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ETHNOARCHAEOLOGICAL SURVEY OF OBIMO: A FIELDWORK REPORT

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ABSTRACT

Iron smelting has been discovered to be amongst earliest technologies of Africans. It provided the earliest source of raw materials for blacksmithing in the African continent and at the same time formed a major part of the earliest economic base of the people. In the past many archaeological studies have concentrated on unearthing the earliest origin of this technology in the continent of Africa and its diversification or diffusion to other parts of the continent. Many of such studies have taken place in the Nsukka area of Enugu, Nigeria. Some of the communities in the Nsukka culture area have traces of this earliest technology in their environment with little or no significant answer to their origin. To this regard, this study is aimed at; studying one of the earliest technologies of Africans in this part of Nigeria, conduct a reconnaissance and ethnographic studies in Obimo community, excavate an iron smelting site in the community, determine the origin of the people and that of the iron smelting, and determine the cultural correlate of the extinct and extant societies of Obimo. Relevant research methods were adopted for efficient study of this kind. They include; reconnaissance survey, ethnography, excavation and documentary sources.

Keywords: Ethnography, Reconnaissance, Excavation, Irons smelting, Survey, Site, Pottery, Datum point.

Contribution/ Originality

The study is one of the few studies which have investigated the earliest indigenous technologies of Africans with emphasis on iron smelting technology and pottery production in Obimo, Nsukka area of Nigeria. Its findings point to the fact that Iron smelting and pottery making was amongst the earliest indigenous technologies of Obimo Community which have gone into extinction.

1. PREAMBLE

The notion of an authentic and viable science and technology (S&T) in pre-colonial Nigeria may sound like a joke to many due to previous misconceptions concerning Africans and

technology. Colonial and neocolonial domination of Nigeria by Europe and America has predisposed Nigerians to believe that their forebears possessed no S&T of any use. Where some modicum of indigenous S&T is discerned, it is commonly caricatured as magic and juju by non-Africans. The ever-widening gaps in science, technology and economic conditions of Africa and the West to think that this disparity has been so since primordial times (Njoku, 2002). Furthermore iron-working is an age-long tradition of Africans that has given Africans much fame prior to the advent of the West to Africa as Godfrey-Smith and Casey (2002) rightly pointed out that..."our chronology is based on the thermoluminescence (TL) dating quartz grains extracted from the walls of three iron smelters located at the Birni site in the Northern Region of Ghana. Two of the smelters yielded statistically undistinguishable ages of 1080 ± 70 and 1090 ± 60 years, while the third yielded a higher age of 1600 ± 100 years. However, fifty-one bloomery iron smelting slag from four sites in the Nsukka Division of Nigeria have been characterized. Radiocarbon dating has shown that smelting in this area took place over about two millennia (Whiteman and Okafor, 2003).

From the foregoing, the study tried to look at the contribution of Africa to the world's technological development through iron smelting as against the notion that Africans have contributed little or nothing to the world's technological development. So many iron smelting sites have been discovered in Africa dating to time immemorial. For instance excavations in some part of Nigeria i.e. Leija, Nsukka, Igala, Opi, Yankari, Sukur, Obimo, etc, have shown earliest iron working in these areas before second half of the last millennia. This African indigenous technology was hampered by the influx of modern iron materials from the west as a clear substitute. Even at that, research has shown that iron gotten from the traditional iron smelting in Africa was far better than those recently imported from the west This underpinning was upheld by Sasson when he notes that Sukur people had decided that the iron imported from Europe and those available in markets made such poor-quality tools that it would pay them to revive the iron smelting of their locally produced ores in their community (Sasson, 1964). He equally observed industrial dynamics of the iron smelting technology in Africa which revealed the prospective nature of the industry on the African soil.

