



Potteries of Sangam Age Habitation in Porpanaikkottai, Pudukkottai District, Tamilnadu, India

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Introduction

In the mise-en-scene of archaeology, ceramic is designated as ABCD or A through Z. The sole art form that depicts multiple aspects of human existence, such as their interpersonal, societal, and economic conditions, is pottery. As an outcome, ceramic is a worthwhile asset for writing about past events and reconstruction. One of the most important components for storage is ceramics. A storage vessel is required to store excess food grains for later use or sowing, as agriculture has made it possible for excess food grain production. A multitude of civilisations, including the Indus, Babylonian, Roman, and others, used ceramics as an index. The analysis of ceramic material clay composition, and adornments (if any) can be used to pinpoint production centres, identify manufacturing processes, interpret technical breakthroughs, and interpret modes of consumption of a location. A few of the scientific methods that may be used to find out more about the material composition of ceramic materials and address research questions in anthropology and archaeology include spectroscopic studies, petrographic observations, and mineralogical analyses.

Pottery-making technique

There are several processes and techniques involved in manufacturing pottery, including pounding, surface treatment, fire, and decorating. An appropriate soil selection was the first step in the pottery-making process. The dirt is then sieved and allowed to ferment to the right consistency for pottery-making in the second stage. Fast-mixing clay and state of doo are combined in the third phase. When creating pottery, there were two methods used:

Handmade pottery techniques

Large jars were often created by hand using traditional ceramic processes. This approach is divided into two categories. approaches such as coiling and pinching.

Pinching method

By pinching the clay, the lump of clay in the pinching process is shaped into the desired shape of a vessel. This process involves shaping the clay into the form of the vessel by pinching it from the middle of the lump of clay. This technology is mostly applied on large vessels.

Wheel made pottery techniques

The wheel made pottery technique is the method of pottery making with the help of the potter wheel. The wheel made pottery is generally a thin sectioned pottery with the grooves in the regular interval. The fine variety pottery was generally a wheel made type of pottery.

Methods employed in the creation of pottery

The process of creating pottery incorporates a number of procedures that come after the final product is half-dry or leather-hard. When creating pottery, a variety of processes were used, such as pounding and scraping. The clay or substance that left an undulating form in the pottery is removed using the scraping technique. This procedure involves gently scraping or removing the pottery's surface with a thin, blade-like substance. Using a wooden pan and pounding stone to hit the outside while supporting the pounding stone into the inside, the Beating or Padding technique shapes the shape and size of the pottery.

Surface treatments

The thin coating of clay that is added to the pottery is called a slip. In general, red ochre, orange slip, grey, brown, black, etc. were discovered. The slip is put over dry pottery on the inside or outside, and occasionally on both sides. It is created by combining clay, water, and colouring agent. Burnishing: Using a burnishing tool, the pottery's surface is polished by this process. Typically, a hammer stone, grinding stone, or a shattered piece of pottery is used as the burnishing tool. The glazy appearance of the pottery is achieved by burnishing.

Designs

Two categories of ornamentation were identified in the ceramics. the ceramic surface's painted embellishments and effects. The ceramics are painted with geometric patterns, animals, birds, and linear and wavy shapes. The pottery's features, which included the crackling effects of the salt glaze, were divided into two categories: surface and incised patterns. Using salt when firing is known as salt glazing. This creates the pottery's surface cracking appearance. The reed or tool-made patterns with perforations or wedge shapes were used to remove clay from the pottery's surface.

Firing method

For pottery making various firing methods were included; which includes the open kiln firing method, inverted firing method and firing at the reduced condition. These methods and the various techniques employed in the pottery making shown by the available pottery.

1) Open Kiln firing:

In the open kiln firing method meant for firing are piled one upon another covering them with combustible materials like husk, straw and dung cakes. They are set fire and the flames are allowed to come into contact with the pots directly. In the open kiln firing should have been affected under oxidizing, reducing or under inverted or straight firing technique.

