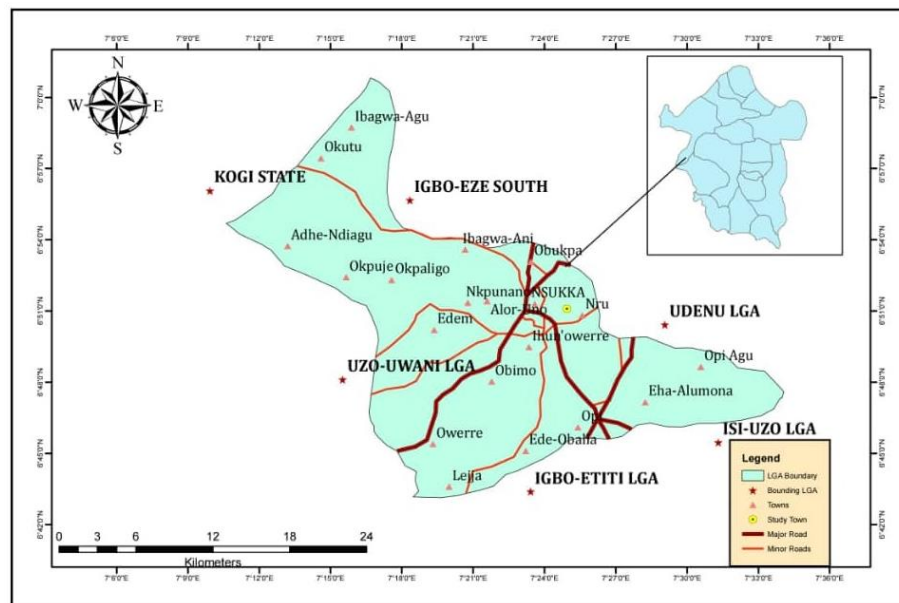


Fig 1: Map of Nsukka showing the study area.

Source: Google Earth as modified by cartographic unit, Archaeology Department, UNN.

The communities are arranged in order of seniority: Iheagu, Ezema, Edem and Umuoyo. Ezema and Edem are referred to as one community. Ezema and Edem are pronounced as "Ezema ne Edem" meaning Ezema and Edem. Umuoyo is one of the nine warheads of Nsukka town and it is made up of two quarters, Amigbo/Umaje and Umuala. The two quarters are made up of eight villages each in the following order, Umudimkwo, Amaigboelu, Umudule, Umugworie, Umuamokeabba, Amoka, Umuajiacha, Umudim, Umudiezugwo, Amaehuru, Umuezike, Umuezike Alike, Umuezikedioke, Umude, Umuezenacho and Amolu. This study was in Umudimkwo and Amoka villages of Umuoyo Nru Nsukka and the people are predominantly farmers. Two reasons influenced the choice of Umudimkwo and Amoka villages of Umuoyo Nru Nsukka autonomous community. First, the area offers great opportunities for cultural activities. Second, the area is rich with heritage resources which include indigenous knowledge, a healing system, iron workings, festivals and other cultural activities.

Umuoyo Nru community celebrate festivals such as Omaba festival, Egorigo festival, Onunu, onwa ise (new yam festival), onwa esaa among others. Amongst these festivals, some are

exclusive to the Umuoyo Nru community. They include the Onunu festival, Onwa Ise and Onwa Esaa. Onunu is an annual festival that occurs at the end of the year. The festival can be likened to the popular Ote festival (wrestling competition). The Onunu festival is known far and wide, attracting visitors from Amigbo, Umuaji and even Umuoyo people in the diaspora. Non-Christians in the community usually celebrate the Onunu by offering oil, yam and kola to the deity of the Onunu festival. The Onwa Ise festival in today's parlance is the new yam festival. Onwa Ise is the Seventh month (the month of harvest) according to the Igbo traditional calendar, which is counted beginning from the Onwaehukehu (the second month in the modern-day calendar). The Onwa Essa festival coincides with the Oriokpa season (a popular masquerade in the town). The Oriokpa masquerade is also popular and celebrated among many communities in Nsukka. Furthermore, the people recognise Chi Ukwu who is the Supreme God while the mediators were the diviners, seers, native doctors or the *dibias* who stood between them and the supreme God. Umuoyo Nru in the past has many deities they worshipped which today have lost their hold and potency due to the coming and spread of Christianity. Many African traditional worshippers have been converted to Christianity.