This however pointed to the prospect of the iron smelting in some parts of Africa. The revival would take place but gradually since most Africans have already imbibed the use of already-made irons thereby making them lazy to make use of their initiatives. Intimidating influence of westernization is not helping matters. But that notwithstanding it is still believed that if the iron smelting is revived in Sukur as was noted earlier, other old iron smelting regions may equally decide to emulate them, but with a more improved methods as against the formal tedious and rigorous methods used in the past. Many Africans do not even believe or have an idea that technologies like iron smelting had its origin from Africa, that the west learnt it from the African soil and went back to improve on it and implored so many strategies to discourage Africans from making use of the indigenous ones in Africa so as to pave way for the easy importation. This has

made most of the indigenous technologies of Africans like the much cherished iron smelting to have gone into extinction, with that aspect of African culture forgotten. The iron smelting technology has been forgotten wholesomely by Africans who are now slaves to westernization. There is the need to look back towards reminding Africans of their technological prowess from time immemorial before western technological intimidations. This has motivated this study which was aimed at; studying one of the earliest technologies of Africans in this part of Nigeria, conduct a reconnaissance and ethnographic studies in Obimo community, and excavate an iron smelting site in the community. Relevant research methods were adopted for efficient study of this kind. They include; reconnaissance survey, ethnography, excavation and documentary sources.

1.1. The Study Area, Obimo

There are many variations in Obimo oral traditions of origin and migration. This gave rise to a great deal of speculations about the origin of the people. Among the places suggested were Nri (*Nshi*) and Igala. Obimo is the oldest settlement in Nsukka LGA. It is because of this claim that one of the informants said 'we break the kola nut and take the head when all Nsukka people assembled, as right'. From all the accounts, it appears that the claim that the people of Obimo migrated from Igala is more popular than other claims mentioned (Nze, 2006).

Obimo is one of the influential towns that made up Nsukka local government area of Enugu State. Hills, Valleys and Adada River surrounded the town. Standing at the far end of *Ajuana* valley, there are major valleys that separated the town from their neighbours. Right in western side, the popular Adada River demarcates the town from Aku in Igbo-Etiti West LGA. The *Ola* and *Adoli* hills are yet other big and long hills in Obimo; they are situated at the boundary between *Nrobu* and *Ugbene Ajima* all in Uzo-Uwani LGA of Enugu state (Ofomata, 1978).

Obimo is located within a rectangle formed by Longitude 653 degrees east and Latitude 623 and 76 degrees north. However, it covers an area of 890 square miles with a population density of 84 per square mile. The high land of Obimo town rises 1,200 feet above sea level and has some peaks which reach up to a height of 1,800 feet. From the high land, the land slopes gently towards the Uzo-Uwani LGA while the Obimo plateau separated the East and the South from the River Adada which flow west to south-west (Ofomata, 1978). Meanwhile, the vegetation of Obimo consists of derived savanna. Patches of rainforest that lie mainly along water courses and their valley are evident that the area was densely forested in the past. These are commonly found around *Akutara* and *Agbo* areas. (Nze, 2006). Finally among the trees that are found within the wooded savanna are Oil palm tree-*Elgaesis guineensis*, Oil bean tree-*Pentaethro maelophyar*, Kola nut-*Cola acuminata*, Locust bean-*Parke clappertoniana*, Iroko tree-*Chlorophera excelsa*, African bread fruit-*Treculia Africana*, Nature mango-*Rrivingis gabonsis*, and weed such as *Penniseta* used in roofing thatched houses in Obimo.

However in Obimo, they have a unique settlement preterm which is not dispersal but converging in nature. This kind of settlement pattern of Obimo people is motivated by the

following factors; family relationship, source of water, defense mechanism, proximity to farm land, customs and traditions, topography, etc. These are some of the factors discovered through ethnographic studies as the determinants of the settlement pattern of the community which is not dispersal rather convergence in nature.

1.2. Ethnographic Studies

Ethnographic studies are useful to archaeology because it helps to draw analogy between the past and the present. The archaeologist uses ethnography to reconstruct past humans culture by detailed study of the technology (tools), behaviour and environment of present day people in order to properly understand and reconstruct artifacts features recovered from excavation (Okpoko, 1982). In Obimo, the *Onyishi* of the community was interviewed with some other resource persons. Furthermore, through ethnographic studies, it was gathered that Awka people came to the town in the olden days for iron smelting. That the community involved well in agriculture through planting of many crops and that they have a popular festival known as *Eke-Ezeugu* which has been affected greatly by the influence of Christianity. They celebrate their Ancestry Remembrance on the 10th month of every year. They equally had some shrines in the community such as *Eze-ugwu*, *Adada*, *Nni Obi Omu*, *Achaebere*, etc, these were worshiped because of the belief that they saved the lives of the people in the area. But unfortunately Christianity has led to the abolishment of most of them. Finally the ethnographic study helped the field trip to determine the existence of iron smelting in Obimo and some other background information which aided the process and progress of the field trip.