(a) *Reducing Condition of the Kiln:* In this process pots are fired in such a way that they do not come into contact with the flames directly. In the kiln no oxygen is allowed. In this case pots turn either black or grey depending upon the controlled temperature. All the black slipped ware, black ware and grey ware of the ancient times

(b) *Inverted Firing:* This kind of firing was used in Black and Red ware industry. This process of firing could have been affected under the oxidizing condition of the kiln. In his process there would have been an open platform with slots provided at equal distances. The number and rows of slots depend upon the area of the platform. Beneath entrances are furnished through which flames are fed. The pots are kept inserted in these slots upside down, in such a way that the rim goes into the slot with the rest of the portion exposed. The interior portion of the pot is always filled or pasted with combustible material. When these pots come into contact with the flames, the exterior portion of the pot namely neck, shoulder, profile and base which are exposed turns red, and the rim portion, since it is concealed in the slot, turns black due to its indirect contact with the flames. As such, certain portion of the pots becomes red and the remaining black. Hence they are called red and black wares. Since the pots are kept top side or upside down and then fired, the technique of firing is termed as inverted firing technique

(c) *Straight Firing:* Black and Red ware industry has also under gone this kind of firing. In this, the pots are kept straight; as such the base portion gets inserted in the slot while the rest of the pot is exposed. As usual the interior portion is filled with combustible material. When they are fired, the base portion turns black since it is concealed and the rest turns red while the interior portion is always black. Here also black and red effect is given as formed in the inverted firing technique.

2) **Saggar Firing:-** This appears to have been executed in a closed Kiln. The pots are placed in rectangular wooden boxes and kept in different levels untouched or detached. The kiln is closed on all sides except one side by which the heat is sent beneath the wooden boxes. The heat is uniform and in all probability fuel appears to have not been used in this case. As such the pots that undergo this technique of saggar firing are uniformly burnt and absolutely there are no different in firing. Such a pottery which has uniform firing is subjected to this saggar firing.

Ceramics From Porpanaikottai Excavation

During the excavation at Porpanaikottai the potteries like Red ware, Red slipped ware, Black and Red Ware, All Black Ware, Red and Black ware, Brown slipped ware, coarse Red ware, perforated ware, painted ware, chocolate brown ware.

Black-and-Red ware

Black-and-Red ware is the well known ceramic type of south India this pottery generally belongs to Iron Age settlements and early historic sites in south India like Uraiur, sanur and kaveripattinam etc. This pottery is found in the lower most strata and found along with All black ware and painted ware.

The Black and Red ware is generally a wheel made pottery made by using the inverted fire technique. Which means the lower portion of the pottery exposed to air and the top portion is in contact with the combustible material and placed inverted inside the kiln? The lustrous polish in the pottery is due to salt glazing. The pottery is black in inner side and the outer side is red mostly the rim portion also turns into black due to the contact with the combustible materials. Black –and-Red ware found as fragments in lowermost level and in the mixed deposit. The lower time limit of the black and red ware dated as 3rd cent BCE. The general shapes of the black and red ware were pots, bowls, dishes, miniature vessels.

Black ware

Black ware is of high quality in south India like NBP ware of North India. It is found in association with Black-and-Red ware. In this pottery type both the interior and exterior sides were in black colour. In this pottery generally the slip is found in outer side rarely at both sides. The pottery is made of well levigated clay and has a thin fabric if it is the wheel made pottery; if it is handmade pottery has a thick fabric. The black colour is achieved on both sides were acquired by firing the pottery under reducing temperature. As an associated pottery of Black-and-Red ware the All Black ware found in almost all sites in south India and the pottery is dated to 3rd cent BCE. PPK - 1 yielded more all black ware pot sherds.

Red ware

Red ware is common type of pottery. The surface colour is normally red to reddish brown. Red ware was generally dated from Neolithic period to till date. At the Porpanaikottai excavation Red Ware was the most predominant pottery which were found in all the layers of the PPK-1 and it was dominated in medieval context. The main shape of red ware was pots, bowls are the type which is noticed in the Porpanaikottai excavation.

Red Slipped ware

Red slipped ware is the pottery found at the later level of the Black-and-Red ware. The pottery is a wheel made named after the red slip applied on the exterior, interior and in both sides. The slip is the thick clay mixed with red ochre; the red slip is applied on the exterior side and the interior of the rim after the pot attains the suitable condition. After firing the smoothness of the surface is given by the rubbing of pot after the

applying of slip. The pottery type is dated from 4th century CE to 9th century CE. During the excavation at Porpanaikottai the fine Red slipped ware potsherds are found.

Chocolate Brown ware

Chocolate brown ware is the pottery made of well levigated clay and it has thin fabric and the pottery had chocolate brown colour. This pottery is found in all early historic and iron age sites in south India. During our excavation at Porpanaikottai we found a few sherds of chocolate brown ware.