Based on oral tradition, the researcher learns that the origin of the people of Umuoyo-Nru has different versions. The first school of thought believed that Umuoyo migrated from Nrobo (another community in Nsukka popularly known for her pottery practices and traditions). This account is supported by the fact that Umuoyo-Nru at some point in time was called 'Umuoyonrobo' and the pottery utensils used in the community were got from Nrobo. Another school of thought believed that they migrated from Nri, the present-day Anambra State. Nri is known and perceived as the progenitor of the Igbo people in that many Igbo communities have traced their origin and migration from there. The third version indicated that the people of Umuoyo-Nru must have migrated from Igala in Benue State, Imo State or even Abia State, all in the Middle Belt to Eastern parts of Nigeria. This assumption is supported by the fact that Umuoyo-Nru has similar cultural practices and traditions to these people and above all they inter-marry. Moreover, all these states are geographical neighbours of Enugu State. Irrespective of the history associated with Umuoyo-Nru migration, the people believed that they existed on their own and were "Igbo" and owners of their land.

Research Method

The researchers employed ethnoarchaeological research method which comprises reconnaissance survey, ethnographic studies and excavations as well as documentation of materials recovered. During reconnaissance, archaeological sites and features were identified with the aim of assessing the archaeological potential for evidence of past activities in the area that pointed to the people's early heritage system. From the reconnaissance, it was identified that Umuoyo-Nru has a high concentration of iron debris which Umudimkwo and Amoka villages were chosen for our study and excavation. Archaeological sites identified within these communities were documented just as surface collections such as slag, haematites, metal objects and potsherds. Oral traditions were sourced from knowledgeable men and women who are versed in the customs and traditions of the people. These elders were able to provide us with their views on the migration and history of the area. They also furnished us with information about deities, traditional medical practices, blacksmithing, taboos, iron smelting, the general livelihood system and heritage resources in Umuoyo Nru. They were not able to give accurate information on the processes involved in iron smelting since they did not meet the technology but were told by the progenitors

that such technology existed. The iron debris seen around the environment served as evidence. The excavation was carried out by Mr Chukwuemeka Anthony Atangwu of the Umudimnkwo compound of Umuoyo Nru Nsukka. The aim of this study was to recover archaeological data and throw light on the human settlement, human behaviour and subsistent patterns within the study area. Other secondary sources such as books and journals archaeological remains, historical accounts, geological and geographical records; relevant unpublished materials and archival materials within a town in Nsukka, were also used,

Results

Excavation of archaeological materials beneath the earth tells the past activities of man at a given period. In carrying excavation in Umudimnkwo in Umuoyo-Nru, the site was identified based on a large concentration of archaeological materials and features. Through oral interviews with knowledgeable people and evidence of past remains the excavated site that aids to throw light on the past human activities within the area of study was chosen. In commencing the excavation, the datum point was established. It is a permanent base from where all measurements in the site were taken in order to initiate the North from the tripod stand. It is often seen as Bench Mark (B M), or the “principal alpha datum” (Lewis 1975). Our Datum point was Mr Attangwu Compound with a distance of 5.6m from the datum point on the North Pole to the excavation site. This was represented on a site plan (Fig. 2).

