AMBARI: A MICRO STUDY OF CERAMICS (7th century CE-17th century CE)

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CERTIFICATE

This is to certify that this dissertation entitled **"Ambari: A Micro Study of Ceramics (7th century CE to 17th century CE)"** submitted by **Preetee Sharma** in partial fulfillment of the requirements for the award of the degree of Master of Philosophy of this university, has not been previously submitted for any degree of this or any other university. This is entirely her own work.

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Preetee Sharma

Contents

Abbreviations

O1C ---- Oxidized Unslipped Coarse Ware

O1M ---- Oxidized Unslipped Medium Ware

O1M(K) ---- Oxidized Unslipped Medium Kaolin Ware

O2M ---- Oxidized Slipped Medium Ware

O2M(K) Red / O2M(K) R ---- Oxidized Slipped Medium Kaolin Ware with Red Clay Slip

O2M(K) Kaolin / O2M(K) K ---- Oxidized Slipped Medium Kaolin Ware with Kaolin Clay Slip

O3F (CLD) ---- Oxidized Glazed Fine Ware (Celadon Ware)

O3F (GG) ---- Oxidized Glazed Fine Ware (Green Glazed Ware)

R1M ---- Reduced Unslipped Medium Ware

R2M ---- Reduced Slipped Medium Ware

ASI ---- Archaeological Survey of India

IAR ---- Indian Archaeological Review

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CHAPTER I

INTRODUCTION

The introduction has been divided into three sections: the first includes the history of archaeology in Assam with specific reference to Ambari, aim of my research and the methodology adopted for this study based on the Ambari ceramics; in the second I will try to locate Ambari within a more general historical frame of the region; and the third section is a historiography of ceramics, which will include the theoretical approaches, some of the ceramic studies in India as well as the archaeological and ethnographic studies related specifically to Ambari.

The site of Ambari (26°11.089'N 91°45.207'E) is situated in the modern Guwahati city of Assam, close to the Brahmaputra River (see figure 1).The site has been well excavated vertically but its horizontal spread could not be ascertained as it is in the middle of the city. This has failed in giving a more nuanced idea about the landscape surrounding the site or the actual extent of the site. The stratigraphic study at Ambari has shown chronologically three periods in the recent excavations of 2008-09. Period I can be approximately dated from circa 2nd to 7th century CE, Period II from 7th to 13th century CE and Period III from 13th to 17th century CE.

Figure 1 Location of Ambari in Guwahati.

I

History of Archaeology in Assam with specific reference to Ambari

This section includes those works which have dealt with the region of Assam and Ambari in particular but the latter will not be discussed in great detail. They manage to throw light on the current state of archaeological studies in Assam and a general idea of the archaeological sites in the region.

Sankalia (1981: 1) saw Assam, like Saurashtra, "as a living ethnological museum". Here, he talks about the findings at the site of Ambari. He talks about kaolin pottery and the terracotta boat found in Guwahati. On the basis of his exploration in Garo hills he (Ibid: 4-5) established the archaeological stratigraphy of the region. This sequence can be subdivided into:

Early Paleolithic	(c. 2, 00,000-50,000 B.C.)
Middle Paleolithic	(c. 50,000-20,000 B.C.)
Late Paleolithic	(c. 20,000-10,000 B.C.)
Mesolithic	(c. 10,000-5,000 B.C.)
New Stone Age (A)	(c. 5,000-2,000 B.C.)
New Stone Age (B)	(c. 2,000-1,000 B.C.)

This sequence he has provided on the basis of some section cuttings he did in the Garo hills. But, the dating is not based on any scientific dating methods and seems to be done relatively keeping in mind the dates ascertained in the other parts of the sub continent. Thus, these dates are not quite acceptable.

Dhavalikar (1973: 137) has described the northeast as a neglected region of the subcontinent. So he opines that a "phased programme of systematic exploration and selective excavation in the Brahmaputra Valley will throw a flood of light and enable us to know the contribution of the Far Eastern and the South East Asian cultures in the making of Indian civilization". He says the attempt behind the present article is to build a culture sequence on the basis of the evidence from Guwahati. The cultural sequence he creates has two periods where period I is characterized by Kaolin pottery and period II by 'Muslim' glazed ware and Chinese celadon ware. The sites in Guwahati he has surveyed are Saraniya hill, Navagraha, Kamakhya, Narakasur hill, Sukreshwar and Umananda. He also mentions the

boat found in Navagraha. The excavated finds of the site of Ambari he discusses where he was a member of the excavation team in 1970-71.

Chakrabarti (1998) gives a fleeting overview of the historical and archaeological works done in the North-Eastern states. In the initial few lines in the first chapter the author says "I have not yet done any fieldwork in Assam and the other northeastern states, i.e. Arunachal, Nagaland, Manipur, Mizoram, Tripura, and Meghalaya, and thus, my observations on the archaeology of this part of east India are based on the published literature". He has summarized the works of Nayanjot Lahiri's *Pre-Ahom's Assam*, A.K. Sharma's *Emergence of Early Culture in North-East India*, N.D. Choudhury's work *Archaeology of the central Brahmaputra Valley*, P.C. Bagchi's *India and China: A Thousand Years of Cultural Relations* and so on. In the book the author describes the site of Bhaitbari on the basis of his reading of A.K.Sharma's book. He also makes a brief mention of SuryaPahar and the site of Ambari. But as the work is based on the already published work and not on direct research so it lacks any novelty in terms of its academic value. It just provides a basic background to the readers about the scenario of archaeology in the North-East.

A book that is being included here is *Archaeology of the Brahmaputra Valley of Assam (Pre-Ahom Period)* (Choudhury 1985). The book does not deal directly with archaeological excavations and finds but instead deals with the Art history of Assam. The author includes the study of sculptures, inscriptions and coins but there is no reference to anything remotely associated with archaeology except that he lists the various archaeological sites in the Brahmaputra Valley. It seems the author has confused the terms archaeology and art history. The title of the book uses the term archaeology but does not do justice to it. The study of sculptures, epigraphy and numismatics are related to the field of archaeology but does not constitute archaeology purely.

History of Archaeological Work at Ambari

At Ambari trial trenches were laid in **1968-69** under the supervision of M.C. Goswami and T.C. Sharma (*IAR 1968-69*). The trenches revealed five layers from the top. The first layer was of 30 cm thickness dark grey in color with debris of modern usage. The second layer was of 25 cm thickness light brown in color containing brick fragments, sculptures and pottery. The third layer was of 50 cm thickness brown in color and compact in nature containing large quantities of pottery, pebbles, hearths and so forth. The fourth layer was of 30 cm thickness brownish grey in color mixed with rubble and pottery. The fifth layer which was partly

exposed was dark grey in color contained brick bats, pottery and so forth. The digging had to be abandoned because of the rise in subsoil water level and so the natural soil was not touched. The excavations yielded over forty stone sculptures from the second layer which is stylistically dated to the 9th 10th century CE period. Also remnants of a brick structure were revealed. The pottery recovered includes kaolin ware, red ware, grey ware, glazed ware. Celadon ware, decorated ware, cornucopia shaped vessel and so forth. The other artifacts found are lamp stand, beads, terracotta bangles, glass bangles, terracotta figurines, a terracotta seal, few rings of copper and iron and a small copper coin issued by the East India Company.

In **1970-71** under the supervision of M.C. Goswami, T.C. Sharma, M.G. Das, Z.D. Ansari and M.K. Dhavalikar (*IAR 1970-71*) in Ambari twelve trenches were laid. But only two trenches AMB I and AMB II were excavated due to the rise in sub soil water. The natural soil could not be reached due to the rise in sub soil water. A couple of brick structures were exposed during this season. On the basis of the pottery four phases had been identified in Ambari. In phase I some lid forms (?) had occurred which the excavator finds similar to the ones in Sisupalgarh in Orissa. Thus, the phase I is identified with the early centuries of the Christian era. The phase II consisted of bowls and vases of red, grey, buff and kaolin wares with stamped decorations. The phase III was characterized by kaolin ware in bowl and lota shape. Also Celadon ware was found in the same layer of phase III. The phase IV is identified with green glazed ware. Also found were sculptures of Brahmanical icons.

In **1987-88** the excavations were conducted under the supervision of T.C. Sharma (*IAR 1987-88*). In the 1987-88 season of excavation three trenches were laid down. The artifacts found includes 135 sculptures of Brahmanical icons, coins of the colonial period, 64 terracotta lingas, a few cannon balls, carnelian beads and so forth. The pottery found includes large amounts of kaolin ware, green glazed pottery and red ware. Some brick structures were also unearthed.

In **1989-90** excavations were supervised by T.C. Sharma and G.N. Bhuyan (*IAR 1989-90*). This season seven trenches were laid which led to the recovery of sculptures, large quantity of pottery and structural remains. The sculptures are kurma avatara of lord Visnu, siva lingas and yoni pithas. The significant pottery found was Chinese celadon ware, kaolin ware and green glazed pottery. The structural remains show five levels of construction in the early medieval period.

N.P. Chaudhury supervised the **1995-96** excavations where five trenches were laid (*IAR 1995-96*). In this season altogether nine layers were identified.

G.N. Bhuyan was the supervisor for the excavations of **1997-98** where 4 trenches were laid and seven layers were identified (*IAR 1997-98*). The Layer 1 is humus, Layer 2 is brownish in color, Layer 3 is sandy soil dark in color, Layer 4 is brownish soil with potteries and brickbats, Layer 5 is compact dark brownish soil with potteries, Layer 6 is slightly reddish colored soil and Layer 7 consists of dark soil. Also during this season a square brick structure resembling a well or a bath was found along with a brick pathway of curvilinear pattern has been found.

R.D. Choudhury, T.C. Sharma, N.P. Debchoudhury and B.P. Sinha in **1998-99** supervised the excavations at Ambari (*IAR 1998-99*). This season three trenches were laid down and excavated to a depth of 2.10 m which exposed eight layers of cultural deposits. The significant structural finds of this season includes a brick inlaid floor. The other artifacts recovered are coins from the colonial period, beads, a stone *yoni pitha*, pottery and brick bats. The significant ceramics are green glazed ware, kaolin ware and lids with dome shaped knobs along with red ware.

The excavation of **1999-2000** season was directed by R.C. Das (*IAR 1999-2000*). Two trenches were laid this season which exposed a brick wall and a brick floor. The pit inside one of the trenches yielded 15 pots of red ware and kaolin ware. These pots have been typologically divided into three categories. These are globular bodied small pot found with a horizontally laid appliqué line, elongated type and flair rims of large storage jars.

In **2002-03** the stress was laid on the structural conservation of the already exposed brick structures under the supervision of H.N. Dutta and Deepirekha Kouli (Dutta and Kouli 2006). A significant find of this season is the discovery of a furnace. The excavators have argued that the Ambari pottery was manufactured locally on the basis of this finding. Also the baulks were removed in Ambari that led to the collection of 338 artifacts. The artifacts include pottery, carved pillar base, stone querns and a yoni pitha. The pottery found are rims of red ware and kaolin ware pots, bowls, beakers, small, medium and large size pots, dome shaped lids, shallow dishes, plates, elongated pots, globular pots and mica dusted ones.

The excavation of **2008-09** was conducted under the supervision of Sanjay Manjul and H.N. Dutta. The excavation report of this season is not published yet. But the excavator has opined that the findings suggest that Ambari has three chronological periods. Period I can be approximately dated from circa 2nd to 7th century CE, Period II from 7th to 13th century CE and

Period III from 13th to 17th century CE. Thus altogether the site has been excavated for nine seasons and which has led to a huge collection of ceramics.

Aim

The aim behind this work is to look at the micro details related to the ceramics of Ambari. Ceramics were an integral part of human life in the age before the advent of the plastic and paper mediums. This is the reason behind the wide distribution of potsherds in archaeological sites. In surveys and excavations the artifact that usually records the maximum collection are ceramics. Ceramics have variations in terms of forms and decorations that are restricted in time and space, which has been widely recognized (Sinopoli 1991: 2). Spatial variations help in distinguishing different regions and temporal variations help in establishing chronology. Ceramics help in establishing the chronology of the site especially in surveys where there is no stratigraphic evidence available.

A micro study enables one to look into various details within the different ceramic types. The details such as slip, wash, mica content, technique used and so forth can be looked at. At Ambari I felt that some aspects of the ceramics have not been looked at in details like the decorated wares, the aspects of standardization in sizes and the context of kaolin ware. I have tried calculating the quantities of the different varieties of ceramics to get a clearer picture of the Ambari ceramics. Ceramics can help in looking at the pattern of habitation of a site and also the consumption patterns of a populace in a particular period.

Thus I have attempted at Ambari to look at the micro details and extract information out of the ceramics. The information collected is empirical in nature since they are calculations of counts, weights and sizes. Through this empirical information the history of Ambari site's habitation is traced as well as the pattern of usage of ceramics.

Methodology

Most modern archaeological studies of pottery are based on three approaches: classification, decorative analyses, and compositional studies (Rice 1987: 25).The mode of ceramic classification followed plays a very significant role in determining our understanding of the past. Sinopoli enlists three types or typologies of ceramic classification. They are intuitive or traditional typologies, type-variety typology and quantitative or statistical typology. Intuitive typology involves the process of sorting the ceramic sherds into groups on the basis of recognition and division on the basis of perceived patterns of similarities and differences (Sinopoli 1991: 4-5). The type-variety method involves sorting of ceramics into broader groups, or types and, finer groups, or varieties, usually on the basis of raw materials,

or clays and tempers, and decorative treatment. The quantitative or statistical method is based on explicitly defining and measuring a number of attributes or traits of ceramics and using a variety of statistical techniques to examine their distributions and divide the vessels into objectively verifiable categories.

The methodology adopted in this study of the Ambari ceramics involves the classification and analysis of the decorated wares, non diagnostics and diagnostics separately. The typologies followed in this study are an amalgamation of the three techniques that Sinopoli discusses, so that an effective recording and analysis of the micro details of the ceramics is possible. The classification sheets designed for this purpose are as follows (see figure 2, 3 and 4).

AMBARI CERAMICS

CERAMIC RECORDING SHEET: DECORATED WARES TRENCH:

ANALYZED BY: Preetee Sharma LAYER:

Form	Type	Count	Wt.(gm)	Dia.(cm)	Design Type	Note

Figure 2 Decorated Wares Recording Sheet.

AMBARI CERAMICS

CERAMICRECORDINGSHEETNON-DIAGNOSTICS TRENCH

ANALYZED BY: Preetee Sharma

Type	Count	Wt.(gm)	Layer

Figure 3 Non diagnostics Recording Sheet.

AMBARI CERAMICS

CERAMIC RECORDING SHEET: DIAGNOSTIC WARES TRENCH:

ANALYZED BY: Preetee Sharma LAYER:

Form	Type	Count	Wt. (gm)	Dia. (cm)	Note

Figure 4 Diagnostics Recording Sheet.

Figure 2 is the format of the classification sheet used for classifying the decorated wares of Ambari. The sheets are used to record the details of the decorated wares according to the trench and layer they occur in. The form here records the vessel type where the decoration occurs. The type records the fabric type used on the sherd with decoration. The count and weight records the number of sherd having the same vessel type and fabric. The diameter is

for recording the size of the decoration. The design type will record the design code, which I have given to all individual designs. The notes are for recording anything special that can be observed on the sherds.

Figure 3 is the format of the classification sheet used for classifying the non-diagnostics in Ambari. In a single non-diagnostic classification sheet sherds are recorded according to the trench they occur in. The first column is type that records the fabric type of the sherds. The count and weight records number of sherds and their weight respectively. The last column records the layer the sherd or sherds occur in.

Figure 4 is the format of the classification sheet used for classifying the diagnostics from Ambari. The classification of diagnostics is done trench and layer wise. The form records the type of vessel a particular diagnostic type occurs with. The second column records the fabric type of the diagnostic sherd. The third and fourth columns record the number of times a particular diagnostic sherd occurs and its weight respectively. The fifth column records the diameter of the sherds like rims, bases or knobs. The notes are for recording anything special observed on the sherds.

II

Locating Ambari within the historical frame of Kamarupa-Pragjyotisha-Guwahati

In order to better understand the Ambari ceramics, it is essential to first discuss the historical background of the region. So the different sources for study of ancient Assam like texts, foreign accounts and epigraphy will be discussed. Then the political history of the region on the basis of these sources will be outlined. Finally, an attempt will be made to situate Ambari in the historical narrative of the region.

SOURCES

The ancient name of Assam in the epics, classical texts and Puranic texts occurs as Kamrup or Pragjyotisha. The classical texts which refer to Kamarupa or Pragjyotisha or places within them are *Arthasastra*, Kalidasa's *Raghuvamsa*, Dandin's *Dasakumaracharita*, Banabhatta's *Harsacharita*, Bilhana's *Vikramankadevacharita*, Sandhyakaranandi's *Ramacharita*, Kalhana's *Rajatarangini*, Varahmihir's *Brihatsamhita*, *Kavyamimansa*, Rajasekhara's *Karpuramanjuri*, Kshemendra's *Abhidhanachintamani* and Somadeva's *Kathasaritsagara* (Baruah 1985: 33). The *Puranas* are a useful source for reconstructing the history of ancient Assam. Most of them like the *Garuda, Markandeya, Naradiya, Brahmana, Skanda, Agni* and *Vishnu* contain

references to ancient Assam and her rulers. The *Kalika Purana*, which was composed in Assam itself in about the 10th century CE is invaluable for a study of the political and cultural history of ancient Assam.

The account of Xuanzang is a useful traveler account on ancient Assam who visited Assam in the 642- 43 CE. He mentions Kamrup as Kamopo or Komelu in his account. His account throws light on the reign of King Bhaskaravarman of Kamrup who was contemporary to King Harsa. Yijing's account talks about a king of eastern India called Devavarma.

In the period from 5th century CE to 12th century CE thirty-one inscriptions have been found relating to the ancient Assam or Kamarupa. The 31 inscriptions are Surendravarman Umachal rock inscription (5th century CE), Nagajari Khanikargaon stone inscription (5th century CE), Bhutivarman-Barganga inscription (6th century CE), Bhaskaravarman-Dubi copper plates (7th century CE), Bhaskaravarman-Nidhanpur copper plates (7th century CE), Bhaskaravarman Nalanda clay seals (7th century CE), Sri Jivara-Sankara-Narayana image inscription (8th century CE), Diglekhavarman-Hari-Hara image inscription (8th century CE), Srikumara-Copperbell inscription (8th century CE), Harjaravarman-Tezpur rock inscription (830 CE), Harjaravarman-Hayunthal copper plates (mid 9th century CE), Deopani Visnu image inscription (9th century CE), Vanamalavarmadeva-Tezpur copper plates (9th century CE), Vanamalavarmadeva-Parbatiya copper plates (9th century CE), Vanamalavarmadeva-Kaliyabor copper plates (9th century CE), Balavarman III-Uttarabarbil copper plates (9th century CE), Balavarman III-Ulubari copper plates (9th century CE), Balavarman III-Nagaon copper plates (9th century CE), Surya image inscription (9th century CE), Ratnapala-Bargaon copper plates (1035 CE), Ratnapala- Suwalkuchi copper plates (1036 CE), Ratnapala-Coratbari copper plates (11th century CE), Indrapala-Guwahati copper plates (1058 CE), Indrapala-Guwakuchi copper plates (1071 CE), Gopalavarman-Gachtal copper plates (1080 CE), Dharmapala-Subhankarapataka copper plates (12th century CE), Dharmapala-Pushpavadra copper plates (12th century CE), Dharmapala Khonamukh copper plates (12th century CE), Vaidyadeva-Kamauli copper plates (1142 CE), Vallabhadeva-Assam plates (1185 CE), Kanaibarasi rock inscription (1206 CE), Samudrapala-Ambari stone inscription (12th-13th century CE) and Gachtal pillar inscription (12th-13th century CE) (Lahiri 1991: pp 26-27).

POLITICAL HISTORY OF THE REGION

Scholars have constructed the political history of ancient Assam through the above mentioned sources. The early history of Pragjyotisha-Kamarupa till the middle of 4th century CE is vague and confusing (Baruah 1985: 87). The epics, Harivamsa, Kalika Purana and so forth, mention the legend of Naraka who was the son of the boar incarnation of Vishnu and

Prithvi or earth. Later he came to Kamarupa and established his rule here. According to the Kalikapurana, Naraka ruled for one full yuga from the tretayuga to the dwaparyuga (Choudhury 1985: 65). Scholars opine that this Naraka was not a single ruler but a dynastic title. Later, Puranic texts narrate that Naraka became very oppressive as a ruler and he was killed by Krishna. On his throne his son Bhagadatta was placed by Krishna.

The genealogies of the three dynasties Bhauma-Varmana, Salastambha and Pala who ruled Pragjyotisa-Kamarupa are as follows (see table 1).

BHAUMA-VARMANA DYNASTY

In the 4th century CE Pusyavarman founded the rule of the Varman dynasty in Pragjyotisa-Kamarupa. He traces his descent from the Bhauma dynasty of Naraka-Bhagadatta, was the first distinguished ruler of the line as recorded in the inscriptions (Choudhury 1985: 68). The inscription that mentions Pusyavarman as the founder of the Varman dynasty is the Nidhanpur copper plates issued by King Bhaskaravarman in the 7th century CE. The Varman dynasty probably continued from the middle of the fourth century AD to the middle of the 7th century CE or even later. Pusyavarman was probably a contemporary of Samudragupta since he also used the epithet of *'Maharajadhiraja'* (Ibid: 69). The accession of Pusyavarman may be placed about CE 350 or a little earlier (Ibid: 71).

Pusyavarman was succeeded by son Samudravarman in 380 CE which has been mentioned in the Nidhanpur copper plates issued by King Bhaskaravarman and probably a contemporary of Chandragupta II (Ibid 1985: 71). The kings who ascended the throne after Samudravarman are respectively Balavarman, Kalyanavarman, Ganapativarman, Mahendravarman, Narayanavarman, Bhutivarman or Mahabhutavarman (554 CE, Badaganga rock inscription), Chandramukhavarman, Sthitavarman, Susthitavarman, Supratisthitavarman and Bhaskaravarman. Bhaskaravarman was a contemporary of Harsavardhana and may be placed between circa 594 and 650 CE (Ibid 1985: 75). He died issueless and so he was the last of the Varmana dynasty. His court was visited by the Chinese pilgrim Xuanzang.

Xuanzang travelled from the monastery of Nalanda to the kingdom Kamarupa. The description given in the records of the travels of XuanZang say that the pilgrim travelled east from Pun-na-fa-tan-na (Pundravardhana) about 900 li, crossed a large river (Karatoya) and finally reached Ka-mo-lu-po (Kamarupa). He describes the capital as around 30 li in size. The kingdom of Kamolupo is identified with Kamarupa or Western Assam and the capital is identified with the city of Guwahati (Watters 1973: 186).

Bhauma-Varmana (mid 4th century-7th century CE)	Salastambha (650-990 CE)	Pala (990- mid 13th century CE)
Pusyavarmana	Salastambha	Brahmapala
Samudravarmana	Vigrahastambha	Ratnapala
Balavarman I	Palaka	Purandarapala
Kalyanavarman	Kumara	Indrapala
Ganapativarman	Vajradeva	Gopala
Mahendravarman	Sriharsa	Harsapala
Narayanavarman	Balavarman II	Dharmapala
Mahabhutivarman	Sri Jivara	Jayapala
Chandramukhavarman	Diglekhavarman	Samudrapala
Sthitavarman	Cakra and Arathi	
Susthitavarman	Salambha	
Supratisthitavarman	Harjaravarman	
	Vanamalavarman	
	Balavarman III	
	Tyagasimha	

Table 1 Genealogy of Three Dynasties of Ancient Assam.

SALASTAMBHA DYNASTY

The Bargaon copper plates, issued by Ratnapala in 1035 CE mention that after the end of the rule of the descendants of Naraka in Kamarupa Salastambha established his rule. He established the rule of the dynasty of Salastambha who ruled from circa 650-990 CE. Salastambha was followed to the throne respectively by Vigrahastambha, Palaka, Kumara and Vajradeva, about whom all the available records are silent (Barua 1985: 113). After Vajradeva the throne was ascended by Sri Harsa or Harsavarmadeva in around circa 730 CE and he ruled till 750 CE (Choudhury 1985: 84-85). The Hayunthal copper plates issued by Harjaravarman in the mid 9th century AD, Copper plates issued by Vanamala and Nepal inscription of Jayadeva II mention him and his reign. He was succeeded by his son Balavarman II and has been mentioned in Hayunthal copper plates issued by Harjaravarman in the mid 9th century CE. After him again there are two kings whose existence is not supported by the sources and they are Sri Jivara and Diglekhavarman (Lahiri 1991: 75). The Hayunthal copper plates issued by Harjaravarman in the mid 9th century AD mention that

after them there are two princes Cakra and Arathi who do not seem to have ruled over the kingdom (Choudhury 1985: 87).

The next important ruler of the dynasty was Pralambha or Salambha who was the son of Arathi and possibly a contemporary of Gopala the first ruler of the Pala dynasty of Bengal (Ibid: 87). The copper plates issued by Vanamala in the 9th century CE talks about the conquests of Salambha. He was succeeded by Harjjaravarman who ruled from circa 820-835 CE which is supported by the rock inscription of his in Tezpur. According to R.C. Majumdar Harjjaravarman could have been a contemporary of Devapala of Gauda. The name of the capital as mentioned in inscriptions is found as Haruppesvara, Hatappesvara or Hadappesvara, located in Tezpur (Ibid: 88). This shift of capital must have happened during the reign of Harjjaravarman and not after (Ibid: 89). Vanamala succeeded hereafter and ruled from circa 835-860 CE which is supported by the Nagaon copper plates issued by Balavarman III in the 9th century CE. The Nagaon copper plates of Balavarman III mention the successor of Vanamala as Jayamala and he was succeeded by Balavarman III. The names of the successors of Balavarman III are known. The name of the last ruler of the dynasty is known from the Bargaon grant of Ratnapala who is Tyagasimha. Tyagasimha ruled in the beginning of the 11th century CE and his rule ended 990 CE.

PALA DYNASTY

The Bargaon copper plates of Ratnapala issued in 1035 CE states that the 21st king of the Salastambha dynasty (Tyagsimha) had died without any issue so his officials thought of appointing someone to the throne belonging to the Bhauma-Naraka-Varmana line. So, in such a situation Brahmapala was appointed king (Barua 1985: 121-22). The Pala dynasty ruled from 990 CE to 1138 CE. Ratnapala succeeded him in circa 1010 CE and ruled till circa 1040 CE. He had a long reign as is proved from his Bargaon and Sualkuchi grants issued respectively in his 25th and 26th regnant year (Choudhury 1985: 93). He shifted his capital from Haruppesvara (Tezpur) and built his capital on the banks of the Brahmaputra and called it Durjaya or impregnable. In the Bargaon copper plates issued by him there is an elaborate description given on Durjaya his capital city. Ratnapala's son Purandrapala died before him stated in the Guakuchi copper plates issued by Indrapala in 1070 CE, Khonamukh copper plates and Subhankarapataka copper plates issued by Dharmapala in 12th century CE and Gachtal copper plates issued by Gopalavarman in 1080 CE.

Ratnapala was succeeded by his grandson Indrapala who has been mentioned in the Guwahati copper plates issued by him in 1071 CE and Khonamukh copper plates and Subhankarapataka copper plates issued by Dharmapala in 12th century CE. He was followed

by his son Gopala who may be placed between circa 1065-1080 CE (Choudhury 1985: 97). He is mentioned in the Gachtal copper plates issued by him in 1080 CE and Pushpabhadra copper plates issued by Dharmapala in 12th century CE. Gopala was succeeded by his son Harsapala during his reign possibly Kamrupa kingdom lost its territory in the west (Ibid: 98). Harsapala was succeeded by Dharmapala (1095-1120 CE) who is mentioned in the Pushpabhadra copper plates, Khonamukh copper plates and Subhankarapataka copper plates issued by him in 12th century CE. The important political event of his reign was the extension of the western boundary of his kingdom to the west of Karatoya (Ibid: 98). Dharmapala shifted his capital to the end of his reign from Pragjyotisapura to Kamrupanagara. Some scholars identify this with Rangpur which was in close vicinity of Pundravardhana.

The dynasty of the Pala rulers of Kamarupa, as found in the grants came to an end with Dharmapala. However, the Silimpur stone inscription of Prahasa mentions the name of Jayapala who possibly might have belonged to the Brahmapala family. The accession of Jayapala may be placed in the 1120 CE (Ibid: 100). The Ambari stone inscription mentions a king called Samudrapala who seems to belong to the Pala family and a successor to Jayapala. The inscription is dated to 1232 CE (Barua 1985: 127). P.C. Choudhury (Choudhury 1970) opines that Pala rule might have continued till the middle of the 13th century on the basis of this inscription.

POLITICAL SCENARIO AFTER THE PALAS

There was no centralized state in Assam between the thirteenth and fifteenth century (Guha 1991: 61). The eastern most part of the Brahmaputra valley its north bank was ruled by the Chutiya tribe. In the south bank the Moran and Borahi tribes led a precarious existence. South of them in the central part of the valley was the powerful kingdom of the Bodo-Kachari tribe. Towards the west of the Chutiya and Bodo-Kachari kingdom were a number of petty Hindu chiefs together as a group called Bara Bhuyan. In the westernmost part of the Brahmaputra valley in the former districts of Kamrup and Goalpara there still continued the waning influence of Kamata which was a successor state of ancient Kamarupa Empire. The kingdom of Kamata was overthrown in 1498 by a short lived Turko-Afghan invasion. In the early 16th century the Koch kingdom of lower Assam and adjoining North Bengal rose into prominence and established their control over the ruins of erstwhile Kamata (Ibid: 62).

In 1228 AD A Tai prince called Sukapaha led a group of Tai people into the Brahmaputra Valley. They came to be called Ahoms and ruled till 1826 (Tripathy 2002: 18). The Ahoms contained themselves in the east for about 300 years to avoid any serious clashes with the

powerful Chutiya and Bodo-Kachari kingdoms (Guha 1991: 65). The Koch kingdom attacked the Ahom capital Garhgaon in 1562. Thereafter their domain was gradually encroached upon from the west by the Mughals and from the east by the Ahoms. From the last quarter of the 17th century Ahoms almost controlled the entire Brahmaputra valley (Ibid: 62).

AMBARI IN THE HISTORICAL NARRATIVE OF THE REGION

Ambari is situated in the heart of modern day Guwahati city. The inscriptions that mention Pragjyotisa are the Tezpur copper plate V of Vanamala (9th century CE) and in line 48 of Kamauli grant of Vaidyadeva (1142 CE) (Lahiri 1991: 144-45). Western Assam was known as "Pragjyotish" or "Kamarupa" till the end of the 12th century CE but after that the use of Pragjyotisa stopped and Kamarupa continued to be used and even today it is retained as the name of a district in Assam (Tripathi 2002: 7). The term Kamarupa has been found in lines 48-49 in the Kamauli grant of Vaidyadeva (1142 CE) (Lahiri 1991: 144-45). Guwahati is identified with ancient Kamarupa and Pragjyotisa.

The Varmana dynasty's capital was situated at Kamrup (Guwahati) in the period of mid 4th century to 7th century CE. The change of dynasty with the coming of the Salastambha dynasty led to a transfer of capital from Kamrup (Guwahati) to Haruppesvara (Tezpur) in the period from circa 650-990 CE. In the Pala dynasty Ratnapala who ruled from 1010-1040 CE shifted his capital from Haruppesvara (Tezpur) to Durjaya on the banks of the Brahmaputra. The description of Durjaya in Bargaon copper plates gives an impression that it was a fortified capital. Durjaya has been identified with modern Guwahati city (Lahiri 1991: 83). Some have identified Durjaya with the ruins found in North Guwahati (Tripathi 2002: 17). Towards end of the reign of Dharmapala (1095-1120 CE) the capital was shifted from Durjaya to Kamrupnagara (west of Durjaya).

I have studied the habitation pattern in Ambari through the ceramics which I will be discussing in greater detail in the later chapters. Ambari seem to have attracted an increase in habitation during the period of the shift of the capital from Haruppesvara to Durjaya. Durjaya has been identified by scholars with the ruins found in North Guwahati (Tripathi 2002: 17). But, Ambari is situated in the South Guwahati which during this period might be the outskirts or the peripheral area of the capital city. Also, both North and South Guwahati are separated by the Brahmaputra River which flows through it. A clear demarcation of the space can be observed here.

But, interestingly no major decline has been observed after the capital again shifted from Durjaya to Kamrupnagara. Ambari can be situated in this westward shift of political center from Tezpur in the east to Kamrupnagara in the West through Guwahati. When the Palas

shifted their capital from Tezpur to Guwahati it gave an impetus to habitation in the area. But, the subsequent shift from Guwahati did not arrest this habitation pattern which in fact continued to flourish.

There is a gradual decline in Ambari from the 14th century CE onwards with the dissolution of the Pala power and coming up of the tribal chiefdoms in the Western and Central Assam and the Kamata kingdom in the east. When the Ahoms acquired supremacy in the region of Assam and adjoining areas from the latter half of the 17th century CE onwards, hiatus sets in gradually at Ambari.

III

Historiography

The historiography has been divided into three parts. The first part (A) includes the studies dealing with the theoretical approaches to ceramics. The second part (B) deals with some of the ceramic studies in India and the third part (C) with ceramic studies on Ambari.

A. Theoretical approaches to ceramics

This section includes the studies of Dean E. Arnold, Prudence Rice and Carla M. Sinopoli. These studies have been included here since they provide the basics of any ceramic study. These studies have explicated in great detail the theoretical framework involved in the ceramic classification and analysis. Arnolds's (1985) study throws light on the paradigmatic shifts within ceramic studies through some case studies. Rice (1987) has tried including in her work almost all the concepts and issues related to ceramic study. The last work in this section is that of Sinopoli (1991) which discusses apart from the different approaches to ceramic classification the relationship between ceramics, state processes and social systems.

The basic premise of Arnold's (1985) work is that there are certain universal processes involving ceramics that are related to ecological, cultural or chemical factors. The attempt here is to provide a theoretical framework to the study of ceramics through the case studies the author has conducted on contemporary ceramics in Mexico, Peru and Guatemala. The different paradigms for ceramic studies are atomistic/analytic/mechanistic, mentalism and new archaeology. The atomistic/analytic/mechanistic paradigm has its roots in Newtonian physics and in ceramics it expresses itself as an emphasis on classification. In atomistic/analytic/mechanistic paradigm of study the basic units of study are potsherds (or less frequently entire vessels) which are broken up into attributes and then clustered and

reassembled as abstract types which are acted upon by the forces of culture process or culture history (Arnold 1985: 4).

Mentalism paradigm or 'the native's point of view' emerged from American anthropology in the 1920s and 1930s. Mentalism brought two analogies to ceramic studies – one from psychological anthropology and the other from linguistics. With the former the concern for the 'the native's point of view' found its fullest expression in the culture and personality school that developed in the late 1920s (Ibid: 4-5). The clay being plastic in character can be shaped to any form by the potter. The second analogy of linguistics developed in the Prague school where phoneme is viewed as a complex psychological unit which was composed of a number of distinctive features which characterized it as a linguistic entity (Ibid: 7). The potter thus constructed a pot according to an ideal set of attributes he has in his mind and these features were also characteristic of the archaeologist's ceramic types (Ibid: 7). Another perspective in this paradigm is cultural ecology.

New archaeology led to a paradigmatic shift in archaeology. It stressed on the interrelated nature of culture which led to the development of the systems theory. The three major theoretical perspectives of this book are the systems paradigm, cultural ecology and ethno archaeological. This book thus applies the generalizing power of a systems approach to ethno archaeological data by concentrating on one very small part of material culture-ceramics (Ibid: 15). The systems are represented by culture and environment. His work focuses on the relationship of the ceramics with these two systems through the local community of potters (Ibid: 17). He stresses on the behavior context of the ceramics in order to understand the past cultural processes. This will lead to better understanding of pottery shapes and their uses which in turn will lead to a better understanding of the past societies.

Rice (1987) lays down the basic concepts and issues of ceramic analysis in her study. Her work has been rightfully entitled as it emphasizes the properties and methods of study of pottery. Rice has enumerated the following objectives behind her study. The first objective was to provide a broad reference for the study of ceramics through this work. The second objective was to provide an insight into the different approaches within the study of ceramics since it is an upcoming field of study. The third objective she intended was to provide a theoretical framework to the practical study of ceramics. Her work has included almost every aspect related to ceramic study and has been rightfully entitled *A sourcebook*.

She has fulfilled this stupendous task through this work which is a magnum opus and it has dealt with the various aspects and facets of ceramic/pottery study. The study includes an introduction to different types of pottery and the history of ceramics. It has dealt with the composition of different types of clay which is the chief raw material for pots. It also throws light on the aspects of plasticity of clay, factors that lead to shrinkage in pottery and role of inclusions or tempering agents. It also deals with the firing process of pottery. Her work gives an exhaustive account of the techniques used in the manufacture of different types of pottery. It further talks about the inter relationship between production of ceramics and their distribution pattern.

Rice elucidates on how the vessel function determines its form or shape and the technology used in making it. She devotes a chapter on ways of analyzing the stylistic attributes of the pottery decorative styles. The ethno archaeological and ethnographic modes of enquiry in ceramic studies have been discussed. The important issues related to pottery studies within archaeology, ethno archaeology and ethnology have been highlighted. She talks of the way ceramics can be looked at during research and how a problem can be approached through analysis of ceramics. Basically ways of designing a ceramics research have been discussed. The strategy of sampling ceramic sherds has been talked of. The different methods of ascertaining the mineralogical and chemical composition of the ceramics like petrographic method, X-ray diffraction analysis, thermal analysis, optimal emission spectroscopy and so forth have also been discussed.

Through her work Sinopoli (1991) seeks to provide a general guide to the increasing literature on ceramic analysis, lay down the scope and potential of ceramic analysis in archaeology for answering the questions about the past (Ibid: vii). She attempts through various ceramic case studies a discussion of the basic theoretical and methodological issues within and shows the various relevant approaches to ceramic analysis. The major achievement of her work is the simplification in explicating the different approaches to the study of ceramics. It definitely helps and goes ahead in providing a general introduction to the literature available on ceramic study.

Sinopoli discusses in details the various steps involved in pottery manufacture like the nature of raw materials, clay, inclusions, water, and technique of making, ornamentation, surface treatment, fuel and firing. The classification process involved in ceramic analysis has also been discussed. Classification plays an important role in determining our understanding of the past. The three types of approaches in classification she discusses are intuitive

typology, type-variety typology and quantitative or statistical approach. She also discusses the role ceramics can play in unveiling the social relations and social systems of the past. It also can help in explicating the relationship between ceramic production and distribution with the state processes of the past.

B. Ceramic Studies in India

This section includes those works which have set precedent to studies on ceramics in India. These works are path breaking in their own areas. Those works have been included here which I thought would be relevant for me before embarking on a study of the ceramics at Ambari. Gogte (1997, 2002) has challenged the idea that all rouletted ware originates from the Roman world. Historians and archaeologists have long used the evidence of rouletted ware as suggestive of Indo Roman trade contacts. Gogte through X- ray diffraction analysis question this very premise. Smith (2001) through her study of the ceramics of Kaundinyapura shows how typologies of ceramics created during classification affects later archaeological data. Krishnan (2005) has depicted how technology can be used for understanding the technique involved in ceramic making. Krishnan and Shah (2005) have outlined the process of ceramic petrology which effectively throws light on technical, economical and socio-cultural areas. Mishra (2008) studies the pottery in the chalcolithic site of Balathal and provides an example for ceramic study.

Gogte (1997, 2002) has talked about the X-Ray diffraction analysis where the content of various minerals in the fabric of the pottery indicates the place of origin. The X-ray diffraction analysis has shown that the rouletted ware found in places such as Arikamedu, Alagankulam, Manikpatna, Sisupalgarh, Kottapatnam, Nashik, Chandraketugarh, TraKieu (Vietnam), Anuradhapura (Sri Lanka), Sembiran (Indonesia) and Beikthano (Burma) were made in the Chandraketugarh-Tamluk region.

Smith (2001) has done a case study of the town of Kaundinyapura in the Vidarbha region of Central India. The case study involved some archaeological field methods such as systematic surface collections of Kaundinyapura as well as another nearby site called Dhamantri. She has tried looking at the patterns of regional exchange and in relation to those processes like production as well as distribution of goods in the region. The systematic surface survey was conducted in Kaundinyapura and the surrounding area in 1994 and 1995.

Smith also discusses the ceramics of central India, and the specific typological organization of the survey ceramics from the site of Kaundinyapura. She discusses here the process of

classification and how the construction of typologies affects the subsequent utilization of archaeological data set. She has also discussed how ceramics in many Indian sites are identified which are useful for broad chronological assessments but finer-scaled typologies can yield more varieties of information. The information of how different ware categories were distributed at a site which will provide probable information about the economic and social difference. Finally she discusses the way the ceramic wares were classified for this project with the focus on the ceramics of the early historic period in Kaundinyapura and Dhamantri (Smith 2001: 58). The ceramics collected from these two sites are quite diverse in character so a sorting typology was developed to record this diversity which can be retrieved through computer database programs (Ibid: 4).

Ceramics form the majority of items recovered in the systematic collection program (Ibid: 4). The ceramics found at both the sites of Kaundinyapura and Dhamantri seems to have been limited to certain forms. These forms are found in multiple periods. The rime forms were identified with other Vidarbha ceramics which helped in chronological identification (Ibid: 73). The archaeological investigation of Kaundinyapura and Dhamantri indicates that a regional exchange network was sustained between these sites and other parts of greater Vidarbha area. Exchange is marked archaeologically by items such as sandstone, mica and grains (Ibid: 102).

Krishnan (2005) uses scanning electron microscopy with energy-dispersive X-ray analysis for a better understanding of the technique of making the slip of the Glazed Reserved slip ware (RSW) sherds collected from the sites of Nageshwar, Zekhda and Shikarpur. The 'glazed' RSW is characterized by a well-defined, glossy and hard surface layer, whereas the surface of 'unglazed' RSW is matt and soft. He has probed the nature of the surface coat of RSW and its technology. He presents an examination of 'glazed' Reserved Slip Ware, based mainly upon the standard approach of the examination of cross-sections in the scanning electron microscope, supplemented by a limited amount of X-ray diffraction analysis (Krishnan 2005: 694). It was found that the surface layers have high alumina and flux content apart from iron oxide and quartz particles. On this basis, it is concluded that these surface coats were applied as very fine clay slips that have sintered to produce hard dense layers such as Greek Attic ware and Roman *terra sigillata* (Ibid: 699). Thus, rather than using the term 'glazed' RSW 'sintered' RSW is preferred and proposed. Also the 'sintered' RSW has a hard surface and low body porosity. This study has thrown light on the major characteristics of 'sintered' RSW and the technique of creating this ware.