1.3. Reconnaissance

“In search for evidence relating to human past, the archaeologist has relied throughout the history of archaeology and has continued to rely principally on his eyes” (Andah and Okpoko, 1994). Wilson (1975) notes that archaeologists deal with what they could see; they dig where they could see a likely place or some tell-tale signs. However, reconnaissance can be defined as the preliminary survey used by archaeologist in determining archaeological potentials of an area. During reconnaissance, discoveries are made using human eyes which aid archaeological studies on any given area under archaeological investigations.

In Obimo, the reconnaissance took place on the first day of the field trip, precisely from the Community Secondary School Obimo where *Iyi-Ikutu*, the spring water of the community, was located. On the way to the hill top there was a water pipe used to extend the spring water to the base of the hill where the people are living. This they said was done by the British during their colonial surgeon in Nigeria. At the spring water on the top of the hill, there was presence of some domestic trees like the avocado tree, mango tree, kola-nut trees, *irvingia gabonensis* (ugiri) and also wild yam tubers or stems, etc. This might be as a result of the fact that the seeds of those plants were dropped there by the formal inhabitant of the area or might have been dropped by the

members of the extant society who might have come there to fetch water and on the process dropped seeds of those trees unknowingly. But the presence of wide yam pointed to the fact that yam might have originated from Africa and that the place might have been occupied by the extinct society. The vegetation around the spring water was much thicker from what was obtainable from the place where the extant society of Obimo is living. This might be as a result of human interaction or climatic changes through time, it shows that the place was originally a tropical forest but is now giving way to derived savanna due to series of disturbances by both man and nature. There was also a sign of terrace farming in the area which may be as a result of lack of land or presence of water or other soil nutrients. Furthermore, there was a rock over-hang further the hill although it was not much elaborate to have housed human beings in the past. From that hill top one could view the landscape, total vegetation and settlement pattern of Obimo community. It took about one hour trek from this hill top to get to a village called *Amaelugwu* Obimo where the excavation took place. At the *Amaelugwu* Obimo, the oldest man (*Onyishi*) in the community, Mr. Mathew Okoro, was interviewed. Settlement pattern, architectural pattern and main shrine of the village were equally observed and later to the house of Mr. Richard Ugwuoke where presence of slag in large quantities, small and large ones was observed which indicated presence of iron smelting in the area in the past. There was also absence of large trees around the area showing that the old iron smelters in the area might have cut much of the trees in producing their charcoals for heating the iron ore during the smelting process. However, during ethnography, the people could not give good explanation with regards to the presence of the slag in the area, hence the slag were serving the following economic functions to the community; as cooking stands, as seats in their compounds and the village square, as bullets when broken into pieces and mixed with gun powder, as climbing steps to their bungalow houses, used in checking erosion by being placed around the basement of their houses, etc.

Furthermore, on the iron smelting in the community, it could not be ascertained whether the smelting was done by the Obimo people, Umundu, Opi, Igala, Leija, (Obimo notable neighboring communities) etc, but it was done by early smelters in the community which would be established through articulate cultural linkages between the extinct and extant societies of the communities mentioned above. Early archaeologists to the community, F. N. Anozie was of the opinion that the type of furnace used for smelting in Nsukka area was pit furnace basing his arguments on observations from certain sites in Opi, Leija, Umundu, etc, where the slag were heavier and cylindrical in nature. This was against the opinion of E. E. Okafor who maintained that it was shaft furnace. But E. I. Itanyi noted that from his excavations at Onyohor and Obimo, he found out that not only one kind of furnace was used in Nsukka area but two types of furnace i.e. pit and shaft furnaces. These were archaeologists in the Department of Archaeology and Tourism, University of Nigeria, Nsukka.

