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Pottery tradition of Neolithic culture in Kurnool district of Andhra Pradesh

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Abstract
Pottery making and using in India is a long historical tradition which perhaps began in a solid way during Neolithic period and became an alphabet of post-Neolithic cultures. Its impact had largely revolutionized the colonization of past human groups in different geographical areas in the Indian past cultures, i.e., Harappa culture, Deccan Chalcolithic cultures, like Malwa, Jorwe, Savalda, etc. and paved for the generation of new cultural traditions. Even today several pottery making communities in India, especially rural community retain their forefather's technique of utility in their day to day life. They inherited the technology of pottery making from their forefathers. Each area somewhat show certain unique method of procuring the raw materials, processing of the same and ultimately ending up with a final product of pottery which take large of their energy. After the discovery of pottery there was a series of revolutionary changes found to occur at various periods of time as mentioned above. The present area of research showed it's own typical way of pottery making and utilization in south India in a broader perspective and Kurnool district in particular as it formed part of South Indian Neolithic culture. The same pottery tradition may not appear now in the region under study but it's tradition is very much present in rural areas of the region.

Keywords: pottery tradition, neolithic culture, tool making, crafts

Introduction
Like any other crafts and handicrafts, the tradition of pottery making in India is very old which speaks volumes about its culture and civilization. It is one of the important mediums through which manufacturing skill, food habits, culinary practices and other cultural emotions are expressed, hence been considered as one of the most beautiful forms of expression for thousands of years. A potsherd is a piece of visual message in its shape and color, hence been the most sensual of all arts. In India, we have had a great tradition of pottery making. In fact, being an agricultural country, pots for storage of water and grains were in demand. The earliest real beginning of this art in India is known to begin with the Indus Valley Civilization and the art of shaping and baking clay articles as pottery, earthenware and porcelain has continued through the ages. However, pottery and earthenware are definitely utilitarian and often decorative, whereas, porcelain and studio pottery belong to the sphere of art. Even at present pottery making, both handmade and wheel-made, is still well in progress all over India, especially in the rural society. In the Harappa civilization potter's place was quite an important one in society as this craft was well advanced and rectangular ovens were in use for the final product. Seals, grain and water containers were put to use effectively, as the potters occupied a unique position in the craft traditions of India and wonderful masters of their trade. Pottery has a long history, over centuries, used in domestic purposes, as votive pieces and even in architecture. There are three main types of ceramic ware, i.e. Earthen ware, stoneware and porcelain, which are categorized according to the clay used to make them, and the temperature required to fire them. The earthenware is the oldest and easiest type of pottery, is also the softest, being heated at the lowest temperature (typically between 1000 and 1200 degrees Celsius), which includes maiolica, faience, delft and it has a great religious significance.

Pottery making is also called ceramic art, the creation of objects, mainly cooking or storage vessels, made out of clay and then hardened by heat was the first functional art to emerge during Neolithic period. It is linked with one another at the regional, zonal and blocks level through various socio-economic and cultural networks. At the regional level, the hereditary group of potters form a distinct socio-cultural entity which is identifiable perhaps by certain diacritical marks of their own cultural organization, whereas, at zonal level, the regional pottery making cultures are differentiated from one another in the finer details of technology in the stylistic varieties in dress and food and also in certain social customs, beliefs and practices, however, all of them share common social and ceremonial traits which can be placed into two cultural blocks. Archaeological studies so far could not differentiate the users of pottery and the makers of it in a geographical zone where a number of similar cultural sites are located and it remained unsolved. The present paper is an attempt to study the pottery tradition that prevailed during Neolithic period in the Kurnool district of Andhra Pradesh.

The Area
Kurnool district is situated between the Northern Latitudes of 14° 53' 45'' and 16° 18'30'' and between the eastern Longitudes of 77° 24'15'' and 79° 39'45'' in the west-central part of Andhra Pradesh state and is bounded by Anantapur district in the south, Kadapa district in the south-east, Prakasam district in the east and Mahabubnagar district of Telangana state in the north and Raichur and Bellary districts of Karnataka state in the north-west and west respectively, and it has an area of 17,658 sq.km. It is bounded by the rivers Tungabhadra and Krishna in the north, geographically divided into four natural divisions, the south-western plains of black soils covering the taluks of Alur and Dhone lying west to the Erramalas ; the western granite terrain comprising the taluks