Krishnan and Shah (2005) elucidate the method of ceramic petrology and its significance in ceramic studies specifically in India. The traditional modes of classification of ceramics took into consideration the morphology and surface treatments. Ceramic petrology enables investigation of paste texture of clay and its properties. Ceramic petrology has raised interesting possibilities for investigating issues relating to provenance, technology and socio-economic process of ancient times. Petrological analysis is a micro-morphological analysis of the "ceramic paste" or "clay paste" of pottery. It is an optical method that involves the examination and description of the micro structural features of the fired clay paste as revealed in the pottery thin sections. A ceramic thin section is prepared by mounting a slice of pottery onto a glass slide and grinding and polishing it to a thickness between 20-30 microns. At this thickness, the mineral constituents of the micro structure became more or less transparent and can be identified by their various optical properties (such as color, relief, cleavage, pleochroism, degree of birefringence, extinction angle.etc.) using the principles of optical mineralogy under the transmitted light of a polarizing microscope (Ibid: 147). Basically, this mode of investigation leads to unearthing everything related to ceramic technology, raw material used, tempering agent and their sources. This can contribute to a better understanding of the complex socio-cultural processes involved in ceramic production which as the authors rightfully says goes beyond economic and technical factors.

Mishra (2008) attempts to conduct a systematic and scientific study of the pottery at the chalcolithic site of Balathal. The aim of this study are the systematic classification of ceramics according to fabric, forms and styles based on their vertical and horizontal distribution, understand the cultural phases of the site through the typo-technological development of the ceramics, ascertain the manufacturing technology, differentiate between the locally manufactured pottery from the imported pottery from other cultures, understand the variability within ceramics and the role of individuals in pottery production, understand the changes in the subsistence and economy as reflected by the typo-technological study of the ceramics, use ceramics as a chronometer for relative dating and to examine other outstanding issues related to Ahar culture like the influence of Harappa, problem of black-and-red ware, origin, development and decline (Mishra 2008: 31).

A comprehensive classification has been attempted where the different wares along with the nature of clay, technique of manufacture, surface treatment, decoration, and technique of firing was recorded. The shapes and sizes of the chalcolithic pottery were determined and catalogued. The pots made by modern potters and their techniques have been compared

with the chalcolithic pottery. Also attempted was a detailed study of decorative patterns, viz., incised, appliqué and painted, and the techniques employed in executing them has been carried out. Also the decorative patterns have been catalogued. With the help of in-depth statistical analysis, relative importance of each ware has been determined. Beginning, maturity and decline of each ware have been studied in relation to the transformation of culture. The individual roles and social organization of potters has been studied with the help of scientific analysis of ceramics and analogy drawn from the ethnographic study of modern potters. Thin section study and X- ray diffraction analysis of pottery have been utilized to determine the provenance of clay. This was done to determine whether the pottery was local or imported. The inter-regional and inter-cultural affinities were probed through a comparative study between the ceramics of Balathal and the adjoining areas of Madhya Pradesh and Gujarat. Finally, statistical tables and charts of different wares, shapes and designs were prepared along with their drawings and photographs (Ibid: 35-34).

Mishra has attempted through this systematic study of the chalcolithic ceramics of Balathal a peek into the subsistence and economic lives of the people of the chalcolithic Balathal. He has employed a number of strategies which have been mentioned above for this purpose. The ceramics have been studied in different ways which are empirical in nature which have in turn led to a better recording of data.

C. Ceramics of Ambari: Archaeological and Ethnographic Studies

The third section in the historiography includes the works on the ceramics of Ambari. These works mostly have done classification on the basis of the color or fabric of the pottery. The work of Sharma, Ashraf and Mahanta (2006) has mentioned the details like quantities and the morphological types within the Ambari pottery. Goswami and Roy (1972) classify the pottery on similar lines of color distinction. They also classify the decorated wares. Sonowal (2006) also classifies the pottery on the basis of the color of the pottery. He, in contrast to others who emphasize more on South East Asian connections draws similarity between the Ambari ceramics with the pottery from the sites of the Gangetic plains. There has also been an attempt to understand the past through studies on the present potter communities. These ethnographical endeavors can be seen in the works of Sharma, Ashraf and Mahanta (2006), Roy (2006), Medhi (1992) and Sharma (2001). In all these works the central argument is that of continuity from pre historic times to the present times which has not been substantiated well with the evidence. This idea of changelessness and continuity in potting tradition is problematic.

Sharma, Ashraf and Mahanta (2006: 46) while discussing the pottery of Ambari have divided the ceramics found in the excavations at Ambari into two categories, the potsherds and the complete vessels. Their percentages are respectively 92.69% and 7.30%. The potsherds they have calculated are the rims, necks and the bases of pots that are basically the diagnostics. Considering the morphological character including the presence of soot on the body of the pot and potsherds the entire collection could be divided into two broad classes or groups: utilitarian and religious.

On the basis of the color another six types within the ceramics have been identified. The color types are White/Light cream Ware, Red Ware, Buff Ware, Grey Ware, Green/Pale Green and Green Glazed Ware. The two discrete textures that have been recorded in this study on the Ambari ceramics are the fine and coarse. The utility of the pottery was ascertained by the shape, size, type and also by considering the usage marks like soot and so forth. This was further confirmed through ethnographic studies (Ibid: 47). The following table shows the pottery of Ambari based on shape, size and color (see table 2).

Class/Groups	Utilitarian Type	Religious Type
White/Light cream	Globular jars, dishes, bowls, plates .etc.	Carinated small pitcher, goblets, small vessels .etc.
Red ware	Pitchers, vessels, plates, dishes, goblets, bowls, lids, spouted vessels .etc.	Carinated pitcher, small goblets, cylindrical vessel, earthen lamps, small bowls, lampstand, dhunadani .etc.
Buff ware	Pitchers, globular jars, dishes, plates, goblets, lids bowl .etc.	Carinated small pitcher, small goblets, cylindrical vessels, small bowl, lampstand .etc.
Grey ware	Dishes, plates, bowls, spouted vessels .etc.	Small goblets, small vessels, bowls, plates .etc.
Celadon ware	Dish, bowl.	
Green Glazed ware	Dish, bowl, plates.	

Table 2 Ambari Pottery Types (After Sharma, Ashraf and Mahanta: 47)

The following table shows the counts percentages of the pottery in all the color types (see table 3).

Type	Total	Percentage
White/Light Cream	429	27.24
Red ware	582	36.94
Buff ware	254	16.13

Grey ware	175	11.11
Cream/Pale green (Celadon)	12	0.76
Green Glazed ware	122	7.75
	1574	100.00

Table 3 Counts and Percentages of Ambari Pottery Types (After Sharma, Ashraf and Mahanta: 48)

The following table shows the counts and percentages of the pottery within the different classes (Utilitarian/Religious) in all the types (see table 4).

Type	Total Counts	Utilitarian Counts	Utilitarian %	Religious Counts	Religious %
White/Light cream	429	126	29.38	303	70.62
Red Ware	582	214	36.77	386	63.23
Buff Ware	254	173	68.11	81	31.89
Grey Ware	175	70	40.00	105	60
Celadon/Pale Green Ware	12	12	100.00	–	–
Green Glazed Ware	122	122	100.00	–	–

Table 4 Counts and Percentages of Utilitarian and Religious Pottery from Ambari (After Sharma, Ashraf and Mahanta: 48)

The following table shows the counts and percentages of the pottery in the two textures within the color types (see table 5).

Type	Total Counts	Fine Counts	Fine %	Coarse Counts	Coarse %
White Light Creeam Ware	429	429	100.00	–	–
Red Ware	582	436	74.91	146	25.08
Buff Ware	254	165	64.96	89	35.03
Grey Ware	175	140	80.00	35	20.00
Cream/Pale Green Celadon Ware	12	12	100.00	–	–
Green Glazed Ware	122	122	100.00	–	–

Table 5 Counts and Percentages of Fine and Coarse Pottery from Ambari (After Sharma, Ashraf and Mahanta: 48)

In this study two pottery making methods have been identified at Ambari: wheel turned and handmade. Most of the pottery was wheel made. Some special types of pottery were handmade like small plates, lamps, lampstand, large storage jars and some miniature pots (Ibid: 49). The constitution of the fabric, character of texture and the core kernel of the pottery advocated the use of both open and kiln firing techniques. Two types of surface treatment observed were slip and glaze. Though in most cases the slip was totally or partially weathered.

The designs and decorations were observed on globular jars, big goblets, bowls, dishes, plates, carinated pitchers, spouted vessels, horn shaped vessel and so forth. They were not observed on earthen lamp, lampstand, carinated small pitcher, storage jars, small goblets and lids. However the religious pottery was devoid of any decorations. The decorations have been described as rib or basketry, stamp, comb, criss-cross, lozenge, diamond, floral, incised and appliquéd designs. The decorations were observed on the exterior surface near the rims and shoulder. Although, some decorations were found only in the bases.

Sharma Ashraf and Mahanta (2006) conducted an ethnographic study of the potters of Assam. There are two potter communities in Assam: the *Kumar* and *Hira.* The *Kumars* make wheel made pottery while the *Hiras* make handmade pottery. The *Hira* pottery is for domestic purpose and is utilitarian in character. The *Kumar* pottery is for ritualistic purpose and is religious in character. Both these techniques are evident in the pottery found at Ambari. So in the present study an attempt has been made to correlate this with the present pattern of the potters. They have tried projecting continuity in the production technique and the functionality of the pots made by the two different techniques. They have tried relating the large occurrence of sculptures of Brahmanical iconography with the pottery and the references of Kamarupa as a place of Shakti worship in the Puranas. Thus suggesting that the pottery had a religious character and projecting Ambari as a possible temple structure. Such a suggestion is on the lines of Dhavalikar who had earlier described the Ambari structures as 'Hindu temples.'

Pottery was brought by river to Guwahati, which was the temple city of Assam (Ibid: 50). This is the reason behind the wide distribution of different types of exotic pottery in Guwahati. Kaolin was similarly used in the region and found in large quantities at Ambari. It has been widely found in the Brahmaputra valley from Sadiya to Dhubri. It is found in the foothills of Meghalaya and so possibly was shipped through Brahmaputra to Ambari where it

was produced. From Ambari it possibly was distributed elsewhere. Thus, Guwahati possibly was an important city in the region in the earlier times.

Goswami and Roy (1972) have made an attempt to construct a cultural sequence. In the absence of any archaeologically established chronology in Assam it may be of interest if the ceramics are classified typologically and if some correlations could be established between and among the objects discovered at Ambari and other kindred pottery reported from other parts of India in general and Southeast Asia in particular (Ibid: 22). The ceramics are divided into five categories on the basis of colour and pattern. The five categories are ribbed design, basket design, quadruple design, crossed design and criss cross design. In the absence of any established sequence of ceramics in relation to archaeological strata and associated paleontological evidence in the valley of the Brahmaputra, it will be more profitable to study the distribution of the cognate types of ceramics in the neighboring zones in order to have some idea about the relative age of ceramics of Ambari (Ibid: 23). They have suggested a culture sequence similar to sites in parts of Southeast Asia. Thus stressing on the cultural migration and diffusion theory.

Roy (1976, 1977, 1983 and 2006) has discussed the continuity he has observed in the ceramics of Assam from the Neolithic to the medieval times. He has analyzed the ceramics of Daojali Hading, a Neolithic site and Ambari, historical to medieval site in this study. He based on his close examination of the Ambari ceramics argues for continuity that he could observe in the potting craft in Assam from the Neolithic to the present times. This he concluded on the basis of the ethno archaeological study he did on the two castes of the potter community, Hira and Kumar.

Further Roy (2006: 65) has undertaken an ethnographic study to have a better understanding of the ceramics. Here he has discussed the ceramics of Ambari and compared them with the present pots made by the potters today in his study. He has identified the first phase (Early Christian Era) of Ambari with ribbed and combed pottery. Most of them are found in a rolled and fragmentary state. Both handmade and wheel made pottery characterize the second phase. Also kaolin ware is found in large quantities. The 'Mughal Glazed wares' mark the third phase. It is not known what is the cultural affiliation of the potters who made the pottery during archaeological past; but he draws the inference that 'classical codes' during past controlled the functional aspects of pottery and their nature of involvement with the institutions (socio-religious or economic) in a same manner as observed today (Ibid: 71).

The ethnographic study had been conducted on the two potter communities of *Hira* and *Kumar* who are equally distributed over the plains of Assam. Each group is found according to the study around 'Hindu' population. The pottery made by the *Hiras* is viewed as ritually impure and so not allowed in the temples; moreover only women make these. In contrast the pottery made by the *Kumars* involves male participation and female participation is limited to the last stage in the pot making process. The author has tried relating the Brahmanical sculptures found in the layer belonging to the 7^{th}-12^{th} centuries CE with the pottery of this layer. The pottery in this layer is strictly of ritual character. So, Roy makes an attempt to show that in this period Ambari may have had an important religious role on the basis of the pottery found.

The pottery made by the *Hira* communities is mostly used for cooking purposes. The pottery is exclusively handmade and follows the technique of coil building. This craft is a domain of the females when male participation is considered to be a taboo (Ibid: 68). The pottery made by the *Kumars* is primarily wheel made and is a male craft. Occasionally women do make pottery through handmade techniques but it is different from the *Hira* community.

Roy (2006: 71) tries drawing continuity from the present potter community to the Ambari ceramics. The Brahmanical figurines found in the phase II of Ambari are stylistically similar to the idols used now in the temples of Assam. So for him this speaks of continuity in concrete form. Pottery found to occur in Phase II and the ethnographic contexts are similar in form as well as function. This has been taken as an evidence of continuity from the archaeological past to the present. The pottery of the phase II is explicitly ritualistic in character.

This connection built up between the Brahmanical sculptures and the pottery is problematic. Firstly, the amount of sculptures that has been recovered at Ambari is huge and also there are a percentage of unfinished sculptures. This suggests that Ambari rather than being a ritual space was possibly a workshop or an atelier. This is supported by the evidence of Kamakhya Temple coming up as a major ritual space in Guwahati in the early medieval period. This may have led to an increase in demand for such sculptures which was met by workshops like at Ambari. Secondly, the pottery that has been associated with the sculptures and given a ritual character can have other roles as well. The pottery can have domestic roles, storage function and so forth. Also certain vessels like *diya* type ones have been ascribed a ritual role where in fact they could have been used as lamps.

Sonowal (2006) mentions two distinct types of pottery: wheel made and handmade. They are divided into four major groups on the basis of color. They are (i) Kaolin Ware, (ii) Red Ware, (iii) Buff Ware and (iv) Grey Ware. These ceramics were fired by adopting two different techniques (i) oxydizing conditions and (ii) reducing conditions (Ibid: 84). The different designs used on the pottery are ribbed or basketry, crossed, combed lozenge or diamond, floral design, lotus design, incised design and appliqué design. Sonowal in the end suggests that the ceramics of Ambari should be seen in relation to sites of the Gangetic valley like Ahichchattra, Kausambi, Rajghat, Hastinapur and so forth. He says that the Ambari pots belong to the same Gangetic complex (Ibid: 85). This he argues on the basis of the evidence of decorative patterns like cut impressions, mat impressions on the base of bowls and dishes and also incised lotus pattern that have been reported at these sites too (Ibid: 84). Further, he cites the evidence of rouletted pottery at Ambari and which has also been reported from Arikamedu near Pondicherry and Sisupalgarh in Orissa.

The major argument of Medhi (1992) is again of continuity. The author in the title mentions both ethno history and ethno archaeology as the two modes of investigation that she plans to do. But, in the work justice has not been done to the second mode of investigation. In fact the author opines that she is not very convinced of ethno archaeology as a valid medium of study while ethnographical work is preferred since it is more 'holistic'. The conclusion that the author arrives at is this that there is a close affinity between the pottery made by the *Hira* community of potters with the pottery of Daojali Hading, a Neolithic site. The *Hira* community makes handmade pottery where women play the chief role in potting. Thus, she argues for continuity in the potting tradition of Nalbari from the prehistoric times to the present times. Though, none of the historical evidence is discussed. The site of Ambari has been discussed in relation to the similarities in pottery found at the two sites called Belbari and Barkapala in Nalbari. These ceramics belong to the early medieval and medieval period. Thus for the continuity argument to sustain, evidence of historical period pottery is necessary which is missing here. Also Medhi mostly does ethnographical study and ethno archaeology has been largely ignored.

Sarmah (Sarmah 2001) has undertaken an ethnographical study of the *Hira* potters in the South Kamrup area. She argues for continuity in the potting craft of the area from the prehistoric times to the present times. She further critiques the idea that handmade pottery in the past gave way to the wheel made pottery. In fact she argues that both handmade and

wheel made pottery has co existed in the region and they have their own demand in the market.

The majority of the studies discussed here follow the cultural historical approach wherein the historical developments are explained through the twin phenomenon of migration and diffusion. The capacity of the region to produce certain changes on its own or in some other way has been negated. Also, the ethno archaeological approach has been least explored. Most of these scholars have done ethnographical studies that do not lead us to a better understanding of the past. The ethnographical studies have given detailed information about the society and culture of the present potter communities but this information has not been properly weaned to understand the past. There has been no attempt at answering questions related to past through studies on the present day potters. The rich accounts of the present potter community would fail to lead to any better understanding of the past if there is no engagement with the past and the present on certain issues by the scholars. Also while relating the past with the present through these studies one has to be careful in not making gross generalizations. Since there is a huge time gap one has to be cautious about suggesting continuity between the ancient past and the present.

Conclusion

The survey of the secondary literature on ceramics shows that ceramic studies in the region of Assam and the northeast have still a long way to go compared with the rest of the sub continent. There have to be more detailed studies with an emphasis at looking at broader aspects then mere 'continuity'. Ceramics can prove to be useful in studying the past and possibly can throw light on many other aspects that have not been explored till now. Chapter 2 deals with both non-diagnostics and diagnostics. Their counts and weight have been classified and analyzed layer and trench wise. Also the issue of standardization has been probed. The patterns of habitation and consumption have been also looked at. Chapter 3 deals with the decorated wares. The individual decorations have been layer wise calculated and analyzed in terms of their fabric type and measurements. The weights and count of sherds would be analyzed to derive a larger picture of the chronology and occurrence of the decorative patterns observed at Ambari. Chapter 4 looks at primarily the kaolin wares found in Ambari. The sites in northeast where kaolin clay has been reported have been looked at. Also the possible source of clay within northeast has been investigated. The issue of standardization within kaolin ware has been further examined. The issue of

linkages within the region is discussed in this chapter. Chapter 5 sums up the major arguments and findings of my study. In addition it will talk about the pre cautions one has to take while using ceramic as a source of history. The problems encountered while practicing archaeology in the northeast and limitations of this work will be discussed. The possible areas of future research will also be suggested.

CHAPTER II

DIAGNOSTICS & NON-DIAGNOSTICS OF AMBARI: CLASSIFICATION AND ANALYSIS

Ceramics form a major part of the findings of any archaeological investigation be it surface survey or excavations. Because of their composition ceramics do not easily perish and thus constitute a major portion of the findings. I have divided the ceramics studied in this chapter into two parts, diagnostics and non diagnostics. The diagnostics are those parts of a vessels from which the shape and dimensions of the vessel can be ascertained. These parts are rims, bases, lids, spouts, knobs and so forth. The non diagnostics are those body parts of vessels from which shape and dimensions cannot be ascertained. But they give information about paste, fabric, design, quantity and so forth. Usually non-diagnostic sherds are more numerous in a ceramic assemblage of any site. The diagnostics are normally lesser in proportion as compared to the non-diagnostics. In this chapter, the diagnostics and the non-diagnostics of the Ambari ceramics assemblage will be discussed. The non-diagnostics will be dealt with first.

I have described the fabric types as coarse, medium and fine which is an indication of the inclusions that can be observed in the sherds visually as well as by feel. Some other terms for inclusions are temper, grog, filler and so forth. During the preparation of clay potters usually add some organic and inorganic elements to the clay to make it more suitable for potting.

The following table gives the percentages of the diagnostics, non-diagnostics and decorated wares observed in the study (see table 6).

Ceramic Category	Sherds Counts	Percentage %	Weight (kg.)	Percentage %
Diagnostics	2662	70.72	128.277	80.01
Non-diagnostics	637	16.92	19.647	12.2
Decorated	465	12.35	12.393	7.73
Total	3764		160.317	

Table 6 Diagnostic, Non-diagnostic and Decorated Wares Counts Weight.

Non-Diagnostics

The non-diagnostics in Ambari surprisingly constitute just around 16% while diagnostics constitute 70% of the total ceramics. This seems to be a deliberate policy adopted during excavations to give more preference to the collection of 'valuable' diagnostic sherds as such a proportion is not possible. The non-diagnostics form 16.92% of all sherds recorded and classified in this study. The percentage of non diagnostics compared to the percentage of diagnostics (70.72%) is very less. The usual trend which is observed in most excavations or surface surveys is that non-diagnostics always outnumber the diagnostics in a fairly large number. But in Ambari it seems the case has been reversed. It can be easily ascertained that the large amount of diagnostics suggests that in Ambari too non-diagnostics outnumbered the diagnostics during excavations. Possibly the concerned authorities did not consider the non-diagnostics to be of as much value as the diagnostics or the decorated wares with. Thus, we see such a huge margin of difference between the diagnostic sherd count and non-diagnostic sherd count.

The following table shows the quantity of oxidized unslipped medium ware (O1M) amongst the non-diagnostics in the different layers (see table 7).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
1	27	18.12	1.781	22.87
2	58	38.92	1.634	20.98
3	34	22.81	3.158	40.56
4	20	13.42	0.939	12.06
5	6	4.02	0.190	2.440
6	4	2.68	0.83	1.06
Total	149		7.785	

Table 7 Non-diagnostic O1M Counts and Weight.

The following table shows the quantity of oxidized unslipped medium Kaolin ware [O1M (K)] amongst the non-diagnostics in the different layers (see table 8).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
1	25	14.45	0.444	14.15
2	65	37.57	1.573	50.15
3	30	17.34	0.567	18.08
4	37	21.38	1.173	37.40
5	6	3.46	0.248	7.90
6	10	5.78	0.131	4.17
Total	173		3.136	

Table 8 Non-diagnostic O1M(K) Counts and Weight.

The following table shows the quantity of oxidized slipped medium ware (O2M) amongst the non-diagnostics in the different layers (see table 9).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
1	2	9.52	0.157	11.36
3	13	61.9	0.712	51.5
4	3	14.28	0.340	24.6
5	3	14.28	0.173	12.51
Total	21		1.382	

Table 9 Non-diagnostic O2M Counts and Weight.

The following table shows the quantity of oxidized slipped medium Kaolin ware [O2M (K)] amongst the non-diagnostics in the different layers (see table 10).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
2	1	20	0.31	27.67
3	2	40	0.50	44.64
4	2	40	0.31	27.67
Total	5		0.112	

Table 10 Non-diagnostic O2M(K) red clay slip Counts and Weight.

The following table shows the quantity of oxidized Green Glazed fine ware [O3F(GG)] amongst the non-diagnostics in the different layers (see table 11).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
3	1	0.6	0.10	0.57
4	149	99.33	1.734	99.42
Total	150		1.744	

Table 11 Non-diagnostics O3F (GG) Counts and Weight.

The following table shows the quantity of oxidized celadon fine ware [O3F(CLD)] amongst the non-diagnostics in the different layers (see table 12).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
1	4		0.28	

Table 12 Non-diagnostics O3F (CLD) Counts and Weight.

The following table shows the quantity of reduced unslipped medium ware (RIM) amongst the non-diagnostics in the different layers (see table 13).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
1	4	33.33	0.36	9.23
2	4	33.33	0.89	22.82
3	3	25	0.138	35.38
4	1	8.33	0.2	0.51
Total	12		0.390	

Table 13 Non-diagnostics R1M Counts and Weight.

The following table shows the quantity of reduced slipped medium ware (R2M) amongst the non-diagnostics in the different layers (see table 14).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
2	4	16.66	0.252	27.81
3	5	20.83	0.291	32.11
4	14	58.33	0.346	38.18
5	1	4.16	0.17	1.87
Total	24		0.906	

Total 14 Non-diagnostics R2M Counts and Weight.

The following table shows the quantity and percentages of the different varieties of ceramic fabrics observed amongst the non-diagnostics in Ambari (see table 15). The fabric

O1M has the highest weight while the fabric O1M(K) shows the highest sherd counts. In this case we take the O1M fabric as having higher percentage of occurrence. The sherd counts are less since the size of the sherds in O1M fabric are larger compared to the O1M(K). The weight testifies to the higher percentage of occurrence of O1M fabric.

Fabric Type	Count	Percentage%	Weight (kg.)	Percentage%
O1M	149	27.69	7.785	50.28
O1M(K)	173	32.15	3.136	20.25
O2M	21	3.90	1.382	8.92
O2M(K)	5	0.92	0.112	0.72
O3F(GG)	150	27.88	1.744	11.26
O3F(CLD)	4	0.74	0.28	0.18
R1M	12	2.23	0.390	2.51
R2M	24	4.46	0.906	5.85
Total	538		15.483	

Table 15 Non-diagnostics Total Fabric Counts and Weight.

The following figure shows the different counts of fabrics observed amongst the non diagnostics in the different layers (see figure 5). The layer four is having the highest count of sherds in all the types of fabrics. It is followed by the layer two and layer three. The period pertaining to these layers are last part of early medieval period (layer four) and medieval period (layer two and three). Thus, the period referred to here is 10th century CE to 15th century CE.

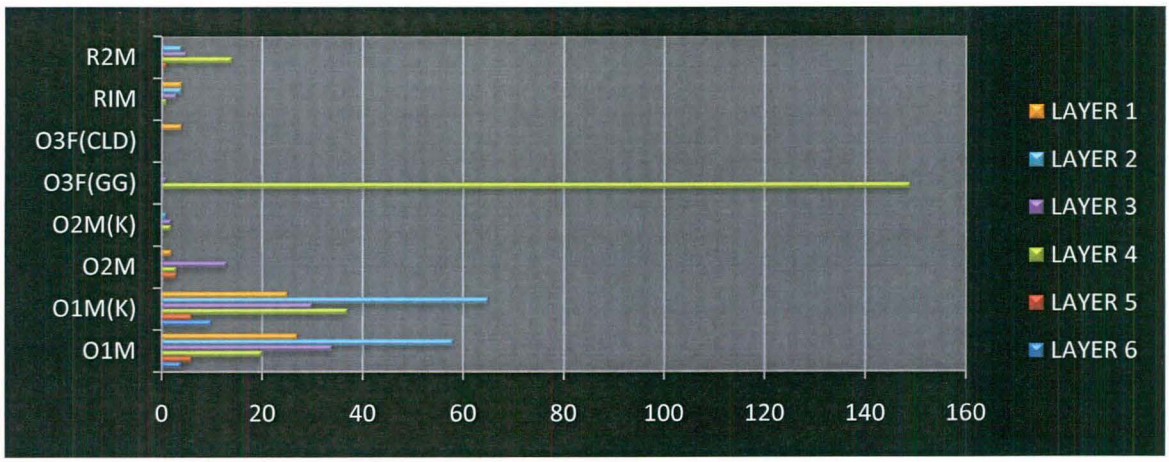

Figure 5 Non diagnostic All Fabric Sherd Counts in All Layers.

Among all the fabrics it is O1M that is oxidized unslipped medium ware, which sees a wide distribution in all the layers. Layer 2 has the highest concentration of O1M sherds among all the layers followed by the layer 3 and layer 1 respectively. In O1M(K) fabric that is oxidized unslipped medium kaolin ware again a wide distribution across the layers can be observed. Layer 2 has the highest count followed by layer 4 and layer 3 respectively. The O2M fabric or oxidized slipped medium ware shows the highest concentration in layer 3 followed by equal concentrations in Layer 5 and 4. The O2M(K) fabric that is oxidized slipped medium kaolin ware, rarely occurs. It can be observed in layers 3 and 4. The highest concentration of non diagnostics can be observed in the fabric O3F(GG) that is oxidized green glazed ware and the concentration is solely observed in layer 4. Celadon ware had occurred only in layer 1. R1M or reduced unslipped medium ware can be seen occurring in layer 1 and layer 2 followed by layer 3. Reduced slipped medium ware that is R2M has the highest concentration in layer 4. In all these fabrics we can observe that the layer 4 sees a high concentration mostly of all the fabrics and particularly O3F. The high concentration in particular fabrics like O3F(GG) over other common fabrics like O1M shows the deliberate policy followed in the collection process during excavation by the concerned authorities.

The following figures on the basis of sherd counts and weight respectively shows the distribution of sherds throughout all layers. It gives a clear picture of the distribution of sherds in the different periods. The latter half of early medieval period sees a spurt in the number of sherds which continues in the medieval period (see figure 6 and figure 7).

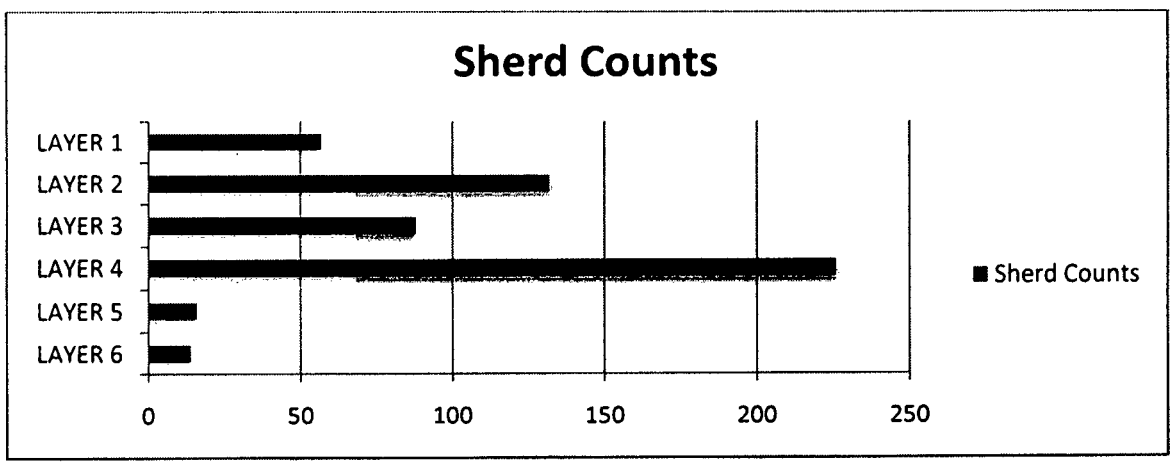

Figure 6 Non-diagnostic Total Sherd Counts in All Layers

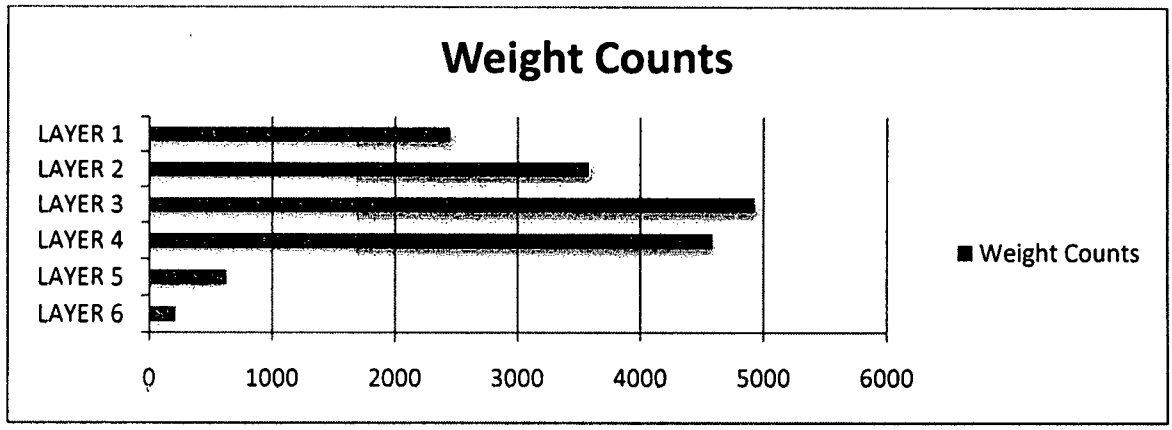

Figure 7 Non-diagnostic Total Sherds Weight in All Layers

These figures showing the counts, weights and the layer of their occurrence of the non diagnostics gives a picture where there is an increased use of pottery observed in the layers 2 to 4. The 'peak' it seems was reached in the layers 3 and 4. The rise can be observed from layer 1 towards layer 4 and then it declines towards layer 5 and layer 6.

Diagnostics

The diagnostics are those parts of vessels which help in ascertaining the shape and dimensions of the vessel in case it is broken. In the diagnostics rims, bases, knobs, lids, spouts, dish on stands and handles have been observed and recorded by me. Among all the sherds of Ambari the diagnostics constitute around 70% of the total sherds.

Rims

The rim is the mouth of the pot. In wheel made pots the rims are near perfect circles due to the circular motion of the wheel. This helps in determining the diameter in case of a broken rim. The following table shows the different rim forms occurring with different vessel types (see Table 16). Broadly, four vessel types have been observed, though within pots we can see there are two types, carinated and non carinated.

Pot	Trough	Dish	Bowl
1R, 2R, 3R, 4R, 5R, 6R, 7R, 8R, 10R, 11R, 12R, 13R, 14R, 15R, 17R, 18R, 19R,	28R.	27R, 30R, 41R.	9R, 16R, 25R, 29R, 40R, 42R, 44R, 46R, 47R.

20R, 21R, 22R, 23R, 24R, 26R, 29R(a), 31R, 32R, 33R, 34R, 35R, 36R, 36R(a), 37R, 38R, 38R(a), 39R, 43R, 45R, 48R, 49R, 50R, 51R, 52R, 53R, 54R, 55R.

Table 16 Rims Vessel Types.

The following table shows the different rim forms that occurred in the different layers along with the total counts and weight (see table 17).

Layer	Form Codes	Sherd counts
1	1R, 3R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 15R, 16R, 19R, 20R, 21R, 22R, 23R, 24R, 25R, 26R, 29R, 29R(a), 32R, 33R, 34R, 35R, 36R, 37R, 38R, 39R, 40R, 41R, 43R, 44R, 46R, 48R, 50R and 52R.	159
2	1R, 2R, 3R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 14R, 15R, 16R, 17R, 19R, 20R, 22R, 23R, 24R, 26R, 28R, 29R, 29R(a), 30R, 31R, 32R, 34R, 36R, 36R(a), 40R, 44R, 45R, 46R, 48R, 50R and 53R.	177
3	2R, 3R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 13R, 14R, 15R, 16R, 17R, 19R, 20R, 21R, 23R, 24R, 27R, 29R, 27R, 28R, 29R, 29R(a), 30R, 32R, 33R, 34R, 36R, 36R(a), 38R, 40R, 42R, 44R, 45R, 46R, 48R, 50R, 51R and 55R.	302
4	1R, 2R, 3R, 4R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 13R, 14R, 15R, 16R, 17R, 18R, 19R, 20R, 21R, 22R, 23R, 24R, 25R, 27R, 28R, 29R, 29R(a), 32R, 32R(a), 33R, 34R, 35R, 36R, 36R(a), 38R, 39R, 40R, 41R,	656

	43R, 44R, 45R, 46R, 48R, 50R, 51R and 54R.	
5	1R, 2R, 3R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 13R, 15R, 16R, 20R, 21R, 22R, 23R, 24R, 26R, 29R, 33R, 34R, 35R, 36R, 38R, 40R, 44R, 45R, 46R, 48R and 54R.	114
6	3R, 5R, 6R, 7R, 8R, 9R, 11R, 12R, 13R, 14R, 15R, 16R, 17R, 19R, 20R, 21R, 22R, 23R, 27R, 29R, 32R, 36R, 36R(a), 37R, 40R, 44R, 46R, 48R and 50R.	67
7	19R	1
8	3R, 5R, 9R, 14R and 20R.	6

Table 17 Rim Form Counts in All Layers.

The following figure shows the counts of the various rim forms observed in the different layers (see figure 8). The following figure depicts the variety of rim forms with their counts according to the layers observed. The figure shows that layer 4 witnessed the highest count in the rim forms among all the layers. The gradual rise can be seen from Layer 1 towards Layer 4 and then the fall can be seen from Layer 4 towards layer 8.

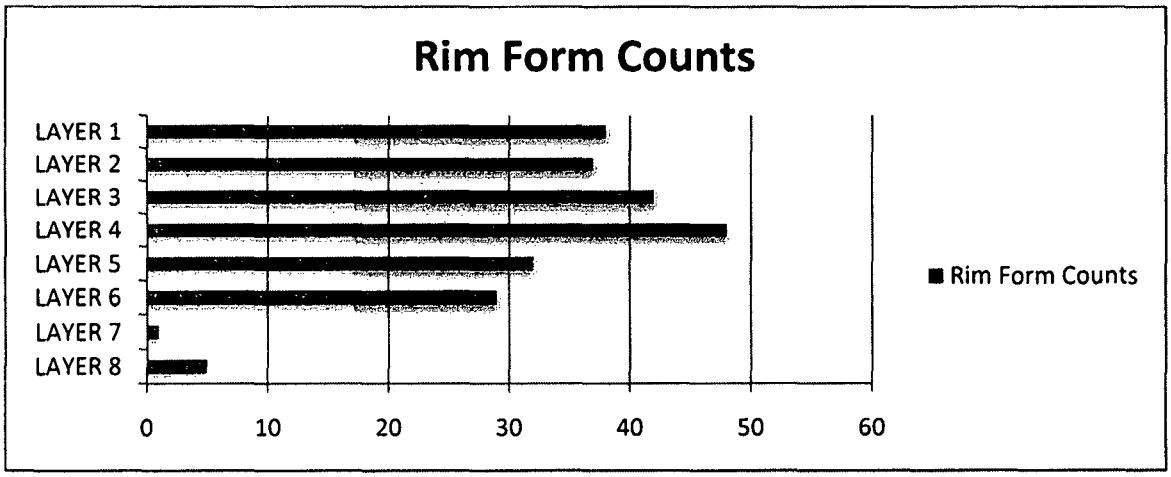

Figure 8 Rim Form Counts in All Layers.

The following figure shows the rim sherd counts observed in all the layers (see figure 9). In terms of rim sherd counts again Layer 4 has the highest count among all the layers. The increase can be seen from layer 1 towards layer 4 and then the fall can be seen from layer 4 towards layer 8. This is similar to the picture projected in figure 4 which shows the counts of the rim forms.

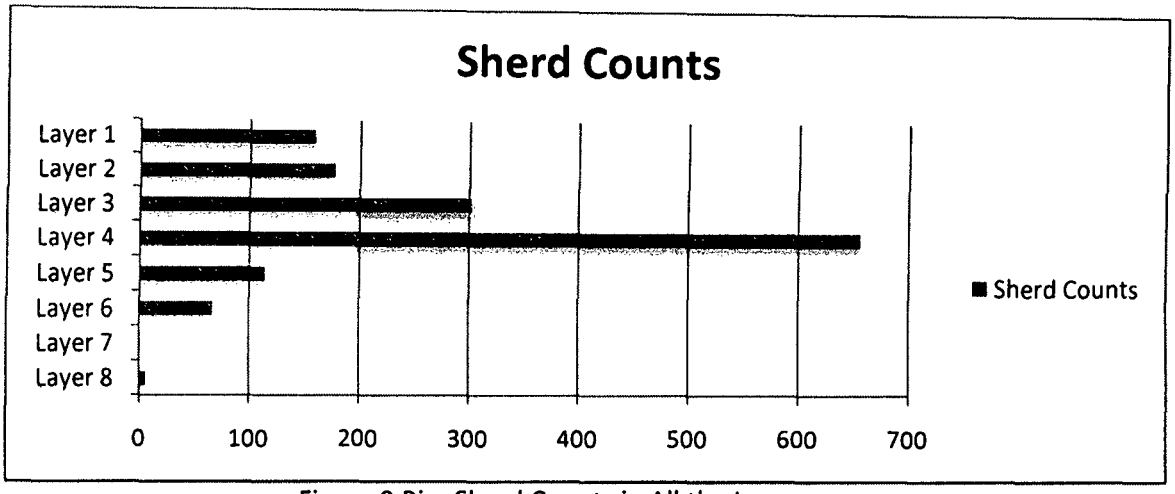

Figure 9 Rim Sherd Counts in All the Layers.

The following table shows the Q1M ware among the rim sherds in relation to the rim forms and layers they have occurred in (see table 18).

Layers	Form codes	Sherd Counts	Weight (kg.)
1	3R, 5R, 7R, 8R, 9R, 11R, 12R, 15R, 16R, 19R, 20R, 21R, 22R, 23R, 24R, 25R, 28R, 29R, 32R, 33R, 34R, 35R, 40R, 44R, 46R, 48R, 50R.	65	2.571
2	3R, 5R,6R, 7R, 8R, 9R, 10R, 11R, 14R, 15R, 17R, 19R, 20R, 21R, 22R, 23R, 24R, 26R, 29R, 29R(a), 31R, 32R, 33R, 36R, 36R(a), 38R, 40R, 44R, 45R, 46R, 48R, 50R.	94	2.812
3	1R, 2R, 3R, 4R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 14R, 15R, 16R, 19R, 20R, 21R,	143	10.186

	22R, 23R, 24R, 25R, 27R, 28R, 29R(a), 30R, 32R, 33R, 34R, 36R, 36R(a), 37R(a), 38R, 39R, 40R, 44R, 45R, 46R, 48R, 50R, 51R, 55R.		
4	1R, 2R, 3R, 4R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 13R, 14R, 15R, 17R, 18R, 16R, 19R, 20R, 21R, 22R, 23R, 24R, 25R, 27R, 28R, 29R, 32R, 32R(a), 33R, 34R, 36R, 36R(a), 38R, 39R, 40R, 44R, 45R, 46R, 48R, 50R, 51R, 54R.	244	14.438
5	1R, 3R, 5R, 7R, 8R, 9R, 11R, 12R, 15R, 20R, 21R, 22R, 23R, 24R, 33R, 35R, 36R, 38R, 40R, 44R, 46R, 48R, 54R.	48	2.039
6	3R, 5R, 6R, 9R, 11R, 12R, 14R, 15R, 16R, 20R, 21R, 22R, 23R, 32R, 36R(a), 40R, 44R, 46R, 50R.	27	1.073
7	19R	1	0.191
8	9R, 20R.	2	0.087
Total		624	33.397

Table 18 Rim Sherd Counts and Weight with Rim Forms in O1M Fabric in All Layers.

The following figure shows the counts of the various rim forms of O1M ware observed in the different layers (see figure 10). In O1M fabric amongst the rim sherds layer 4 records the highest number of rim forms. This is a gradual rise from layer 1 to 4 and then a fall from layer 4 towards layer 8.