1.4. The Site

The compound of Mr. Richard Ugwuoke was chosen amidst other compounds in the area due to the massive presence of heavy slag in cylindrical forms indicating the existence of industrial iron smelting site in the area in the past. Also in this compound, there are so many other iron smelting sites to be excavated but one was chosen and excavated due to the much presence of archaeological evidence on the surface and also its convenience to the family of Richard Ugwuoke, since some other sites are closer to the foundation of the house and might affect the house's foundation if excavated, through erosion menace after the excavation. The site was immediately behind the house of Mr. Richard Ugwuoke, within his compound. On the site, eight tuyeres or nuzzles were found laying in-situ.

1.5. The Grid System

This could be defined as the practice of dividing a site into squares to enable for easy recording of features and objects excavated during systematic excavation. Normally a square trench is cut within each grid square and separated by a baulk from each neighbouring trench to easy the process (Bray and Trump, 1975). However, in archaeology there are two types of gridding; the finite and union grid. While finite grid is used on limited area of excavation site, union grid is used on a large area of excavation site. Also while finite grid system uses one-by-one cm interval, union grid system is using 10-by-10 cm interval or even more depending on the area of excavation coverage. In the excavation at Obimo, finite grid system was used due to the limited nature of the site to be excavated. Effective grid system helped in the systematic collection of artefacts, location of materials, getting the contour of the materials, and limiting the area of the excavation.



Plates One & Two: Mapped area for gridding and gridding proper

In making the grid, the Tripod Stand (T-S) was set to find the cardinal points so as to locate the position of the North Pole (N-P). After getting the N-P, a peg was used at the North East (N-

E) of the proposed wall. From that N-E peg, using Pythagoras Theorem, a Tape was used to get 3m to the North West (N-W) of the site and it was pegged, from N-W peg to the 4m to the South West (S-W) of the site and it was pegged. From the S-W the pegging diagonally returned to the N-E peg to get the Hypotenuse at 5m. i.e.

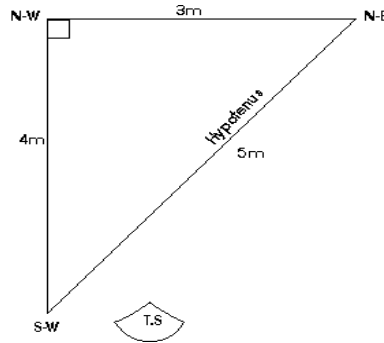


Fig-1. Making the Hypotenuse

After which the right angle was indicated. The marking went further 3m from south-west (S-W) to get the south-east (S-E), from this pole returned 4m to the original N-E peg. I.e

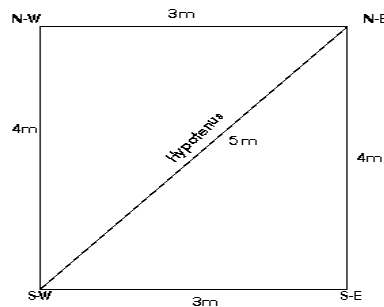


Fig-2. Locating the four cardinal Points of the Site

Then one-by-one meters was measured from the north-east peg to the north-west, to the south-west peg, to the south-east peg and back to the north-east peg. Pins were put at each of the meters as shown below;

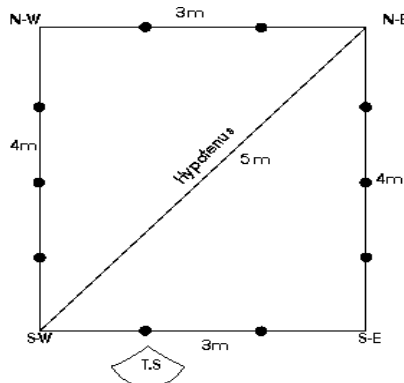


Fig-3. Making the Grid

Furthermore, using pins to indicate the one-by-one meters, pegs were used to replace the pins after which ropes were used to connect the pegs and the grids were numbered into twelve (12) sub-grids.