Coarse Red Ware

It is a dull red ware made of impure clay mixed with husk, grass and sand. The section is ill-fired and with rough surface. This pottery indicates the deterioration in the ceramic industry and found in all levels particularly in middle and later levels. They appeared commonly from the period of 4th century CE. In our excavation few shreds were found in middle and later levels.

Painted ware

Painted ware is the pottery with the painting design. The major decorations found on the pottery were the linear decorations or geometrical designs of white paint on the black and red ware, russet coat and painted ware etc

Red on Black Ware

Red on Black ware is the pottery found in early historic sites. In this pottery the external side is black and internal is red in colour. The black glossy external surface is achieved by using of special treatment. The pottery is found from early historic time to present time

Perforated ware

The perforated ware is the found as the fragments in the excavation at PorpanaikottaI perforated ware found here in this excavation is of red ware. The perforated ware probably used for the purpose of draining of starch and water from the cooked rice.

A **Pot** made out of course red ware was identified at the depth of 120 cms which might have been used for house hold purpose.

A **Rim portion** of an **Urn** whose body is absent was recovered from the PPK-1 with huge amount of broken potsherds been dumped all around the rim.

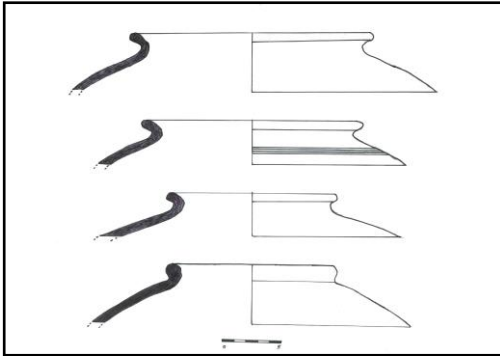
Conclusion

Through fieldwork and excavations, many kinds of pottery have been discovered in Tamil Nadu from the Neolithic era. They have guided us through many aspects over the years, such as trade relations, economic ups and downs, technical advancements, and living standards of the populace. The degree of artistic interest and the ability to apply knowledge to better adapt to their surroundings and create what they need may be seen in the technical dexterity of various ceramic forms. Thus, the many forms of pottery discovered during the

Porpanaikottai excavation—such as Graffiti and Pottery with script—are employed as a means of communicating the people's ideas, literacy, the local environment, environmental shifts, traditions, etc.

Ceramics from Porpanaikottai excavation

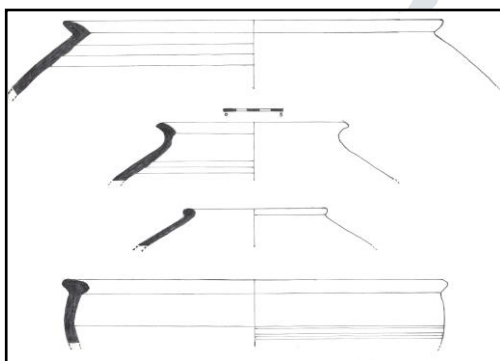
Figure 1



T:1- Fragment of Red ware stunted necked globular vessel having everted blunt rim

T:2- Fragment of Red ware stunted necked globular vessel having everted blunt rim with grooves on exterior part of the neck

Figure 2



T:1- Fragment of Red ware stunted necked globular vessel having everted sharpened rim with grooves in the inner portion of the pot.

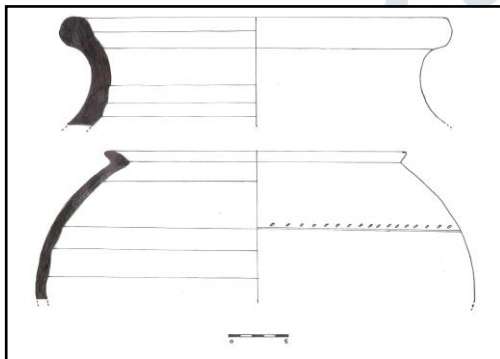
T:2- Fragment of Red ware stunted necked globular vessel having everted sharpened and stangled at the inner surface of the rim with grooves in the inner portion of the body part of vessel.

T:3- Fragment of Red ware globular vessel without neck having everted blunt rim

T:4- Fragment of Black and Red ware basin with nail headed rim having grooves represented on the body portion.