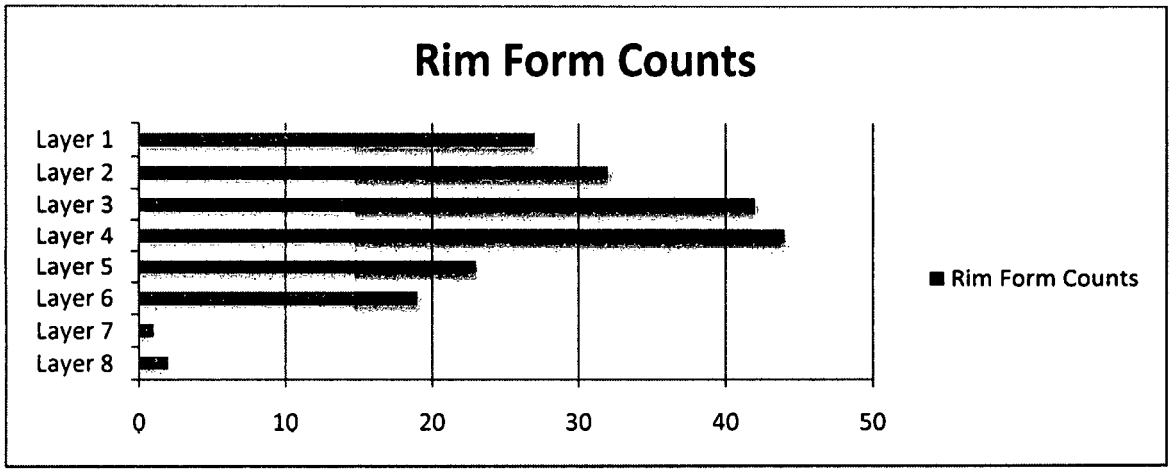

Figure 10 Rim Form Counts in All Layers in O1M Fabric.

The following figure shows the rim sherd counts in the O1M fabric (see figure 11). The rim sherd counts in O1M fabric witnesses a gradual rise from layer 1 to layer 4 and thereafter a fall.

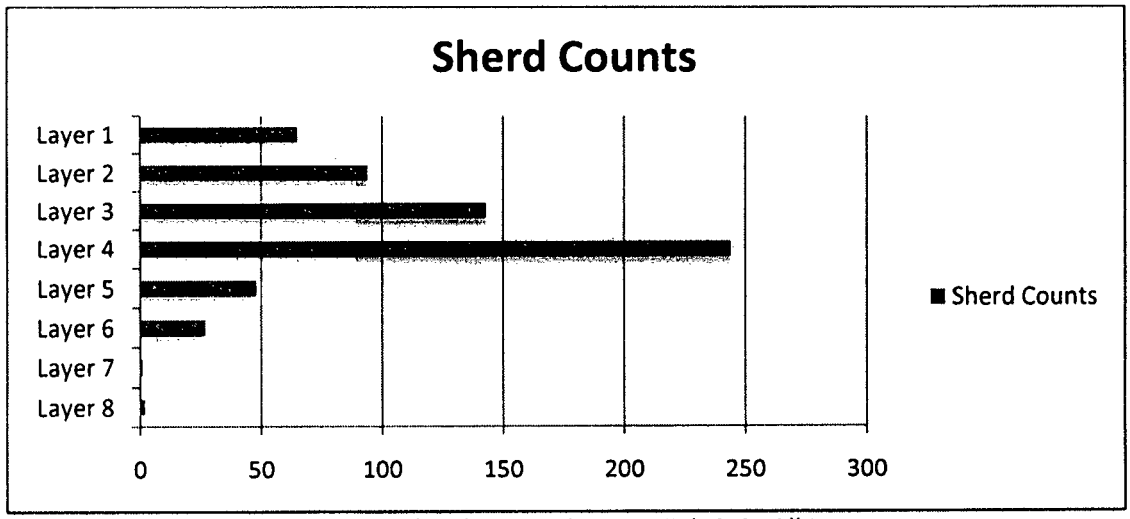

Figure 11 Rim Sherd Counts in O1M Fabric in All Layers.

The following figure shows the rim sherds total weights recorded in the various layers in the O1M ware (see figure 12). Layer 4 records the highest weight among all the layers followed by layer 3 and layer 2.

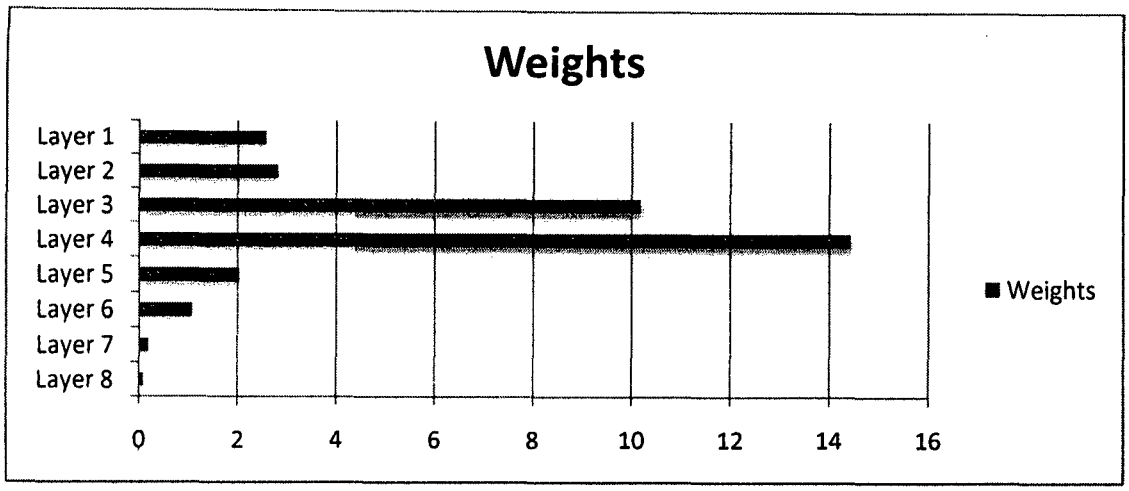

Figure 12 Rim Sherd Total Weight in O1M Fabric in All Layers.

The following table shows the O1M(K) ware among the rim sherds in relation to the rim forms and layers they have occurred in (see table 19).

Layers	Design Codes	Sherd Counts	Weight (kg.)
1	1R, 5R, 6R, 7R, 9R, 10R, 11R, 12R, 16R, 20R, 21R, 22R, 26R, 29R(a), 33R, 34R, 36R, 38R, 40R, 44R, 46R, 48R.	25	0.523
2	1R, 3R, 5R, 6R, 7R, 8R, 11R, 12R, 14R, 29R(a), 40R, 42R, 44R, 50R.	26	0.465
3	1R, 2R, 3R, 5R, 7R, 8R, 9R, 10R, 11R, 12R, 13R, 14R, 15R, 16R, 20R, 21R, 22R, 23R, 25R, 26R, 27R, 29R, 36R, 38R, 40R, 42R, 46R, 48R.	67	2.607
4	1R, 2R, 3R, 5R, 6R, 7R, 8R, 9R, 10R, 11R,	190	6.063

	12R, 13R, 14R, 15R, 16R, 17R, 20R, 21R, 22R, 23R, 24R, 25R, 29R, 29R(a), 32R, 33R, 34R, 35R, 36R(a), 38R, 39R, 44R, 46R, 48R.		
5	1R, 2R, 3R, 6R, 7R, 10R, 11R, 16R, 22R, 26R, 33R, 34R, 40R, 45R, 47R	22	0.849
6	3R, 7R, 8R, 9R, 14R, 20R, 22R, 23R, 36R, 40R, 46R, 48R.	14	0.644
8	3R, 5R, 14R.	3	0.108
Total		347	11.259

Table 19 Rim Sherd Counts and Weight with Rim Forms in O1M(K) Fabric in All Layers.

The following figure shows the counts of the various rim forms O1M(K) observed in the different layers (see figure 13). Overall there was a gradual rise from layer 1 to layer 4 despite the sudden drop in layer 2. Layer 4 again records the highest count in rim forms among the rim sherds with O1M(K) fabric.

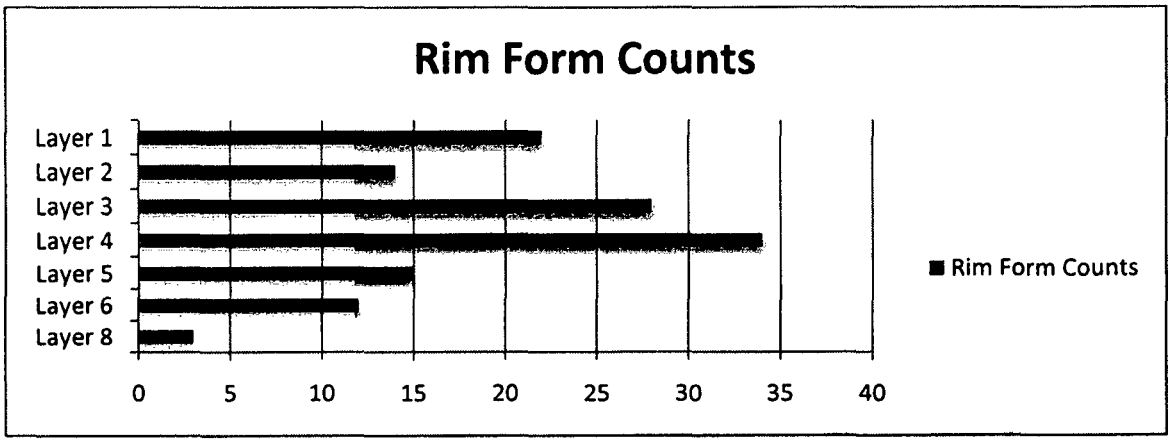

Figure 13 Rim Form Counts in All Layers in O1M(K) Fabric.

The following figure shows the total rim sherds counts recorded in the various layers in the O1M(K) ware (see figure 14). In O1M(K) fabric the highest count of rim sherds was recorded

in layer 4. In fact layer 4 stands out amongst all the other layers. The gradual rise and decline is missing here.

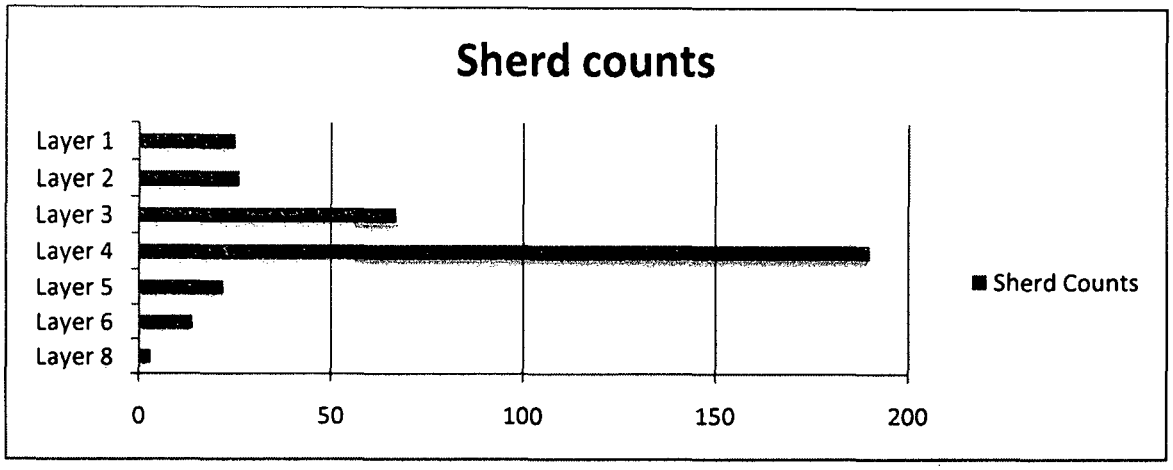

Figure 14 Rim Sherd Counts in O1M(K) Fabric in All Layers.

The following figure shows the rim sherds total weights recorded in the various layers in the O1M(K) ware (see figure 15). This tells the same story as figure 10 with layer 4 having the highest weight.

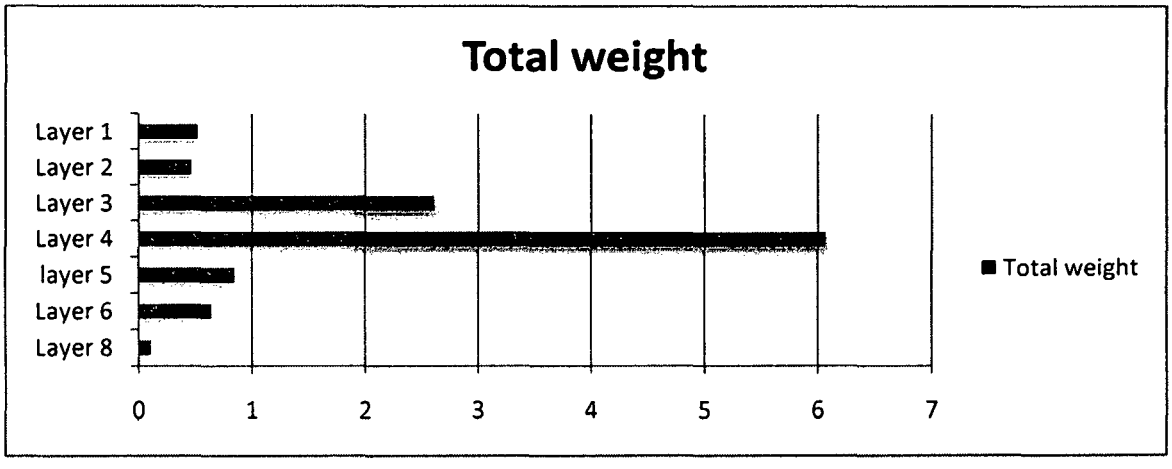

Figure 15 Rim Sherd Total Weight in O1M(K) Fabric in All Layers.

The following table shows the sherd counts and total weights observed in the different layers in the fabric O2M ware (see table 20). In rim form counts and rim sherd counts layer 1 records the highest counts. In terms of weight layer 3 has the highest weight record.

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	3R, 7R, 26R, 29R, 37R, 40R.	7	0.107

3	27R, 33R, 36R(a).	3	0.222
5	8R	2	0.109
Total		12	0.438

Table 20 Rim Sherd Counts and Weight with Rim Forms in O2M Fabric in All Layers.

The following table shows the sherd counts and total weights observed in the different layers in the fabric O2M(K) ware with red clay slip (see table 21).

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	1R, 5R, 7R, 8R, 9R, 10R, 12R, 20R, 22R, 23R, 24R, 26R, 29R, 29R(a), 33R, 34R, 35R, 36R, 36R(a), 38R, 39R, 40R, 43R, 46R, 48R, 50R, 52R.	60	1.225
2	2R, 5R, 7R, 8R, 9R, 11R, 12R, 14R, 15R, 16R, 17R, 19R, 20R, 21R, 22R, 23R, 24R, 26R, 32R, 34R, 35R, 36R, 36R(a), 40R, 46R, 48R, 50R, 53R.	51	1.381
3	2R, 3R, 5R, 6R, 7R, 8R, 9R, 10R, 12R, 13R, 14R, 15R, 16R, 17R, 20R, 21R, 22R, 27R, 28R, 29R(a), 32R, 33R, 37R(a), 40R, 41R, 42R, 44R, 46R, 50R.	65	2.728
4	1R, 2R, 3R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 13R, 14R, 15R, 16R, 17R, 19R, 20R,	195	9.529

	21R, 22R, 23R, 24R, 27R, 28R, 29R, 32R, 33R, 34R, 35R, 36R, 36R(a), 38R, 40R, 41R, 43R, 44R, 45R, 46R, 48R, 50R.		
5	3R, 5R, 8R, 9R, 11R, 12R, 13R, 15R, 16R, 23R, 24R, 29R, 33R, 38R, 48R.	37	1.741
6	5R, 9R, 12R, 13R, 14R, 15R, 17R, 19R, 20R, 22R, 23R, 37R, 44R, 46R.	22	1.373
8	9R	1	0.052
Total		431	18.029

Table 21 Rim Sherd Counts and Weight with Rim Forms in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the counts of the various rim forms O2M(K) with red clay slip observed in the different layers (see figure 16). There is a sudden rise from layer 1 to layer 3 and then a sudden rise of layer 4. There is a sudden drop from layer 4 onwards to layer 8. Layer 4 records the highest count of rim forms in fabric O2M(K) with red clay slip.

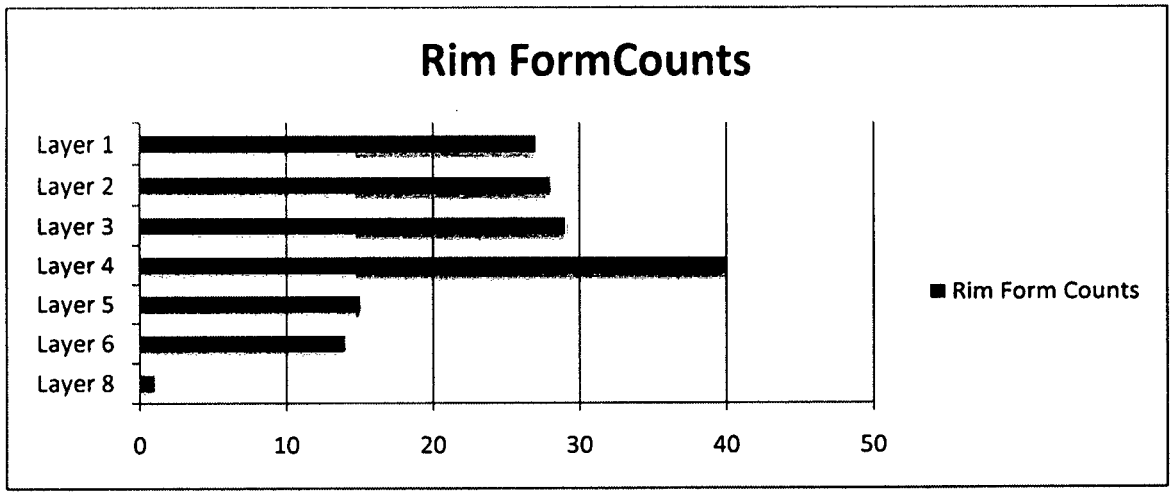

Figure 16 Rim Form Counts in All Layers in O2M(K) Fabric with Red Clay Slip.

The following figure shows the total rim sherds counts recorded in the various layers in the O2M(K) ware with red slip (see figure 17). In figure 13 similar to figure 12, layer 4 rises starkly high compared to the other layers. The layer 4 records highest count of rim sherds in the fabric O2M(K) with red clay slip.

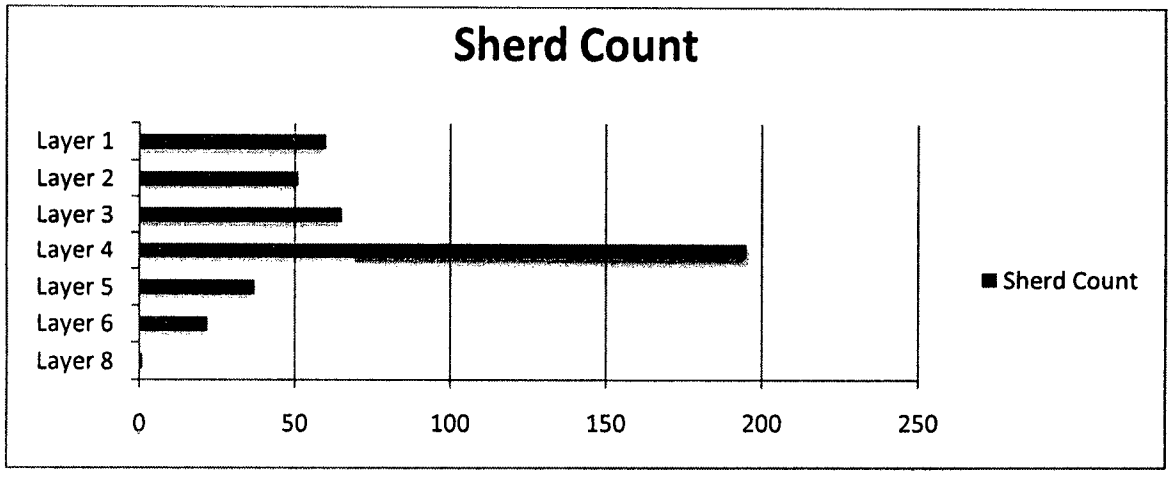

Figure 17 Rim Sherd Counts in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the rim sherds total weights recorded in the various layers in the O2M(K) ware with red slip (see figure 18). The story told by figure 14 is similar to the figures 12 and 13. Layer 4 stands out starkly high as compared to the other layers.

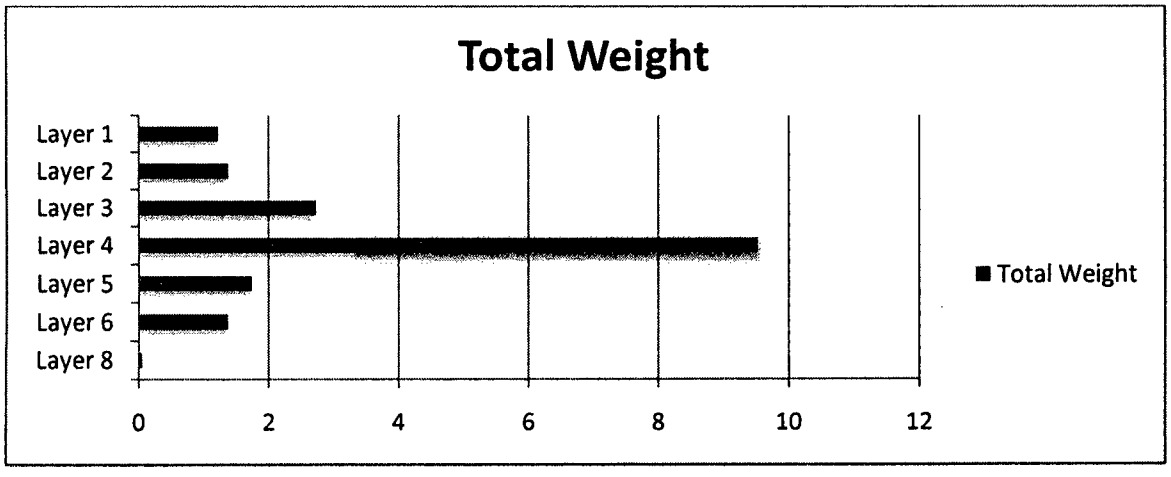

Figure 18 Rim Sherd Total Weight in O2M(K) Fabric with Red Clay Slip in All Layers.

The following table shows the sherd counts and total weights observed in the different layers in the fabric O2M(K) ware with kaolin slip (see table 22). This fabric occurs only with the rim form 1R.

Layers	Form Codes	Sherd Counts	Weight (kg.)
4	1R	2	0.070

Table 22 Rim Sherd Count and Weight with Rim Form in O2M(K) Fabric with Kaolin Slip.

The following table shows the sherd counts and total weights observed in the different layers in the fabric O3F (Green Glazed) ware (see table 23). The green glazed ware occurs in two rim forms in two layers. Layer 4 has the highest sherd counts and weight of the rim sherds. In the non diagnostics too Layer 4 recorded the sole and highest concentration of green glazed ware.

Layers	Form Codes	Sherd Counts	Weight (kg.)
3	27R, 29R.	4	0.080
4	27R, 29R.	35	0.908
Total		39	0.988

Table 23 Rim Sherd Counts and Weights with Rim Forms in O3F(GG) Fabric in All Layers.

The following table shows the sherd counts and total weights observed in the different layers in the fabric O1C (see table 24). The only rim form observed in O1C fabric is 46R with one sherd count.

Layers	Form Codes	Sherd Counts	Weight (kg.)
4	46R	1	0.163

Table 24 Rim Sherd Count and Weight with Rim Form in O1C Fabric.

The following table shows the sherd counts and total weights observed in the different layers in the fabric R1M (see table 25).

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	40R, 46R.	2	0.042
2	30R, 40R.	2	0.053
3	8R, 17R, 27R, 40R.	8	0.432
4	27R, 29R(a), 40R, 48R.	6	0.198
5	26R, 48R.	4	0.118
6	27R	1	0.051
Total		23	0.894

Table 25 Rim Sherd Counts Weight with Rim Forms in R1M Fabric in All Layers.

The following figure shows the counts of the various rim forms R1M observed in the different layers (see figure 19). Rim forms recorded in the layer 3 are the highest closely followed by layer 4.

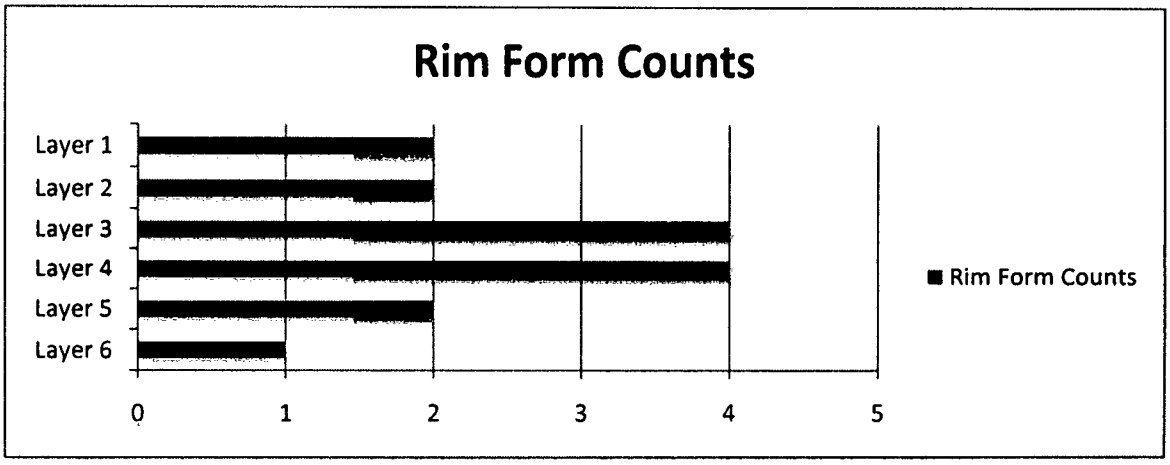

Figure 19 Rim Form Counts in All Layers in R1M Fabric.

The following figure shows the total rim sherds counts recorded in the various layers in the R1M ware (see figure 20). Layer 3 records the highest rim sherd counts in this fabric. There is a sudden increase from layer 1 and 2 to 3 and then layer 3 onwards to layer 6 gradually there is a decline.

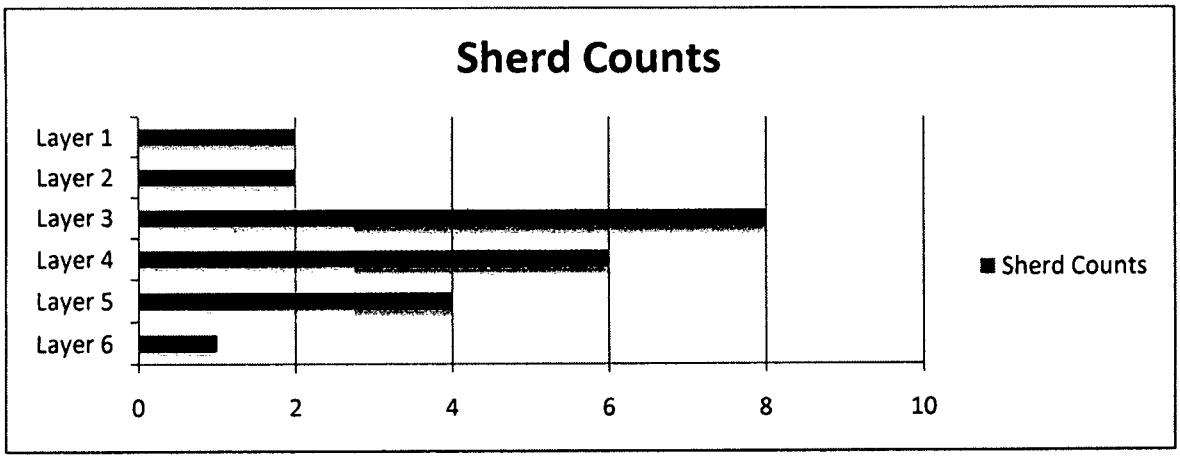

Figure 20 Rim Sherd Counts in R1M Fabric in All Layers.

The following figure shows the rim sherds total weights recorded in the various layers in the R1M ware (see figure 21). In figure 17 similar to figure 16 there is a sudden increase from layer 1 and 2 to 3 and then layer 3 onwards to layer 6 gradually there is a decline.

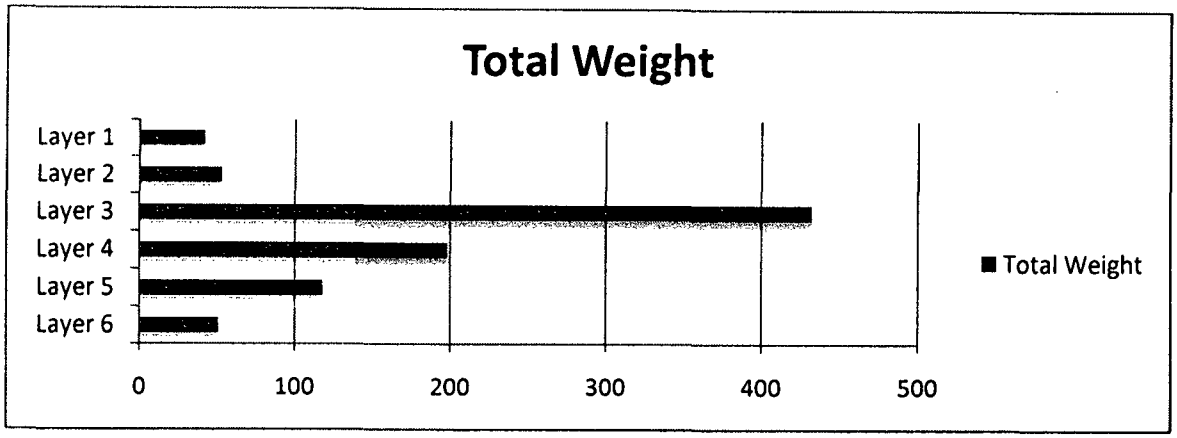

Figure 21 Rim Sherd Total Weight in R1M Fabric in All Layers.

The following table shows the sherd counts and total weights observed in the different layers in the fabric R2M (see table 26).

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	41R.	1	0.023
2	28R, 29R.	4	0.367
3	2R, 11R, 27R, 29R, 30R, 40R, 47R.	14	1.089
4	6R, 29R, 28R, 29R, 36R, 40R.	10	0.527
5	7R.	1	0.011
Total		30	2.017

Table 26 Rim Sherd Counts and Weight with Rim Forms in R2M Fabric in All Layers.

The following figure shows the counts of the various rim forms in R2M fabric observed in the different layers (see figure 22). Layer 3 records the highest count of forms observed in R2M fabric amongst the rim sherds followed by layer 4.

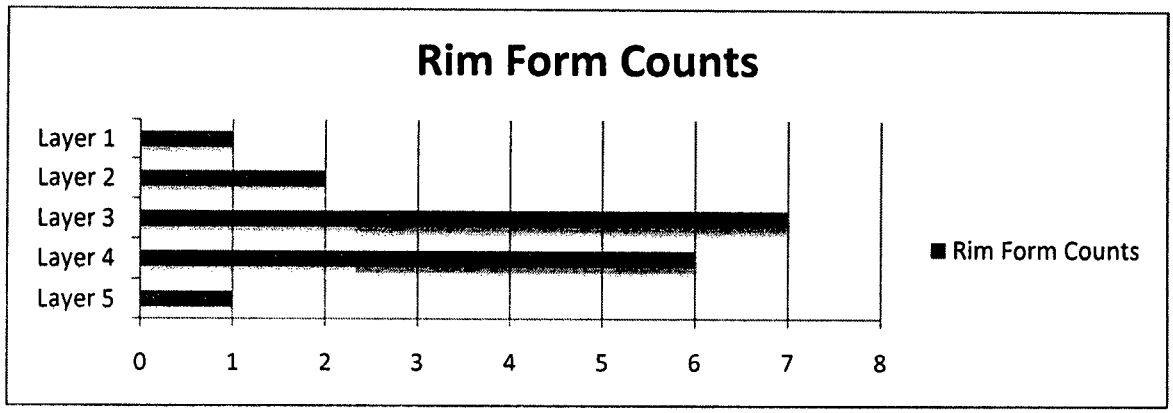

Figure 22 Rim Form Counts in All Layers in R2M Fabric.

The following figure shows the total rim sherd counts recorded in the various layers in the R2M ware (see figure 23). A gradual rise can be seen from layer 2 towards layer 3 and then a fall from layer 3 towards layer 5. The peak can be seen in layer 3.

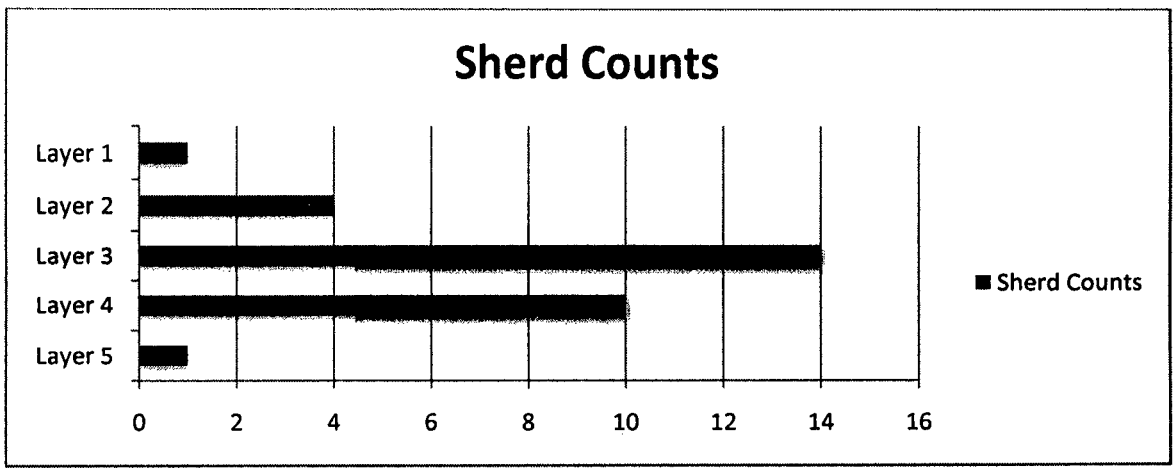

Figure 23 Rim Sherd Counts in R2M Fabric in All Layers.

The following figure shows the rim sherds total weights recorded in the various layers in the R2M ware (see figure 24). The peak in R2M fabric amongst the rim sherds can be seen in layer 3.

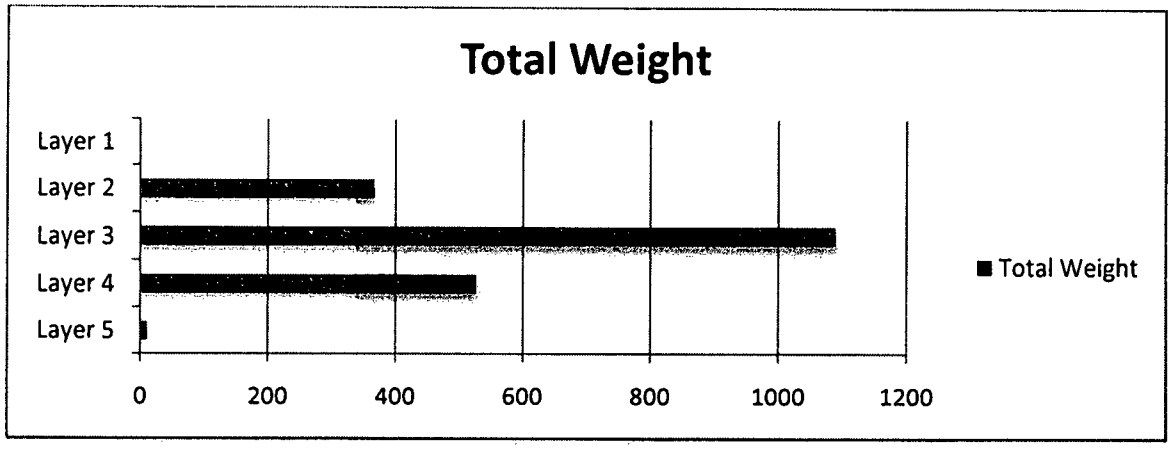

Figure 24 Rim Sherd Total Weight in R2M Fabric in All Layers.

The following table shows the counts and the total weights of all the rim sherds in all the fabrics (see table 27).

Fabric	Counts	Weight(kg.)
O1M	624	33.397
O1M(K)	347	11.259
O2M	12	0.428
O2M(K) with red clay slip	431	18.029
O2M(K)	2	0.070
Q3F(Green Glazed)	39	0.988
O1C	1	0.163
R1M	23	0.894
R2M	30	2.017
Total	1509	67.245

Table 27 Rim Sherd All Fabric Counts and Weight.

The following figure shows the rim sherd counts in all the fabrics (see figure 25). Among the rim sherds the highest count can be observed in the oxidized unslipped medium fabric, which is O1M, followed by oxidized slipped medium kaolin slipped with red clay fabric which is O2M(K). The three fabrics leading the sherd counts amongst the rims are respectively O1M, O2M(K) with red clay slip and O1M(K).

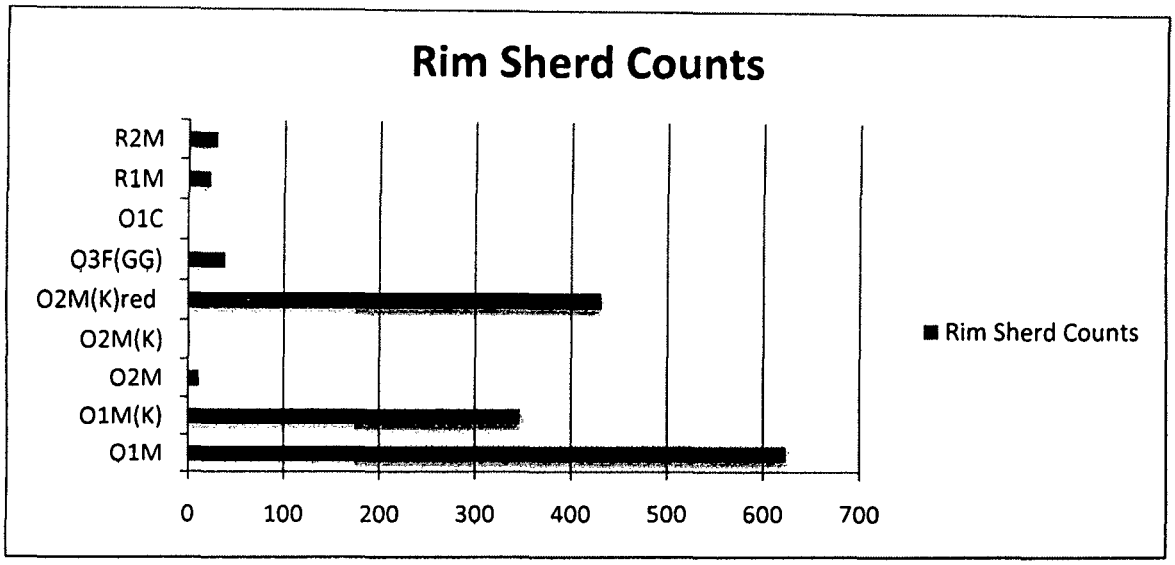

Figure 25 Rim Sherd Counts in All Fabrics.

The following figure shows the total weights observed in the different fabrics of the rim sherds (see figure 26). Oxidized unslipped medium fabric has the highest weight amongst the rim sherds followed by the oxidized slipped medium kaolin slipped with red clay fabric and oxidized unslipped medium kaolin fabric respectively.

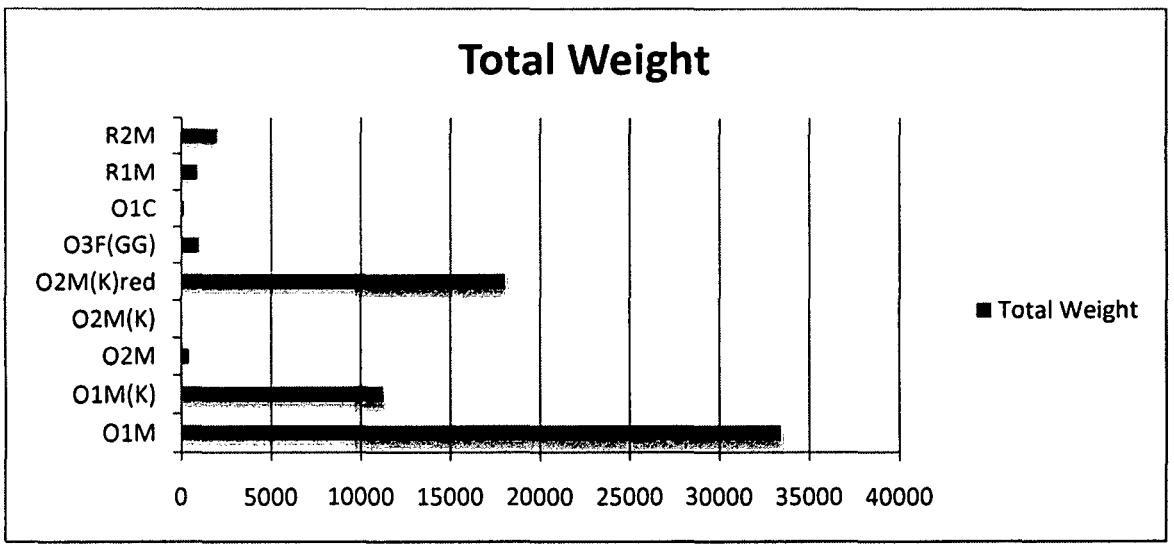

Figure 26 Rim Sherd Total Weight in All Fabrics.

CONCLUSION:

The vessel forms observed with the rim forms are pots (carinated and non carinated), dishes, bowls and troughs. The tables from 17 to 27 and figures from 8 to 26, show that there was a steady increase from layer 1 towards layer 4 and thereafter gradual decline. Thus, mostly the peak is observed in layer 4 except in the case of R1M and R2M where the peak is

observed in the layer 3. The layer 4 to layer 3 corresponds to the period 11th century CE to 14th century CE. Out of all the fabrics the most commonly occurring fabric is the O1M fabric followed by O2M(K) ware with red clay slip and O1M(K) ware respectively.

Bases

The base is the bottom part of a vessel on which it stands. Wheel made vessels have striation marks on their base and are circular in form. Striation marks are caused by the thread used for cutting the pot from the wheel. So it is easy to determine their diameters even when the base is broken. In Ambari I recorded in all a total of 15 different base forms. In the following pages the different forms that I recorded have been tabulated and compared to get a more comprehensive picture.

The following table shows the different base forms in relation to the different vessel types they occur with (see table 28). I have separated the 4(a)B, 4(b)B and 4(c)B base forms from the following table as they are earthen lamps. These will be discussed separately.

Pot	Dish/ Trough	Bowl
1B, 2B, 5B, 9B, 11B.	3B, 6B, 10B, 12B.	7B, 8B

Table 28 Base Vessel Types

The following table shows the different base forms that occurred in the different layers along with the total counts and weight (see table 29).

Layer	Form Codes	Sherd counts
1	1B, 2B, 5B, 6B, 7B, 8B, 9B.	24
2	1B, 2B, 8B, 9B.	19
3	1B, 2B, 3B, 5B, 7B, 8B, 9B, 10B, 12B.	71
4	1B, 2B, 3B, 5B, 7B, 8B, 9B, 10B, 11B, 13B.	136
5	1B, 2B, 3B, 7B, 8B.	20
6	1B, 7B.	3
8	1B.	1
Total		274

Table 29 Base Form Counts in All Layers.

The following figure shows the counts of the various base forms observed in the different layers (see figure 27). The following figure depicts the variety of base forms with their counts according to the layers observed. Layer 4 is seen to have the highest count among the base forms. Layer 4 witnessed a high count of styles among the bases followed by Layer 3.