1.6. The Datum Point

In any systematic excavation, there is always need to have datum point from which other measurements of the site start. Datum point is a reference for future researchers to locate where an excavation has been done. It is usually represented using a feature (Nze, 2006). Also the datum point is usually used to note the position of archaeological site after excavation. And features used as datum points should be permanent or long lasting features since the use of temporal features as a datum point might pose the archaeological site with the problem of being lost if the feature is removed. However when no other external features could be found, the main house of Mr. Richard Ugwuoke was used as a substantive datum point. It was then measured 2.0m from the N-E/S-E wall of the house to the Tripod Stand, from T-S; it was measured 5.0m to the N-E pole of the grid system. E.g.

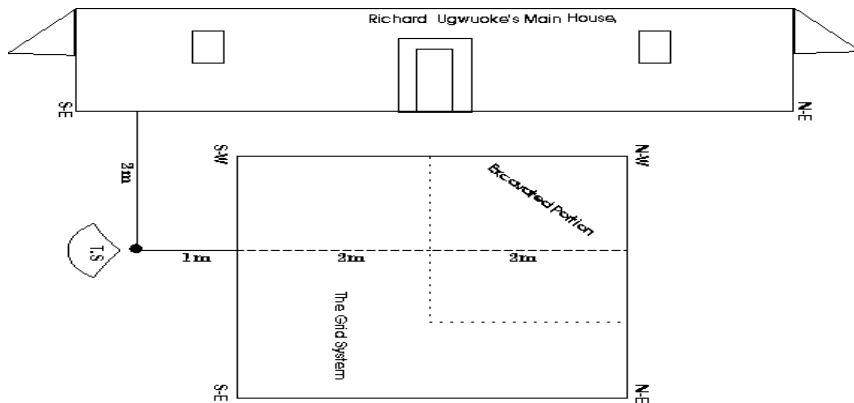


Fig-4. The Site Plan Showing the Site and the Datum Point

Afterwards, grids with highest deposition of nuzzles tuyeres (as could be observed from the surface of the soil) were selected. Grids 1, 2, 5 and 6 were selected in that process which gave a two-by-two square.

1.7. The Excavation

Excavation is the major means by which archaeologists gather data about the past mainly from beneath the ground surface (Andah and Okpoko, 1994). Bray and Trump (1975) notes that in archaeological excavation, the deposits are perforce dug away, and could be destroyed. But an excavation can only justify its destruction if done meticulously and finds preserved, accurate information recorded afterwards, etc. Hester *et al.* (1975) posits that immediately an area of a site is chosen for archaeological excavation, archaeologists must choose the appropriated excavation

method to be used. The choice will depend on the site under investigated and on the specific goal to be achieved at the end of the practice.

Having chosen or selected the two-by-two meter square to excavate, the digging was started and the site was named *"UGWUOKE RICHARD SITE OBIMO, 2008"*. 0-10cm was chosen as the first spit level but later extended to 0-20cm. A sample bag was named and used to collect all the collections from this level. When the systematic digging got to the proposed 0-20 spit level and those nuzzles were still laying intact in the ground, the surface of those nuzzles and the entire excavating site was brushed and pictures were taken. Graph was plotted to indicate the position of nuzzles in the two-by-two meters pit.



0-20cm spit level



0-40cm spit level

Plates Three & Four: The excavation at various spit levels

1.8. Stratigraphy

It was unfortunate that after going up to 40cm deep spit level, more than one layer of soil could not be found for the stratigraphic studies. This then left the exercise with one layer of stratigraphy with 2m length and 40cm deep. See Figure five below;

2. DATA PRESENTATION AND ANALYSIS

2.1. Classification of Finds

During the excavation at Obimo, so many collections were made from the two spit levels dug. A total of thirty-nine (39) collections were made from spit level one while a total of fifteen (15) collections were made from spit level two, thereby making a total of fifty-four (54) collections in all. Collections include; potsherds, charcoal, quartz stone, pieces of furnace wall, slag and pieces of nuzzles. This is represented in the table below;