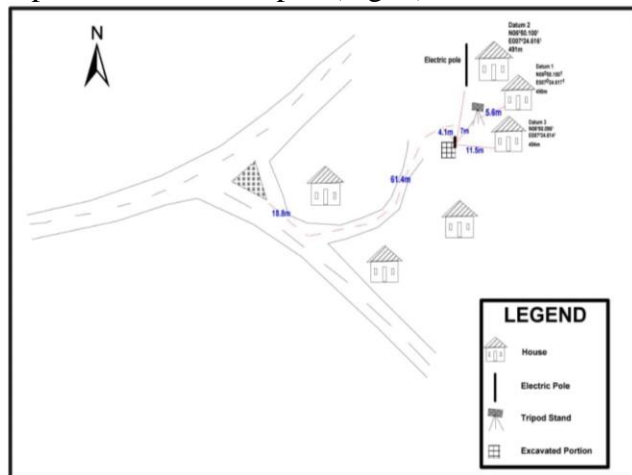


Fig 2: Site Plan Umuoyo showing Important features

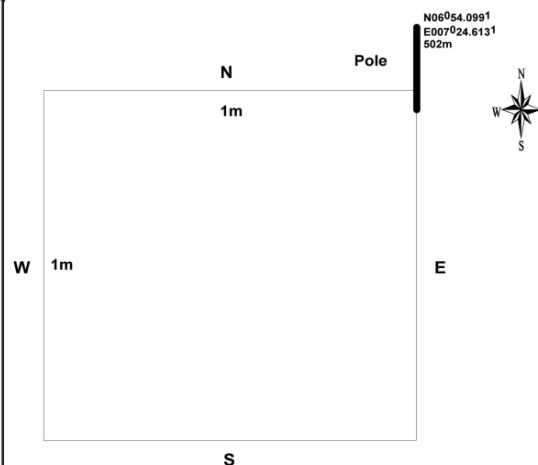


Fig. 3: Gridded site showing an excavated portion

A trench was initiated based on the Pythagoras theorem using A, B and C represented by 1m + 1m + 1m. The theorem adopted helped in achieving a perfect square whereby the sum of the area of points A and B are equal to the area of point C. After obtaining the unit square, the finite gridding of 1x1m was done and a spot was chosen (Fig. 3), for excavation based on abundant cultural materials such as potsherds and slag debris. The site was cleared for systematic and gradual digging (plate 1). The excavation was done with an arbitrary spit of 20cm which at 100cm the sterile level was seen though an additional 20cm was added to confirm the level. This brought to our knowledge that the level was not a hiatus. At **0-20cm** the digging began from the north pole and extended to other areas. Abundant rootlets and roots, aggregate slag and potsherds were seen. The soil appears coarse in texture and very dark reddish in colour (Plate 2). At **20-40cm**, the soil was reddish brown and coarse. Slag and pottery were still recovered (Plate 3). At **40-60cm**, there was a clear reduction of cultural materials such as potsherds and slag. Ore and

baked clay were retrieved while roots and rootless were reduced. The soil was compact in texture and reddish brown (Plate 4). At 60-80cm, only metal objects and slag were seen. The soil was compact and reddish brown (Plate 5). At 80-100cm the soil colour changed to red and became compact in texture. Only slags were seen sparingly till 98cm. At 100cm non was found again. An additional 20cm was added that showed 100cm was our sterile level (Plate 6).



Plate 1: cleared site for excavation; plate 2: spit 0-20cm; plate 3: spit 20-40cm; plate 4: spit 40-60cm; plate 5: spit 60-80cm; plate 6: spit 80-100cm

Materials recovered from the various spits were sieved and recorded (Table 1). Alexander (1970) and Asakitikpi (2001) posited that sieved materials during excavation are a simultaneous process by archaeologists in the field. Renfrew and Bahn (2000) opined that excavation results come from the following: good organization, detailed plan, either in chart or field notes and layer-by-layer reconstruction of a given site. On this basis, the materials retrieved were represented in charts (Fig 4).

Table 1: Showing Archaeological finds from Umudimkwo in Umuoyo-Nru

SPITS	SLAG	POTTERY	KERNEL	BONE	METAL OBJECT	Ore	Baked Clay
Surface collection	16	6	1	1	0	0	0
0-20cm	95	52	0	0	0	0	0
20-40cm	16	26	0	0	0	0	0
40-60cm	20	39	0	0	0	4	2
60-80cm	14	0	8	0	2	0	0
80-100cm	14	0	0	0	0	0	0