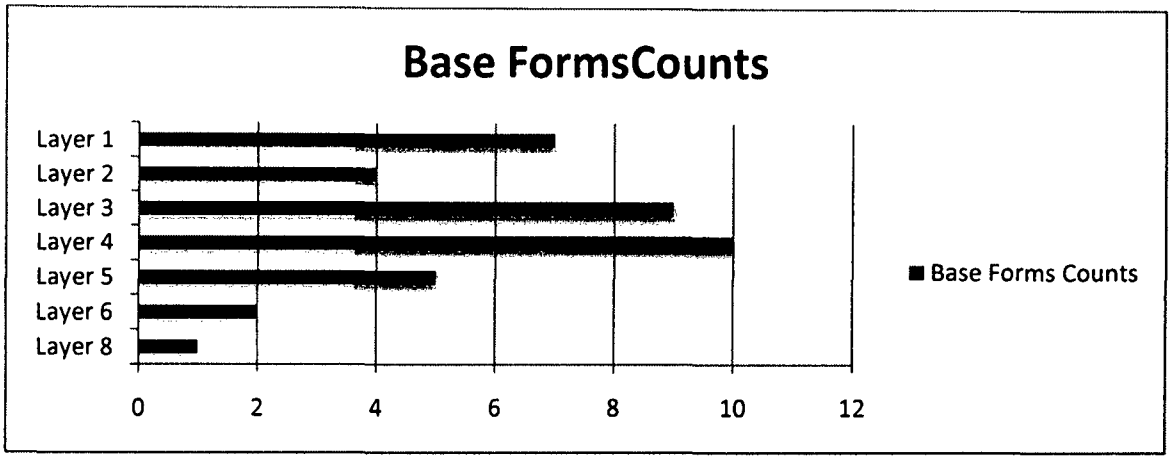

Figure 27 Base Form Counts in All Layers.

The following figure shows the sherd counts of the bases observed in the different layers (see figure 28). Even in sherd counts layer 4 is having the highest count in terms of sherd counts followed by layer 3.

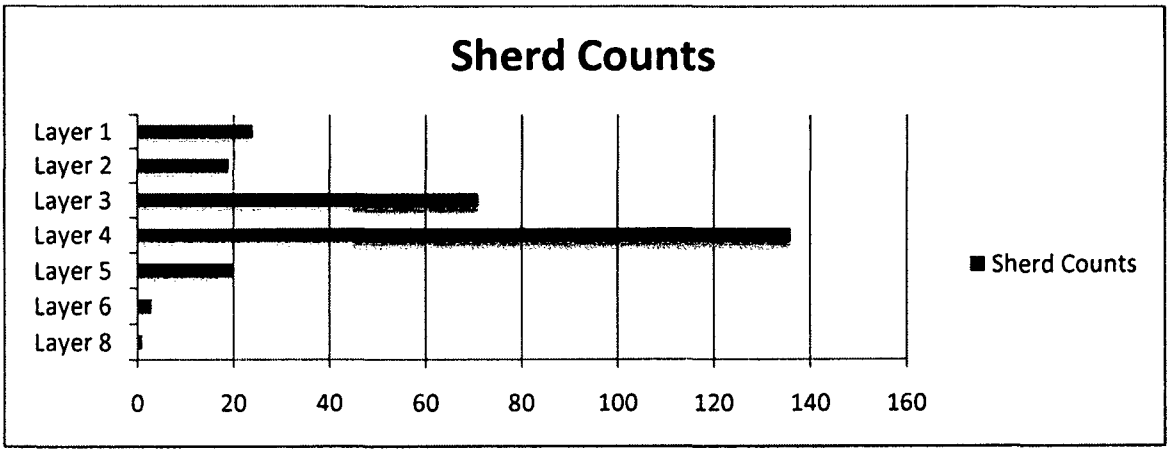

Figure 28 Base Sherd Counts in All Layers.

The following table shows the O1M ware among the base sherds in relation to the base forms and layers they have occurred in (see table 30).

Layers	Form codes	Sherd Counts	Weight (kg.)
1	1B, 2B, 5B, 6B, 8B, 9B.	19	0.988
2	1B, 2B.	8	0.580
3	1B, 2B, 3B, 5B, 7B, 8B, 9B.	28	2.080
4	1B, 2B, 3B, 5B, 7B, 8B, 9B.	74	7.867
5	2B, 7B, 8B.	9	0.605
6	1B, 7B.	2	0.128
8	1B	1	0.094
Total		141	10.342

Table 30 Base Sherd Counts and weight in O1M Fabric in All Layers.

The following figure shows the counts of the various base forms of O1M ware observed in the different layers (see figure 29). After layer 1 there is a sudden drop in layer 2 in base style counts. The highest count can be seen in layer 3 and 4. Then from layer 4 onwards there is a gradual decline towards layer 8.

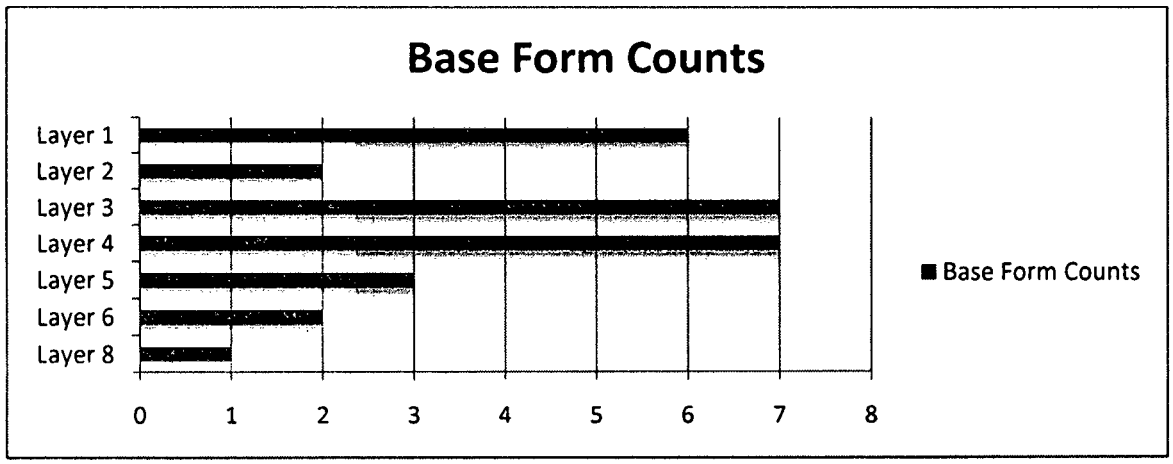

Figure 29 Base Form Counts in O1M Fabric in All Layers.

The following figure shows the sherd counts of the various base forms in O1M ware observed in the different layers (see figure 30). The highest count in sherds was recorded in layer 4 which stands out starkly compared to the other layers. Layer 4 is followed respectively by layer 3, layer 1 and layer 5.

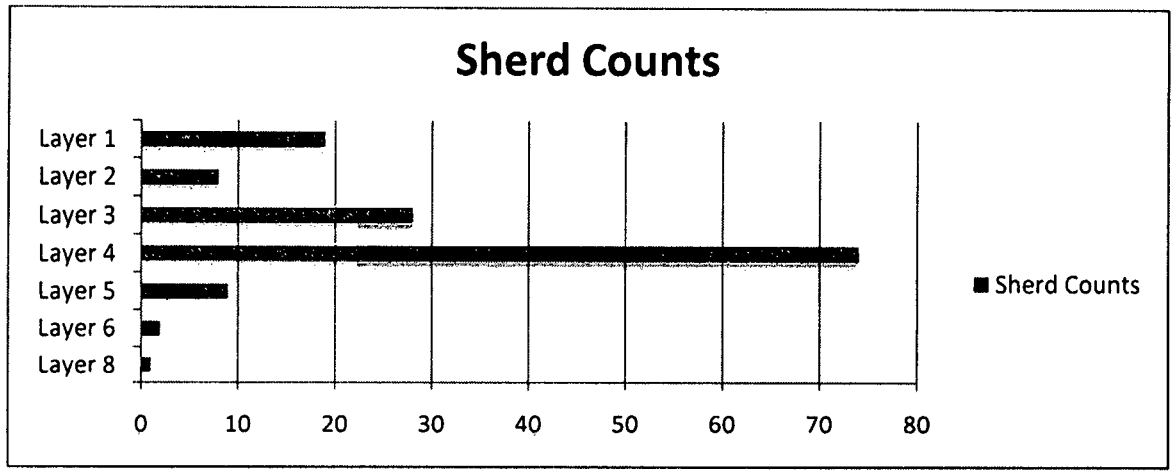

Figure 30 Base Sherd Counts in O1M Fabric in All Layers.

The following figure shows the total weight of the base sherds in O1M ware recorded in all the layers (see figure 31). In terms of weight recorded layer 4 has the leading count followed by layer 3, layer 1 and layer 5 respectively.

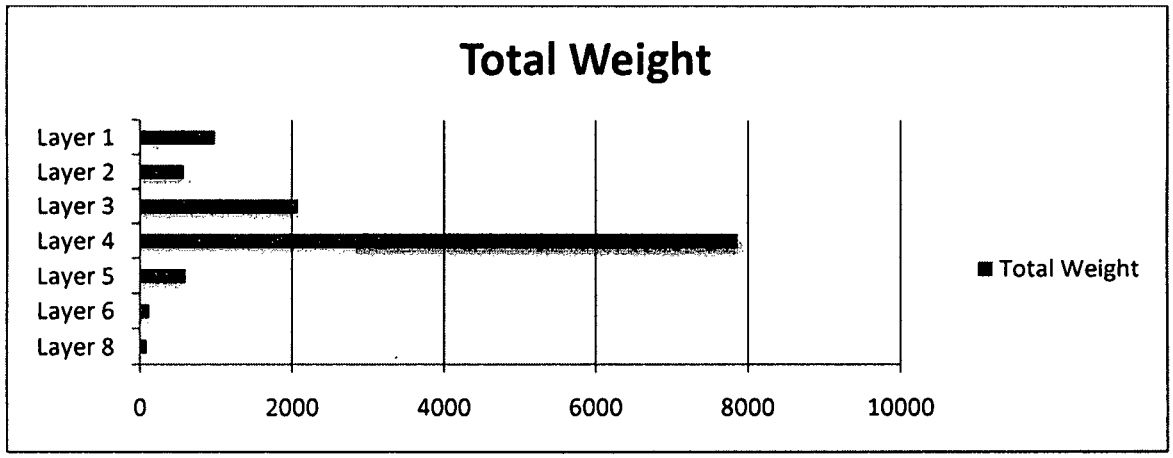

Figure 31 Base Sherds Weight in O1M Fabric in all Layers.

The following table shows the O1M(K) ware among the base sherds in relation to the base forms and layers they have occurred in (see table 31).

Layers	Form codes	Sherd Counts	Weight (kg.)
1	2B, 7B.	2	0.099
2	1B, 2B, 9B.	6	0.228
3	1B, 2B, 8B.	12	0.774
4	1B, 2B, 5B, 8B,	19	1.714
5	1B, 8B.	6	0.246

Total	45	2.061

Table 31 Base Sherd Counts and Weight in O1M(K) Fabric in All Layers.

The following figure shows the counts of the various base forms of O1M(K) ware in different layers (see figure 32). There can be seen a gradual rise from layer 1 towards layer 4 and observed the then a decline towards layer 5.

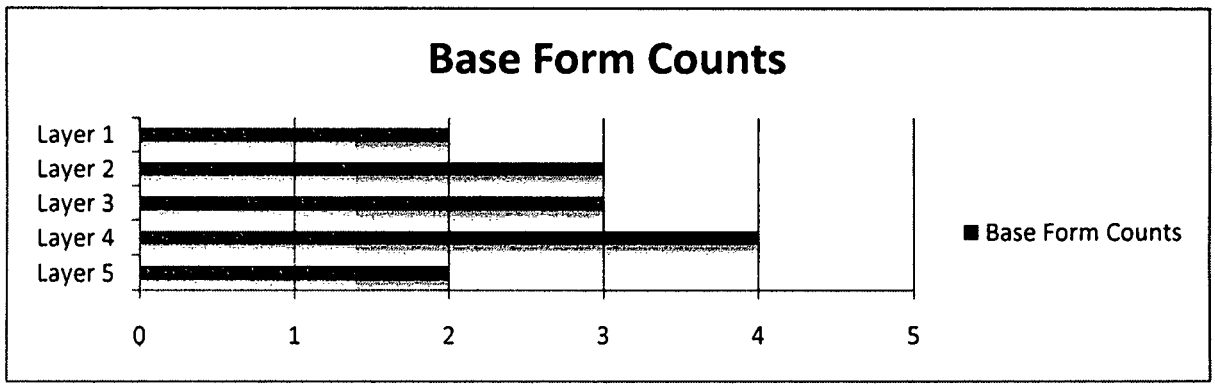

Figure 32 Base Form Counts in O1M(K) Fabric in All Layers.

The following figure shows the sherd counts of the various base forms in O1M(K) ware observed in the different layers (see figure 33). Similar to form counts sherd counts show a gradual rise from layer 1 to layer 4 and then a fall towards layer 5.

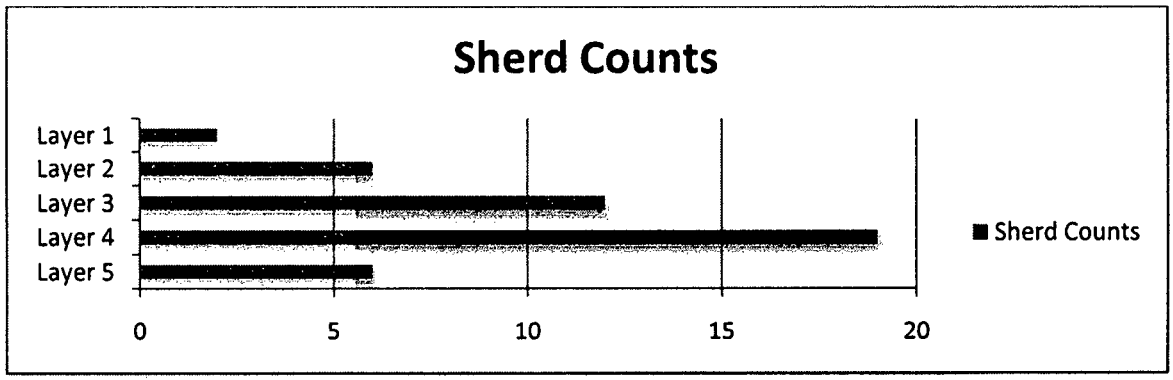

Figure 33 Base Sherd Counts in O1M(K) Fabric in All Layers.

The following figure shows the total weight of the base sherds in O1M(K) ware recorded in all the layers (see figure 34). In the weights recorded in O1M(K) ware a constant rise can be seen from layer 1 onwards to layer 4 and then fall towards layer 5.

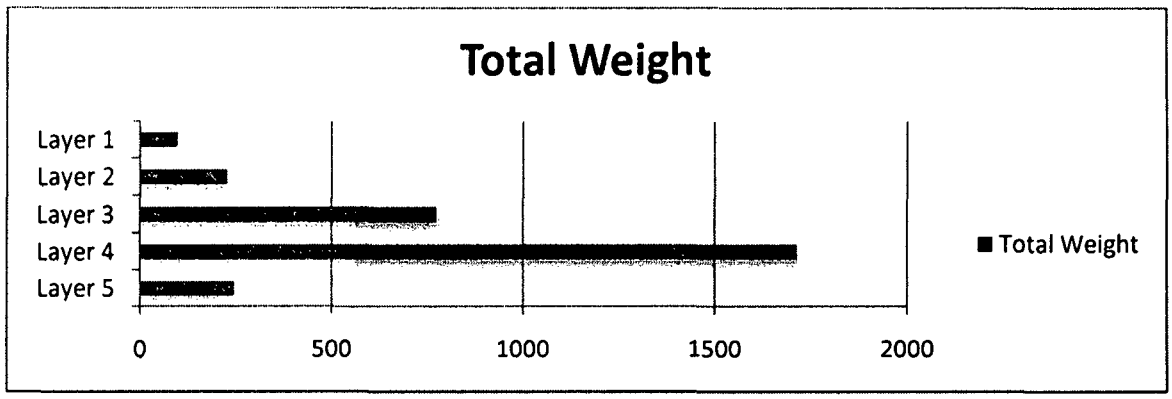

Figure 34 Base Sherd Weight in O1M(K) Fabric in All Layers.

The following table shows the base counts and total weights observed in the different layers in the fabric O2M ware (see table 32).

Layers	Form codes	Sherd Counts	Weight (kg.)
3	12B	1	0.061

Table 32 Base Sherd Count and Weight in O2M Fabric in All Layers.

The following table shows the base counts and total weights observed in the different layers in the fabric O2M(K) with red clay slip (see table 33).

Layers	Form codes	Sherd Counts	Weight (kg.)
1	1B, 2B, 8B, 9B.	6	0.300
2	1B, 2B, 9B.	4	0.151
3	1B, 2B, 3B, 7B, 8B, 10B.	15	1.438
4	1B, 2B, 7B, 8B, 9B.	30	2.750
5	7B, 8B.	3	0.295
6	1B.	2	0.059
Total		60	4.993

Table 33 Base Sherd Counts and Weight in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the counts of the various base forms in O2M(K) fabric with red clay slip observed in the different layers (see figure 35). Layer 3 has the highest count followed by layer 4 and layer 1.

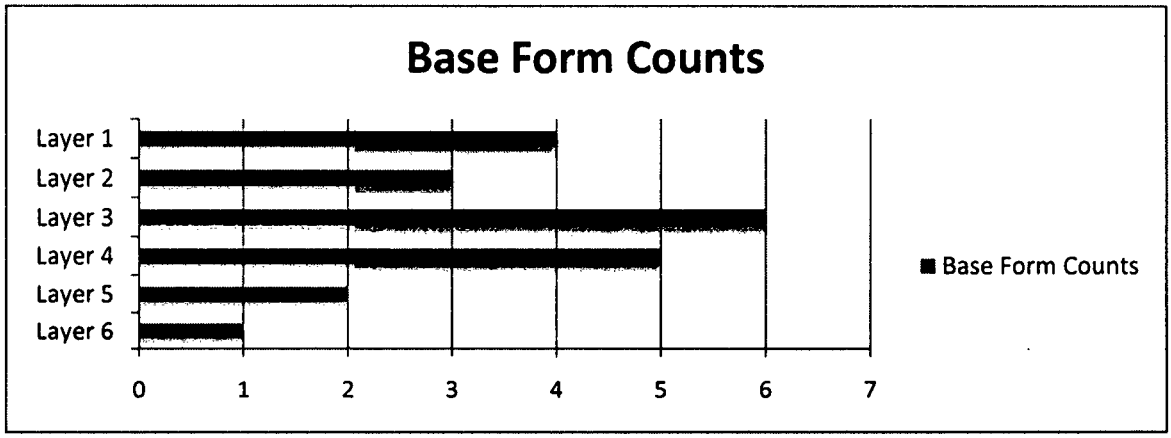

Figure 35 Base Form Counts in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the sherd counts of the various base forms in O2M(K) fabric with red clay slip observed in the different layers (see figure 36). In sherd counts it can be seen that layer 4 has clearly high counts followed by layer 3 and layer 1 respectively.

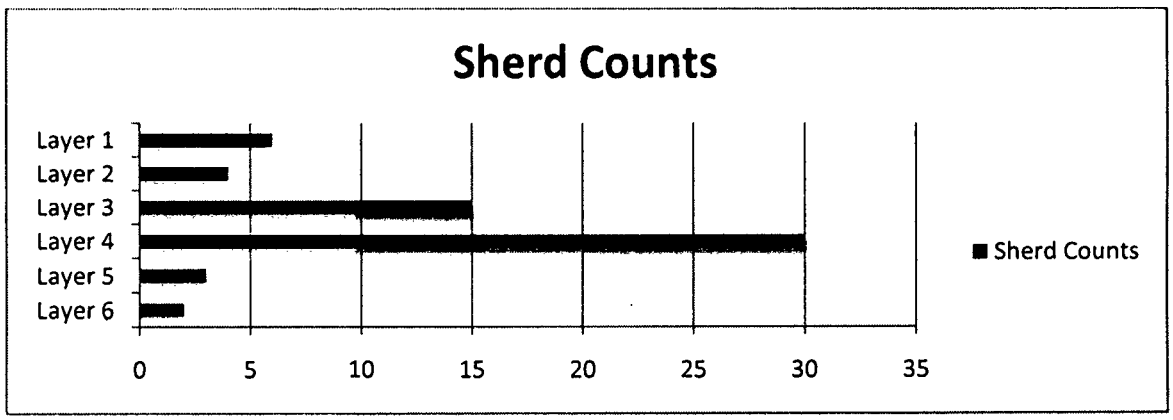

Figure 36 Base Sherd Counts in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the total weight of the base sherds in O2M(K) fabric with red clay slip recorded in all the layers (see figure 37). Layer 4 has the highest recording of weights in O2M(K) ware followed by layer 3.

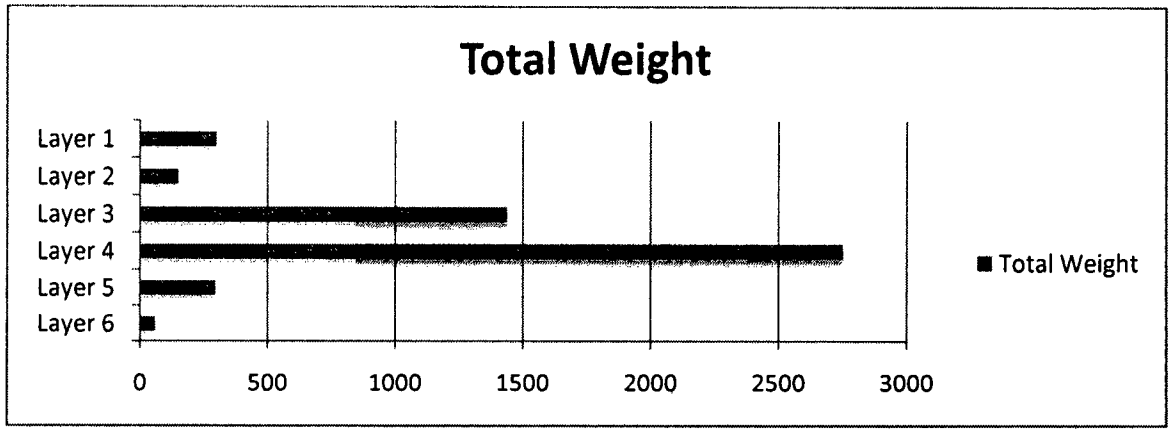

Figure 37 Base Sherd Weight in O2M(K) Fabric with red clay slip in All Layers.

The following table shows the base counts and total weights observed in the different layers in the fabric O1C ware (see table 34). It occurs with only one base form 7B.

Layers	Form codes	Sherd Counts	Weight (kg.)
4	7B	1	0.200

Table 34 Base Sherd Counts and Weight in O1C Fabric in All Layers.

The following table shows the sherd counts and total weights observed in the different layers in the fabric O3F (Green Glazed) ware (see table 35). The green glazed ware occurs with only the 3B base form which is a ring base. Layer 4 has the highest sherd counts and weight just like in the case of the rim sherds. In the non diagnostics too layer 4 recorded the sole and highest concentration of green glazed ware.

Layers	Form Codes	Sherd Counts	Weight (kg.)
4	3B.	11	0.954
5	3B.	3	0.097
Total		14	1.051

Table 35 Base Sherds Counts and Weight in O3F(GG) Fabric in All Layers.

The following figure shows the sherd counts of the various base forms in O3F(GG) ware observed in the different layers (see figure 38). Layer 4 has the highest sherd counts.

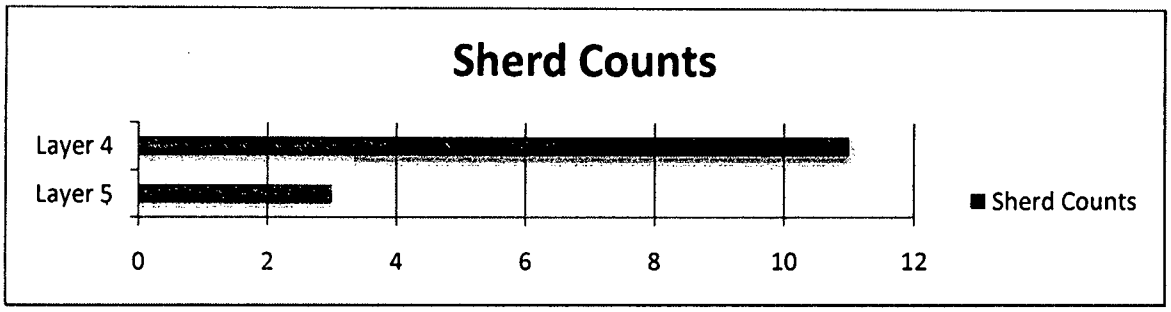

Figure 38 Base Sherd Counts in O3F(GG) Fabric with red clay slip in All Layers.

The following figure shows the total weight of the base sherds in O3F(GG) ware recorded in all the layers (see figure 39). Layer 4 has the highest weight recorded in 03F fabric.

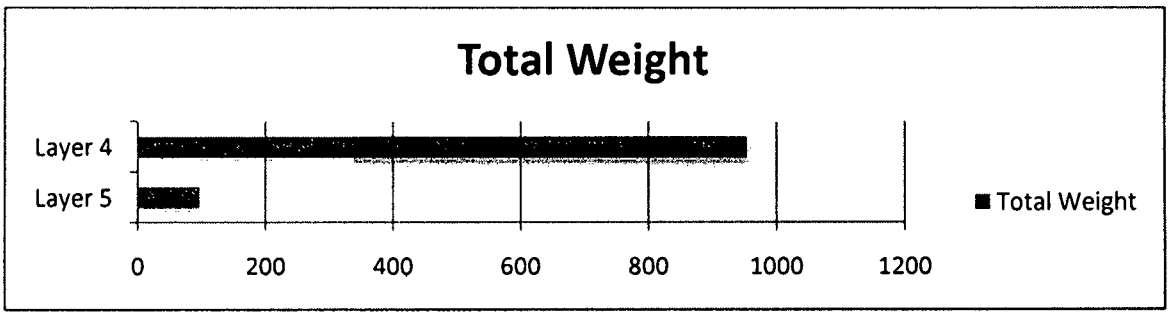

Figure 39 Base Sherd Weight in O3F(GG) Fabric in All Layers.

The following table shows the sherd counts and total weights observed in the different layers in the fabric RIM ware (see table 36).

Layers	Form Codes	Sherd Counts	Weight (kg.)
3	1B, 9B.	3	0.083
4	3B.	1	0.018
Total		4	0.101

Table 36 Base Sherd Counts and Weight in R1M Fabric in All Layers.

The following figure shows the sherd counts of the various base forms in R1M ware observed in the different layers (see figure 40). Layer 3 records two base forms compared to only one in layer 4.

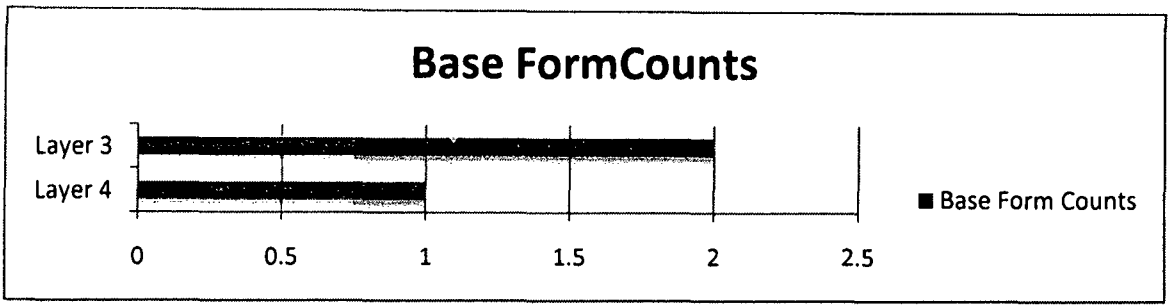

Figure 40 Base Form Counts in R1M Fabric in All Layers.

The following figure shows the sherd counts of the various base forms in RIM ware observed in the different layers (see figure 41). Layer 3 with three sherd counts has higher sherd counts as compared to layer 4.

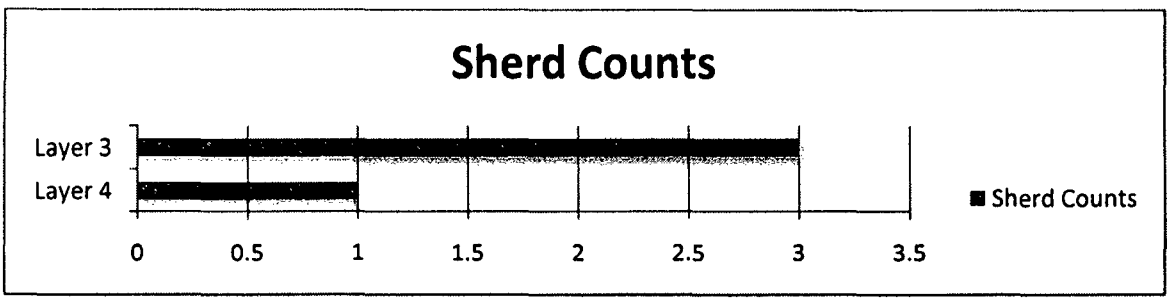

Figure 41 Base Sherd Counts in R1M in All Layers.

The following figure shows the total weight of base sherds in RIM ware recorded in all the layers (see figure 42). In weights recorded, layer 3 scores higher than layer 4.

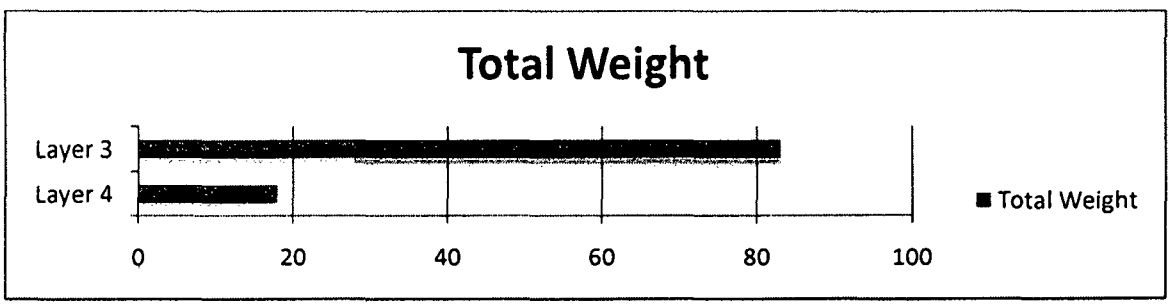

Figure 42 Base Sherd Weight in R1M Fabric in All Layers.

The following table shows the sherd counts and total weights observed in the different layers in the fabric R2M ware (see table 37).

Layers	Form Codes	Sherd Counts	Weight (kg.)
3	3B.	7	0.400

Table 37 Base Sherd Counts and Weight in R2M Fabric in All Layers.

The following table shows the counts and weight of the bases observed in all the fabrics (see table 38).

Fabric	Counts	Weight(kg.)
O1M	141	10.342
O1M(K)	45	2.061
O2M	1	0.061
O2M(K)with red clay slip	60	4.993
O1C	1	0.200
O3F(Green Glazed)	14	1.051
R1M	4	0.101
R2M	7	0.400
Total	273	19.209

Table 38 Base Sherd All Fabric Counts and Weight.

The following figure shows the counts of the bases in all the fabrics observed (see figure 43). The fabric having the highest counts among all the fabrics among the base sherds is O1M fabric followed by O2M(K) fabric with red clay slip and O1M(K) fabric respectively.

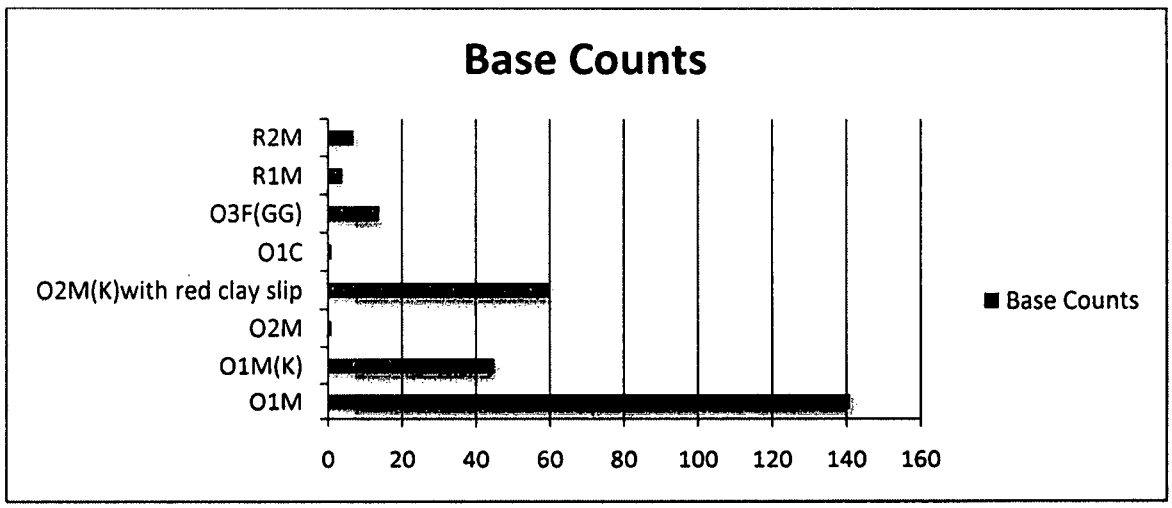

Figure 43 Base Sherd Counts in All Fabrics.

The following figure shows the total weights of the bases in all the fabrics observed (see figure 44). O1M fabric has the highest weight recorded followed by O2M(K) fabric with red clay slip and O1M(K) fabric.

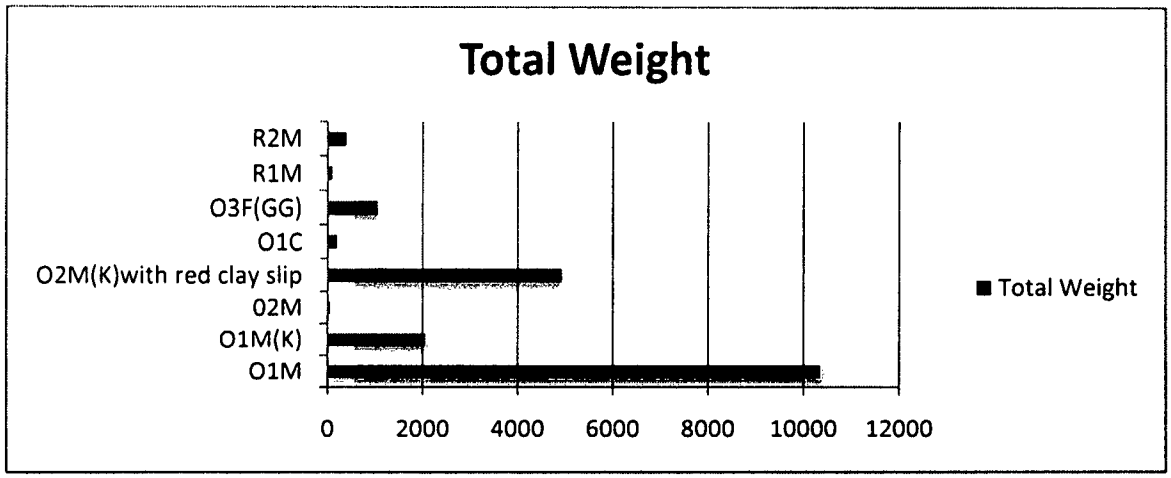

Figure 44 Base Sherd Total Weight in All Fabrics.

CONCLUSION:

The vessel forms observed with the base forms are pots, dishes, bowls and troughs. The tables from 29 to 38 and figures from 27 to 44, show that there was a steady increase from layer 1 towards layer 4 and then a gradual decline afterwards. Thus mostly the peak is observed in layer 4 except in the case of R1M and R2M where the peak is observed in layer 3. The layer 4 to layer 3 corresponds to the period 11th century CE to 14th century CE. Out of all the fabrics the most commonly occurring fabric is the O1M fabric followed by O2M(K) ware with red clay slip and O1M(K) ware respectively.

From the above, the base forms 4(a)B, 4(b)B and 4(c)B have been excluded as the aim is to study them in detail. These three forms are different varieties of earthen lamps which are both wheel made and handmade. They have been identified as earthen lamps because of the evidence of soot marks on them as well as their morphological character. The 4(a)B base style is a wheel made earthen lamp (see figure 45). The 4(b)B base style is a handmade earthen lamp which is made with the pinching technique (see figure 46). The pinching technique has been ascertained on the basis of the evidence of the marks left by fingers on the body of the lamp while pinching the clay into that particular shape. The 4(c)B style again is a wheel made earthen lamp but is slightly different from 4(a)B style. The 4(c)B style has a ridge around the rim (see figure 47).

Figure 45 4(a)B Form

Figure 46 4(b)B Form

Figure 47 4(c)B Form

4(a)B

The following table shows the counts and total weights observed in the 4(a)B style in the different layers in the fabric O1M ware (see table 39).

Layer	Counts	Weight(kg.)
2	9	0.168
3	1	0.007
4	8	0.193
5	9	0.225
6	81	2.154
Total	108	2.747

Table 39 4(a)B Base Form Sherd Counts and Weight in O1M Fabric in All Layers.

The following figure shows the counts of the 4(a)B base form in O1M fabric observed in the different layers (see figure 48). Layer 6 has the highest counts and stands out among the other layers.

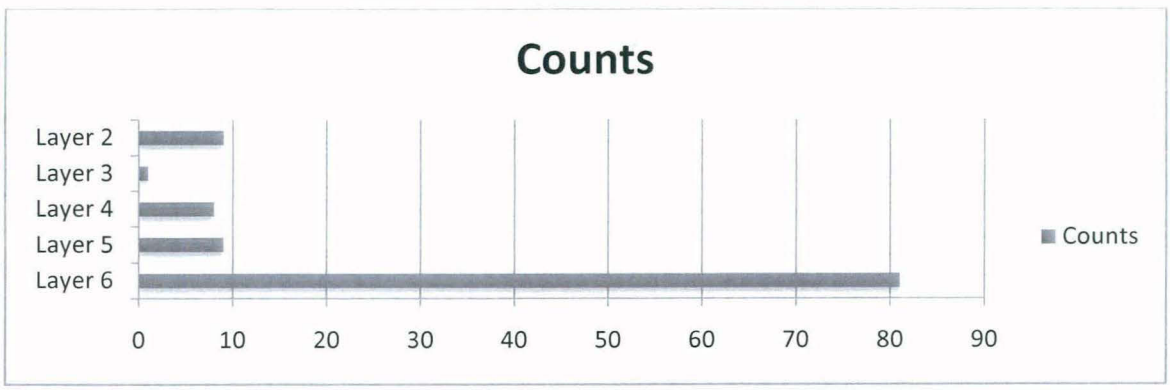

Figure 48 4(a)B Base Form Sherd Counts in O1M Fabric in All Layers.

The following figure shows the total weight of the 4(a)B counts in O1M fabric recorded in all the layers (see figure 49). In the weights recorded again layer 6 stands out with the highest weight among the other layers.

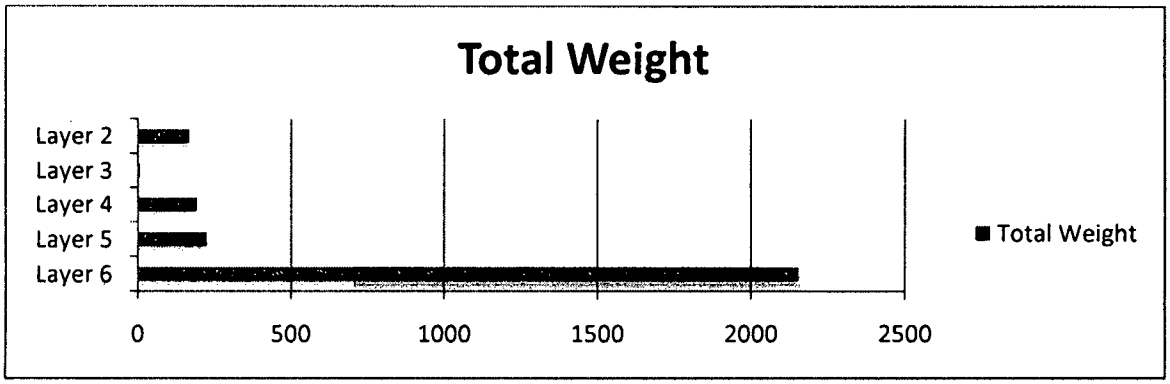

Figure 49 4(a)B Base Form Total Weight in O1M Fabric in All Layers.

The following table shows the counts and total weights observed in the 4(a)B form in the different layers in the fabric O1M(K) fabric (see table 40).

Layer	Counts	Weight(kg.)
2	2	0.020
5	4	0.117
6	40	1.108
7	1	0.029
Total	47	1.274

Table 40 4(a)B Base Form Sherd Counts and Weight in O1M(K) Fabric in All Layers.

The following figure shows the counts of the 4(a)B base form in O1M(K) fabric observed in the different layers (see figure 50). In the O1M(K) fabric layer 6 has a marked highest sherd counts. After layer 6, way behind is layer 5.

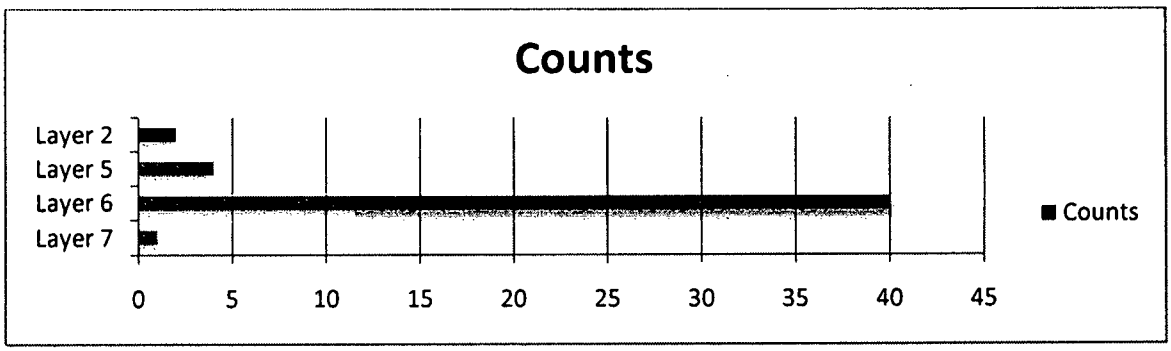

Figure 50 4(a)B Base Form Sherd Counts in O1M(K) Fabric in All Layers.

The following figure shows the total weight of the 4(a)B counts in O1M(K) fabric recorded in all the layers (see figure 51). Layer 6 has the highest weight recorded in the O1M(K) fabric among all the layers.