Tab-1. Distribution of Excavated Artefacts and their Spit Levels

	slag	potsherds	Furnace wall	Charcoal	stone	Tuyeres
Spit level I 0 – 20cm	24	8	1			6
Spit level II 20 – 40cm	5		3	6	1	
Total	29	8	4	6	1	6



Fig-5. Potsherd one. Technique: Burnishing Motif: Smooth surface

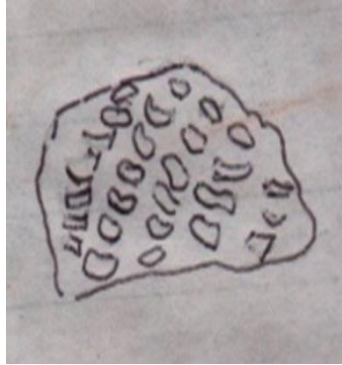


Fig-6. Potsherd two. Technique: Roulette Motif: Maize Cob

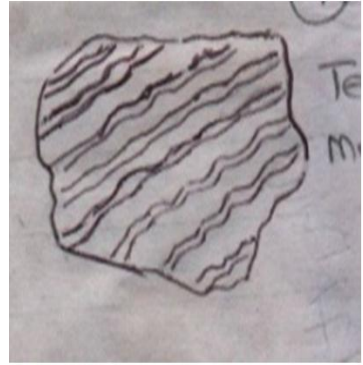


Fig-7. Potsherd four. Technique: Impression Motif: Net

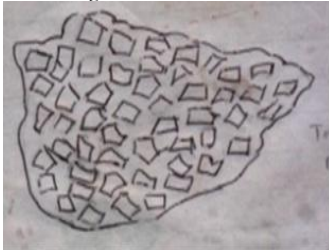


Fig-8. Potsherd six. Technique: Incision Motif: Sharp Object



Fig-9. Tuyere sample



Fig-10. Potsherd three. Technique: impression Motif: Net

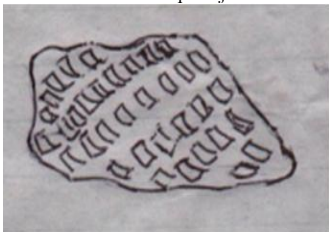


Fig-11. Potsherd seven. Technique: Roulette Motif: Maize Cob



Fig-12. Potsherd eight. Technique: Roulette Motif: Maize Cob

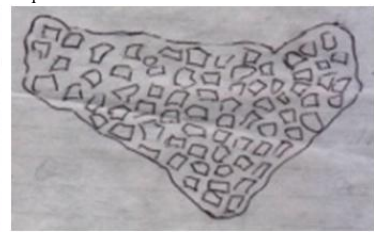


Fig-13. Potsherd five. Technique: Incision Motif: Sharp Object



Fig-14. Slag Sample

2.2. Pottery Analysis

Pottery has been discovered to be amongst the more relevant artefacts to archaeologists in the reconstruction of the past. It is a charitable tool in the hands of archaeological analysis of the past of any society. However in Obimo, eight pieces of potsherds were collected from the Spit Level One of the excavation. Unfortunately pieces of rim could not be found; rather the eight were all broken bodies, thereby making reconstruction of a complete pot impossible. The analysis is represented in the tables below;

Tab-2. Interpretation of Potsherds

Technique	Colour	Body	Motif	Thickness	Tempering material
Impression-net	Brown/ash	1	Net	0.8cm	Ash
Roulette	Black	2	Maize cub	0.5cm	Grog/animal dung
Impression	Ash	3	Net	0.8cm	Ash
Burnishing	Black	4	Smooth	0.4cm	Grog/animal dung
Incision	Ash	5	Sharp object	0.4cm	Ash/Sand
Incision	Black/ash	6	Sharp object	0.6cm	Ash/grog
Roulette	Black	7	Maize cub	0.6cm	Ash
Roulette	Black	8	Maize cub	0.6cm	Ash/sand

Tab- 3. Analysis of Technique

Impression	Thickness	Roulette	Burnishing	Incision
1	0.8cm	0	0	0
0	0.5cm	1	0	0
1	0.8cm	0	0	0
0	0.4cm	0	1	0
0	0.4cm	0	0	1
0	0.6cm	0	0	1
0	0.6cm	1	0	0
0	0.6cm	1	0	0
Total	2	3	1	2