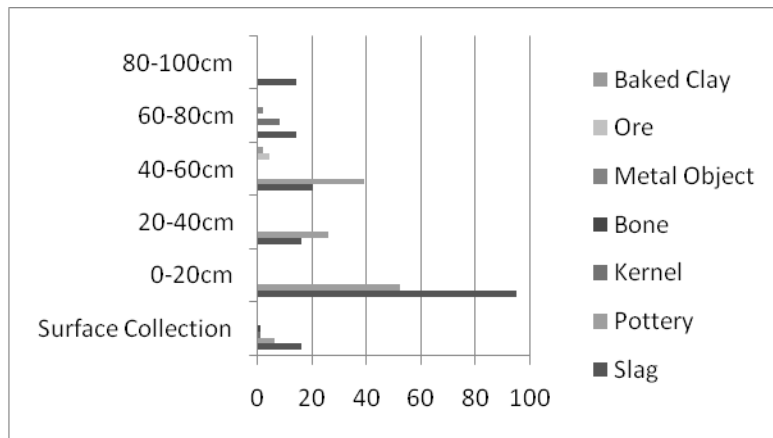


Fig 4: Bar chart cultural materials retrieved from the excavated site in Umudimkwo in Umuoyo-Nru

Stratigraphy of Iron Smelting Site in Umudimkwo in Umuoyo-Nru

Stratigraphy as defined by Sharer and Ashmore (1979, p. 214) is “the layering of matrices and features that reflects the geological law of superposition, the sequence of observable strata, from bottom to top, reflecting the order of deposition from earliest to latest”. In the Umudimkwo Umuoyo site, the stratigraphy was drawn after artefacts were labelled and bagged layer by layer. A root cutter, hand trowel and brush were employed to smoothen and clear the layers for accurate results. The natural stratigraphy of the study area was observed. Ibeanu (2000) postulates that “natural stratigraphy represents the soil layers observed as well as records of the specific soil deposition history in the soil profile of a given area, while cultural stratigraphy represents the distribution pattern using both vertical and horizontal cultural materials within the soil strata”. Invariably, the stratigraphy is essential in depicting the culture of our study area. The stratigraphy was done and four layers were identified based on cultural materials inclusions, soil texture and soil colour.

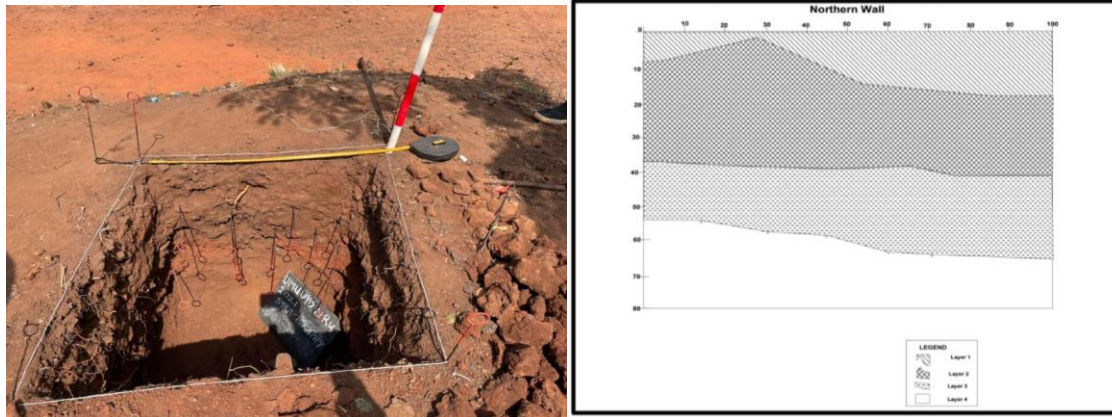


Plate 7: Stratigraphy of Iron Smelting Site in Umudimkwo in Umuoyo-Nru

Archaeological analysis and interpretation of Finds

Materials retrieved from the site were analyzed which helped to draw inferences from physical features and possible composition of minerals in the slag and pottery. Furthermore, it aid to understand the cultural sequence within the study area. A total of 10 samples were randomly selected from the entire cultural materials retrieved from the surface collection and spits. Below is a tabular representation of slag and potsherds obtained from the study area.