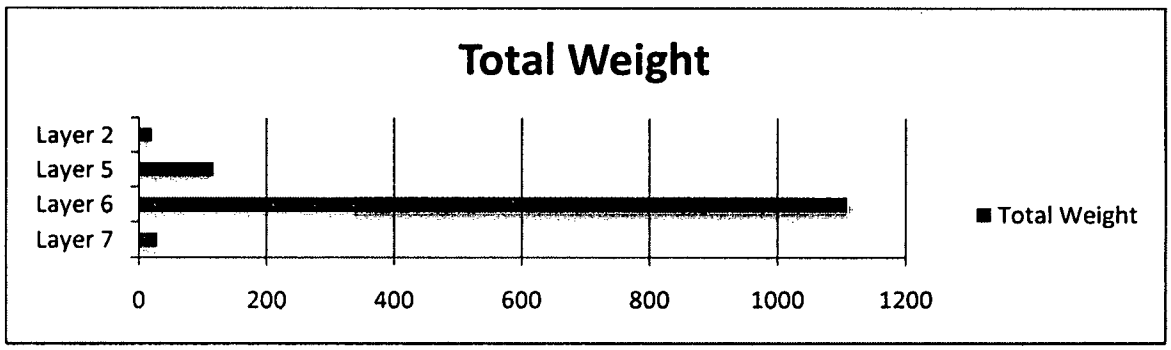

Figure 51 4(a)B Base Form Total Weight in O1M(K) Fabric in All Layers.

The following table shows the counts and total weights observed in the 4(a)B form in the different layers in the fabric O2M(K) ware with kaolin slip (see table 41).

Layer	Counts	Weight(kg.)
4	1	0.034

Table 41 4(a)B Base Form Sherd Count and weight in O2M(K) Fabric in All Layers.

The following table shows the counts and total weights observed in the 4(a)B form in the different layers in the fabric O2M(K) ware with red slip (see table 42).

Layer	Counts	Weight(kg.)
1	1	0.013
4	2	0.080
5	1	0.021
6	6	0.177
Total	10	0.291

Table 42 4(a)B Base Form Sherd Counts and Weight in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the counts of the 4(a)B base form in O2M(K) fabric with red clay slip observed in the different layers (see figure 52). Layer 6 has the highest counts recorded in this fabric followed by layer 4.

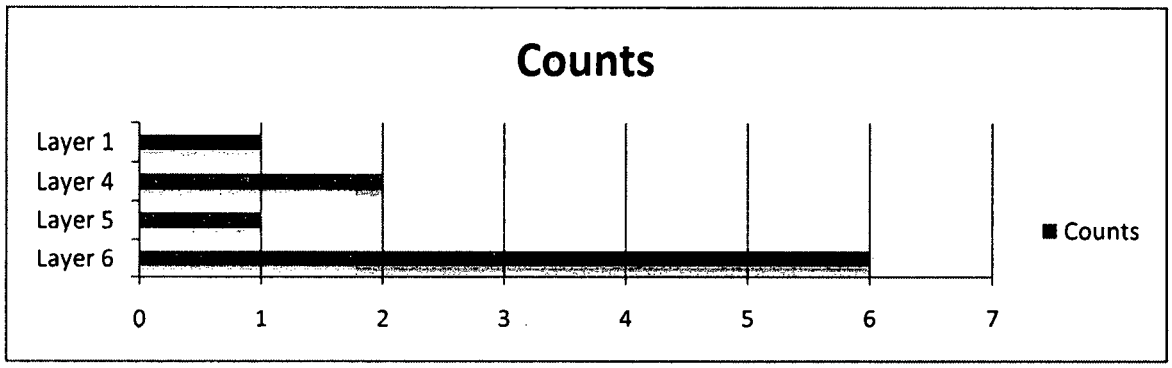

Figure 52 4(a)B Base Form Sherd Counts in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the total weight of the 4(a)B counts in O2M(K) fabric with red clay slip recorded in all the layers (see figure 53). Layer 6 has the highest weight followed by layer 4 and layer 5 respectively.

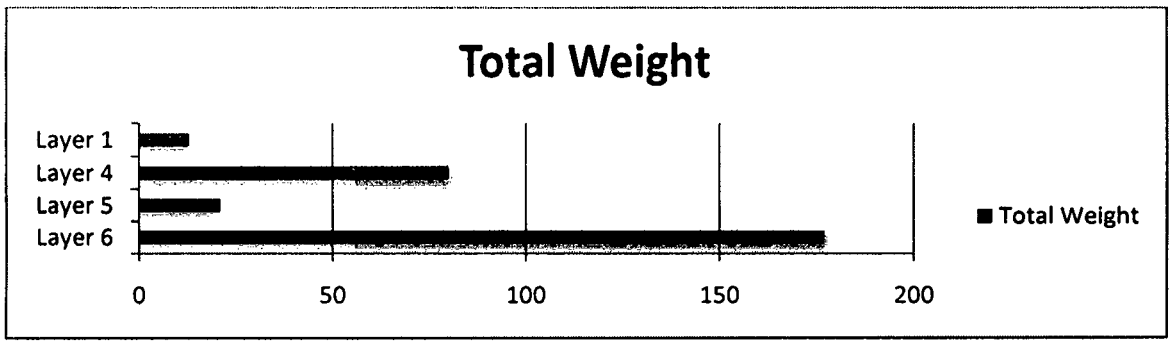

Figure 53 4(a)B Base Form Total Weight in O2M(K) fabric with Red Clay Slip in All Layers.

The following table shows the counts and total weights observed in the 4(a)B form in the different layers in the fabric R1M (see table 43).

Layer	Counts	Weight(kg.)
6	1	0.027

Table 43 4(a)B Base Form Sherd Count and Weight in R1M Fabric in All Layers.

The following table shows the different counts and weights recorded in the 4(a)B base form in all the different fabrics (see table 44).

Fabric	Counts	Weight(kg.)
O1M	108	2.747
O1M(K)	47	1.274
O2M(K)	1	0.034

O2M(K) with red slip	10	0.291
R1M	1	0.027
Total	167	4.373

Table 44 4(a)B Base Form All Fabric Counts and Weight.

The following figure shows the counts of the 4(a)B base form in all the fabrics observed (see figure 54). In the 4(a)B base form O1M fabric has the highest counts and it is followed by O1M(K) and O2M(K) with red clay slip respectively.

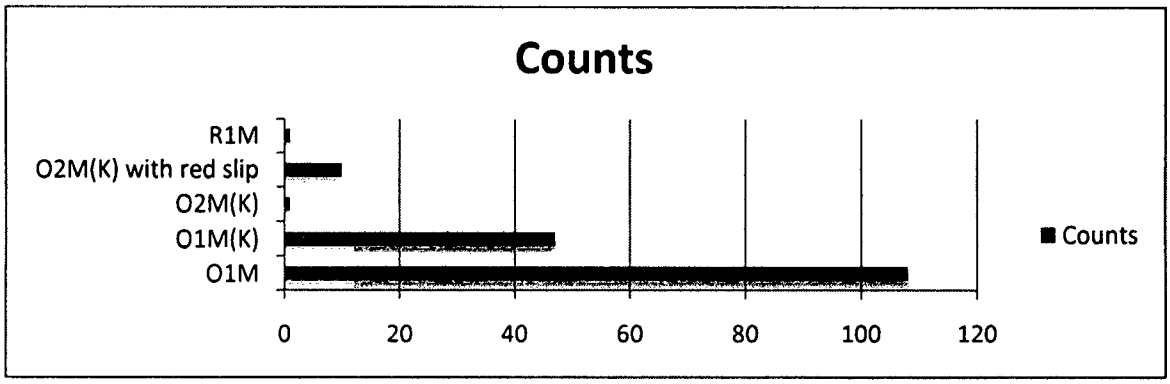

Figure 54 4(a)B Base Sherd Counts in All Fabrics.

The following figure shows the total weight of the 4(a)B counts in all the fabrics recorded (see figure 55). In the 4(a)B base form O1M fabric has the highest weight and it is followed by O1M(K) and O2M(K) with red clay slip respectively.

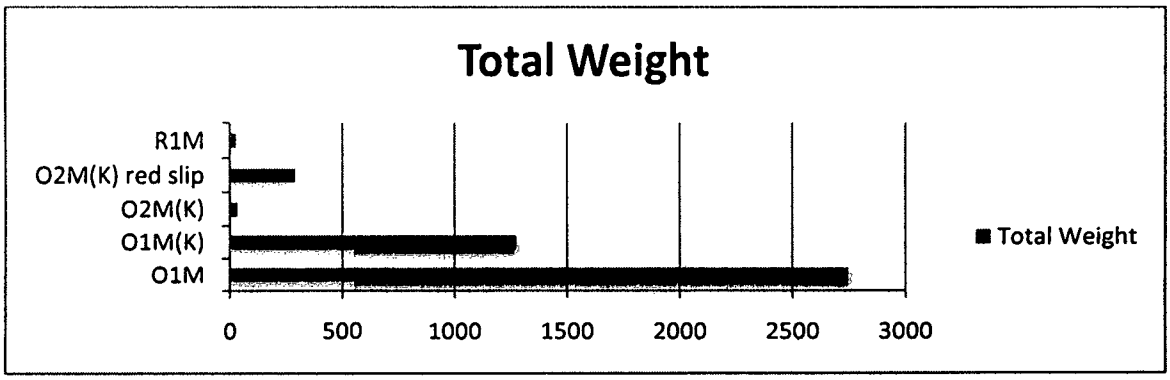

Figure 55 4(a)B Base Total Weight in All Fabrics.

CONCLUSION:

In 4(a)B base form the peak can be observed in layer 6 which corresponds to the period 8th to 9th century CE. The most commonly used fabric in this form is the O1M fabric followed by O1M(K).

4(b)B

The following table shows the counts and total weights observed in the 4(b)B form in the different layers in the fabric O1M ware (see table 45).

Layer	Counts	Weight(kg.)
4	2	0.026
5	6	0.079
6	7	0.120
Total	15	0.225

Table 45 4(b)B Base Form Sherd Counts and Weight in O1M Fabric in All Layers.

The following figure shows the counts of the 4(b)B base form in O1M ware observed in the different layers (see figure 56). The highest counts of 4(b)B in O1M fabric can be seen in the layer 6. Layer 6 is followed by layer 5 and 4 respectively. The rise from layer 4 towards layer 6 is gradual.

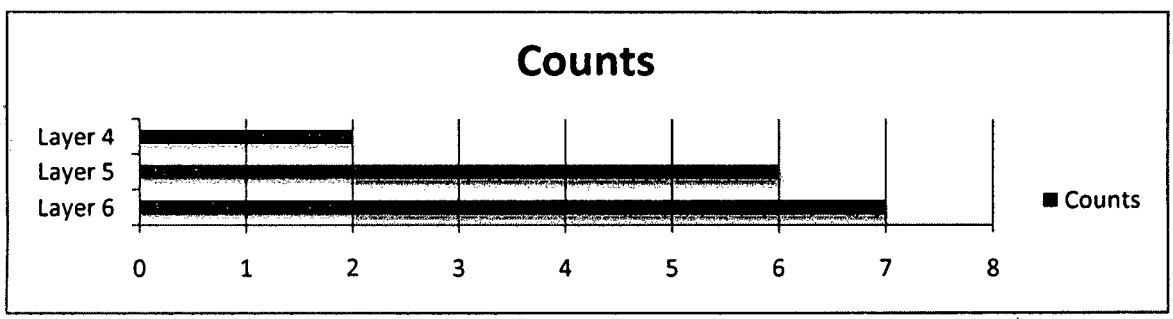

Figure 56 4(b)B Base Form Sherd Counts in O1M Fabric in All Layers.

The following figure shows the total weight of the 4(b)B counts in O1M fabric recorded in all the layers (see figure 57). There is a gradual rise from layer 4 onwards to layer 6 where the peak can be seen.

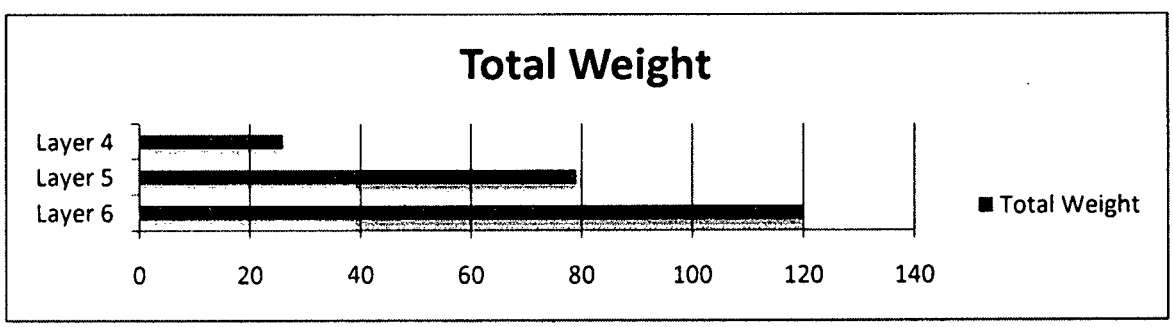

Figure 57 4(b)B Base Form Total Weight in O1M Fabric in All Layers.

The following table shows the counts and total weights observed in the 4(b)B form in the different layers in the fabric O1M(K) ware (see table 46).

Layer	Counts	Weight(kg.)
2	1	0.012
5	9	0.145
6	29	0.489
7	2	0.033
8	1	0.013
Total	42	0.692

Table 46 4(b)B Base Form Sherd Counts and Weight in O1M(K) Fabric in All Layers.

The following figure shows the counts of the 4(b)B base form in O1M(K) ware observed in the different layers (see figure 58). The highest count in the fabric O1M(K) in 4(b)B can be seen in layer 6 followed by layers 5 and 7.

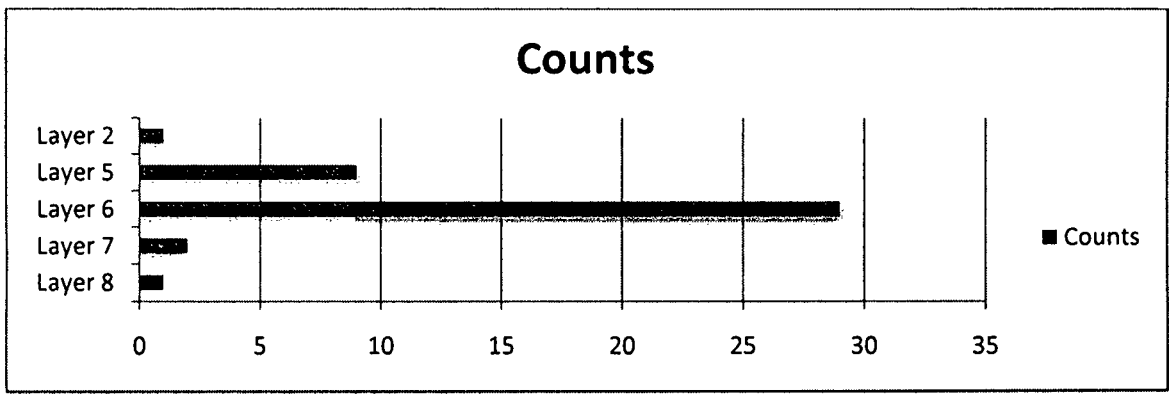

Figure 58 4(b)B Base Form Sherd Counts in O1M(K) Fabric in All Layers.

The following figure shows the total weight of the 4(b)B counts in O1M(K) fabric recorded in all the layers (see figure 59). In the 4(a)B base form O1M(K) fabric has the highest weight and it is followed by layers 5 and 7 respectively.

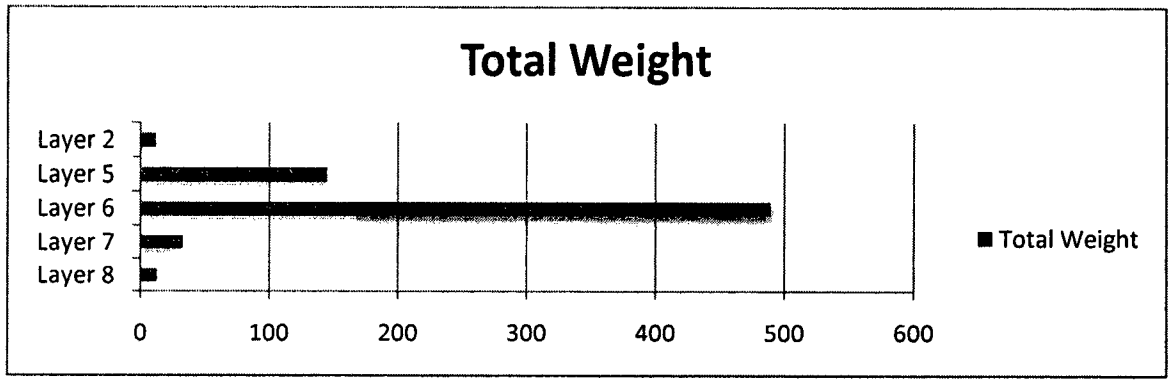

Figure 59 Base Form Total Weight in O1M(K) Fabric in All Layers.

The following table shows the counts and total weights observed in the 4(b)B form in the different layers in the fabric O2M(K) ware (see table 47).

Layer	Counts	Weight(kg.)
3	1	0.018
4	1	0.010
Total	2	0.028

Table 47 4(b)B Base Form Sherd Counts and Weight in O2M(K) Fabric in All Layers.

The following table shows the counts and total weights observed in the 4(b)B form in the different layers in the fabric O2M(K) ware with red slip (see table 48). There is a gradual rise from layer 3 towards layer 5.

Layer	Counts	Weight(kg.)
3	1	0.011
4	2	0.053
5	3	0.057
Total	6	0.121

Table 48 4(b)B Base Form Sherd Counts and Weight in O2M(K) Fabric with Red Clay Slip in All Layers.

The following table shows the different counts and weights recorded in the 4(b)B form in all the different fabrics (see table 49).

Fabric	Counts	Weight(kg.)
O1M	15	0.225
O1M(K)	42	0.692

O2M(K)	2	0.028
O2M(K) with red slip	6	0.121
Total	65	1.066

Table 49 4(b)B Base Form All Fabric Counts and Weight.

The following figure shows the counts of the 4(b)B base form in all the fabrics observed (see figure 60). The highest counts in 4(b)B base form was observed in the O1M(K) fabric followed by O1M and O2M(K) with red clay slip respectively.

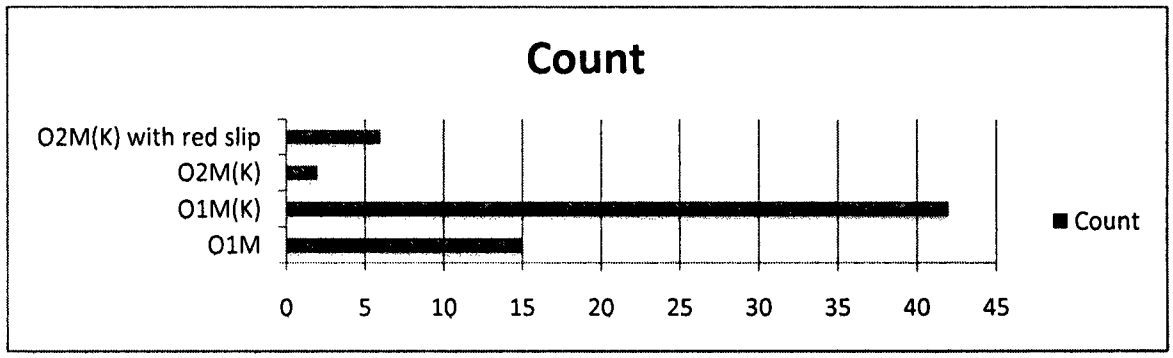

Figure 60 4(b)B Base Sherd Counts in All Fabrics.

The following figure shows the total weight of the 4(b)B counts in all the fabrics recorded (see figure 61). In the weight recorded the O1M(K) fabric has the highest weight followed by O1M and O2M(K) with red clay slip.

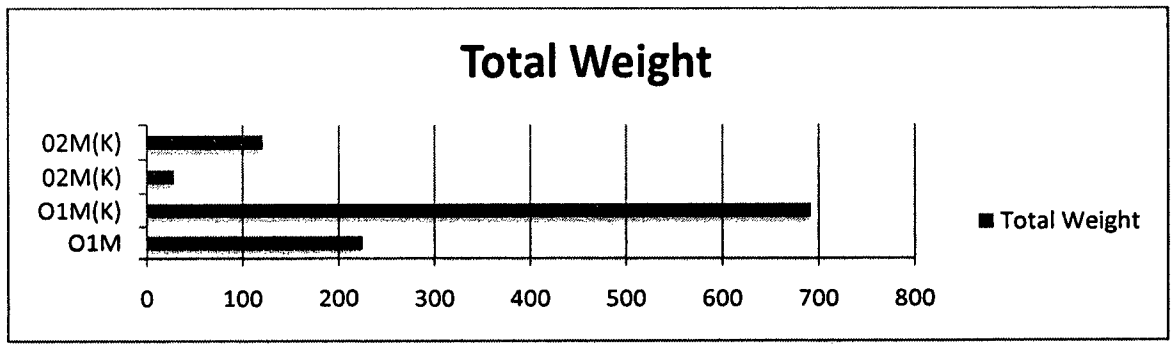

Figure 61 4(b)B Base Total Weight in All Fabrics.

CONCLUSION

In 4(b)B base form, the peak can be observed in layer 6 which corresponds to the period 8th to 9th century CE followed by layer 5 corresponds to the period 9th to 10th century CE. The most commonly used fabric in this form is the O1M(K) fabric followed by O1M contrary to the case in 4(a)B base form.

4(c)B

The following table shows the counts and total weights observed in the 4(c)B form in the different layers in the fabric O1M ware (see table 50). Layer 6 has the highest sherd counts in O1M fabric among the 4(c)B form.

Layer	Counts	Weight(kg.)
3	1	0.052
4	1	0.030
5	1	0.026
6	14	0.348
Total	17	0.456

Table 50 4(c)B Base Form Sherd Counts and Weight in O1M Fabric in All Layers.

The following table shows the counts and total weights observed in the 4(c)B form in the different layers in the fabric O1M(K) ware (see table 51). This fabric has been recorded in layer 6.

Layer	Counts	Weight(kg.)
6	5	0.190

Table 51 4(c)B Base Form Sherd Counts in O1M(K) Fabric in All Layers.

The following table shows the counts and total weights observed in the 4(c)B form in the different layers in the fabric O2M(K) with red clay slip (see table 52). In O2M(K) fabric layer 6 has two sherd counts compared to one sherd count of layer 3.

Layer	Counts	Weight(kg.)
3	1	0.052
6	2	0.074
Total	3	0.126

Table 52 4(c)B Base Form Sherd Counts and Weight in O2M(K) Fabric with Red Clay Slip in All Layers.

The following table shows the different counts and weights recorded in the 4(c)B form in all the different fabrics (see table 53).

Fabric	Counts	Weight(kg.)
O1M	17	0.456
O1M(K)	5	0.190
O2M(K) with red slip	3	0.126
Total	25	0.772

Table 53 4(c)B Base Form All Fabric Counts and Weight.

The following figure shows the counts of the 4(c)B base form in all the fabrics observed (see figure 62) The O1M fabric has the highest sherd counts among all the other fabrics followed by O1M(K).

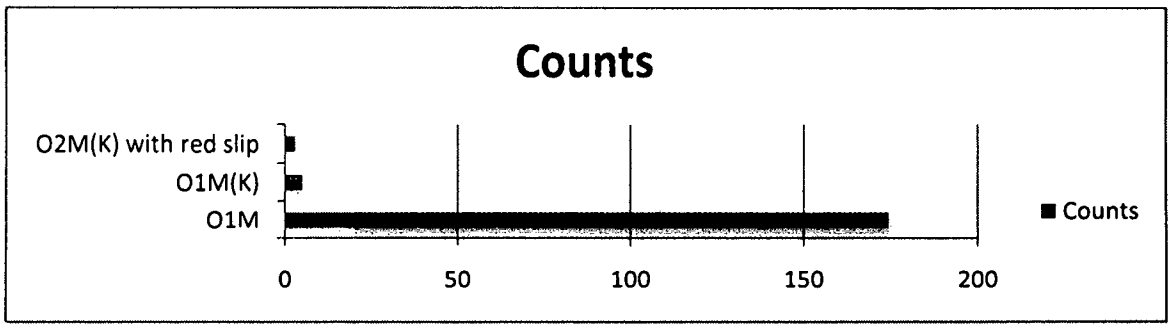

Figure 62 4(c)B Base Sherd Counts in All Fabrics.

The following figure shows the total weight of the 4(c)B counts in all the fabrics recorded (see figure 63). The O1M fabric recorded the highest weight followed by O1M(K) fabric.

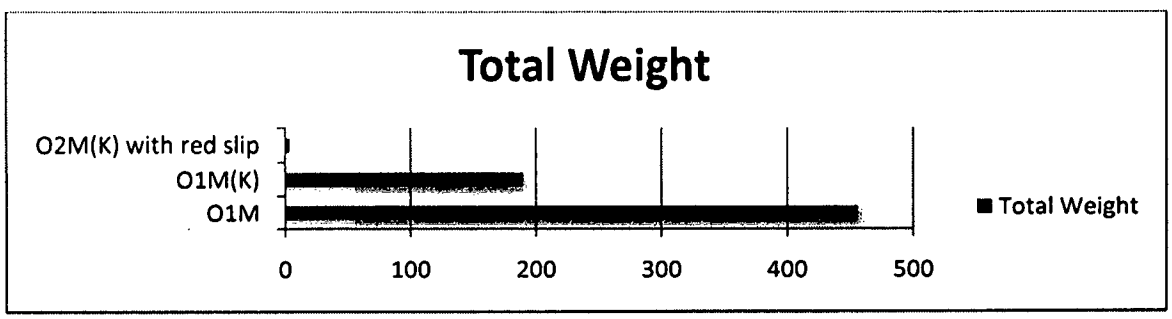

Figure 63 4(c)B Base Total Weight in All Fabrics.

CONCLUSION

The 4(c)B base form has lower counts compared to 4(a)B and 4(b)B base forms. The layer which has recorded the maximum counts in all fabrics is layer 6 which pertains to the period 8th to 9th century CE. The fabric most commonly used is O1M followed by O1M(K).

Lids

Lids are those parts of pottery that are used for covering the mouths of pots. I have observed four different types of lid forms among the Ambari ceramics. The following tables and figures show their counts and weights in the different fabrics.

The following table shows the counts and weight of lids in O1M fabric in the different layers (see table 54). In layer 3 and layer 4, 2 lid forms have been recorded.

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	1L.	1	0.072
2	1L.	3	0.216
3	1L, 3L(a).	7	0.987
4	1L, 2L, 4L.	16	1.038
Total		27	2.313

Table 54 Lid Form Sherd Counts and weight in O1M Fabric in All Layers.

The following figure shows the counts of all lids in O1M fabric observed in all the layers (see figure 64). In O1M fabric the counts show a rise from layer 1 towards layer 4 which records the highest count.

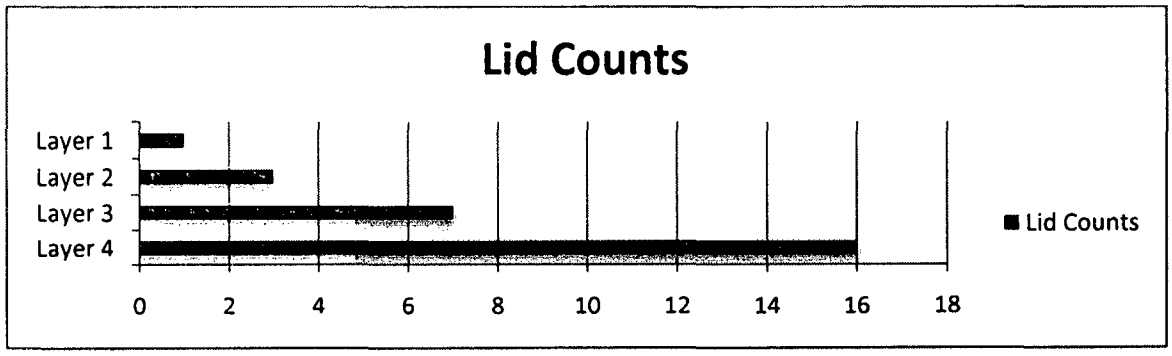

Figure 64 Lid Form Sherd Counts in O1M Fabric in All Layers.

The following figure shows the total weight of the lids in the O1M fabric observed in all the layers (see figure 65). A gradual rise can be seen from layer 1 towards layer 2. Then from layer 2 towards layer 3 there is a sudden rise. From layer 3 there is gradual rise to layer 4. Layer 4 has the highest weight recorded in O1M fabric.

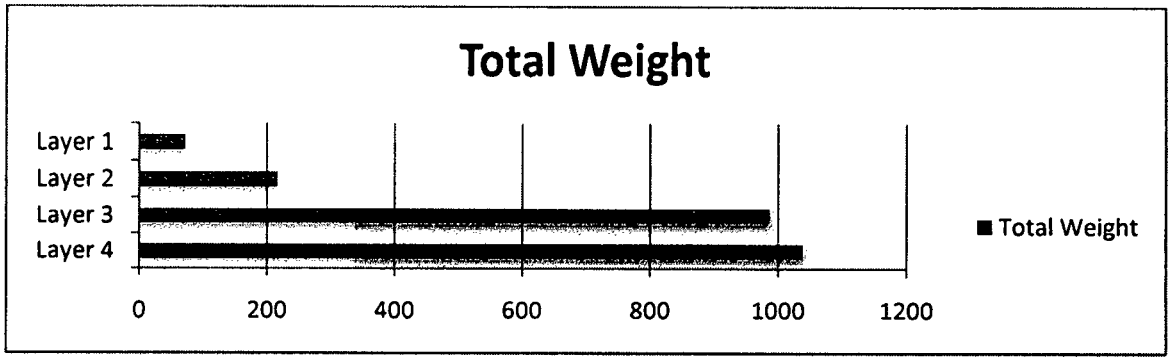

Figure 65 Lid Form Sherd Counts in O1M Fabric in All Layers.

The following table shows the counts and weight of lids in O1M(K) fabric in the different layers (see table 55). Layer 3 with two form counts and five sherd counts has the highest count as well as weight.

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	1L	1	0.043
3	1L, 2L.	5	0.348
Total		6	0.391

Table 55 Lid Form Sherd Counts and Weight in O1M(K) Fabric in All Layers.

The following table shows the counts and weight of lids in O2M(K) fabric with red slip in the different layers (see table 56).

Layers	Form Codes	Sherd Counts	Weight (kg.)
4	1L	1	0.220

Table 56 Lid Form Sherd Counts and weight in O2M(K) Fabric with Red Clay Slip in All Layers.

The following table shows the counts and weights of the different lid forms in all the fabric types (see table 57).

Fabric	Counts	Weight(kg.)
O1M	27	2.313
O1M(K)	6	0.391
O2M(K) with red clay slip	1	0.220
Total	34	2.924

Table 57 Lid Form Sherd Counts and weight in All Layers.

The following figure shows the counts of all lids recorded according to their fabrics (see figure 66). Among the lids the commonly used fabric seems here to be O1M fabric followed by O1M(K) and O2M(K) with red clay slip respectively.

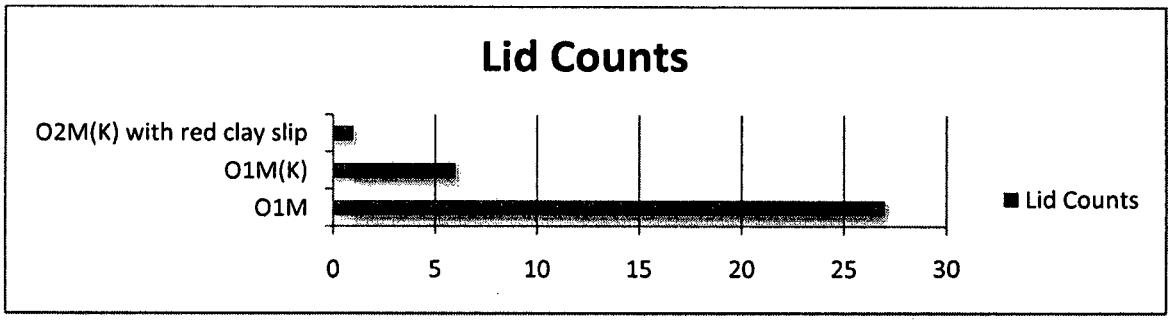

Figure 66 Total Sherd Counts of All Lid Forms in All Fabrics.

The following figure shows the total weights of the lids recorded according to the different fabrics (see figure 67). The O1M fabric among all the other fabrics among the lids has the highest weight followed by O1M(K) and O2M(K) with red clay slip respectively.

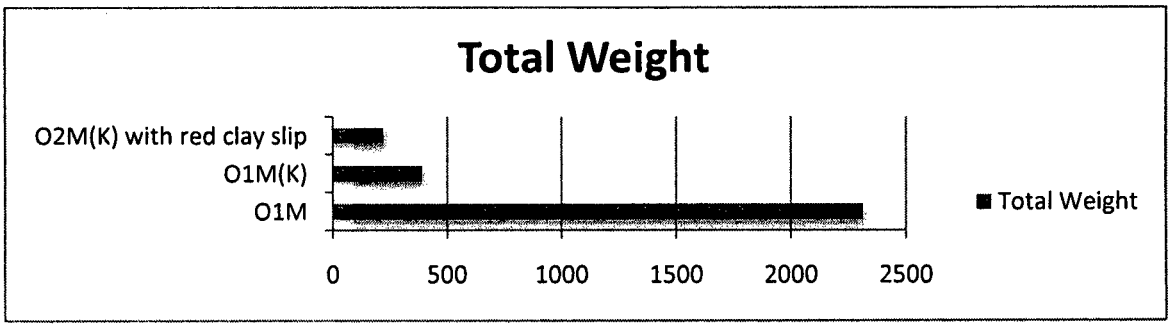

Figure 67 Total Weight of all lid forms in All Fabrics.

CONCLUSION

In the lid forms the maximum occurrence can be seen in O1M fabric (27). The other two fabrics O1M(K) (6) and O2M(K) with red clay slip (1) have very minimal counts of occurrence. In all the fabric types the maximum occurrence of the lid forms have been observed in Layer 4 followed by layer 3, which refers to the period from 11th to 14th century CE.

Knobs

Knobs are protrusions made on the lids so that handling the lid becomes easier. In the present study 16 different knob forms has been observed and recorded in Ambari. In the

following pages the different counts and weights observed in the different layers pertaining to the varying fabrics has been recorded.

The following table shows the knob forms, counts and weights observed in the O1M fabric in the different layers (see table 58).

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	6K	3	0.082
2	4K, 6K, 9K.	9	0.177
3	1K, 4K, 5K, 6K, 9K, 11K, 12K.	32	0.968
4	1K, 5K, 6K, 7K, 8K, 9K, 10K, 10K(i), 11K, 12K, 14K.	41	1.169
5	5K, 12K, 14K.	6	0.183
6	5K, 9K, 10K, 10K(i), 11K, 12K.	13	0.365
Total		104	2.944

Table 58 Knob Form Sherd Counts and Weight in O1M Fabric in All Layers.

The following figure shows the counts of the various knob forms in O1M fabric observed in the different layers (see figure 68). From layer 1 towards layer 4 a gradual rise can be seen and then after layer 4 there is a fall in the form counts of O1M fabric.

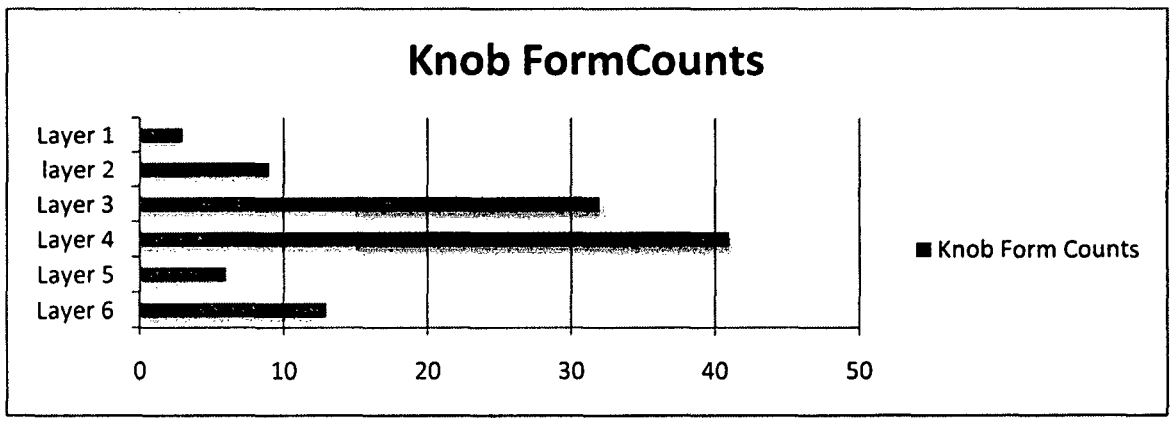

Figure 68 Knob Form Counts in O1M Fabric in All Layers.

The following figure shows the counts of the knob forms in the O1M fabric observed in all the layers (see figure 69). In the knob counts we can see a gradual rise from layer 1 to layer

2. Then from layer 2 there is a sudden rise towards layer 3. The rise from layer 3 to layer 4 is a gradual rise. After layer 4 a sudden drop can be seen from layer 4 towards layer 6.

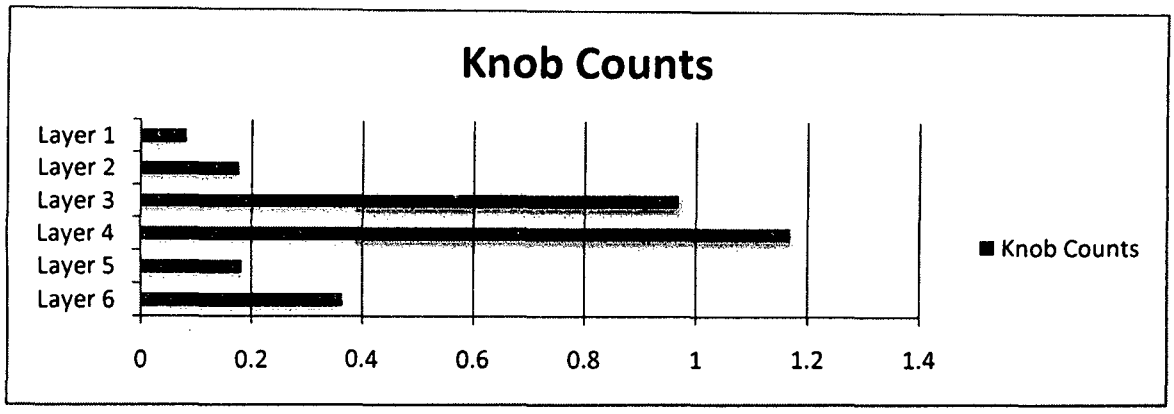

Figure 69 Knob Sherd Counts in O1M Fabric in All Layers.

The following figure shows the total weight of the knobs in the O1M fabric observed in all the layers (see figure 70). In the weights recorded layer 3 has the highest count followed by layer 4 and layer 1 respectively.

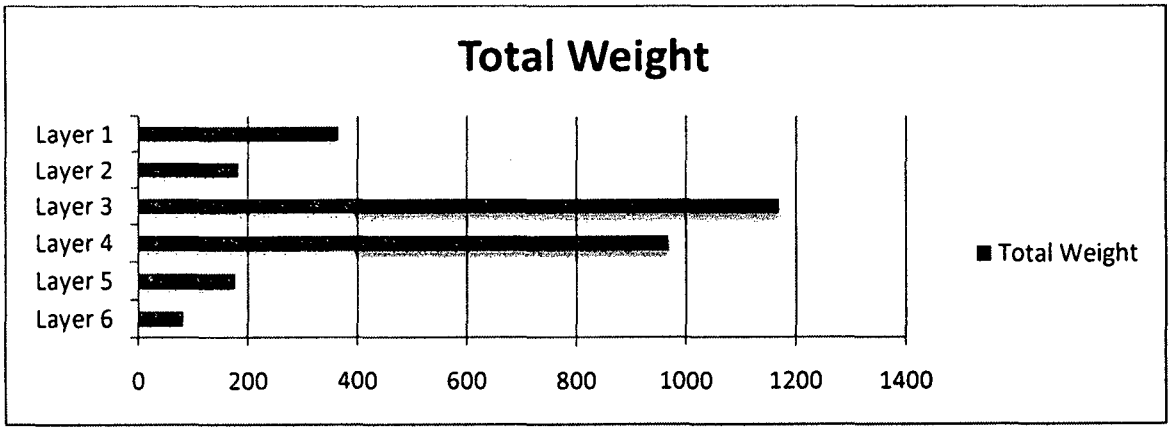

Figure 70 Knob Sherd Total Weight in O1M Fabric in All Layers.

The following table shows the knob forms, counts and weights observed in the O1M(K) fabric in the different layers (see table 59).

Layers	Form Codes	Sherd Counts	Weight (kg.)
2	6K	3	0.075
3	5K, 6K, 10K, 11K.	10	0.225
4	4K, 5K, 6K, 10K, 10K(i), 11K, 12K, 13K.	20	0.566
5	6K, 9K.	3	0.073
6	5K, 9K, 10K, 12K.	6	0.193
Total		42	1.132

Table 59 Knob Form Sherd Counts and Total Weight in O1M(K) Fabric in All Layers.

The following figure shows the counts of the various knob forms in O1M(K) fabric observed in the different layers (see figure 71). Layer 4 clearly has the highest form counts among the knobs in O1M(K) fabric.

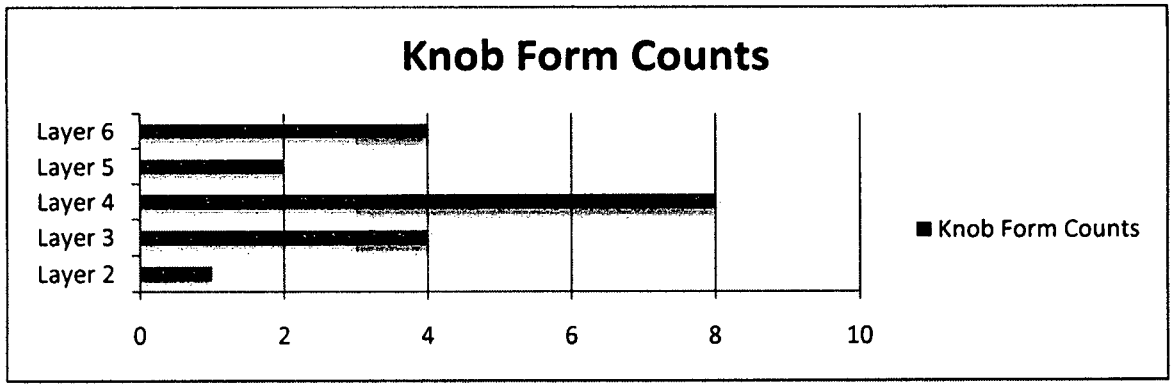

Figure 71 Knob Form Counts in O1M(K) Fabric in All Layers.