of Adoni,Yemmiganur and Pattikonda; the eastern valley of Nallamalas and Erramalas comprising Kurnool, Nandikotkur, Atmakur and part of Nandyal taluks and the south-southeastern Kunderu valley covering the taluks of Koilkuntla, Banaganapalle, Allagadda and the remaining part of Nandyal taluk. It forms part of the south-eastern portion of the Deccan geologically delineated the portion of Peninsular India that falls within the frame of eastern hills of Eastern Ghats situated in the centre of a basin occupied by rock formations namely Cuddapah and Kurnool systems popularly known as the Nallamalas and Erramalas,, however, a branch of it known as Veligondas serve as the eastern boundary between Kurnool and Prakasam districts. The principle rivers that flow in the region(Fig.1) are the Tungabhadra and it's tributaries such as the Handri, the Bhavanasi the Kunderu and its tributaries such as Vakkileru, Jurreru and other hill streams joining the tributaries, whereas the former river joins Krishna on it's right bank. The region is a stable shield of ancient rocks belonging to Archaean or Lower Pre-Cambrian,Upper Pre-Cambrian or the Cuddapah system, Upper Pre-Cambrian to Cambrian or Kurnool system and the Recent and sub-recent soil, alluvium and cave deposits. The soils of the region are broadly divided into black cotton soils and red or brown soils, however, loams and sandy soils come across in the granite terrains. Calcareous tufa occurs in the limestone tracts in which calcareous nodules occur abundant over limestones, calcareous shales and basic and fractured rocks, which support luxuriant bamboo vegetation. The flora of the region comprised Southern Tropical dry deciduous forests, Southern thorn forests and Hardwickia binata. The climate is characterized by hot summers with a rainfall of 624.4 mm. per annum.

Fig 1: The physiography and River system of Kurnool district

The sites

The present study has been made on the available data of Neolithic sites located through scientific explorations by several scholars from time to time and a preliminary investigation carried out by the present scholar which are found at the villages, i.e.,

1. Adoni (15°37′28″N;77°16′23″E),
2. Allagadda (15°41′55″N;78°24′45″E),
3. Amadala (15°17′20″N; 78°18′E),
4. Bastipadu (15° 47′ 05″N; 77° 58′ 20″E:IAR 2008-09:8)
5. Bijanuru (15°40′N;78°25′55″E),
6. Bijinavemula (15°15′30″N;78°18′E),
7. Bondaladinne (15°11′30″N;78°14′20″E),
8. Bodemmanuru (15°04′N;78°24′55″E),
9. Budidapadu (15°43′30″N;77°54′30″E:IAR1962-63:2),
10. Chetnapalli, (15°40′02″N;77°87′20″E),
11. Cherlopalle (15°10′N;78°05′E),
12. Chintalapalli (15°44′N;78°17′E),
13. Chindukuru (15°38′N; 78° 27′E),
14. Chinnakopperla (15°43′10″N;78°20′E),
15. Chinnampalle (15°43′10″N;78°15′50″E),
16. Daivamdinne (15°49′N;77°35′25″E),
17. Devanuru (15°43′30″N;78°15′50″E),
18. Gaddamankampalli (15°16′25″N;78°08′40″E:IAR1963-64:4),
19. Gorantla (15°38′15″N;77°49′30″E:IAR2008-09:8),
20. Gudekal (15°44′29′N;77°28′30″E),
21. Hattibelagallu (15°22′N;77°13′20″E:IAR1958-59:11; 1964-65:3),
22. Hothramandinne (15°12′10″N;78°14′10″E),
23. Inagandla (15°51′30″N;77°40′25″E),
24. Illurukothapeta (15°14′30″N;78°15′45″E),
25. Injedu (15°05′10″N;78°25′E),
26. Joladarasi (15°20′30″N;78°20′30″E),
27. Kakarawada. I and
28. Kakarawada. II (15°02′55″N;78°25′35″E),
29. Kambadahal (15°49′40″N;77°37′30″E),]
30. Kanakavedupeta (15°51′45″N;77°34″E),
31. Kalugotla,KKL (15°37′30″N;78°04′45″E),
32. Kalugotla, KNL (15°′35″N;77°58′05″E:Venkatasubbaiah 2013:36-48),
33. Kontalapadu (15°38′N;78°09′E),
34. Kuppagallu (15°43′50″N;77°14′E),
35. Lingadahalli (15°58′N;77°12′E),
36. Lingamdinne (15°05′10″N;78°17′E),
37. Mandlem (15°51′35″N;78°19′45″E),
38. Mantralayam (15°57′N;77°25′55″E),
39. Mayaluru (15°06′10″N;78°21′20″E),
40. Mettupalle (15°14′N;78°06′E),
41. Muchchalpuri (15°09′N;78°17′E),
42. Mukkamalla (15°09′N;78°15′E),
43. Nagaladinne (15° 55′N;77°34′E),
44. Neravada (15°47′30″N;77°58′05″E),
45. Nichchenametla (15°13′N;78°08′E),
46. Nidzuru (15°52′N;77°59′E),
47. Nilunagondla (15°14′50″N;78°14′55″E),
48. Owk (15°04′N;78°09′E),
49. Pandipadu (15°45′05″N;78°00′E),
50. Patapadu I and
51. Patapadu II (15°19′40″N;78°09′20″E),
52. Peddakopperla (15°18′N;78°19′40″E),
53. Peddammanuru (15°04′N;78°26″E),
54. Penchikalapadu (15°45′05″N;77°53′45″E:IAR1962-63:2),
55. Ramapuram (15°05′N;78°05′E:IAR1980-81to1983-84),
56. Remata (15°49′30″N;77°51′15″E),
57. Rupanagudi (15°06′N;78°23′35″E),
58. Singanapalle (15°11′N;78°09′E),
59. Sivavaram (15°12′30″N;78°11′E),
60. Sugunuru (15°49′N;77°31′05″E),
61. Sunkesula (15°52′N;77°49′50″E),
62. Tangadancha (15°51′30″N;78°21′15″E),
63. Tanguturu (15°21′N;78°21′E),
64. Tamdallapalle (151635N;781330E),
65. Tarturu (15°50′50″N;78°19′50″E),
66. Tsallakudluru (15°49′05″N;77°32′E:Venkatasubbaiah 2013:36-48),
67. Uyyalawada-I and
68. Uyyalawada-II (15°15′06″N;78°24′E),
69. Veerapuram (16°20′N;78°17′15″),
70. Velagaturu (15°15′05″N;78°17′45″E),
71. Vallampadu (15°19′N;78°21′E) and
72. Vipanagandla(15°50′45″N;78°18′50″E:Venkatasubbaiah1 998:8-12; Murty 1989: 66-81; Ravikorisettar et.al. 2002: appendix III:436-478;Venkatasubbaiah 2009:1-37; Venkatasubbaiah 2012:36-48; Varaprasadarao 2002; Rami Reddy 1968;Sarma 1968:68-83; IAR 2008-09:5-9; IAR 2010-11:1-4).