Grand total = 8

Tab- 4. Analysis of Motif

Thickness	Net	Maize	Smooth surface	Sharp
0.8cm	1	0	0	0
0.5cm	0	1	0	0
0.8cm	1	0	0	0
0.4cm	0	0	1	0
0.4cm	0	0	0	1
0.6cm	0	0	0	1
0.6cm	0	1	0	0
0.6cm	0	1	0	0
Total	2	3	1	2

Grand total = 8

Tab-5. Graphical Representation of Motif

Thickness	Ash / brown	Ash	Black	Black / ash
0.8cm	1	0	0	0
0.5cm	0	0	1	0
0.8cm	0	1	0	0
0.4cm	0	0	1	0
0.4cm	0	1	0	0
0.6cm	0	0	0	1
0.6cm	0	0	1	0
0.6cm	0	0	1	0
Total	1	2	4	1

Grand total = 8

Tab-6. Analysis of Tempering Materials

Thickness	Ash	Grog	Ash / sand	Ash / grog
0.8cm	1	0	0	0
0.5cm	0	1	0	0
0.8cm	1	0	0	0
0.4cm	0	1	0	0
0.4cm	0	0	1	0
0.6cm	0	0	0	1
0.6cm	1	0	0	0
0.6cm	0	0	1	0
Total	3	2	2	1

Grand total = 8

3. DISCUSSION

The 2008 field work of the department of Archaeology and Tourism Department, University of Nigeria Nsukka at Obimo, precisely in the compound of one Mr. Richard Ugwuoke, 'Ugwuoke Richard, Obimo 2008', was aimed at unearthing an iron smelting site and its cultural correlates with the extant society of the area. This is in continuation with the ever ending search on the first iron smelters in this part of the world.

However having sourced for data in various sources i.e. reconnaissance, ethnography, excavation and secondary sources, and their subsequent analysis, some preliminary conclusions were made. It is obvious that the extant society of the area have little or no knowledge of iron smelting in the area. This point to the fact that their patriarchs may not have engaged in the iron smelting technology in the area in the past. The cultural understanding of the present society of Obimo has nothing in common with tradition of iron smelting as found in other iron smelting societies. Through the ethnographic study of Obimo, it was gathered that the people of Obimo may not likely be the original inhabitants of the area since they claimed to have migrated from Nri and Awka in Anambra state via their ancestors. The understanding of the excavated potteries from the site is an indication that the people living in the area are of Neolithic age since most of the potsherds did not show any sign of wear and tear suggesting that the potsherds are relatively young in nature. Also the decorations on the potsherds are also not different from the general

pottery tradition of people living in Nsukka area (Nze, 2006). It was also gathered that the type of furnace iron smelters in the area may have used were both Pit and Shaft furnaces as was confirmed from series of iron smelting sites in Nsukka area. Also there is an indication that one of the people originally known for iron smelting i.e. Lieja, Igala, etc, might have lived in the area in the past and possibly left the area out of frustration, famine, or tribal wars. These are pointing towards the fact the present Obimo people may not have been the original inhabitants of the area, but the whereabouts of the original inhabitant of the area or the causes of their departure from the area remains puzzling towards the understanding of the origin of iron smelting in Obimo.

4. CONCLUSION

Conclusively, the fieldwork at Obimo was successful as the majority of the aims of the fieldwork were achieved. Many relevant sources were used towards ensuring a comprehensive field trip. These include reconnaissance, ethnography, excavation and written materials. Also from the information gathered, the present Obimo people may not have practiced iron smelting in the past since they presently denied the knowledge of iron smelting. But no information was unveiled with respect to the true people that practiced the iron smelting in the area in the past and what might have caused their total exit from the environment. Also it was noted that the kind of furnace used in smelting could be either pit or shaft furnace since these are the common type of furnace used in iron smelting in Nsukka area. This comparative technique was used to determine the type of furnace used considering the fact that excavation could not get to the basement of the furnace wall that was excavated.

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