The following figure shows the counts of the knob forms in the O1M(K) fabric observed in all the layers (see figure 72). There can be seen a gradual rise from layer 2 towards layer 4 and then from layer 4 onwards there is a fall in the counts in O1M(K) fabric.

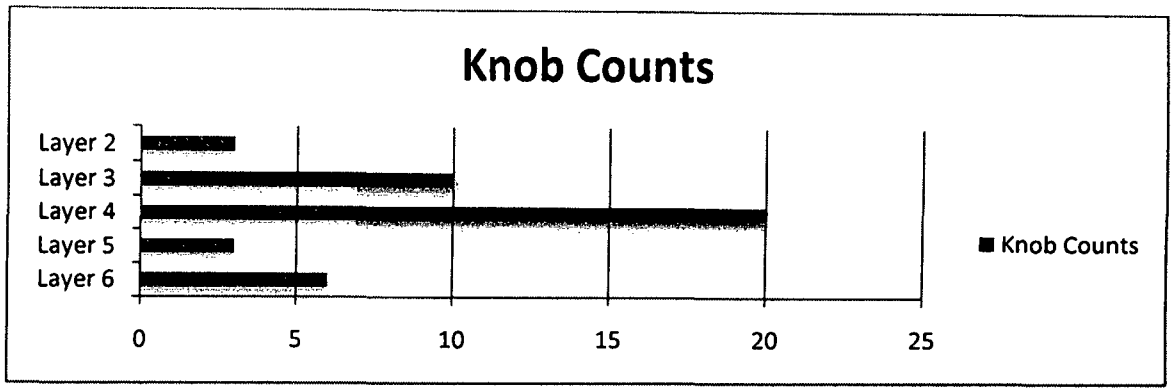

Figure 72 Knob Sherd Counts in O1M(K) Fabric in All Layers.

The following figure shows the total weight of the knobs in the O1M(K) fabric observed in all the layers (see figure 73). In O1M(K) fabric highest weight was recorded in layer 4 followed by layer 3 and layer 6 respectively.

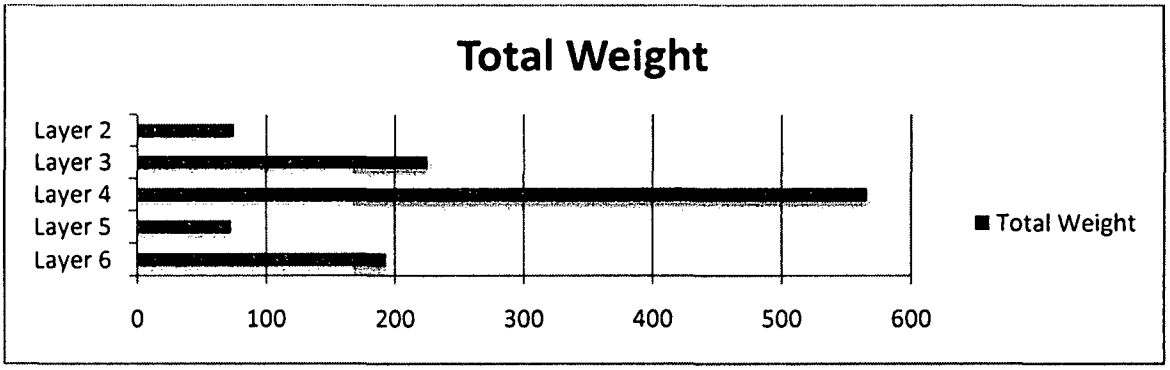

Figure 73 Knob Sherd Total Weight in O1M(K) Fabric in All Layers.

The following table shows the knob forms, counts and weights observed in the fabric O2M(K) with red clay slip in the different layers (see table 60).

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	14K	1	0.024
3	3K	1	0.053
4	1K, 5K, 6K, 10K, 11K, 12K.	8	0.307
5	3K	1	0.095
6	9K, 10K.	2	0.086
Total		13	0.565

Table 60 Knob Form Sherd Counts and Weight in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the counts of the various knob forms in the fabric O2M(K) with red clay slip observed in the different layers (see figure 74). Layer 4 has the highest form counts in fabric O2M(K) with red clay slip. It is followed by layer 6 though there is a wide difference between the counts of the two layers.

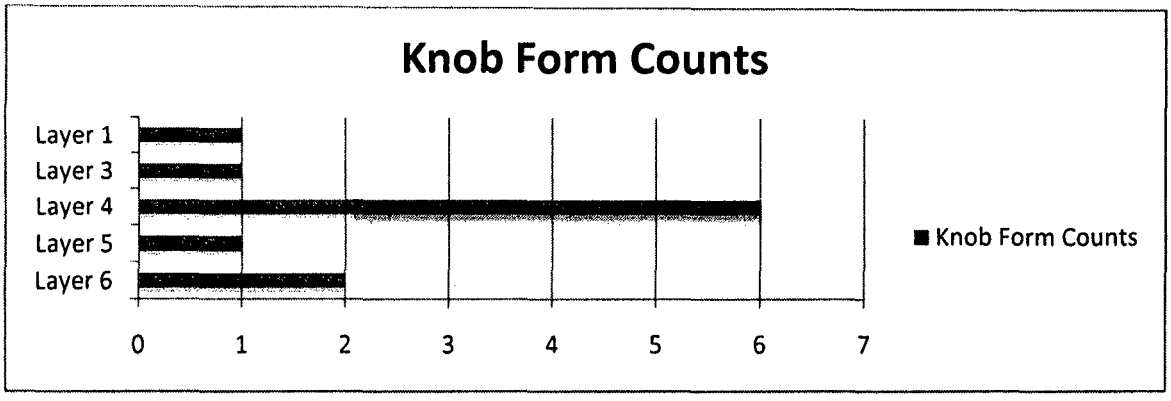

Figure 74 Knob Form Sherd Counts in O2M(K) Fabric in Red Clay Slip in All Layers.

The following figure shows the counts of the knobs in the fabric O2M(K) with red clay slip observed in all the layers (see figure 75). Again layer 4 has the highest counts followed by layer 6. But there is a wide difference between the counts of the two layers.

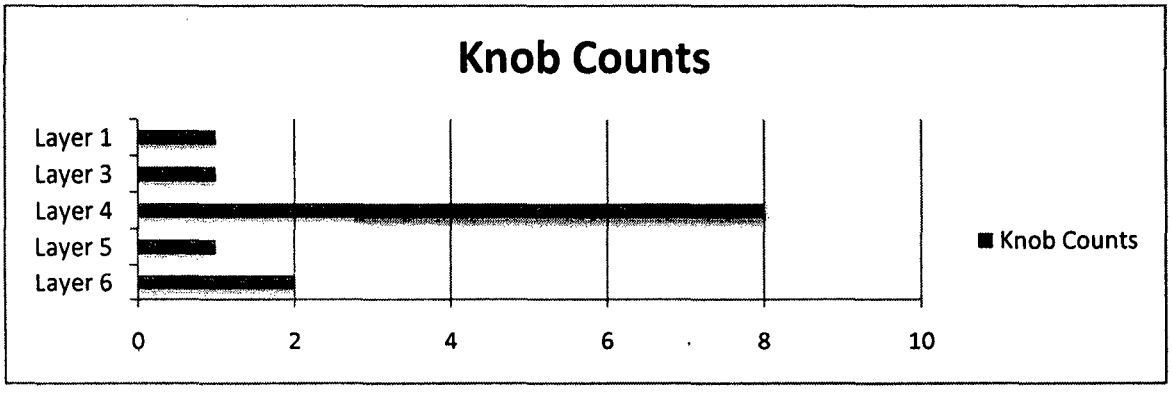

Figure 75 Knob Sherd Counts in O2M(K) Fabric in Red Clay Slip in All Layers.

The following figure shows the total weight of the knobs in the O2M(K) fabric with red clay slip observed in all the layers (see figure 76). A gradual rise can be seen from layer 1 to layer 3 and then there is a sudden rise from layer 3 to layer 4. Layer 4 to Layer 5 there is a sudden fall in the weights recorded. Again from layer 5 to layer 6 there is a gradual decline.

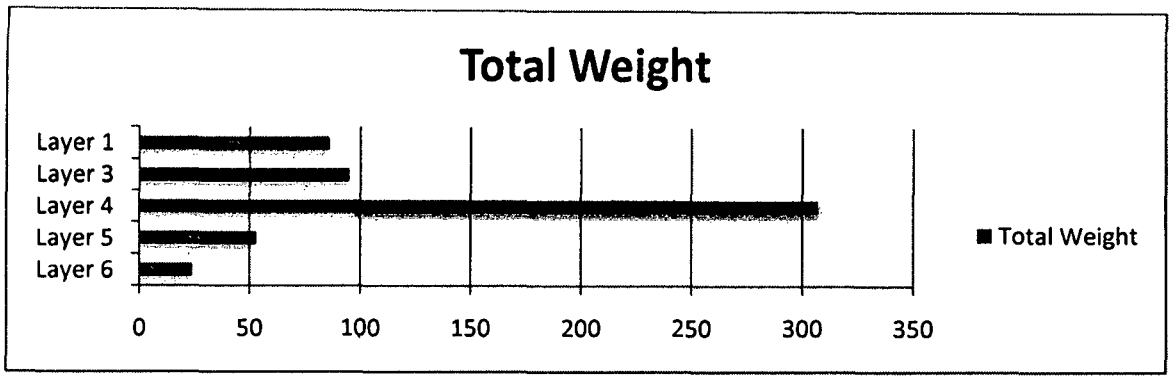

Figure 76 Knob Sherds Total Weight in Q2M(K) Fabric in Red Clay Slip in All Layers.

The following table shows the knob forms, counts and weights observed in the fabric O2M in the different layers (see table 61).

Layers	Form Codes	Sherd Counts	Weight (kg.)
2	12K	1	0.047
3	2K	1	0.032
Total		2	0.079

Table 61 Knob Form Sherd Counts and Weight in O2M Fabric in All Layers.

The following table shows the knob forms, counts and weights observed in the fabric O1C in the different layers (see table 62).

Layers	Design Codes	Sherd Counts	Weight (kg.)
4	12K	1	0.017

Table 62 Knob Form Sherd Counts and Weight in O1C Fabric in All Layers.

The following table shows the counts and weights of the different knob forms in all the fabric types (see table 63).

Fabric	Counts	Weight(kg.)
O1M	104	2.944
O1M(K)	42	1.132
O2M(K) with red clay slip	13	0.565
O2M	2	0.079
O1C	1	0.017
Total	162	4.737

Table 63 Knob Form Sherd Counts and Weight in All Layers.

The following figure shows the counts of all knobs recorded according to their fabrics (see figure 77). The fabric that recorded the highest count among the knobs is O1M followed by O1M(K) and O2M(K) with red clay slip.

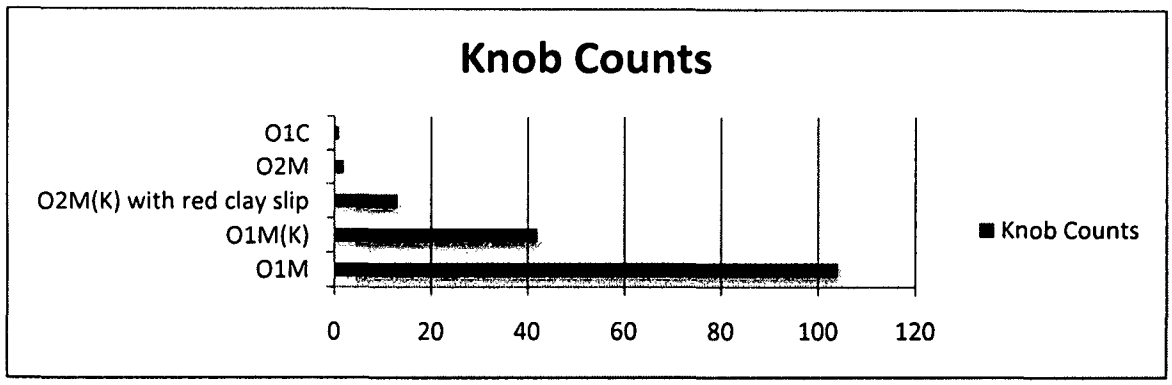

Figure 77 Total Sherd Counts of All Knob Forms in All Fabrics.

The following figure shows the total weights of the knobs recorded according to the different fabrics (see figure 78). In the weights recorded among the knobs the highest weight was recorded in fabric O1M followed by O1M(K) and O2M(K) with red clay slip.

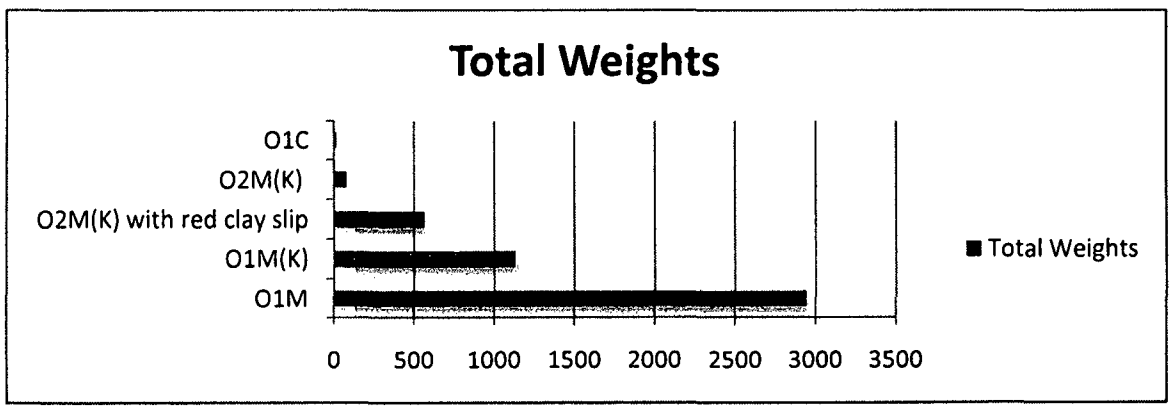

Figure 78 Total Weight of all Knob Forms in All Fabrics.

CONCLUSION

The layer 4 has the highest counts as well as highest form counts in all the fabrics except the O2M fabric in the knobs. Layer 4 is followed by layer 3 though there is some difference between the two in most fabrics. Layer 4 pertains to the period 11th to 12th century CE and layer 3 pertains to the period 12th to 13th century CE. This is similar to the lid counts observed earlier. Since both lids and knobs are related to each other so their occurrences are usually in the same layers, and thus show similar trends. The fabric with the highest counts is O1M fabric followed by O1M(K) fabric, a picture similar to lid forms.

Spouts

Spouts are parts added on to the body of a pot through which liquids can be poured. They make the pouring of liquids easier. Among the diagnostics in Ambari twelve spout forms were observed and recorded. They occurred in varying fabrics. The following table shows the counts and weights of the spouts according to the different fabrics.

The following table shows the form codes, spout counts and weights according to different layers in O1M fabric (see table 64). Layer 3 has four forms which is the highest form count among O1M fabric. In sherd counts layer 3 has the highest counts followed by layer 4.

Layers	Form Codes	Sherd Counts
1	1S.	3
2	1S, 9S.	4
3	1S, 4S, 7S, 12S.	19
4	1S, 2S, 12S.	16
Total		42

Table 64 Spout Form Sherd Counts and Weight in O1M Fabric in All Layers.

The following figure shows the counts of the spouts in the fabric O1M observed in all the layers (see figure 79). From layer 1 towards layer 3 there can be seen a steady rise in weights. Layer 3 has the highest weight recorded among spouts in O1M fabric. After layer 3 there is a fall towards layer 4. Layer 3 is followed respectively by layer 4 and layer 2 respectively.

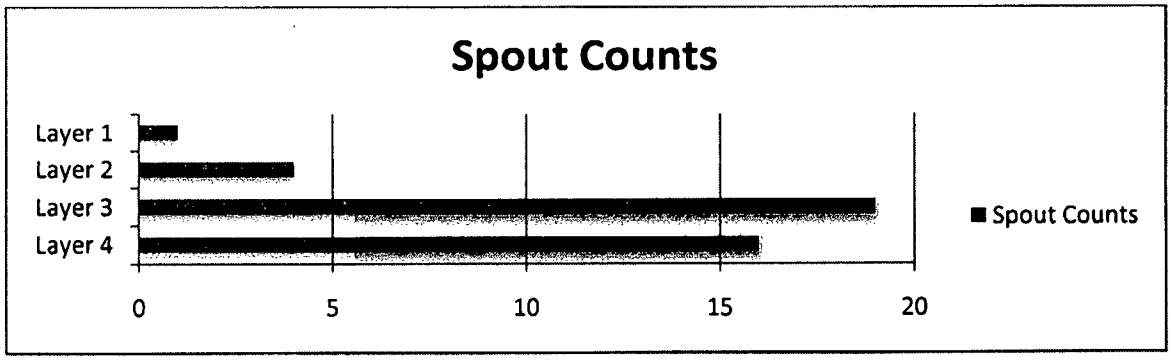

Figure 79 Spout Form Counts in O1M Fabric in All Layers.

The following table shows the design codes, spout counts and weights according to different layers in O1M(K) fabric (see table 65). Layer 2 has the highest form counts.

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	1S.	1	0.016
2	1S, 2S.	4	0.057
3	1S.	5	0.107
4	1S.	1	0.025
Total		11	0.205

Table 65 Spout Form Sherd Counts and Weight in O1M(K) Fabric in All Layers.

The following figure shows the total weight of the spouts in the O1M(K) fabric observed in all the layers (see figure 80). In counts there is steady increase from layer 1 onwards to layer 3. Layer 3 has the highest counts in spouts in O1M(K) fabric. From layer 3 towards layer 4 there is a fall.

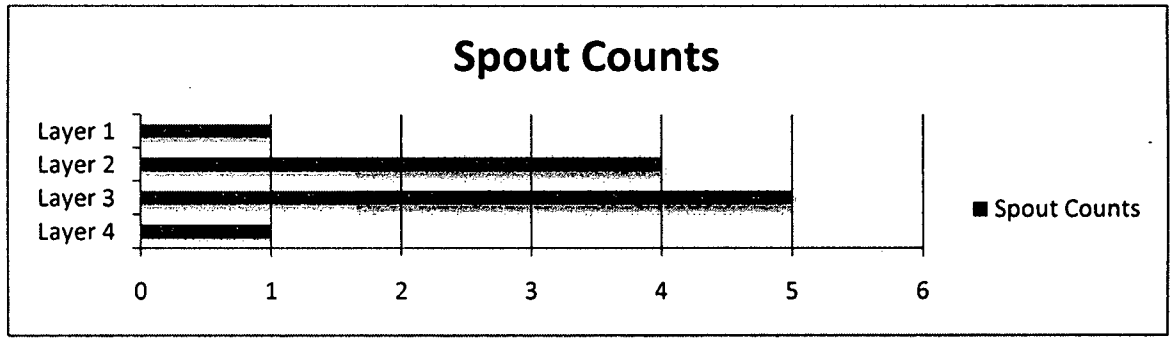

Figure 80 Spout Sherd Counts in O1M(K) Fabric in All Layers.

The following figure shows the total weight of the spouts in the O1M(K) fabric observed in all the layers (see figure 81). Layer 2 has the highest weight in O1M(K) fabric followed by layer 3 and layer 4 respectively.

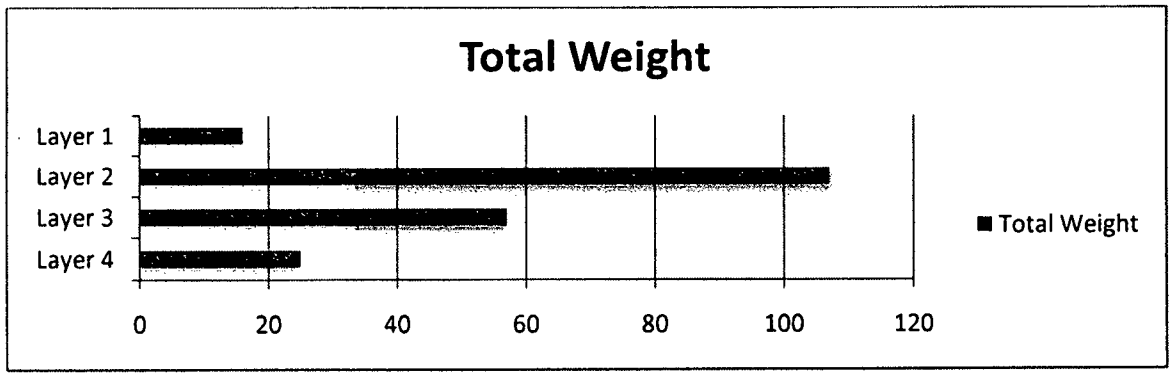

Figure 81 Spout Sherd Total Weight in O1M(K) Fabric in All Layers.

The following table shows the design codes, spout counts and weights according to different layers in O2M(K) fabric with red slip (see table 66). The highest weight is recorded in layer 4.

Layers	Form Codes	Sherd Counts	Weight (kg.)
3	9S	1	0.112
4	1S	1	0.164
Total		2	0.276

Table 66 Spout Form Sherd Counts and Weight in O2M(K) fabric with Red Clay Slip in All Layers.

The following table shows the form codes, spout counts and weights according to different layers in O2M fabric (see table 67). Layer 2 has the highest style counts in layer 2. The highest sherd counts were recorded in layer 2. Highest weight was recorded in layer 2.

Layers	Form Codes	Sherd Counts	Weight (kg.)
1	11S.	1	0.005
2	10S, 11S.	3	0.088
3	1S.	1	0.020

Table 67 Spout Form Sherd Counts and Weight in O2M Fabric in All Layers.

The following table shows the form codes, spout counts and weights according to different layers in R1M fabric (see table 68).

Layers	Form Codes	Sherd Counts	Weight (kg.)
2	1S, 2S.	2	0.019
3	1S, 2S.	2	0.033
4	8S.	1	0.042
Total		5	0.094

Table 68 Spout Form Sherd Counts and Weight in R1M Fabric in All Layers.

The following table shows the form codes, spout counts and weights according to different layers in R2M fabric (see table 69).

Layers	Form Codes	Sherd Counts	Weight (kg.)
2	7S.	1	0.090
3	1S, 11S.	2	0.026
Total		3	0.116

Table 69 Spout Form Sherd Counts and Weight in R2M Fabric in All Layers.

The following table shows the counts and weights of the different spout styles in all the fabric types (see table 70).

Fabric	Counts	Weight(kg.)
O1M	42	3.010
O1M(K)	11	0.205
O1M(K) with red slip	2	0.276
O2M	1	0.020
R1M	5	0.094
R2M	3	0.116
Total	64	3.721

Table 70 Spout Form Sherd Counts and Weight in All Layers.

The following figure shows the counts of all spouts recorded according to their fabrics (see figure 82). The highest counts among the spouts were observed in O1M fabric followed by O1M(K) and R1M.

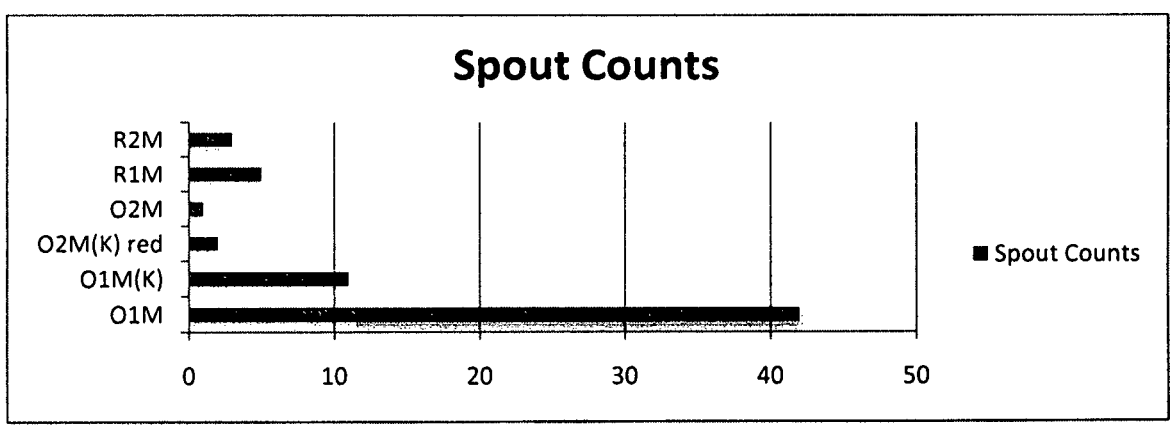

Figure 82 Total Sherd Counts of All Spout Forms in All Fabrics.

The following figure shows the total weight of the spouts in the O1M(K) fabric observed in all the layers (see figure 83). The highest weight was markedly observed in O1M fabric among the spouts followed by O1M(K) and O2M(K) with red clay slip.

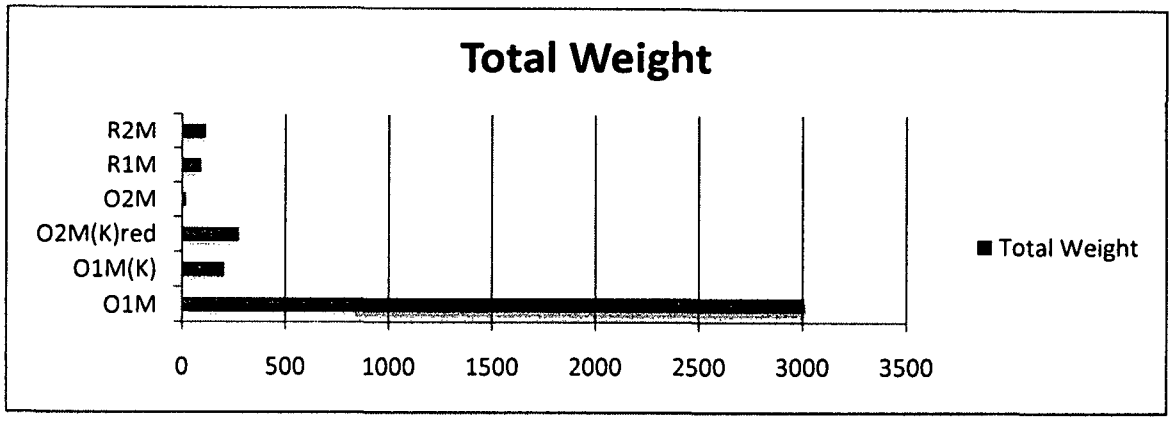

Figure 83 Total Weight of All Spout Forms in All Fabrics.

CONCLUSION

The peak in all the fabrics in spout forms can be seen in layer 3 followed by layer 2. Layer 3 and layer 2 roughly pertain to the period 11th to 12th century CE and 12th to 13th century CE respectively. The most common fabric is O1M followed by O1M(K) fabric.

Handles

Handles are forms attached to vessels to enable easy handling. In Ambari two handle were observed and recorded. The following tables record their counts and weights according to the layers.

The following table shows the counts and weights observed among the handles in O1M fabric (see table 71).

Layers	Form Codes	Sherd Counts	Weight (kg.)
2	1H.	2	0.086
3	1H.	1	0.018
5	2H.	1	0.105
Total		4	0.209

Table 71 Handle Form Sherd Counts and Weight in O1M Fabric in All Layers.

The following table shows the counts and weights observed among the handles in O1M(K) fabric (see table 72).

Layers	Form Codes	Sherd Counts	Weight (kg.)
3	1H.	1	0.092
4	1H.	2	0.055
5	1H.	1	0.017
6	1H.	1	0.021
Total		5	0.185

Table 72 Handle Form Sherd Counts and Weight in O1M(K) Fabric in All Layers.

The following table shows the counts and weights observed among the handles in O2M(K) fabric with red clay slip (see table 73).

Layers	Form Codes	Sherd Counts	Weight (kg.)
2	1H.	1	0.019
3	1H.	1	0.069
Total		2	0.088

Table 73 Handle Form Sherd Counts and Weight in O2M(K) Fabric With Red Clay Slip in All Layers.

The following table shows the counts and weights observed among the handles in O2M fabric (see table 74).

Layers	Form Codes	Sherd Counts	Weight (kg.)
3	1H.	1	0.010

Table 74 Handle Form Sherd Counts and Weight in O2M Fabric in All Layers.

The following table shows the counts and weights of the different handle styles in all the fabric types (see table 75).

Fabric	Counts	Weight(kg.)
O1M	4	0.209
O1M(K)	5	0.185
O2M(K) with red clay slip	2	0.088
O2M	1	0.010
Total	12	0.492

Table 75 Handle Form Sherd Counts and Weight in All Layers in All Fabrics.

The following figure shows the counts of all handles recorded according to their fabrics (see figure 84). Among the handles the most commonly used fabric is O1M(K) followed by O1M and O2M(K) with red clay slip respectively.

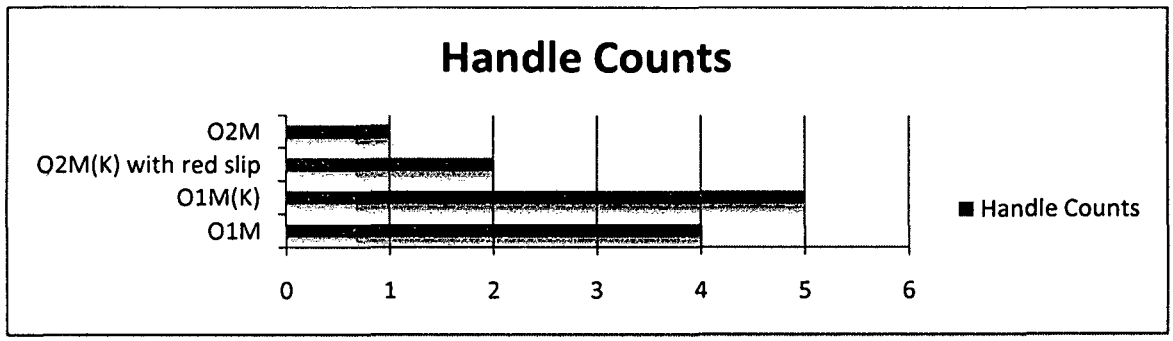

Figure 84 Total Sherd Counts of All Handle Forms in All Fabrics.

The following figure shows the total weight of the handles in the O1M(K) fabric observed in all the layers (see figure 85). According to the weight recorded O1M fabric recorded the highest weight followed by O1M(K) and O2M(K) with red clay slip respectively.

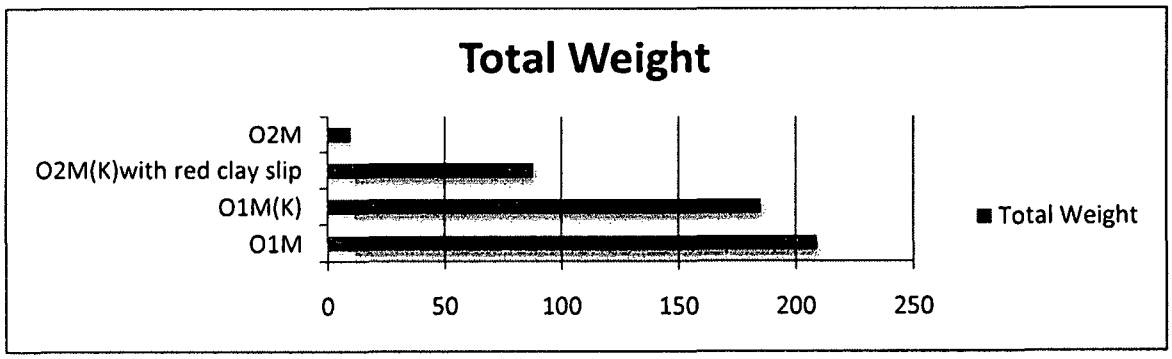

Figure 85 Total Weight of All Handle Forms in All Fabrics.

CONCLUSION

The fabric with the highest counts in the handle forms is O1M fabric followed by O1M(K) fabric. The total handle counts are very low. The layers which have recorded a few handle forms are layer 2, 3, 4, 5 and 6.

Dish on Stands

In Ambari among the pottery dish on stands were also observed (see figure 86 and figure 87). The following tables show their quantities recorded amongst the different fabrics. Even now in the Assamese community there is the prevalence of the dish on stand which is called Sarai but it is made of bell metal (see figure 88). It is used by the community across all castes in different rites and rituals. It is usually used to offer betelnut and betel leaf with a *gamocha* (a woven cotton cloth) which is a way of showing respect.

Figure 86 Ambari Dish on Stand

Figure 87 Dish on Stand side view

Figure 88 Modern Dish on Stand with lid

The following table shows the counts and weights observed among the dish on stands in O1M fabric (see table 76).

Layer	Part of Dish on Stand	Counts	Weight (kg.)
1	Stand	1	0.016
2	Stand	3	0.455
3	Base	3	0.301
	Stand	14	1.900
	Dish	2	0.173
4	Base	1	0.078
	Stand	25	2.928
	Dish	12	0.079
5	Base	1	0.035
	Stand	4	0.074
	Dish	5	0.410
6	Stand	2	0.179
	Dish	5	0.334
8	Stand	1	0.052
Total		79	6.014

Table 76 Sherd Counts and weight of Dish on Stands in O1M Fabric in All Layers.

The following figure shows the counts recorded in O1M fabric according to the different parts of the dish on stand (see figure 89). The highest concentration of dish on stands can be observed in layer 4 followed by layer 3.

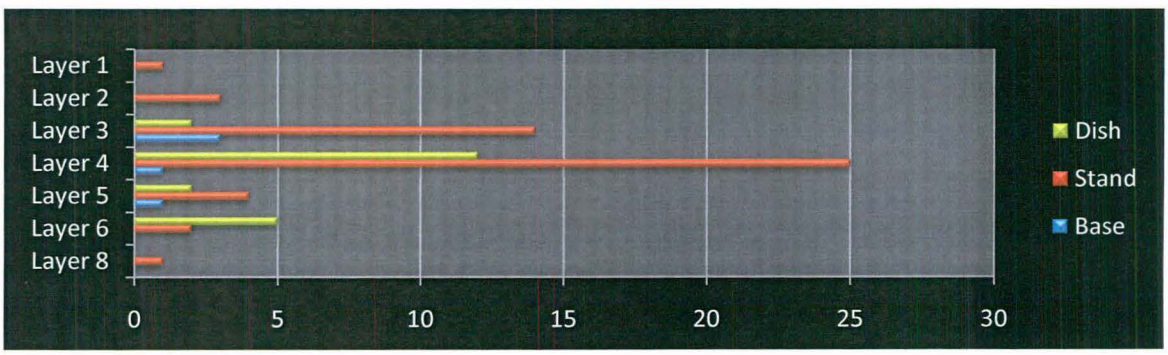

Figure 89 Sherd Counts of Dish on Stands in O1M Fabric in All Layers.

The following figure shows the weights recorded in O1M fabric according to the different parts of the dish on stand (see figure 90). Layer 4 followed by layer 3 has the highest weight among the dish on stands in O1M fabric.

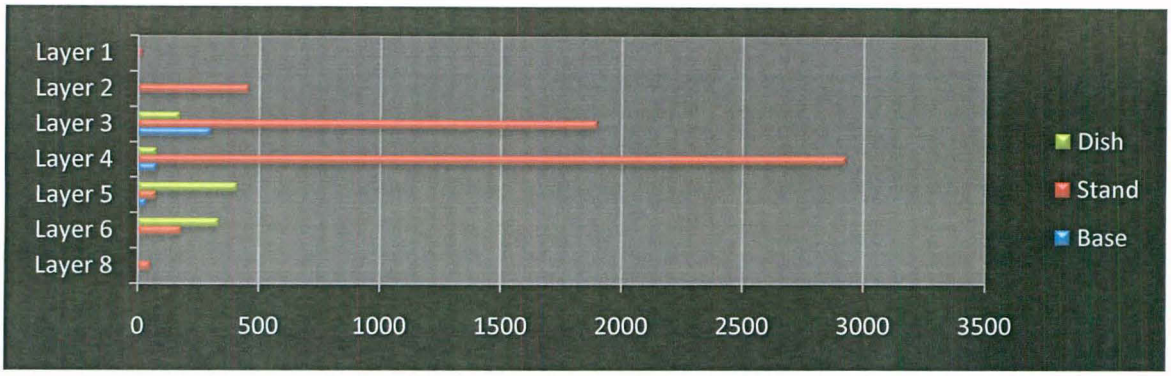

Figure 90 Total Weight of Dish on Stands in O1M Fabric in All Layers.

The following table shows the counts and weights observed among the dish on stands in O1M(K) fabric (see table 77).

Layer	Part of Dish on Stand	Counts	Weight (kg.)
3	Stand	2	0.223
	Dish	1	0.237
4	Stand	3	0.265
5	Stand	1	0.065
Total		7	0.790

Table 77 Sherd Counts and weight of Dish on Stands in O1M(K) Fabric in All Layers.

The following figure shows the counts recorded in O1M(K) fabric according to the different parts of the dish on stand (see figure 91). Layer 3 has the highest counts followed by layer 4.

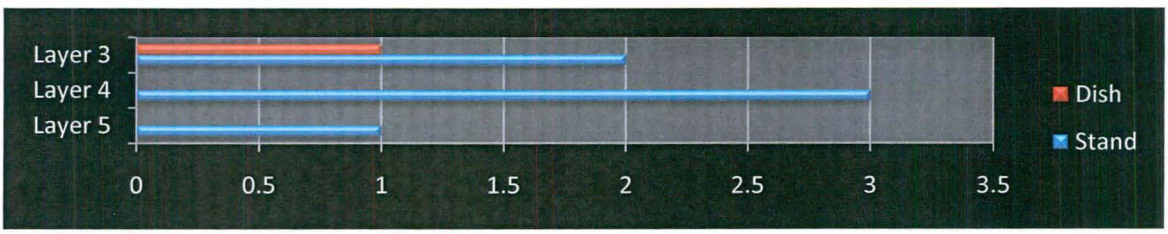

Figure 91 Sherd Counts of Dish on Stands in O1M(K) Fabric in All Layers.

The following figure shows the weights recorded in O1M(K) fabric according to the different parts of the dish on stand (see figure 92). In terms of weight layer 3 has highest weight followed by layer 4.

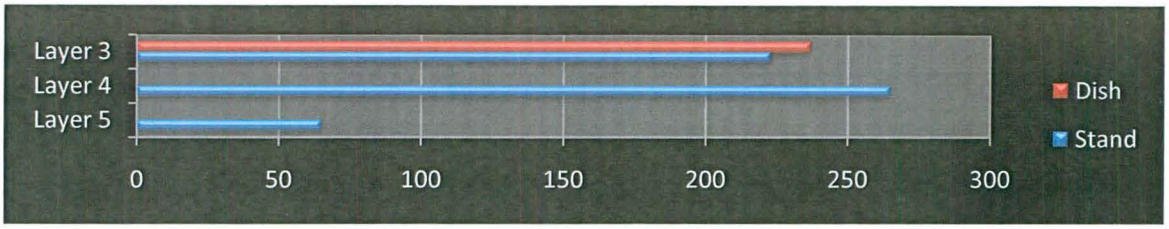

Figure 92 Total Weight of Dish on Stands in O1M Fabric in All Layers.

The following table shows the counts and weights observed among the dish on stands in O2M(K) fabric with red clay slip (see table 78).

Layer	Part of Dish on Stand	Counts	Weight (kg.)
3	Stand	3	0.208
	Dish	1	0.029
4	Base	1	0.074
	Stand	7	0.976
	Dish	2	0.069
Total		14	1.356

Table 78 Sherd Counts and weight of Dish on Stands in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the counts recorded in O2M(K) fabric with red clay slip according to the different parts of the dish on stand (see figure 93). In this type of fabric, the dish on stands has been found only in layer 3 and 4.

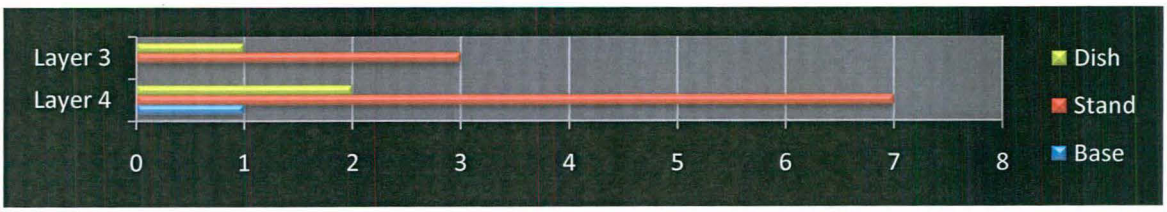

Figure 93 Sherd Counts of Dish on Stands in O2M(K) Fabric with Red Clay Slip in All Layers.

The following figure shows the weights recorded in O2M(K) fabric with red clay slip according to the different parts of the dish on stand (see figure 94).

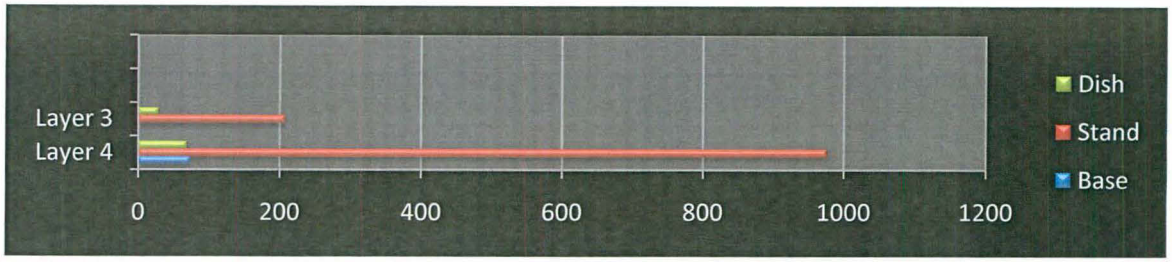

Figure 94 Total Weight of Dish on Stands in O2M(K) Fabric with Red Clay Slip in All Layers.

The following table shows the counts and weights observed among the dish on stands in O2M fabric (see table 79).

Layer	Part of Dish on Stand	Counts	Weight (kg.)
3	Stand	1	0.369

Table 79 Sherd Counts and Weight of Dish on Stands in O2M Fabric in All Layers.

The following table shows the counts and weights observed among the dish on stands in R1M fabric (see table 80).

Layer	Part of Dish on Stand	Counts	Weight (kg.)
5	Stand	1	0.033

Table 80 Sherd Counts and Weight of Dish on Stands in R1M Fabric in All Layers.

The following table shows the counts and weights of the dish on stand in all the fabric types (see table 81).

Fabric	Counts	Weight(kg.)
O1M	79	6.014
O1M(K)	7	0.790
O2M(K) with red clay slip	14	1.356
O2M	1	0.369
R1M	1	0.033
Total	102	8.562

Table 81 Dish on Stand Counts and Weight in All Layers in All Fabrics.

The following figure shows the counts observed in the different fabrics dish on stand occurs in (see figure 95). The fabric with the highest counts among the dish on stands is the O1M fabric which is followed by O2M fabric.