All the above mentioned sites are attached to water source with an environment profusely useful for the Neolithic man depend on pastoralism and agriculture supplemented by hunting, gathering and fishing, in which pottery formed one of the important cultural components that was utilized in all sorts of socio-cultural activities. It is basically divided into the following type of fabrics:

1. Red ware in which four variety of finished fabrics are there such as coarse red ware (incised and combed),burnished red ware without paintings, black-on-red ware(black paintings executed on the surface sometimes the fabric is burnished and also perforated at the base) and unburnished red ware(incised, combed and perforated).
2. Grey ware(burnished,unburnished and incised)
3. Brown ware(burnished)
4. Buff ware(burnished and unburnished)
5. Black ware(unburnished)
6. Black and red ware.

The following tentative analysis has been dealt here with the body clay, shaping methods, surface treatment and firing. The Neolithic potter might have procured the clay out of the soils derived from weathering of rocks found at the bottom of pools or river beds which normally contained high clay content, highly plastic and sticky. This clay contained chemical elements such as silica, iron oxide, alumina, lime magnesia, potash, etc. which indirectly help in the manufacture and production of pottery. In majority of the pottery the core contained admixture of sand and gritty particles, except in the case of painted pottery.

In general the pottery is handmade except black and red ware which is probably made on a slow wheel or turn table. However, the regularity of form and degree of competence indicate a developed craftsmanship and lack of striation marks and uneven thickness of walls indicate the use of turn-table and beater and anvil technique. The fabric is from course to medium, but former being common. The surfaces are debarred