Figure 3

Figure 3 & Figure 4

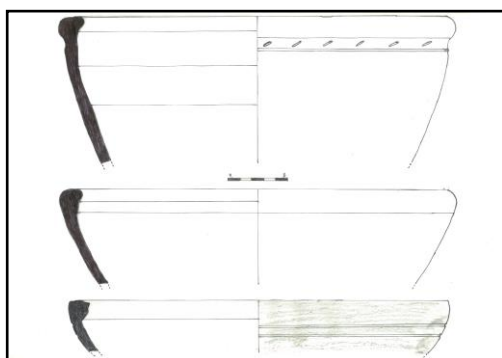


T:1- Fragment of Red Slipped ware high necked globular vessel having clubbed rim.

T:2- Fragment of Red Slipped ware globular vessel with an externally sharpened rim without neck portion. Obliquely and equally placed small elliptical designs are noticed on the exterior part of the body of the vessel.

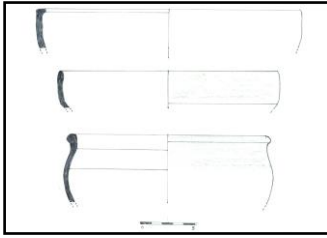
T:3- Fragment of Red Slipped ware basin with a short internally beaded rim and sides narrowing to a flat base. Obliquely and equally placed small elliptical designs are noticed on the exterior part below the rim.

T:4- Fragment of Red Slipped ware bowl with a short internally beaded rim and sides narrowing to a flat base.



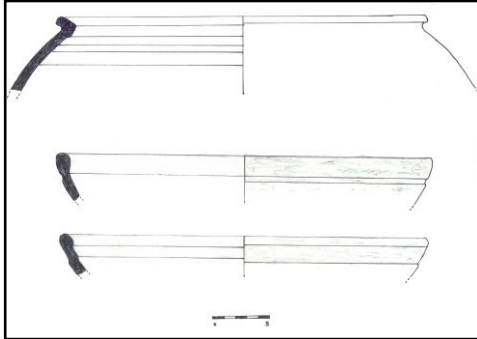
T:5- Fragment of Black ware bowl with a short internally beaded rim.

Figure 4



T:1- Fragment of Black and Red Ware bowl with incurved and internally flattened rim.
T:2- Fragment of Black and Red Ware dish with sharpened rim.
T:3- Fragment of Black and Red Ware basin with slightly everted rounded rim.

Figure 5



T:1- Fragment of Red Slipped Ware globular vessel with an externally rounded rim without neck portion.
T:2- Fragment of Black and Red Ware bowl with thick internally beaked rim.
T:3- Fragment of Black and Red Ware bowl with thick internally beaked and externally grooved rim.

Figure 6

GRAFFITI

Another important identification of this excavation was the findings of pottery with graffiti symbols of different kinds. They have identified at different depth, whose actual date should be concluded on the basis of the associated remains. A Black and Red ware pottery seems to bear the ladder symbol, another red ware pottery with multiplication symbol, a red ware bearing a symbol inside a U shaped semi circle, red ware pottery having oblique lines, a black ware having a wavy line superimposed over the extreme oblique of the second sign. Apart from this few more symbols that cannot be completely identified due to its unfinished condition were also recovered.



Figure 1: A fork like sign. Two oblique lines meeting a central vertical line at the top, somewhat looks like a three-pronged fork.



Figure 2: Asokan-Brahmi 'ma' like sign (X-like mark having a horizontal stroke connecting two oblique lines at the base) placed inside a U-shaped semi-circle.



Figure 3: Three pronged fork like sign placed in the horizontal manner.



Figure 4: A rectangular box-like sign placed vertically and divided into six equal parts. A field sign.



Figure 5: Two V-shaped sign placed one above the other in vertical posture

Figure 6: A Sun like sign.



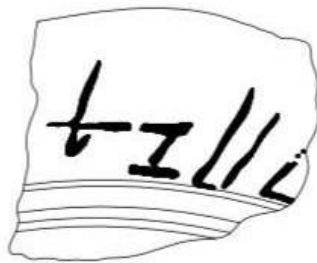
Figure 7: X-like sign.



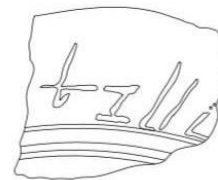
Figure 8: Three horizontal lines intersected by two vertical lines.

POTTERY WITH TAMILI SCRIPT

The most noteworthy and extremely important finding of this excavation is the exposure of a pottery piece with Tamil script on the exterior of the pottery. The script in the pottery was read as கு ன ஊ ர ன். On the basis of the palaeographical evidences the letter is being dated to 2nd BC. This particular sherd has been retrieved from layer 3 at the depth of about 89cms from PPK-I.



Ku na ū ra ṅ



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