Table 2: Shows an analysis of slag debris from Umudimkwo in Umuoyo-Nru

Surface collection (18 pieces)										
Slag no	1	2	3	4	5	6	7	8	9	10
Length	10cm	4cm	5.3cm	8.5cm	3.1cm	6.7cm	6.5cm	3.2cm	4.8cm	3cm
Width	8cm	2.2cm	3cm	6.4cm	1.3cm	4.8cm	2.8cm	1.5cm	3.3cm	1.9cm
Weight	0.39kg	0.39kg	0.39kg	0.39kg	0.39kg	0.39kg	0.39kg	0.39kg	0.39kg	0.39kg
Morphology	A	FG	A	B	FA	A	C	B	B	H
Thermal cond.	C	F	F	B	F	F	R	F	B	C
Lustre	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Porosity	L	N	N	N	N	N	L	N	N	N
Magnetism	N	N	N	N	N	N	N	N	N	N
Colour	DG	DG	DG	DG	DG	DG	DB	DG	DG	DG
Impression	R	F	F	M	F	F	R	F	N	M
Fragment.	C	N	N	1	N	2	3	1	1	N
Raw material	M	M	M	M	M	M	M	M	M	M
Surface cond.	R	P	R	S	S	S	S	S	P	G
Quantity	18	18	18	18	18	18	18	18	18	18
Level 0-20cm (85 pieces)										
Slag no	1	2	3	4	5	6	7	8	9	10
Length	6.4cm	7cm	8.5cm	7.3cm	8.5cm	5.3cm	5cm	4.6cm	6.7cm	9cm
Width	4cm	3.4cm	3.5cm	3cm	4cm	5cm	4cm	3.5cm	4cm	7cm
Weight	1.65kg	1.65kg	1.65kg	1.65kg	1.65kg	1.65kg	1.65kg	1.65kg	1.65kg	1.65kg
Morphology	HS	A	A	G	A	G	A	A	A	SP

Thermal cond.	F	F	R	F	F	F	B	C	C	C
Lustre	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Porosity	N	N	L	L	N	L	M	N	N	H
Magnetism	N	N	N	N	N	N	N	N	N	N
Colour	DG	DG	DG	DG	DG	DB	DG	DG	DE	BD
Impression	R	F	R	R	N	R	SM	R	R	SM
Fragment.	3	1	C	N	1	4	2	N	1	C
Raw material	M	M	M	M	M	M	M	M	M	M
Surface cond.	S	R	R	G	S	S	R	R	R	R
Quantity	85	85	85	85	85	85	85	85	85	85
Level 20-40cm (16 pieces)										
Slag no	1	2	3	4	5	6	7	8	9	10
Length	8cm	7.7cm	9.5cm	9cm	6cm	8cm	7cm	6.3cm	4.5cm	6.5cm
Width	7.5cm	6.7cm	7cm	4cm	5cm	7.5cm	5.5cm	4.5cm	4cm	4cm
Weight	1.36kg	1.36kg	1.36kg	1.36kg	1.36kg	1.36kg	1.36kg	1.36kg	1.36kg	1.36kg
Morphology	C	A	C	JS	A	AN	JS	L	TS	A
Thermal cond.	C	F	F	C	C	B	F	F	F	C
Lustre	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Porosity	M	M	M	M	L	L	N	L	N	H
Magnetism	N	N	N	N	N	N	N	N	N	N
Colour	DG	DG	DG	BD	DG	DG	DG	DG	DG	DG
Impression	R	R	R	M	R	R	R	F	M	C
Fragment.	C	2	3	C	C	C	2	3	2	C
Raw material	M	M	M	M	M	M	M	M	M	M
Surface cond.	R	R	S	R	R	R	R	S	P	R
Quantity	16	16	16	16	16	16	16	16	16	16
Level 40-60cm (21 pieces)										
Slag no	1	2	3	4	5	6	7	8	9	10
Length	11.7cm	8.8cm	14cm	7.3cm	13.5cm	9cm	8cm	7cm	9.3cm	6.5cm
Width	7cm	6.5cm	8cm	5.5cm	7.5cm	5.4cm	6.2cm	6cm	4.8cm	4.5cm
Weight	0.23kg	0.23kg	0.23kg	0.23kg	0.23kg	0.23kg	0.23kg	0.23kg	0.23kg	0.23kg
Morphology	B	A	A	A	A	SS	B	A	SS	FA
Thermal cond.	F	F	M	C	C	F	F	C	C	F
Lustre	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Porosity	N	M	N	N	H	N	N	N	N	N
Magnetism	N	N	N	N	N	N	N	N	N	N
Colour	DG	DG	K	DG	BD	DG	DG	DG	DG	DG
Impression	C	R	R	SM	SM	M	F	R	W	F
Fragment.	N	C	C	N	C	1	N	N	N	N
Raw material	M	M	M	M	M	M	M	M	M	M
Surface cond.	R	R	R	R	R	R	R	R	R	S