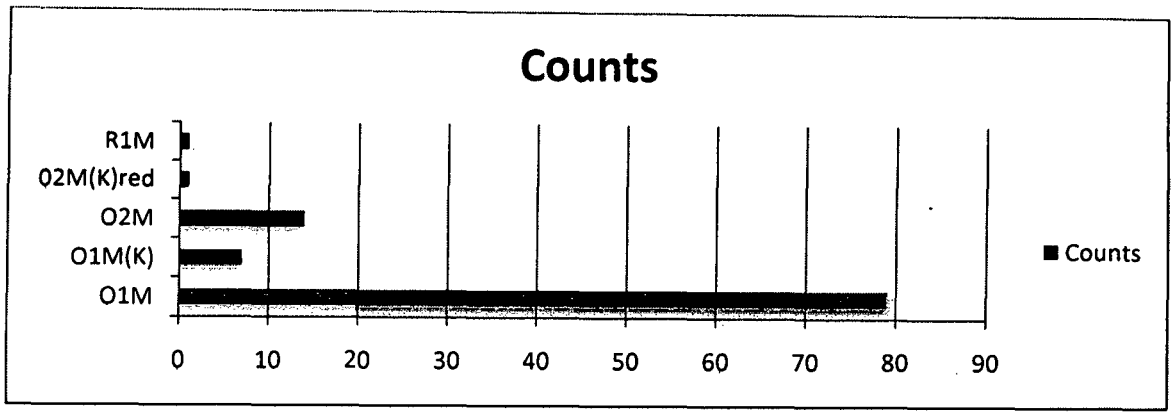

Figure 95 Total Sherd Counts of All Dish on Stands in All Fabrics.

The following figure shows the weights recorded in the various fabrics dish on stand occurs in (see figure 96). O1M fabric has the highest weight among the dish on stands which is followed by O2M and O1M(K) fabrics respectively.

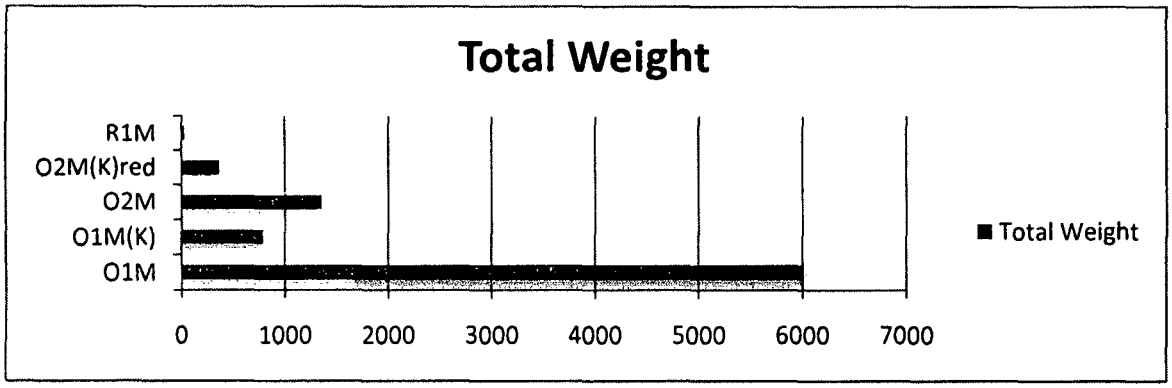

Figure 96 Total Weight of All Dish on Stands in All Fabrics.

CONCLUSION

The peak can be seen in layer 4 followed by layer 3 in all the fabrics of dish on stands. The periods these layers pertain to are 12th to 13th century CE and 11th to 12th century CE respectively. The fabric with the highest counts is O1M followed by O2M.

Total Counts and Weight in All Fabrics

The following table shows the counts and weights recorded in the different diagnostic types in all the fabrics they have occurred with (see table 82).

Fabric	Diagnostic Type	Counts	Weight (kg.)
O1M	Rims	624	33.397

	Bases	141	10.342
	4(a)B	108	2.747
	4(b)B	15	0.225
	4(c)B	17	0.456
	Knobs	104	2.944
	Lids	27	2.313
	Spouts	42	3.010
	Handles	4	0.209
	Dish on Stands	79	6.014
Total		1161	61.657
O1M(K)	Rims	347	11.259
	Bases	45	2.061
	4(a)B	47	1.274
	4(b)B	42	0.692
	4(c)B	5	0.190
	Knobs	42	1.132
	Lids	6	0.391
	Spouts	11	0.205
	Handles	5	0.185
	Dish on Stands	7	0.790
Total		557	18.179
O2M	Rims	12	0.428
	Bases	1	0.061
	Knobs	2	0.079
	Spouts	1	0.020
	Handles	1	0.010
	Dish on Stands	1	0.369
Total		18	0.967
O2M(K)	Rims	2	0.070
	4(a)B	1	0.034
	4(b)B	2	0.028
Total		5	0.132

O2M(K) with red clay slip	Rims	431	18.029
	Bases	60	4.993
	4(a)B	10	0.291
	4(b)B	6	0.121
	4(c)B	3	0.126
	Knobs	13	0.565
	Lids	1	0.220
	Spouts	2	0.276
	Handles	2	0.088
	Dish on Stands	14	1.356
Total		542	26.065
O1C	Rims	1	0.163
	Bases	1	0.200
	Knobs	1	0.017
Total		3	0.380
O3F(Green Glazed)	Rims	39	0.988
	Bases	14	1.051
Total		53	2.039
R1M	Rims	23	0.894
	Bases	4	0.101
	4(a)B	1	0.027
	Spouts	5	0.094
	Dish on Stand	1	0.033
Total		34	1.149
R2M	Rims	30	2.017
	Bases	7	0.400
	Spouts	3	0.116
Total		40	2.533
Grand Total		2413	113.101

Table 82 Total Counts and Weight of All Diagnostics in All Fabrics.

The following figure shows the counts recorded amongst the diagnostics in all the fabrics (see figure 97). The O1M fabric constitutes 48.1% of the total ceramics in Ambari. O1M(K) fabric constitutes 23% of the ceramics. O2M(K) with red clay slip has a percentage of 22.4% among the Ambari ceramics. The green glazed ware constitutes 2.19% of the total ceramics of Ambari. R1M ware is having a 1.4% in the Ambari ceramics. R2M ware constitutes 1.65% of the total ceramics of Ambari.

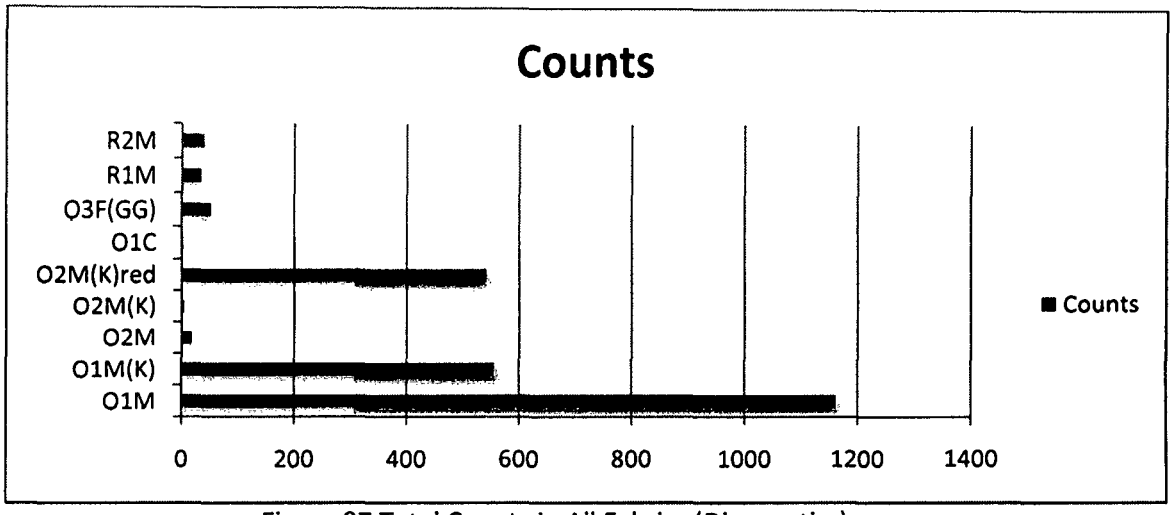

Figure 97 Total Counts in All Fabrics (Diagnostics).

The following figure shows the weights recorded amongst the diagnostics in all the fabrics (see figure 98). The percentage of O1M fabric among the Ambari ceramics is 54.51%. The Q1M(K) fabric constitutes 16.07% of the total ceramics in Ambari. O2M(K) with red clay slip has a percentage of 23.04% among the Ambari ceramics. The green glazed ware constitutes 1.80% of the total ceramics of Ambari. R1M ware has a 1.01% share in the Ambari ceramics. R2M ware constitutes 2.23% of the total ceramics of Ambari.

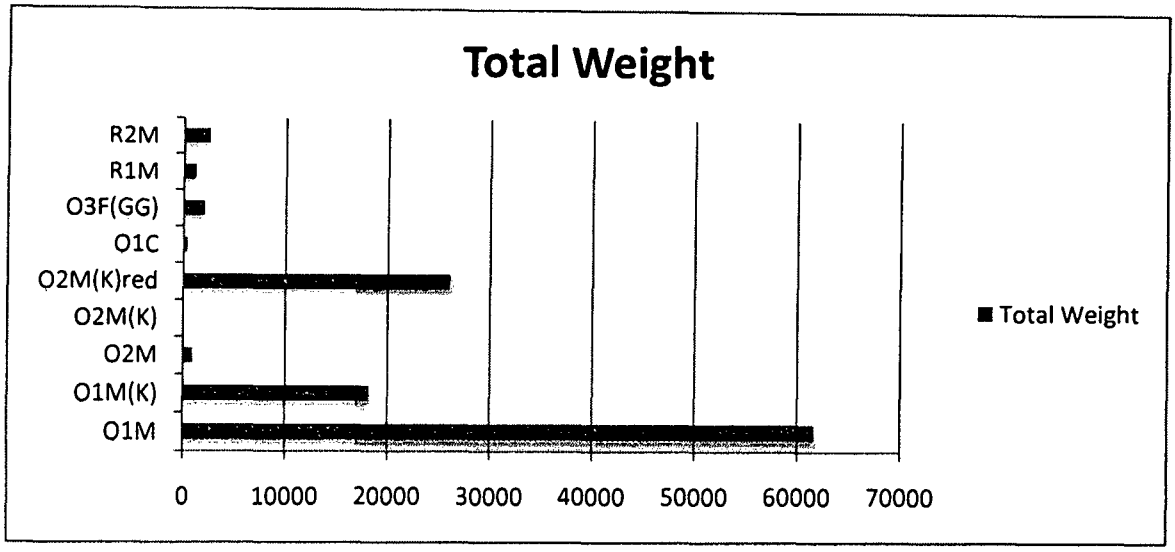

Figure 98 Total Weight in All Fabrics (Diagnostics).

CONCLUSION

In the diagnostics on the basis of sherd counts and weight the fabric with the highest occurrence is the oxidized unslipped medium ware which is followed by oxidized slipped medium kaolin ware with red clay slip and oxidized unslipped medium kaolin ware respectively.

Total Counts and Weight in All Diagnostics

The following table shows the percentages of the different diagnostics like rims, bases, knobs, lids and spouts (see table 83).

Diagnostics	Counts	Percentage (%)	Weight	Percentage (%)
Rims	1509	62.5	67.245	58.04
Bases	273	11.3	19.209	16.58
Knobs	162	6.71	4.737	4.08
Lids	34	1.40	2.924	2.52
Spouts	64	2.65	3.721	3.21
Handles	12	0.49	0.492	0.42
4(a)B, 4(b)B, 4(c)B	257	10.6	8.958	7.73
Dish On Stands	102	4.22	8.562	7.39

Total	2413	115.848

Table 83 Total Counts and Weight in All Diagnostics.

The following figure shows the counts and weights of the different diagnostics (see figure 99). Rims clearly constitute a major portion of the ceramics at Ambari followed by bases and *diya* [4(a)B, 4(b)B and 4(c)B] style vessels respectively (see figure 99).

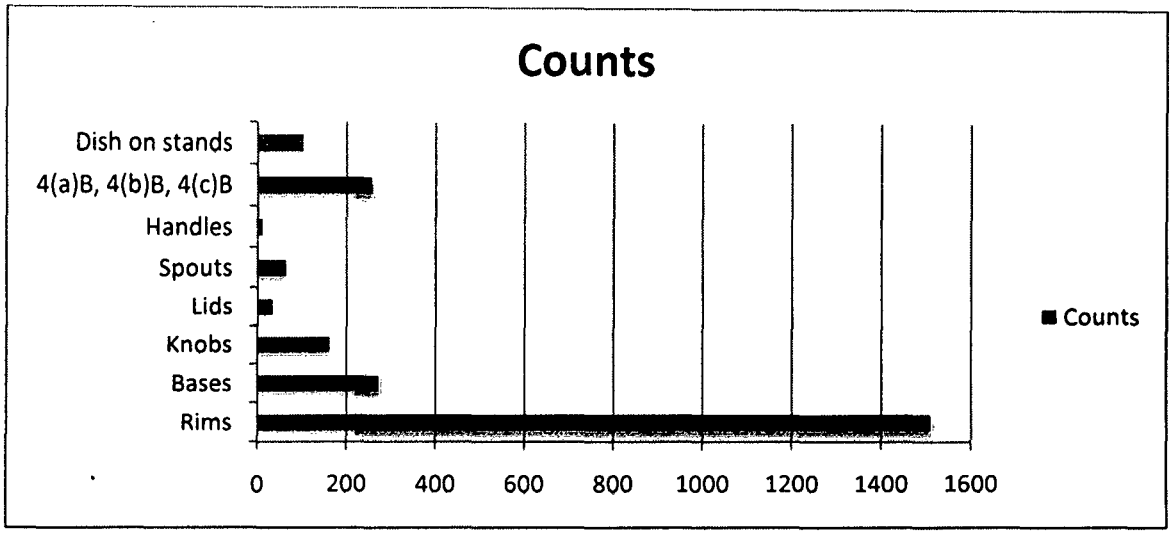

Figure 99 Total Counts of All Diagnostics.

The following figure shows the different weights in the diagnostics (see figure 100). In weight rims are clearly leading followed by bases. The third position has been taken jointly by *diya* [4(a)B, 4(b)B and 4(c)B] style vessels and dish on stands (see figure 100).

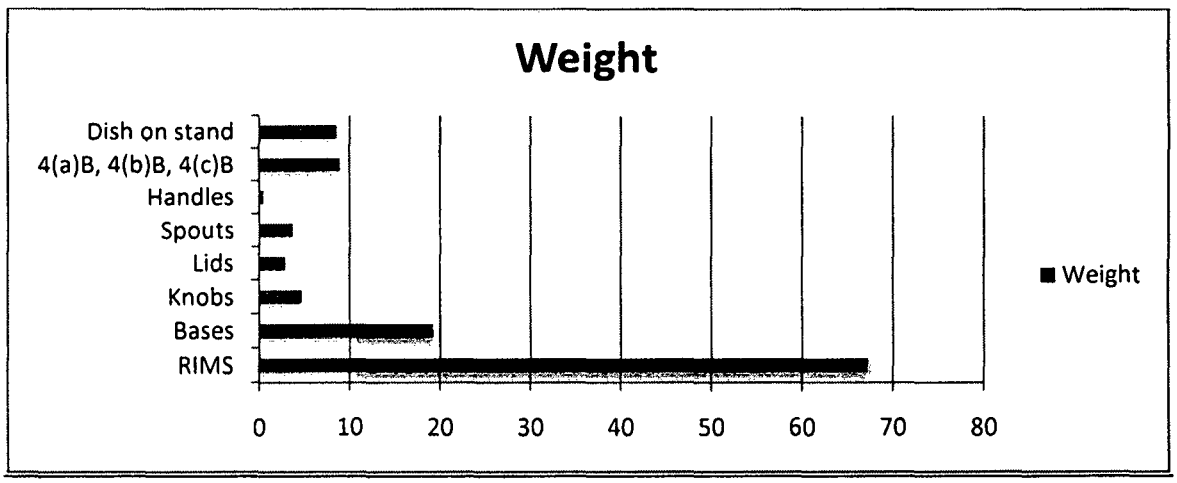

Figure 100 Total Weight in All Diagnostics.

CONCLUSION

The diagnostics which has the highest occurrence is rims followed by bases, diya forms [4(a)B, 4(b)B and 4(c)B] and dish on stands respectively.

Total Counts and Weight of all Fabrics (Diagnostics and Non diagnostics)

The following table shows the total counts and weights of the fabrics in diagnostics and non diagnostics along with their percentages (see table 84).

Fabric	Counts	Percentage (%)	Weight	Percentage (%)
O1M	1310	44.39	69.442	54.10
O1M(K)	730	24.73	21.315	16.54
O2M	39	1.32	2.349	1.82
O2M(K)	5	0.16	0.132	0.10
O2M(K) with red clay slip	547	18.53	26.177	17.98
O1C	3	0.10	0.380	0.29
O3F(GG)	203	6.87	3.783	2.93
O3F(CLD)	4	0.13	0.280	0.21
R1M	46	1.55	1.539	1.19
R2M	64	2.16	3.439	2.66
Total	2951		128.836	

Table 84 Total Counts and Weights of All Fabric (Diagnostics and Non diagnostics).

The following figure shows the total counts of the different fabrics among both diagnostics as well as non diagnostics (see figure 101). The highest counts can be seen in O1M fabric followed by O1M(K) and O2M(K) with red clay slip respectively.

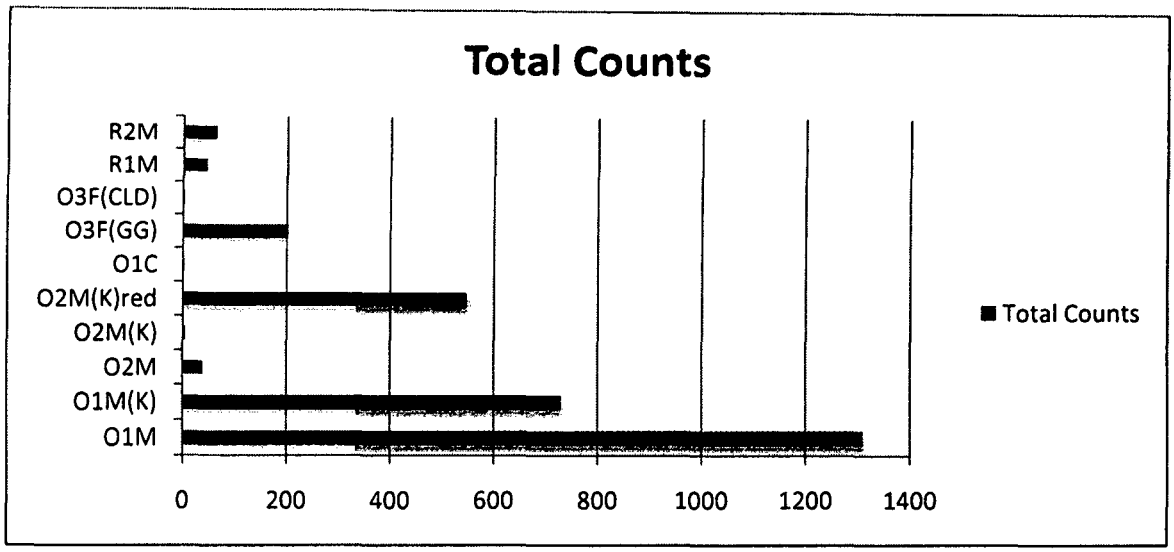

Figure 101 Total Counts in All Fabrics (Diagnostics and Non diagnostics).

The following figure shows the total weights of the different fabrics among both diagnostics as well as non diagnostics (see figure 102). The highest counts can be seen in O1M fabric followed by O2M(K) with red clay slip and O1M(K) respectively.

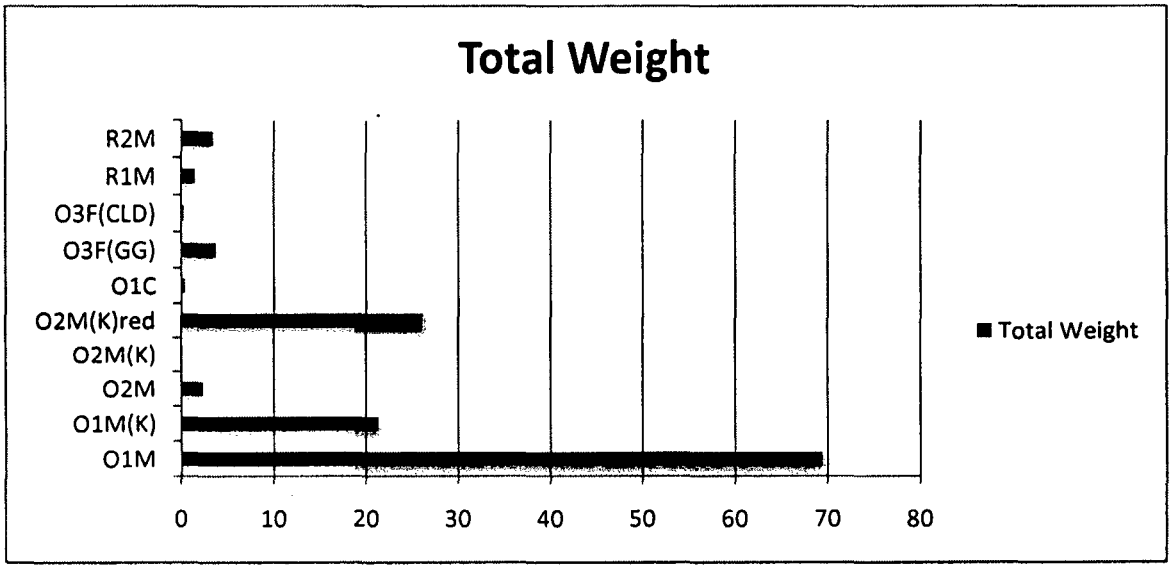

Figure 102 Total Weight in All Fabrics (Diagnostics and Non diagnostics).

CONCLUSION

In Ambari among the diagnostic and non diagnostic sherds the most popular fabric is oxidized unslipped medium ware followed by oxidized slipped medium kaolin ware with red clay slip and oxidized unslipped medium kaolin ware respectively.

Standardization and Uniformity

The table below show the diameters recorded in the different diagnostic types like the rim, base, lid, knob and spout in the different fabric types (see table 85). The degree of standardization will be probed through the recorded diameters of rims, bases, lids, knobs and spouts in the following table.

Forms	O1M	O1M(K)	O2M	O2M(K)red		O2M(K)kaolin	O1C	R1M	R2M	O3F
1R	23(1), 17(1), 16(1), 21(2), 31(1),	21(1), 27(3), 19(1), 24(7), 22(1), 21(4), 25(1), 18(1), 26(1), 23(2), 10(1)		16(1), 32(1), 23(1)	24(3), 27(1),	24(2)				
2R	9(1), 33(1), 32(1), 22(1)	20(1), 25(1), 42(1), 24(1), 23(1), 27(1), 19(1), 26(1)		13(1), 41(1), 25(1), 19(1)	35(1), 14(1), 32(1),				30(1)	
3R	14(4), 19(2), 31(1), 32(2), 36(1), 21(1), 23(2), 26(2), 24(2), 40(1), 25(1), 30(1), 10(1), 28(1), 17(1), 18(1), 13(1)	22(3), 25(2), 27(1), 26(1), 24(1), 36(1), 32(2)	21(1)	22(3), 24(3), 23(2), 27(1),	14(2), 26(2), 20(1), 21(1)					

4R	28(1), 29(1)	22(1)	25(1)		
5R	27(1), 26(4), 20(4), 22(9), 17(4), 14(1), 21(1), 15(1), 38(1), 24(3), 12(1), 28(2), 37(1), 31(3), 29(1), 25(3), 16(2), 33(2), 30(1), 23(1), 34(2)	28(1), 19(1), 20(1), 23(1), 16(1), 27(1), 6.3(1), 17(2)	16(1), 12(2), 36(1), 25(2), 19(2), 21(2), 28(1), 26(5), 30(1)	15(2), 14(2), 23(2), 20(3), 27(2), 24(5), 22(2), 17(1),	
6R	15(2), 26(1), 22(3), 27(1), 32(1), 34(1), 12(1), 25(2), 24(1), 23(1)	20(2), 23(1), 24(1), 27(1), 36(1)	37(1), 19(1), 21(1)	32(1), 22(1),	19(1)
7R	16(2), 19(1), 9(2), 13(1), 22(2), 27(1), 17(1), 12(1), 24(1), 40(1), 35(1), 11(1), 37(3)	18(1), 23(7), 24(7), 12(1), 25(2), 22(3), 29(4), 26(2), 20(2), 27(1), 21(1), 19(2), 17(1), 30(1)	11(1), 14(1)	18(2), 15(1), 22(2), 27(1), 20(2), 29(1), 25(1), 33(1)	19(2), 11(1), 17(2), 21(1), 14(1), 24(4), 16(1),	28(1)

8R	27(1), 10(2), 9(3), 15(4), 18(3), 16(1), 21(2), 30(1), 11(2), 19(1), 20(1), 14(3), 28(2), 23(1), 29(1), 8(1), 7(1), 13(1), 22(1), 34(1), 25(2), 12(1)	11(1), 23(5), 17(3), 18(2), 27(1), 22(7), 24(4), 25(2), 30(1), 13(1), 26(1), 28(1), 19(1), 15(2), 34(1), 33(1), 20(1), 14(1), 21(2)	16(1), 11(1)	11(1), 12(1), 42(1), 19(1), 10(1), 31(1), 15(1), 27(1), 21(1)	18(2), 22(4), 20(3), 25(2), 24(5), 14(1), 34(1),	39(1)
9R	23(2), 29(2), 30(1), 26(1), 28(4), 14(1), 22(3), 32(2), 24(1), 25(1), 27(1), 38(1), 33(1), 41(1), 31(1)	27(5), 19(1), 16(1), 30(2), 28(1), 43(1), 21(1), 18(1), 23(1), 42(1), 34(1), 25(1), 24(1), 22(1), 33(1)		20(3), 28(3), 23(2), 38(1), 43(2), 22(2), 37(2), 41(1), 34(1)	16(1), 29(4), 24(1), 36(1), 25(2), 33(2), 27(3), 40(1), 32(1), 39(1), 26(1), 30(3), 11(1),	23(1)
10R	20(1), 17(1), 18(2), 32(1), 19(1), 21(1), 25(1), 16(1)	16(1), 20(2), 28(2), 23(1), 22(2), 24(4), 29(1), 25(3), 26(2), 27(2),		14(1), 27(1), 15(1), 16(1), 21(1), 25(2), 28(2), 24(1), 32(1), 33(1),		

		12(1)	31(1)	
11R	29(1), 32(1), 33(3), 14(2), 25(2), 27(3), 22(2), 15(3), 24(2), 34(1), 31(1), 13(1), 23(2), 35(2), 39(1)	11(1), 24(2), 39(1), 30(1), 28(2), 22(1), 19(1), 16(1), 20(1)	22(1), 12(1), 28(2), 31(1), 35(2), 24(3), 38(1), 36(1), 40(1), 33(1)	15(2)
12R	15(3), 13(1), 19(2), 21(1), 16(1), 20(2)	21(2), 23(2), 20(2), 15(1), 22(2), 16(1), 25(1), 18(1),	25(4), 12(3), 17(1), 16(2), 18(2), 22(1), 15(2), 21(1), 24(1)	
13R	20(1)	26(1), 24(1), 25(1), 20(3), 23(1)	23(2), 17(1), 15(1), 25(2), 34(1), 21(2)	
14R	14(1), 13(1), 27(1)	27(1), 26(1), 24(3), 22(2), 25(3), 23(3), 21(2), 12(1)	23(1), 10(1), 21(1), 19(1), 28(2), 24(1), 26(1), 33(1)	
15R	30(2), 27(1), 14(1), 26(1), 22(4), 25(2), 34(1), 33(1),	25(1), 22(1), 15(1), 23(2), 24(1), 29(1), 7.4(1)	22(1), 13(1), 26(1), 30(1), 24(1), 17(1), 20(1), 23(1),	

	28(1), 23(1), 17(1)		33(1), 29(1), 37(1)	
16R	23(1), 22(1), 21(1), 20(1)	17(1), 34(1), 23(1), 19(3)	18(1), 21(1), 19(2), 22(1), 20(1)	
17R	13(1), 21(2), 12(1), 11(1)	24(1), 13(1), 23(1)	12(2), 13(2), 18(1), 24(1)	10(1),
18R	12(1)			
19R	21(1), 22(1), 23(1), 27(1), 26(1), 28(1)		20(1), 31(2), 29(3)	
20R	22(2), 19(1), 26(1), 18(1), 21(1), 30(1), 27(2), 23(3), 16(2), 15(2), 17(2), 32(1), 24(1), 20(1)	18(2), 26(1), 23(3), 13(1), 21(1), 17(1)	18(1), 13(2), 27(1), 25(1), 30(1), 15(2), 36(1), 16(1), 11(1), 26(1), 29(1), 23(1), 24(1), 22(1), 19(1), 20(1)	
21R	23(1), 17(1), 13(1), 22(3), 15(2), 18(1), 33(1), 26(1), 14(2), 30(1), 24(1), 19(1)	30(1), 28(1), 24(1), 29(1), 22(1), 14(1)	26(1), 24(3), 30(1)	

22R	16(4), 23(3), 13(1), 22(2), 38(1), 20(2), 19(1), 31(1), 21(1), 17(1), 26(1), 25(1), 10(1), 18(3)	14(1), 19(1), 16(1), 29(1)		19(1), 11(1), 23(3), 15(1), 26(1), 22(3), 20(2), 14(1), 28(1), 18(1), 25(1), 21(1), 32(1)				
23R	15(2), 20(3), 23(3), 27(1), 28(3), 21(1), 46(1), 18(1), 38(1), 24(1), 22(1), 19(1), 25(1), 30(2)	27(1), 30(1), 22(3), 23(1)		22(3), 11(1), 24(4), 16(1), 18(1), 15(1), 28(1), 39(1), 23(1), 25(1), 38(2)				
24R	30(1), 16(1), 20(2), 32(1), 27(3), 40(1), 38(1), 18(1), 26(1), 42(1), 22(1)	26(1), 27(1)		25(1), 28(2), 20(2), 17(1), 27(1)				
25R	137(6), 21(1)	11(1)						
26R	12(1)	9(1), 3.3(1)	7(1)	11(1)		12(1), 2.2(1)		
27R	33(1), 38(1), 20(1), 36(1),	38(2),	22(1)	38(1), 18(1)	28(1),	29(1), 39(1), 27(1)	33(2), 30(1),	38(1), 22(2), 35(1), 26(1), 30(7), 32(5), 31(6), 29(4),

	27(1), 55(1)					36(1)	33(1), 18(1)
28R	23(1), 24(1)			24(1)		30(2)	
29R	12(3), 9(2), 11(1), 14(2), 23(2)	26(1), 14(2), 28(1), 13(1)	6(1)	14(2), 15(1), 16(1)	30(1)	18(1), 25(1), 16(1), 27(1), 15(1), 19(1), 17(1), 14(1)	27(1), 16(4), 15(3), 17(4)
30R	33(1)				35(1),	40(1),	
31R	10(1)						
32R	20(4), 19(4), 17(1), 18(6), 16(3), 15(2), 21(1), 25(1), 14(2), 23(1)	19(1)		20(1), 17(1), 18(1). 16(1)			
33R	28(1), 17(6), 23(1), 14(2), 21(1), 19(1), 13(1), 15(5), 22(1), 16(1), 20(2)	27(1), 16(2), 14(1), 15(1), 17(1)	16(1)	13(1), 14(4), 15(3), 18(1), 22(1), 17(1), 30(1)			
34R	19(1), 34(1), 14(1),	14(3), 32(1), 41(1), 15(1)		25(1), 22(1)			
35R	15(2), 17(1), 35(1), 19(1), 22(1)	12(1)		15(2), 22(1)			
36R	19(1), 20(1),	19(1), 17(2)		24(1), 17(2),		10(1)	22(1)

	34(1), 13(1), 22(1), 23(1), 26(1), 16(1), 14(1)						
37R			15(1)	14(1)			
38R	23(1), 15(1), 18(1), 22(1)	27(1), 14(1), 40(1), 31(1), 17(1)		24(1), 14(2), 20(1), 13(1)			
39R	17(1), 20(1), 16(2)	19(1)		17(1), 18(2)			
40R	18(3), 16(5), 17(4), 20(1), 5(1), 11(7), 14(3), 21(4), 12(3), 25(1), 13(4), 11(2), 15(8), 28(1), 19(1), 10(5), 7(1), 14(1), 27(1), 12(2)	14(1), 17(2), 30(1), 10(2), 8(1), 15(1), 10(1)	15(1)	14(3), 23(1), 22(1), 13(2), 21(1), 15(3), 12(1), 16(1), 17(1)	36(1), 33(1), 13(1),	18(1), 22(1), 27(1)	34(1), 32(1), 16(1)
41R		37(1)					9(1)
42R		24(1), 15(2)		25(1),			
43R				19(1), 41(1), 24(1)			
44R	26(2), 21(3), 22(3), 23(1),	20 (1), 26(1), 28(1), 22(1),		22(1), 21(1), 24(1), 9(1)			

	14(1), 24(3), 17(1), 32(1)	30(1)				
45R	10(1), 18(1), 22(1), 25(1), 21(2), 20(3), 19(2)	21(1)	20(1), 23(1)			
46R	14(1), 17(5), 23(2), 12(2), 25(1), 21(2), 19(2), 24(3), 13(4), 22(3), 18(3), 20(1)	20(1), 34(1), 14(2), 22(1), 18(1), 19(1), 8(1)	18(1), 25(2), 22(2), 16(2), 23(1), 26(1), 13(1), 21(1), 14(1), 19(1), 27(1), 11(1), 12(1)	28(1)	19(1),11(1)	14(1)
47R						14(1)
48R	23(1), 20(2), 7(1), 15(3), 18(1), 21(2), 22(1), 24(1), 17(2), 36(1)	14(1), 22(3), 16(3), 8(1),	13(3), 14(1), 7(1), 16(2), 20(1), 24(1), 19(1)		8(1), 14(1), 16(1), 30(1)	
50R	10(5), 12(2), 20(3), 8(1), 15(1), 21(2), 17(1), 24(3), 39(1), 27(1), 16(2), 14(1),	20(1), 23(1), 19(1)	17(1), 13(1), 20(1), 12(1), 18(1), 19(1), 14(1), 21(1)			

	46(1)				
51R	18(1), 15(2)				
52R			13(1), 20(1), 14(1),		
53R			15(1)		
54R	19(1), 20(1)				
55R	16(1),				
36Ra	21(2), 16(1), 31(2), 38(1), 41(1), 24(2), 20(2), 42(1)	22(1), 20(1), 13(1), 77.8(1) , 31(1), 18(1)	35(1),	32(1), 16(1), 18(1), 26(1), 19(1)	
29Ra	11(2), 10(1), 12(1)	13(1), 12(2), 9(1)		10(1), 16(1)	17(1)
37Ra	22(1)			22(1)	
32Ra	11.4(1) , 18(1)				
1B	3.9 (4), 3.2(1), 4.6(1), 5(1), 5.3(1), 2.7(1), 5.2(1), 5.6(1), 5.4(1), 5.9(2), 4(1), 5.5(1), 4.5(1), 6.2(2), 4.2(3), 5.8(1)	3(1), 4.9(1), 5.7(1), 6.7(1), 5.9(2), 6.1(1), 5(1), 4.6(1), 5.3(1), 4.2(1)		4 (1), 3.5(2), 13(1), 4.3(2), 4.9(1), 5(1), 4.6(1), 4.2(1), 4.1(1), 4.5(1), 5.2(1), 5.6(1), 3.6(1), 3.8(1)	4.6(1), 4.8(1)
2B	4.5 (3), 5(2), 3.2(1), 4.6(2), 4.2(3), 5.5(1),	4.1(2), 5.3(2), 5.8(1), 5.4(1), 5.2(1), 6.2(1),		18 (1), 5.2(1), 4.9(1), 4.5(1), 5.7(2), 4.2(1),	

	3.6(1), 4.9(2), 3.9(1), 5.1(1), 4.1(1), 5.6(3), 6(1), 4.3(3), 6.3(1), 6.7(2), 5.8(1), 5.3(1), 7.7(1), 4.4(2)	5.7(1), 4.8(2), 5.1(1), 5.6(2), 6(1), 3.7(1)	4.4(1), 5.1(1), 4.8(1), 4.3(1)		
3B	8(2), 9.4(1), 9.3(1), 12(2)			10(1)	8(1), 6.8(2), 5(1), 5.6(1), 7.8(1), 5.1(1), 7(1), 7.3(1)
5B	10.2(1)				
6B	5.8 (1)				
7B	3.7(5), 3.5(1), 4.5(4), 4.3(4), 3.8(2), 4(2), 2.2(1), 3.9(1), 16(1), 3.6(1), 15(1), 4.2(2), 4.1(1), 21(1)	5(1), 4.5(1)	4.2(1), 3.3(1), 2.1(1), 3.7(1), 18(1), 4.3(1), 4.4(1), 4(1), 19(1), 4.9(1)	5.1(1)	
8B	4.1(4), 10(1), 3.8(1), 4(2), 4.3(2), 3.6(2), 4.2(1), 4.6(2), 4.5(1),	4.1(3), 4(1), 3.9(1), 10(1)	6(1), 4(2), 5.1(1), 4.8(1), 3.9(2), 10(1), 4.3(1), 23(1)		

	5.1(1), 14(1), 4.4(1), 13(1),			
9B	5 (1), 4(1), 4.7(2), 5.7(1), 4.5(1)	5.4(1)	5 (1), 5.6(1), 4.6(1), 5.5(1)	2.3(1), 4.6(1), 3.1(1)
4aB	4.7(2), 3.5(6), 3.3(6), 4.6(4), 3(2), 3.8(6), 4.3(9), 3.6(3), 4.8(3), 3.4(3), 4(8), 4.2(5), 6.1(1), 3.7(6), 5(3), 4.4(5), 2.7(1), 4.5(4), 4.1(3), 3.9(12), 3.1(1), 4.9(2), 5.3(1), 5.5(1),	4.4(3), 8(1), 4.2(3), 3.9(2), 4.5(2), 3.3(6), 3.6(6), 3.1(2), 4.1(1), 3.7(3), 3.5(2), 2.7(1), 3.4(3), 3.2(2), 3(1), 4.6(2), 2.8(1), 4.3(1), 3.5(1), 5.5(1), 3.8(1)	4.3(1), 4.5(1), 3.6(2), 3.5(1), 4.2(1), 3.2(2)	3.2(1)
4bB	6(1), 7(1), 4.3(2), 4.9(2), 4(3), 5.5(1), 5.1(1), 6.1(2), 4.8(1)	5.9(1), 5.2(4), 4.3(3), 6(4), 4.6(2), 4.5(4), 4.7(2), 5.6(3), 4.8(3), 4.9(3), 5.1(5), 4.6(2), 6.5(1),	4.6(2), 7.9(1), 3.7(1), 5.3(1), 4.9(2)	

		5.5(1), 5(1), 4(1), 4.2(1), 4.1(2), 5.7(1), 4.4(1)				
4cB	6.4(1), 4.5(1), 3.9(3), 5.8(1), 4.7(1), 3.3(1), 3.6(1), 2.7(1)	3.5(3), 4.7(1), 4.6(1), 3(1)		7.3(1), 2.7(1), 4(2)		
11B	9.1(1)					
1L	12(1), 24(1), 22(1), 9(1)	8.2(1)				
3L	27(1)					
4L	17(1),					
1S	2.1(1), 2.7(3), 1.5(1), 3.5(1), 3.1(2), 2.6(1), 1.6(1), 3.6(1), 3(3), 4.8(1), 3.7(1), 4.4(1)	1.7(2), 2.3(1)	1.8(1), 2.5(1)	3.7(1), 2.8(1)		
5S	1.2(1)					
6S	1.5(1)					
7S	3.4(1), 2.6(1), 2.3(1)					3.5
8S					2(1)	
9S	3.4(1)			2.8(1), 1.2(1)		
10S		2.9(1)	2.9(1)		1.8(1),	
11S			3(1),			2.9(1), 1.5(1)
12S	8.4(2),	4.4(1)				

	10.8(1), 6(2), 8(1), 13(2), 9.7(1), 8.2(1), 7.9(1), 11(1), 7.8(1), 6.4(2), 5.6(1), 9.2(1), 6.7(1), 5.7(1), 7(1), 5(1), 5.9(1), 6.9(1), 4.5(1), 7.6(2), 6.6(1), 9(1), 6.8(1), 15(1), 7.7(1), 8.6(1)			
1K	3.2(1), 3.4(1), 3.3(2), 4.2(1)	3.2(1),	3.4(1)	
2K		2.4(1)		
3K			5.9(1)	
4K	1.9(1), 2.2(1)	4.1(1)		
5K	3.1(1), 2.3(1), 4.1(1), 2.4(1), 3.8(2)	2.6(1), 3.3(1), 3.7(1)	3.5(1),	3(1)
6K	2(1), 1.6(2), 1.7(4), 1.9(2), 2.5(1), 2.1(1)	1.2(1)	1.9(2)	
9K	3.4(1),	3.1(1),	3.5(1)	

	4.2(1), 4.3(2), 5(1), 4(1), 4.5(1)	5.1(1)		
10K	3.2(1), 5.6(2), 3.9(1), 4.3(1), 4.6(1)	3.1(1), 3.2(1), 3.5(1), 5.1(1)		2.9(1), 4.8(1), 4.1(1), 5.1(1)
11K	3.2(2), 3.6(2)			3.1(1)
12K	4.7(3), 5.4(2), 4.6(2), 3.5(1), 4.4(2), 5.6(1), 3.6(1), 3.9(1), 4.8(1), 4.5(1), 5(1)	3.7(1)	5.1(1)	4.9(1)
14K	2.5(1)			3.2(1)
10K(i)	2.9(3), 3.3(1), 3(1)			

Table 85 Diameters of all Diagnostic Types in All Fabrics.

Standardization in Rim Forms (Pots, Bowls and Trough)

The following table shows the groups in which the rim diameters have been divided to look at the extent of standardization through their frequency of occurrence (see table 86). The group E which includes diameters between 21 to 25 cms has the highest counts followed by Group D.

Diameter Groups (in cms.)	Frequency of occurrence
A (1-5)	3
B (6-10)	48
C (11-15)	258
D (16-20)	333
E (21-25)	438

F (26-30)	218
G (31-35)	98
H (36-40)	45
I (41-45)	13
J (46-50)	5
K (51-55)	1
P(76-80)	1
Z(137)	6

Table 86 Rim Diameter Groups.

The following figure shows the different counts within the rim diameter groups (see figure 103).