revealing 'scooping' possibly with the help of a brush of grass or a piece of cloth. Both the methods are followed which are actually visualized when we see the inner surface of the utensils. The merge marks are very distinct in vases and jars which are made in parts and luted, especially in the case of channel spouted vessels, bowls and high necked jars with or without perforation at the base. Apart from the regular shaping methods employed in the pottery manufacturing secondary devices like handles, lips and spouts are invariably used, especially in the case of red, grey and buff wares. Based on the surface treatment various ceramic fabrics have been recognized such as burnishing, application of slip followed by decorative patterns such as incisions, fingertip impressions, perforations, paintings and other impressions like mat, leaf, etc. According to Allchin (1960:30) [1], the Neolithic pottery of south India was produced by simple bonfire kiln method of firing, which contained a process of mixing a lot of fuel and pots kept on bare ground, in which only a limited control of firing was possible. Blackish nature of core indicate the low baking process but in the collection which is not observed in small bowls and vases, except in big vases and vessels, hence it is inferred that the pottery was baked to a high temperature. The final appearance of the pottery depends on two factors, i.e, the pretreatment given to the clay before shaping which involves the removal of associated minerals, etc. and firing temperature. It is the firing operation that gives the final color to the pottery through the process of oxidation and reduction of iron present in the clay. Black painted Red ware, grey ware, black and red ware, buff ware, brown ware are well fired as they gave rise to metallic sound and the rest are brittle due to low baking process, especially unburnished red ware and black ware. On the basis of technique, fabric and form the Neolithic pottery of the area belongs to homogeneous industry. Black painted red ware is not common at all sites but majority being reported from the sites located in the Kunderu valley and its tributary channels. The paintings are found on the rim, neck and shoulder portions of pottery in the form of bands, lines and strokes a significant feature of the sites in the Kunderur river valley named by several scholars as 'painted pottery tradition'(Allchins 1962:302-303;Sarma1967:75-94; Sarma 1968:68-83; Fig.2) [2, 9, 10].

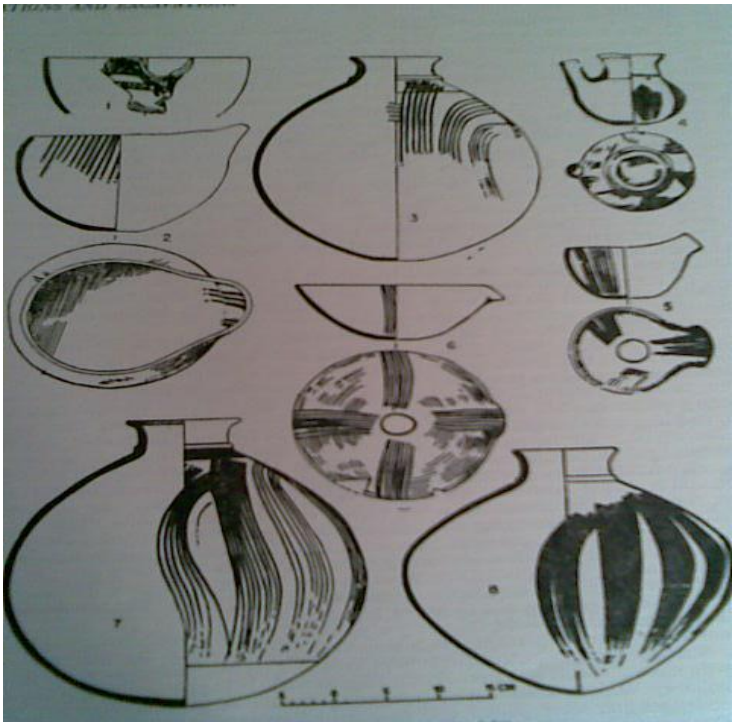

Fig 2: Black-on-red ware from Ramapuram (after IAR 1980-81)

There are 28 vessel forms in total from the sites reported from Kunderu river basin whereas, 26 forms from the sites located on the Tungabhadra and its tributaries, such as bowls, dishes, basins, cups, lotahs, vases, pots, jars, goblets, bases, handles, lips, spouts and lids. Big vases were invariably used as urns for burying the dead, whereas, the rest had been utilitarian in character and Allchin (1960:31,67) [1] has given the functional analysis of Neolithic pottery on the basis of shape such as service of food and consumption by the open bowls; deep bowls for service and food consumption of liquids; channel spouted bowls for cooking and service of food items; carinated bowls for cooking and eating; shallow bowls for consumption and service of food for cattle; deep basins for storing liquids; vases for carrying liquids, cooking, etc. The painted pottery might have been used more for serving food rather than cooking.

The Social component of Neolithic culture being recognized as the populations settled in the form of villages inter-connected with each other forming a link between them in several economic activities such as pottery, stone tool and bone tool manufacturing along with engaged themselves in domestication of plants, especially a small variety of cereal, millets and pulse cultivation and animals, especially cattle, sheep/goats, etc., supplemented by hunting, gathering and fishing activities. Pottery production might have been a daily activity of certain sites and other sites are supplied the same through trade or received on certain cultural events of congregation which is not yet established by archaeologists.

The daily activities such as manufacturing domestic equipment such as pottery for cooking, gathering, hunting, storing, transporting goods in exchange basis from one settlement to another during agricultural operations suggest a strong social structure inter-linked with division of labour within a single settlement or between settlements as a matter of social organization (Venkatasubbaiah 2006:48) [13]. The Neolithic populations in the area might have engaged on social gathering for several factors such as exchange of goods and purchase of suitable cattle, sheep/goats and other animal wealth, food-grains, technological discourses, exchange of information connected with cattle fairs and festivals, marriage relationship, etc. The social gathering intensified knowing new material culture and adoption of new techniques, for example the processes of production of painted pottery, procurement of metal, cultivation methods, etc.