Quantity	21	21	21	21	21	21	21	21	21	21
Level 60-80cm (14 pieces)										
Slag no	1	2	3	4	5	6	7	8	9	10
Length	7cm	4.2cm	5.5cm	5cm	5cm	4cm	9cm	4.4cm	5cm	5.5cm
Width	5.7cm	2.6cm	4.2cm	3.3cm	4cm	2.9cm	3.2cm	4cm	2.9cm	4cm
Weight	0.35kg	0.35kg	0.35kg	0.35kg	0.35kg	0.35kg	0.35kg	0.35kg	0.35kg	0.35kg
Morphology	FA	FG	A	B	A	FG	B	JS	A	FA
Thermal cond.	F	F	F	F	B	F	M	F	C	F
Lustre	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Porosity	N	N	N	L	N	N	M	N	L	N
Magnetism	N	N	N	N	N	N	N	N	N	N
Colour	DG	DG	DG	DG	DG	DG	DG	DG	BG	DG
Impression	F	F	F	F	F	F	R	F	C	M
Fragment.	1	N	N	1	N	N	2	1	C	1
Raw material	M	M	M	M	M	M	M	M	M	M
Surface cond.	S	S	S	S	S	S	S	S	S	S
Quantity	14	14	14	14	14	14	14	14	14	14
Level 80-100cm (14pieces)										
Slag no	1	2	3	4	5	6	7	8	9	10
Length	13.4cm	8cm	8.9cm	6cm	5.5cm	5cm	6cm	9.8cm	6.3cm	10.2cm
Width	10cm	7.5cm	3.5cm	5cm	4cm	3.3cm	3.8cm	7.9cm	3.5cm	9cm
Weight	0.22kg	0.22kg	0.22kg	0.22kg	0.22kg	0.22kg	0.22kg	0.22kg	0.22kg	0.22kg
Morphology	FA	A	SS	FA	M	B	F	A	A	A
Thermal cond.	F	C	F	F	C	F	F	C	C	F
Lustre	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Porosity	N	L	N	N	N	N	N	N	L	N
Magnetism	N	N	N	N	N	N	N	N	N	N
Colour	DG	BG	DG	DG	E	DG	DG	DG	BG	DG
Impression	F	R	F	F	SM	F	F	R	W	F
Fragment.	N	C	1	1	N	1	N	N	N	N
Raw material	M	M	M	M	M	M	M	M	M	M
Surface cond.	R	G	S	R	G	R	S	R	R	R
Quantity	14	14	14	14	14	14	14	14	14	14

Pottery Analysis

The excavated pottery comprising different shapes and sizes was physically analysed using the motifs found on them.

Table 3: Shows an analysis of potsherds from Umudimkwo in Umuoyo-Nru

LEVELS	WAVE LINES	NET IMPRES.	MAIZE COB	GROOVE	BURNISH.	STRAIGHT LINES	COMP.
Surface collection	0	0	0	2	1	0	2
0-20cm	12	1	1	3	3	1	4
20-40cm	2	0	7	3	2	0	3
40-60cm	9	0	2	7	3	1	4
60-80cm	0	0	0	0	0	0	0
80-100cm	0	0	0	0	0	0	0
TOTAL	23	1	10	15	9	2	13

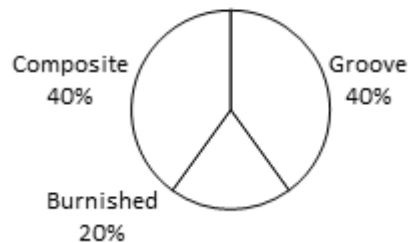
GRAND TOTAL= 87 (EXCLUDING THE RIMS)

FORMULA= $X/Y \times 360/1$

Surface collection

Groove: $\frac{2}{5} \times \frac{360}{1} = 144$ Burnished: $\frac{1}{5} \times \frac{360}{1} = 72$ Composite: $\frac{2}{5} \times \frac{360}{1} = 144$

Surface Collection



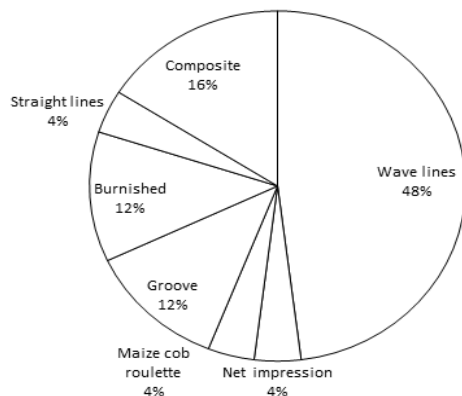
O – 20cm

Wave lines: $\frac{12}{25} \times \frac{360}{1} = 172.8$ Net impression: $\frac{1}{25} \times \frac{360}{1} = 14.4$ Maize cob roulette: $\frac{1}{25} \times \frac{360}{1} = 14.4$

Groove: $\frac{3}{25} \times \frac{360}{1} = 43.2$ Burnished: $\frac{3}{25} \times \frac{360}{1} = 43.2$ Straight lines: $\frac{1}{25} \times \frac{360}{1} = 14.4$

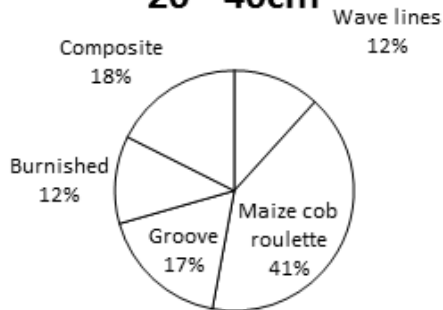
Composite: $\frac{4}{25} \times \frac{360}{1} = 57.6$

0 - 20cm

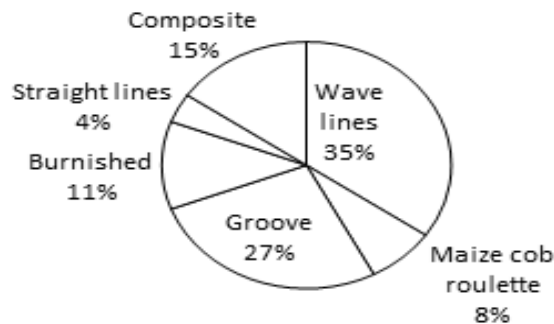


20 – 40cm

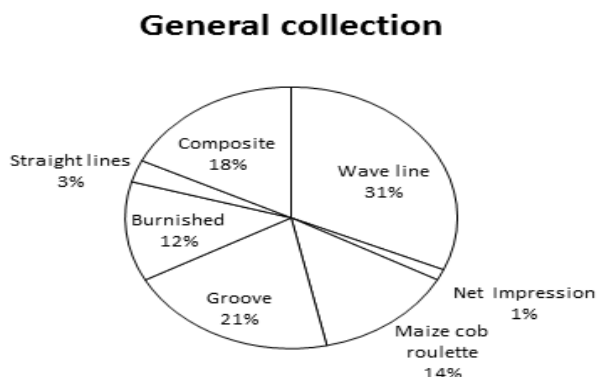
Wave lines: $\frac{2}{17} \times \frac{360}{1} = 42.4$ Maize cob roulette: $\frac{7}{17} \times \frac{360}{1} = 148.2$ Groove: $\frac{3}{17} \times \frac{360}{1} = 63.5$
 Burnished: $\frac{2}{17} \times \frac{360}{1} = 42.4$ Composite: $\frac{3}{17} \times \frac{360}{1} = 63.5$