The economic component of Neolithic culture in the region is basically a pastoral one depending on cattle,sheep/goat, pastoralism for several purposes such as flesh, milk,dung,skin, bones and finally for transport and traction. Animal remains from Ramapuram and Singanapalle (cattle, sheep.goats,pig, deer sp., mulluscan shells, etc. IAR 1980-81:3-7;1981-82:3-8;1982-83:3-5 and 1983-84:3-5 and IAR 1967-68:3-5) and plant remains such as cereals, millets, pulses(Fuller and Others 2001: 171-187) [3] along with fruits, tubers, leafy vegetables, etc. supplemented by wild animal hunting and aquatic fishing activities suggest that the Neolithic populations dietary items included both vegetarian and non-vegetarian foods. Looking at the shapes of pottery and stone objects like querns, mullers, rubber stones, sling balls, grinding stones, etc. the processing involved crushing and pounding the grains of cereals, millets and pulses in which water and salt might have had been a principle ingredient. During Neolithic period the cooking was mostly depend on boiling the foods in liquid form, served and consumed with a variety of large and small vessels or pots, served them in bowls which possessed channel spouts or spouted vessels a major variant noticed in the ceramic industry. Flesh of cattle and other flesh from the hunted wild animals served the purpose of non-vegetarian items which was either boiled with water or cooked/kept in fire with the help of wooden instruments and consumed.

However, recently the catchment area analysis carried out by Venkatasubbaiah (2010: 117-126) [15] at Ramapuram site was based on the distribution of arable land around the ancient settlement by taking the modern land use pattern into consideration according to the method proposed by Vita Finzi and Higgs (1970:5-7) [17] to reconstruct the land-use pattern of ancient inhabitants of Ramapuram. It revealed the estimation of ancient resource potential, i.e. one hour exploitation territory of 5 km radius covering 78.57 sq.km. (7857 hectares); within 1 km. (12 minutes walking distance) about 3.14 sq. km.(314 hectares) and within 2 km.(24 minutes walking distance) about 12.57 sq.km.(1257 hectares). Area surrounding the habitation within 1 km. comprising medium black cotton soils might have been used for rough grazing and cultivation of post-monsoon crops millets and pulses. The raw material, especially sandstone and limestone was exploited for the manufacture of domestic equipment, stone rubble for superficial packing of burials, alignment of platforms and slabs for cists. The area between 1 and 2 km. radii was utilized for agriculture in the patches of medium to deep black cotton soils which might have also served as grazing ground. It also supported for gathering of fruits and berries (ber: zizyphus jujube and neredu:Eugenia jambolana) available in the thick thorn and scrub vegetation which also supported small game. Whereas, the area between 2 and 5 km. radii supported thick vegetation which was probably cleared with axes and fire and brought under dry cultivation of millets and pulses like that of the neighbor settlements at Singanapalle, Injedu and Rupanagudi(Fuller and Others 2001:1-8) [3], i.e.horsegram (Macrotyloma uniflorum), greengram(Vigna radiata), Urd(Vigna cf. mungo) and Hyacinth bean(Setaria verticillata) along with cereals Barley(Hordeum vulgare) and Wheat(Triticum sp.: IAR 1982-83:140). Thus, the pottery tradition of Neolithic population in the region formed an important component of cultural feature in view of village economy even today.

Discussion

Pottery making and using in India is a long historical tradition which perhaps began in a solid way during Neolithic period and became an alphabet of post-Neolithic cultures. Its impact had largely revolutionized the colonization of past human groups in different geographical areas in the Indian past cultures, i.e., Harappa culture, Deccan Chalcolithic cultures, like Malwa, Jorwe, Savalda, etc. and paved for the generation of new cultural traditions. Even today several pottery making communities in India, especially rural community retain their forefather's technique of utility in their day to day life. They inherited the technology of pottery making from their forefathers. Each area somewhat show certain unique method of procuring the raw materials, processing of the same and ultimately ending up with a final product of pottery which take large of their energy. After the discovery of pottery there was a series of revolutionary changes found to occur at various periods of time as mentioned above. The present area of research showed it's own typical way of pottery making and utilization in south India in a broader perspective and Kurnool district in particular as it formed part of South Indian Neolithic culture. The same pottery tradition may not appear now in the region under study but it's tradition is very much present in rural areas of the region.

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