20 - 40cm**40 - 60cm**

Wave lines: $\frac{9}{26} \times \frac{360}{1} = 124.6$ Maize cob roulette: $\frac{2}{26} \times \frac{360}{1} = 27.7$ Groove: $\frac{7}{26} \times \frac{360}{1} = 96.9$
 Burnished: $\frac{3}{26} \times \frac{360}{1} = 41.5$ Straight lines: $\frac{1}{26} \times \frac{360}{1} = 13.9$ Composite: $\frac{4}{26} \times \frac{360}{1} = 55.4$

40 - 60cm**General Collection:**

Wave lines: $\frac{23}{73} \times \frac{360}{1} = 113.4$ Net impression: $\frac{1}{73} \times \frac{360}{1} = 4.93$ Maize cob roulette: $\frac{10}{73} \times \frac{360}{1} = 49.3$
 Groove: $\frac{15}{73} \times \frac{360}{1} = 73.97$ Burnished: $\frac{9}{73} \times \frac{360}{1} = 44.4$ Straight lines: $\frac{2}{73} \times \frac{360}{1} = 9.9$
 Composite: $\frac{13}{73} \times \frac{360}{1} = 64.1$



The research carried out in Umudimkwo and Amoka showed the possible early human occupation, activities and interaction with the environment. From the reconnaissance, ethnographic survey and excavation carried out in the study area, our understanding of the historic and socio-cultural life of the people was enhanced. The cultural materials retrieved showed early iron smelting activity in Umuoyo-Nru. Iron debris and potsherd identified gave an insight into the technological ingenuity of the people, the economy and the possible use of resources within the environment for production. Several traces of ironworking were seen in areas such as Opi, Owerre-Elu, Orba, Umundu, Eha-Alumona, Nru, Isiakpu, Ede-Oballa and Eha-NdiaguOkafor (1993; 1997). These sites suggested early ironworking, possible raw material, slag and furnace types. Other sites investigated such as Onyohor, Ekwegbe, Idoha, Aku, Affa, Egede, Okpatu, Nrobo and Obimo provided information on iron smelting in Nsukka for documentation (Ezike 1998; Itanyi 2013; Okonkwo, Uzuegbu and Eyisi 2018). From the excavation carried out in our study area, slag aggregates recovered suggested that the shaft furnace type was used for the production. The smooth surface or flat smooth ropyslag suggests slag tapping. The slags identified were similar to the slag found in Owerre-Elu and Ukehe classified under the late phase of ironworking development in Nsukka (Okafor, 1992; Daniel, 2020). With the date, $1060 \pm 60\text{BP}$ and $570 \pm 60\text{BP}$ Owerre-Elu () calibrated to two sigmas levels 800 and 1430 cal. AD (Okafor, 1992), Ukehe calibrated date of 1540-1635cal AD (410-315cal BP) and 1450-1530cal (500-420cal BP) (Daniel, Ibeanu and Ikegwu, 2022), suggests the possible period of human activities. The late phase of iron development showed the efficiency of iron extraction, slag aggregates seem better smelted with better technology than cylindrical slags. However, the possible source of the raw materials used in the production could be obtained within the environment in which evidence is abundant haematite found in the surround. Huge heaps of slag debris suggest that the area was possibly an industrial site since iron smelting technology may have diffused from Nsukka and moved Southwards along Nsukka–Okigwe cuesta. The study area is situated within Nsukka.

Analysis of potsherds discovered from the Umuoyo Nru reveals two types of pottery. The first category is a cooking pot, while the second is a storage vessel, which might have been used to store water or grains. Potsherds retrieved display decorative motifs such as roulette, incision, and composite. The presence of potsherds within the study area suggested human activities and periods of occupation. From the potsherd motifs, the aesthetic and cultural identity of the producers were seen. The present pottery used in the community has similar motifs to the ones excavated showing cultural continuity. The technological ingenuity of the people was seen on the potsherds. Oral tradition has it that most pottery wares used in the study area were purchased from Nrobo and other neighbouring communities which established a trade relationship with Umuoyo Nru, our study area.

Conclusion

From the research carried out in Umuoyo Nru, cultural materials retrieved showed a cultural sequence of the past human activities to the present, the cultural life of the past and their technological ingenuity which were traceable to the present inhabitants. The archaeological investigation of the area aid in the documentation of Archaeological data and understanding of the consistency of human activities within the area.

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