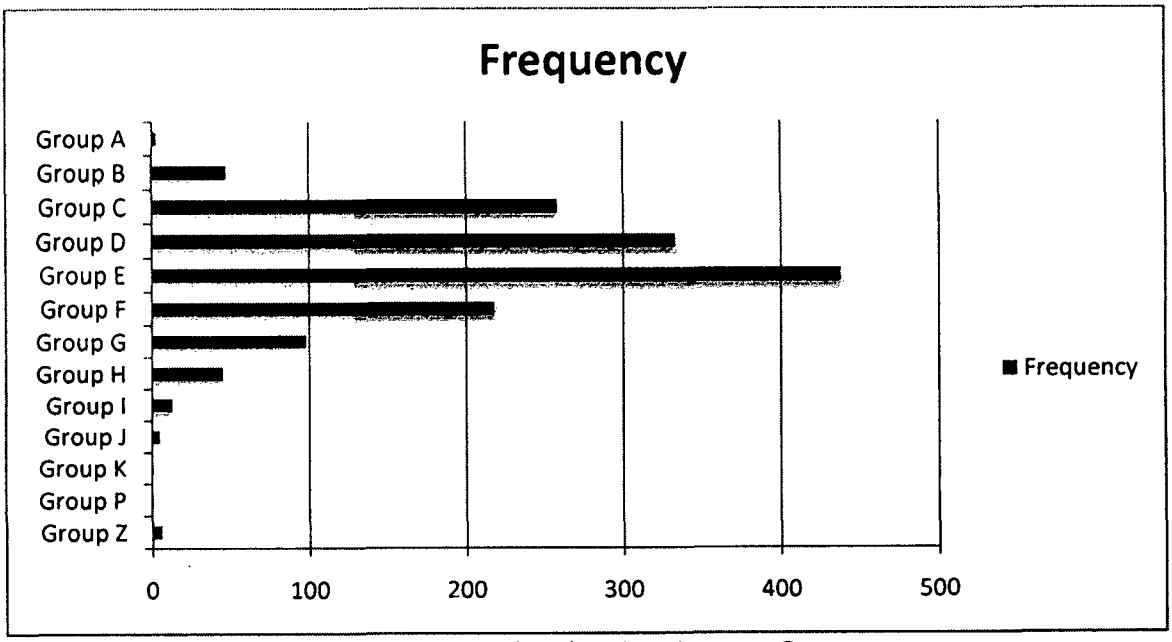

Figure 103 Counts Within the Rim Diameter Groups.

The following table shows the groups in which the diameter of the rim forms have been divided to look at the extent of standardization through their frequency of occurrence (see table 87). The groups are diameter measurement clusters in cms. The vessel forms are indicated alongside the rim forms where B stands for bowl, D stands for dish, T stands for trough and others are pots.

Rim Forms	Group A (0-5)	Group B (6-10)	Group C (11-15)	Group D (16-20)	Group E (21-25)	Group F (26-30)	Group G (31-35)	Group H (36-40)	Group I (41-45)
1R		1		5	25	5	2		
2R		1	2	3	5	3	4		
3R		1	7	5	22	9	5	3	
4R					2	2			
5R		1	9	22	30	21	7	3	
6R			3	4	10	13	3	2	
7R		2	10	19	32	12	2	4	
8R		8	20	20	38	10	5	1	1
9R			2	8	20	31	10	7	6
10R			3	9	16	10	4		
11R			10	3	15	9	11	5	
12R			10	14	15				
13R			1	5	9	1	1		
14R		1	3	1	16	6	1		
15R		1	3	3	15	9	3	1	
16R(B)			9	6			1		
17R		1	7	1	5				
18R			1						
19R				1	3	6	1		
20R			8	14	15	9	1	1	
21R			6	3	10	7			
22R		1	5	17	15	4	2	1	
23R			4	7	20	9		4	
24R				7	2	10	1	2	1
25R(B)			1		1				
26R	2	2	3						
27R(D)				3	3	17	16	8	
28R(D)					3	2			
29R(B)		3	17	13	3	5			
29Ra	3	6	2						
30R(D)							2	1	

31R		1							
32R			4	23	3				
32Ra			1	1					
33R			18	16	4	3			
34R			5	1	2		2		1
35R			5	2	2		1		
36R		1	2	8	4	1	1		
36Ra			1	8	5	1	5	1	2
37R			2						
37Ra					2				
38R			5	3	3	1		1	
39R				8					
40R	1	10	40	19	8	4	3	1	
41R(D)		1						1	
42R			2	2					
43R				1	1				1
44R(B)		1	1	2	14	5	1		
45R		1		7	6				
46R		1	15	18	18	3			
47R			1						
48R		4	9	13	9	1		1	
50R		6	7	12	7	1		1	
51R			2	1					
52R			2	1					
53R			1						
54R				2					
55R				1					

Table 87 Rim Diameter Frequencies in Different Groups.

CONCLUSION

The group E which is 21 to 25 cms records the maximum counts of occurrence among all the other groups. The rim forms where some amount of standardization can be observed are 1R, 2R, 14R, 15R, 23R, 32R, 40R, 44R and 50R. In some rim forms I observed that there is

standardization in more than one group. These rim forms have two to three groups where some amount of standardization is observed. These rim forms are 5R, 7R, 8R, 9R, 12R, 16R, 20R, 22R, 27R, 29R, 33R and 46R. These rim forms possibly had two to three size variants.

Standardization in Base Forms

The following table shows the groups in which the base diameters have been divided to look at the extent of standardization through their frequency of occurrence (see table 88). The group E which includes diameters between 4.1 to 5 cms has the highest counts followed by Group D.

Diameter Groups (in cms.)	Frequency of occurrence
C (2.1-3)	14
D (3.1-4)	140
E (4.1-5)	175
F (5.1-6)	72
G (6.1-7)	16
H (7.1-8)	7
J (9.1-10)	6
K (10.1-11)	1
L (11.1-12)	2
M (12.1-13)	2
N (13.1-14)	1
O (14.1-15)	1
P (15.1-16)	1
S (18.1-19)	1
U (20.1-21)	1
W (22.1-23)	1

Table 88 Base Diameter Groups.

The following figure shows the different counts within the base diameter groups (see figure 104).

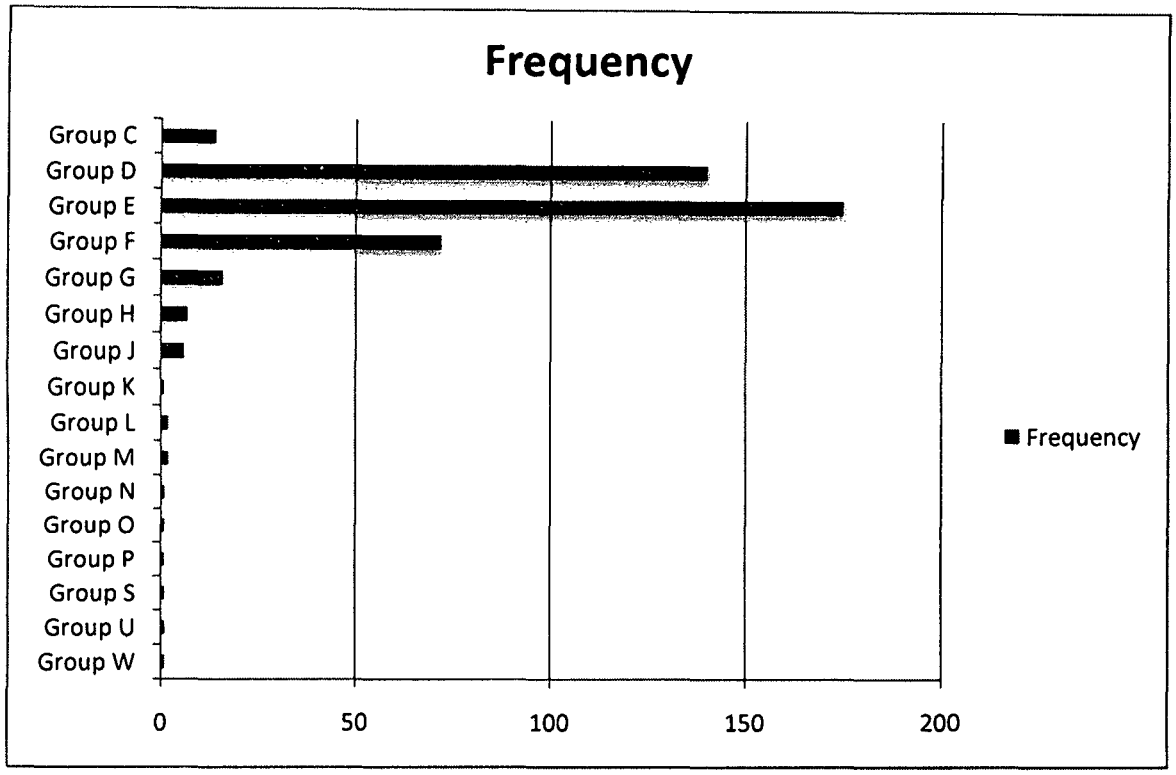

Figure 104 Counts Within the Base Diameter Groups.

The following table shows the groups in which the diameter of the base forms have been divided to look at the extent of standardization through their frequency of occurrence (see table 89).

CONCLUSION

The group E which is 4.1 to 5 cms records the maximum counts of occurrence among all the other groups. The base forms where some amount of standardization can be observed are 4(a)B, 4(b)B, 4(c)B and 8B. In some base forms I observed that there is standardization in more than one group. These base forms have two to three groups where some amount of standardization is observed. These base forms are 1B, 2B and 7B. These base forms possibly had two to three size variants.

Base Forms	Group C (2.1-3)	Group D (3.1-4)	Group E (4.1-5)	Group F (5.1-6)	Group G (6.1-7)	Group H(7.1-8)	Group J (9.1-10)	Group K(10.1-11)	Group L(11.1-12)
1B	2	10	18		14	4			
2B		4	28		21	4 1			
3B			1		2	3 5		3	2
4(a)B	6	85	55		3	1 1			

4(b)B			4		33			19		4		
4(c)B		3		10		4				1		
5B												1
6B								1				
7B		2		14		16						
8B				8		14		6			3	
9B		1		2		7		4				
11B											1	

Table 89 Base Diameter Frequencies in Different Groups.

Standardization in Lid Forms

The following table shows the groups in which the diameter of the lid forms have been divided to look at the extent of standardization through their frequency of occurrence (see table 90).

Lid forms	Group A (1-10)	Group B (11-20)	Group C (21-30)
1L	2	1	2
3L			1
4L		1	

Table 90 Lid Diameter Frequencies in Different Groups.

CONCLUSION

The group C which is 21 to 30 cms records the maximum counts of occurrence among all the other groups. The lid counts are very few and so it is problematic to ascertain the degree of standardization within the lid forms.

Standardization in Knob Forms

The following table shows the groups in which the knob diameters have been divided to look at the extent of standardization through their frequency of occurrence (see table 91). The group D which includes diameters between 3.1 to 4 cms has the highest counts followed by Group E.

Diameter Groups (in cms.)	Frequency of occurrence
B (1.1-2)	13

C (2.1-3)	14
D (3.1-4)	32
E (4.1-5)	23
F (5.1-6)	10

Table 91 Knob Diameter Groups.

The following figure shows the different counts within the knob diameter groups (see figure 105).

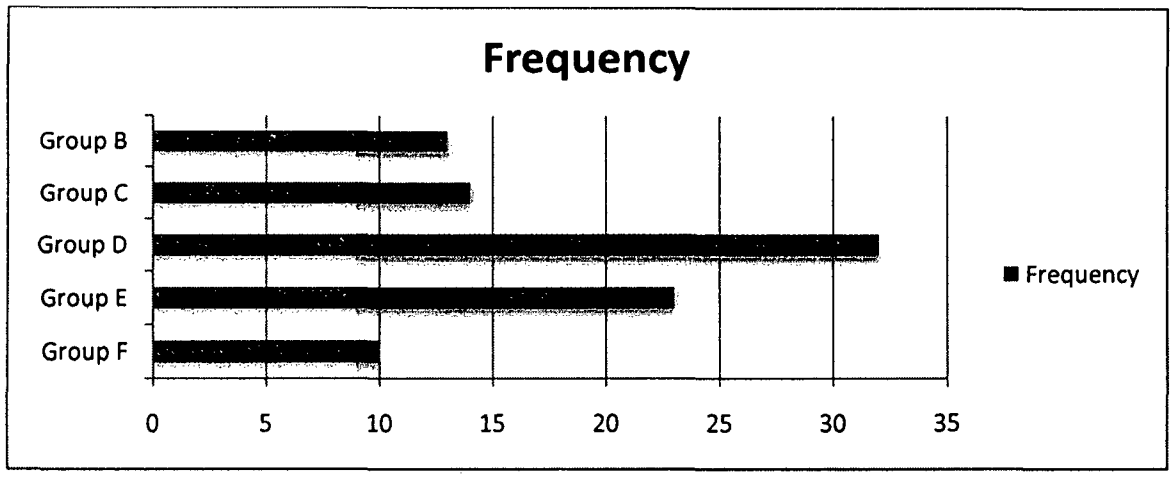

Figure 105 Counts Within the Knob Diameter Groups.

The following table shows the groups in which the diameter of the knob forms have been divided to look at the extent of standardization through their frequency of occurrence (see table 92).

Knob forms	Group B (6-10)	Group C (11-15)	Group D (16-20)	Group E (21-25)	Group F (26-30)
1K			6	1	
2K	1				
3K					1
4K	1	1		1	
5K		4	6	1	
6K	12	2			
9K			4	5	1
10K		1	5	4	4
10K(i)		4	1		

11K		5		
12K		4	11	4
14K	1	1		

Table 92 Knob Diameter Frequencies in Different Groups.

CONCLUSION

The group D which is 16 to 20 cms records the maximum counts of occurrence among all the other groups followed by group E (21-25 cms) and group C (11-15 cms) respectively. The knob forms where some amount of standardization can be observed are 1K, 6K, 10K(i), 11K and 12K. In some knob forms I observed that there is standardization in more than one group. These knob forms have two to three groups where some amount of standardization is observed. These knob forms are 5K, 9K and 10K. These knob forms possibly had two to three size variants.

Standardization in Spout Forms

The following table shows the groups in which the spout diameters have been divided to look at the extent of standardization through their frequency of occurrence (see table 93). The group C which includes diameters between 2.1 to 3 cms has the highest counts followed by Group B.

Diameter Groups (in cms.)	Frequency of occurrence
B (1.1-2)	11
C (2.1-3)	18
D (3.1-4)	8
E (4.1-5)	5
F (5.1-6)	5
G (6.1-7)	7
H (7.1-8)	6
I (8.1-9)	5
J (9.1-10)	2
K (10.1-11)	2
M (12.1-13)	2
O (14.1-15)	1

Table 93 Spout Diameter Groups.

The following figure shows the different counts within the spout diameter groups (see figure 106).

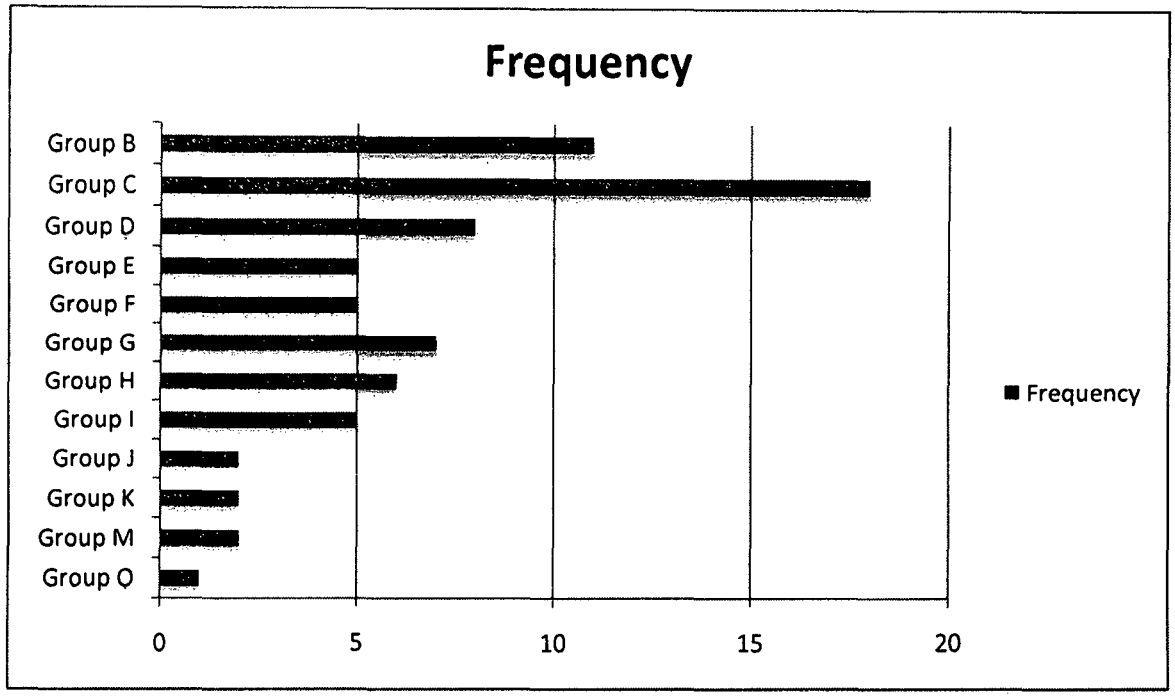

Figure 106 Counts Within the Spout Diameter Groups.

The following table shows the groups in which the diameter of the spout forms have been divided to look at the extent of standardization through their frequency of occurrence (see table 94a and 94b).

Spout forms	Group B (1.1-2)	Group C (2.1-3)	Group D (3.1-4)	Group E (4.1-5)	Group F (5.1-6)	Group G (6.1-7)	Group H (7.1-8)	Group I (8.1-9)	Group J (9.1-10)
1S	5	11	6	2					
5S	1								
6S	1								
7S		2	2						
8S	1								
9S	1	1	1						
10S	1	2							
11S	1	2							
12S				3	5	7	5	4	2

Table 94a Spout Diameter Frequencies in Different Groups.

Spout forms	Group K (10.1-11)	Group M (11.1-12)	Group O (14.1-15)
12S	2	2	1

Table 94b Spout Diameter Frequencies in Different Groups.

CONCLUSION

The group C which is 2.1 to 3 cms records the maximum counts of occurrence among all the other groups followed by group B (1.1-2 cms) and group D (3.1-4 cms) respectively. In the spout forms I observed that there is standardization in more than one group. These spout forms have two to three or more groups where some amount of standardization is observed, which are 1S, 7S and 12S. These spout forms possibly had two to three or more size variants.

TRENCHES

The following table shows the trenches and the layers in which the non diagnostic sherds have been found at Ambari (see table 95) (see figure 107).

Trenches	Layers
AMB I	2 and 3.
AMB II	3 and 5.
AMB II A	1, 3 and 4.
AMB II B	1, 2, 3, 4, 5 and 6.
AMB III	3, 4 and 6.
AMB III A	1, 3, 4, 5, 6 and 8.
AMB III B	1, 3 and 4.
AMB III C	1, 2, 3, 4 and 5.
AMB III D	1, 2, 3, 4 and 5.
AMB III E	1 and 2.
AMB IV	3 and 5.
AMB IV A	3, 4, 5 and 6.
AMB IV B	3.
AMB IV E	1 and 4.
AMB V	2, 3 and 4.
AMB V A	3 and 4.
AMB V B	2 and 3.

AMB VI A	3 and 4.
AMB VII A	3, 4 and 5.
AMB VIII A	2, 3 and 4.
AMB IX A	2, 3 and 4.
AMB X A	4.
AMB XI B	1.
AMB XI C	3.

Table 95 Trenches and Their Layers.

The following table shows the trenches in which certain specific ceramic types and fabric types were found (see table 96) (see figure 108).

Type	Trench and Layer
O3F (Green Glazed Ware)	AMB V and AMB V A Layer 4
4(a)B, 4(b)B and 4(c)B	AMB III A and AMB IV A Layer 6.

Table 96 Trenches of O3F(GG), 4(a)B, 4(b)B and 4(c)B.

DISCUSSION

A wide disparity can be seen among the diagnostics and non diagnostics of the ceramics of Ambari. The non-diagnostics in Ambari surprisingly constitute just around 16% while diagnostics constitute 70% of the total ceramics. Usually, it is the quantity of non diagnostics that outnumber the quantity of the diagnostics. This seems to be the result of a policy followed by the excavators in Ambari where preference was given to collecting only the 'relevant' ceramic sherds and discarding the 'others'. Thus in table 11 and figure 5 it can be seen that green glazed ware has the highest count as well as weight. Green glazed ware is far ahead of oxidized unslipped medium ware or red ware in quantity among the non diagnostics. This shows the precedence given to more 'valuable' non diagnostic sherds over 'ordinary' non diagnostic sherds. Thus, the non diagnostics of Ambari do not project a very conducive picture for a more representative picture of Ambari ceramics.

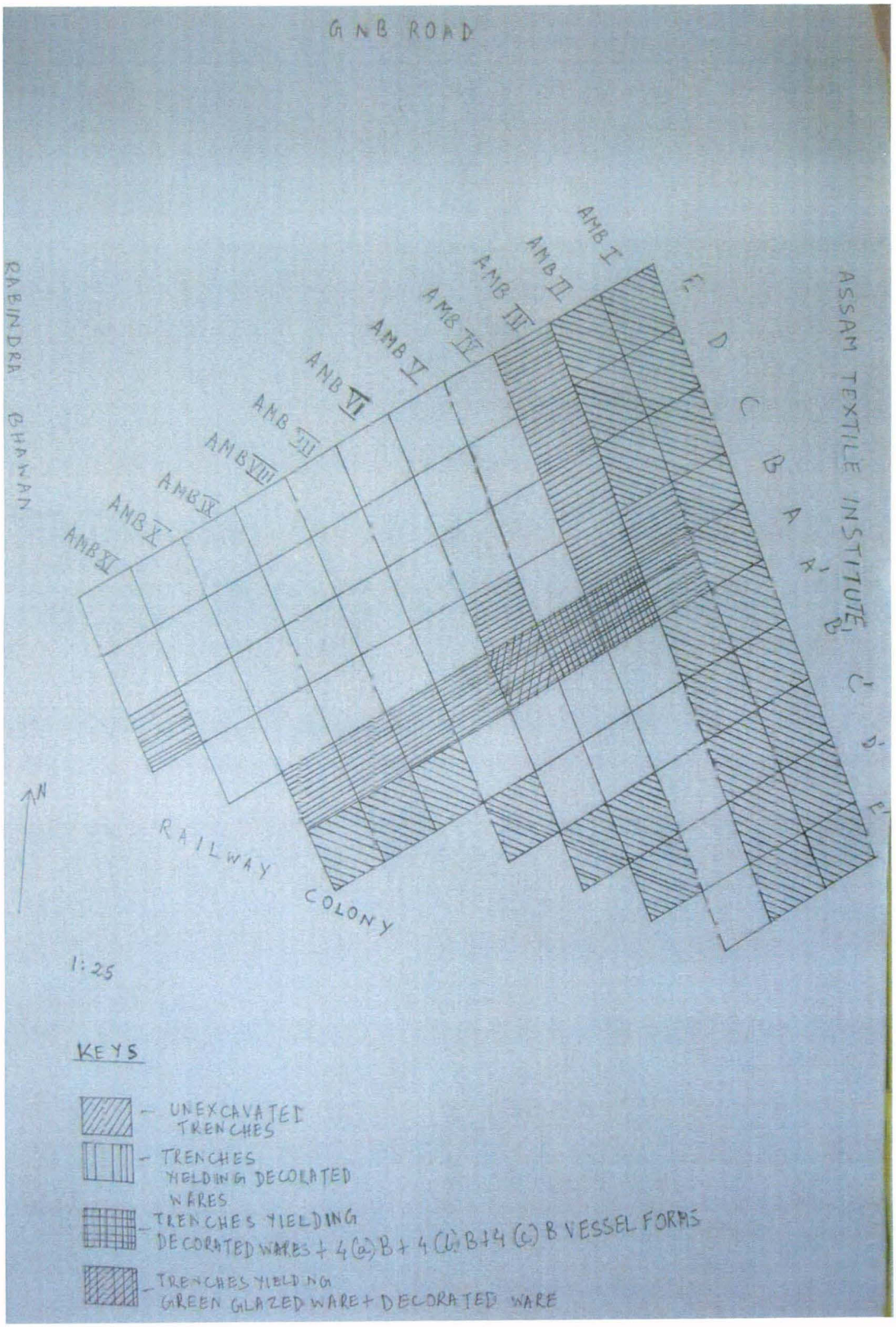

Figure 107 Site Map of Ambari (After Sharma, Ashraf and Mahanta 2006: 52)

In the non diagnostics the sherd counts and weight recorded as can be seen in figure 6 and 7 indicate a higher concentration of ceramics from layer 1 to layer 4. There is a low concentration of non diagnostic sherds in layers 5 and 6. Layers 1 to 3 roughly belong to the medieval period which is from the 13th century to 17th century CE approximately. The layer 4 onwards represents the early medieval period. The peak period in the non diagnostics can be ascertained from the figures 6 and 7 as belonging to layer 4 and 3. This roughly belongs to the period from 11th century CE to 14th century CE. In the 11th century a sudden rise can be seen from the quantity of ceramics recorded in layer 4 and layer 5. Then it seems there is a slight decline but it does not diminish altogether in layer 1 and layer 2 which is roughly the period of 14th century to 16th century CE.

In Ambari among the diagnostics the rims have the highest counts and weight among all the other diagnostics as can be seen in figure 99 and 100. It is followed by the base counts but there is a wide gap. In Ambari 55 different rim forms were observed and recorded. These rim forms have been identified with different vessel types like pot, dish, trough and bowl. Out of the 55 rim forms 42 are identified with pot. Some of the pots had carination. The layer 4 has the highest count of rim styles followed by layer 3. The layer 8 and 7 has a very low count of rim forms but there is a sudden rise seen in layer 6. Then this rise in forms constantly increases and reaches its peak in layer 4 as seen in figure 8. Thus, from the 9th century onwards there is a rise which reaches its peak in 11th century. After 11th century there is a gradual fall which is not very drastic. In terms of quantity as seen in figure 9 there seems to be a sudden rise in the layer 4 from layer 5. The drop from layer 4 towards layer 3 is also sudden. But, the quantity observed in the layers 1 to 3 (14th century to 16th century CE) is more than layers 6 to 5 (9th century to 10th century CE).

Base forms observed and recorded in Ambari is around 15. In table 24 these base forms have been identified with pots, dishes, bowls and troughs. Five of these forms are associated with pot. Similarly 4 base forms have been identified with dish and 3 forms with bowl. In terms of style counts, sherd counts and weight recorded in layer 4 witnesses the peak followed by layer 3. The period of 11th century CE to 14th century CE approximately seems to witness a multiplication in base forms as well as quantity as can be ascertained from figure 28.

The other diagnostics like lids, knobs and dish on stands have a similar peak which is observed in layer 4 followed by layer 3 that pertains to the period 11th century CE to 14th century CE. But in spouts the peak is seen in layer 3 or 12th to 13th century CE which is later than the other diagnostics. The counts of handles are very few which can be seen in layer 2,

3, 4, 5 and 6 (10th century CE to 15th century CE). The 4(a)B, 4(b)B and 4(c)B base forms have a peak in the layer 6 which pertains to the period from 8th century CE to 9th century CE.

An attempt has been made here to see the pattern of ceramics in terms of quantity in different periods in different fabrics. Thus, both the diagnostics and non diagnostics have been categorized into tables and charts that will give a picture that shows a pattern in consumption. Among the diagnostics the O1M fabric constitutes 48.1 % of the total ceramics in Ambari. O1M(K) fabric constitutes 23% of the ceramics. O2M(K) with red clay slip has a percentage of 22.4% among the Ambari ceramics. The green glazed ware constitutes 2.19% of the total ceramics of Ambari. R1M ware is having a 1.4% in the Ambari ceramics. R2M ware constitutes 1.65% of the total ceramics of Ambari. Thus, the most popular fabric is oxidized unslipped medium ware or plain red ware. The most popular fabric seems to be O1M followed by O1M(K) and O2M(K) with red clay slip. These three fabrics will be broadly discussed as the other fabrics show very nominal quantities compared to these three. Even among the 'disputed' non diagnostics after the counts green glazed ware is the most popular fabric followed by O1M and O1M(K) respectively as can be seen in figure 5. Overall the mostly used fabric in Ambari are O1M, O1M(K) and O2M(K) with red clay slip as can be seen in figures in 101 and 102.

In O1M fabric in all the diagnostics the quantities in all the layers has been calculated and recorded. In rims in the O1M fabric the table 18 and figures 10, 11 and 12 show that the peak was observed in the layer 4. In bases the same picture can be seen in the table 30 and figures 29, 30 and 31 where the peak is seen in the layer 4. The O1M fabric experiences the peak in the knobs again at layer 4 as shown in table 58 and figure 68, 69 and 70. Among the lids too, the table 54 and figures 64 and 65 show that layer 4 is where the peak is. The spouts in O1M fabric, as shown in table 64 and figure 79 share the peak between layer 3 and layer 4. Thus, In O1M fabric among the diagnostics we see that the period from 11th to 14th century CE period saw a multiplication in styles as well as quantity.

In O1M(K) fabric among the rims as seen in table 19 and figures 13, 14 and 15 the peak can be observed in layer 4. In the base sherds of O1M(K) fabric the peak can be seen clearly in layer 4 as shown in table 31 and figures 32, 33 and 34. The O1M(K) fabric in the knobs shows in table 59 and figures 71, 72 and 73 that the highest count is in layer 4. Among the lids only 6 sherds occur in O1M(K) fabric out of which 5 occur in layer 3 as can be seen in table 55. The spouts in O1M(K) fabric as seen in table 65 and figures 80 and 81 seem to have reached the peak in between layer 3 and layer 2. In O1M(K) fabric it can be seen that rims, bases and

knobs seem to have multiplied in terms of forms and numbers in the period from 11th to 14th century CE. In the case of lids and spouts it seems that only in a slightly later period (14th to 16th century CE) they multiplied in styles and quantity in O1M(K) fabric.

Rim sherds in O2M(K) fabric with red clay slip in table 20 and figures 16, 17 and 18 show that the peak is in layer 4. In O2M(K) fabric with red clay slip among the bases as seen in table 32 and figures 35, 36 and 37 the peak can be observed in layer 4. In the knobs of O2M(K) fabric with red clay slip the peak can be seen clearly in layer 4 as shown in table 60 and figures 74, 75 and 76. It seems in both lids and spouts O2M(K) fabric with red clay slip was not a really favored medium as can be seen in the tables 56 and 66 respectively. But in both lid and spout this fabric has occurred in layer 4 and layer 3. In O2M(K) fabric it can be clearly seen that the layer 4 is the period there was a wide scale of forms as well as numbers of pottery increased and reached its peak. The period is broadly 11th to 14th century CE.

In the three fabrics oxidized unslipped medium ware or red ware (O1M), oxidized unslipped medium kaolin ware or kaolin ware [O1M(K)] and oxidized slipped medium kaolin ware with red clay slip or kaolin ware with red clay slip [O2M(K)] the layer 4 is the peak period. Layer 4 in the three most popular fabrics used at Ambari saw a multiplication in the forms of rims, bases, knobs, lids and spouts. Also, there was an increase in the amount of pottery used in this layer in terms of sherd counts and weight. This increase can be seen gradually from layer 6 towards layer 4 and then from layer 4 towards layer 1 a gradual fall can be seen. The figures seem to make a parabola kind of pattern where the peak is centered on layer 4. The gradual rise can be associated with the period beginning from 8th to 9th century CE. This rise culminated in a spurt of forms and ceramic production around the 11th to 14th century CE. This rise gradually shows a fall 15th to 17th century CE.

The rise from layer 6 onwards also coincides with the use of decorations in the pottery of Ambari. The designs are observed from layer 1 to 6 which means decorated wares are in use from the early medieval to the medieval period. The period which witnessed a surge in the use of decorated wares in Ambari is the later part of early medieval and the first part of medieval period (11th century CE to 14th century CE). This is the same period when there is a spurt in the quantity of diagnostics as well as in the designs used on the pottery in Ambari. The decorated wares of Ambari are dealt with in the next chapter in detail. Thus, the period from 11th century CE to 14th century CE witnessed an increased production of ceramics as well as multiplication in designs or decorations in Ambari.

There were certain ceramic types which will be discussed separately now. The Green glazed ware (see figure 108) occurred in large quantities in non diagnostics and diagnostics in the layer 4 as can be seen in table 11, 23 and 35 and figure 5. It pertains to the period from 11th to 14th century CE. It occurs in two ceramic shapes of a shallow dish and a deep dish with a ring base. The trenches it occurs in are AMB V and AMB V A which are adjacent trenches in the layer 4 as shown in figure 108 and table 96. The green glazed ware probably was not an item of everyday use but it must have been used in certain particular spaces. It seems to be a rare type of ceramic used in Ambari so it is not found extensively. The green glazed ware also known as the 'muslim pottery' is associated with the Indo-Arab trade of the early medieval period. The green glazed ware in Ambari is associated with the 11th century to 14th century CE period. This suggests that networks existed between the coast and the hinterland. Ambari is located on the Brahmaputra River which might have provided fluvial network with the Bengal coast. Thus, this may explain the networks between Ambari and the Arab world.

Figure 108 Green Glazed Ware.

4(a)B, 4(b)B and 4(c)B are three different styles of diya type vessels which were again found in large quantities in Ambari. The 4(a)B vessel is wheel made which was found to occur in large numbers in O1M fabric followed by O1M(K) fabric. But O1M fabric far outnumber the ones made in OIM(K) fabric as can be seen in table 44 and figures 48 and 49. The layer in which the peak is observed here is layer 6. 4(b)B is a handmade vessel which occurs in O1M and O1M(K) fabric. The O1M(K) fabric has higher counts then O1M fabric which can be seen in table 49 and figures 60 and 61. Layer 6 is has the highest counts as well as weight. 4(c)B is

a wheel made vessel with a ridge around the rim. The table 53 and figures 62 and 63 show that O1M fabric outnumbers the O1M(K) fabric. The layer 6 is the peak here again.

The O1M fabric is preferred in the case of 4(a)B and 4(c)B but O1M(K) fabric is preferred in 4(b)B. The trenches they have occurred in are AMB III A and AMB IV A which are adjacent trenches. The layer 6 is pertains to the period of 8th century CE to 9th century CE. The sheer quantity of these vessel types suggests that they had a special function. Also, they were used in a particular area. While their use did not stop in the later period their numbers had drastically reduce. It seems in the 8th to 9th century CE when the other ceramic styles had not reached their peak periods these vessel types did. These vessel types seem to have performed some very important ritualistic function which in the later period sees a decline or possibly a replacement.

The aspect of standardization in the pot sizes have been probed at. For this the diameters of the rims, bases, lids, spouts and knobs were recorded, counted and grouped. The rim, base, spout and knob diameters seem to have some amount of standardization while in the lids it was missing. The tables 85 to 94b and figures 103 to 106 show the amount of standardization that can be seen. It seems that there is quite a high level of standardization. In rims the Group E (21-25 cms) has the highest counts having a percentage of around 30% among all the other groups of rim diameters. Group E is followed by Group D (16-20cms) with around 23% among the total counts. In the bases the Group E (4.1-5 cms) has the highest counts followed by Group D (3.1-4cms). Their percentages were respectively 40% and 32%. In the spouts the highest counts were recorded in Group C (2.1-3 cms) followed by Group B (1.1-2 cms). The percentages of both the groups are respectively 25% and 15%. Among the knobs the highest count was recorded in Group D (3.1-4 cms) followed by Group E (4.1-5 cms) whose percentages are respectively around 35% and 25%.

Thus in these diagnostic types we see some amount of standardization in certain measurement groups. It can be suggested that there was some measurement codes for certain pottery styles and also possibly they were made by a closely knit potter's guild or community. This suggestion rests on the fact that a close knit potter's guild or community has fixed codes of measurements for certain pottery styles. Thus, the majority of Ambari pottery possibly came from a single source or there may have been a single authority governing the pot sizes.

Another interesting ceramic type observed in Ambari is the dish on stand. The fabric it has mostly occurred in is O1M fabric as shown in table 81 and figures 95 and 96. The layer that it has occurred mostly in is layer 4 in all the fabrics as can be seen in the figures 89 to 96. The dish on stand seems to pertain to a ritualistic role rather than a utilitarian role. The period it emerges in the scenario of Ambari ceramics is the 11th century AD to 14th century AD period. It continues to exist beyond this period but there is a fall in its numbers. It is found quite well distributed around the site. It is possible that dish on stands replaced the role of 4(a)B, 4(b)B and 4(c)B vessel types in the realm of rituals, as the dish on stands emerge in the period when the numbers of 4(a)B, 4(b)B and 4(c)B vessel types reduce.

The ceramic types mostly observed in my study seem to pertain to functions such as storage, rituals and table ware. The evidence of soot marks is very rare except for the 4(a)B, 4(b)B and 4(c)B forms. Thus, this shows that cooking possibly was not one of the functions for the pottery. It can be proposed that Ambari possibly had a ritual or non residential character.

The density of ceramics is very minimal in the period before 9th century CE. It gradually rises in the period from 9th century CE to 11th century CE. The peak can be observed in the period from 11th century CE to 14th century CE. The period from 14th century CE to 16th century CE experience a gradual fall and then hiatus sets in from 17th century CE onwards. The site of Ambari is completely forgotten from the period of 17th century CE onwards till it was discovered in the mid 20th century.

In the period from the mid 7th century CE to the last decade of the 10th century CE the Salastambha dynasty ruled the Brahmaputra valley which included the region of Kamrup where Ambari is situated. The political center was situated in Tezpur in the eastern part of the valley. This period in Ambari show very less consumption. In a very small area the 4(a)B, 4(b)B and 4(c)B forms has been found along with some other pottery. Thus, in this period the extent of habitation in Ambari was limited and also the ceramic quantity as well as types was limited.

Ratnapala, a Pala ruler changed the capital from Tezpur to Durjaya which is a westward shift in the first half of 11th century CE. Durjaya has been identified with the ruins of North Guwahati (Tripathi 2002: 17). This is the period which witnesses a drastic increase in the pottery quantity in Ambari. There is a multiplication of forms and decorations. The shift of political center possibly gave an impetus to Ambari which experiences an extension of the

area under habitation. This is reflected in the wide distribution of ceramics in the site of Ambari during this period compared to the earlier period.

The capital once again shifted in the second decade of 12th century CE westwards. But, this failed to arrest the thriving habitation of Ambari which can be ascertained from the ceramic quantities. It continued till around 16th century CE when gradually the nature of political authority changed and by the time Ahoms came into power Ambari had relapsed into oblivion.

CHAPTER III

DECORATED WARES: CLASSIFICATION AND ANALYSIS

My study of the ceramics of Ambari, I observed chiefly four types of decorated wares. The four types of decorated wares observed are impressed or incised, stamped, incised and stamped, and appliquéd. In this chapter an attempt has been made to classify and analyze the decorated wares of Ambari. The different decorative patterns will be dealt with separately in association with the layers and varying ceramic fabrics that they occur with. The weights and count of sherds will be analyzed to derive a larger picture of the chronology and occurrence of the decorative patterns observed in Ambari.

An attempt has also been made to introduce a new method of classification for the decorative patterns by giving the individual decorations a different design code. The decorative patterns of Ambari have never before been classified at such an exhaustive scale. Also, it has been observed that scholars like S.K. Roy, M.C. Goswami (Roy and Goswami 1972), H.C. Sharma, A.A.Ashraf, H.C. Mahanta (Sharma. Ashraf and Mahanta 2006) and Minarva Sonowal (Sonowal 2006) have identified very few decorations. Also, they tend to describe the decorations in a manner which in this study has been done away with and instead the different decorative patterns observed were given separate codes and documented. The descriptions of design patterns that have been used by scholars for the Ambari decorations are rib or basketry, comb, criss-cross, lozenge, diamond, floral and so forth.

Classification and Analysis

In the present study the decorated wares form 12% of the total sherds that have been classified. Out of the 3,764 sherds classified 465 sherds have decorative patterns on them. The 465 sherds weigh around 12 kgs of the total 160 kgs of sherds including diagnostics and non-diagnostics that have been classified. Out of the 12 kgs around 1 kg of sherds does not have any contextual evidence and their count was 64. Since their contextual information was missing so they have been studied sparingly. In this study 56 different decorative patterns were observed and recorded (see table 6 and table 97).

Ceramic Category	Sherd Counts	Percentage %	Weight (kg.)	Percentage %
Diagnostics	2662	70.72	128.277	80.01
Non-diagnostics	637	16.92	19.647	12.2
Decorated	465	12.35	12.393	7.73
Total	3764		160.317	

Table 6 Diagnostic, Non diagnostic and Decorated ware Counts and Weight.

Out of the 465 decorated sherds 64 are unlabeled which weigh 1.250 kgs (see table 6). The unlabeled sherds fail to give contextual evidence in terms of the layers and in some cases trench details where they occur. But, they have been included to form the larger picture where a general analysis has been attempted. However, they have been excluded from the layer specific analysis.

Decorated sherds	Count of sherds	Count Percentage %	Weight (kg.)	Weight Percentage %
Labeled	401	86.23	11.143	89.91
Unlabeled	64	13.76	1.250	10.08
Total	465		12.393	

Table 97 Counts and Weight of Labeled and Unlabeled Decorated Sherds.

In this study 56 different decorative patterns were observed and recorded. In all total 465 sherds with decorative patterns on them were recorded. Out of all the 56 designs the most common designs are 2(c), 2(a) and 2(b) respectively. 2(c) occurred on sherds numbering 118 while 2(a) and 2(b) occurred on sherds numbering 77 and 52 respectively (see table 98 and figures 1, 2, 3, 4, 5 and 6). Designs 1 and 1(a) have occurred on 65% of the pots and have not been included in the table below. It is a circular groove that the potter creates around the neck or shoulder of the pot with his nail while the vessel is on the wheel. The following table has not included those sherds where more than one decorative pattern occurs. They will be dealt with seperately.

The decorative patterns that have the maximum counts of occurrence in Ambari are 2(c), 2(a), 2(b), 19, 3 and 15 and their counts are respectively 118, 77, 52, 49, 36 and 20. On the basis of weight the sherds with maximum weight are 2(c), 2(a), 19, 2(b), 26, 3 and 15 and their weights are respectively 4.654 kg, 1.449 kg, 1.077 kg, 0.821 kg, 0.792 kg, 0.709 kg and 0.532 kg. Thus, there is not much variation seen between the weight and count of the sherds with decorative patterns (see table 98 and figures 109, 110, 111, 112, 113 and 114).

Figure 109 Design Type 2(a)

Figure 110 Design Type 2(b)

Figure 111 Design Type 2(c)

Figure 112 Design Type 3

Figure 113 Design Type 15

Figure 114 Design Type 19

Design Type	Count	Percentage %	Weight (kg.)	Percentage %
2(a)	77	16.7	1.449	11.69
2(b)	52	11.2	0.821	6.62
2(c)	118	25.5	4.654	37.5
3	36	7.8	0.709	5.72
4	9	1.95	0.244	1.96
4(a)	1	0.21	0.4	0.32
5	1	0.21	0.18	1.45
6	1	0.21	0.22	1.77
6(a)	1	0.21	0.18	1.45
9	3	0.65	0.78	6.29
10	3	0.65	0.51	4.11
12	2	0.43	0.34	2.74
13	1	0.21	0.61	4.92
13(a)	1	0.21	0.25	2.01
13(b)	2	0.43	0.49	3.95
14	4	0.86	0.80	6.45
15	20	4.33	0.532	4.29
15(a)	3	0.65	0.30	2.42
15(b)	2	0.43	0.42	3.38
19	49	10.62	1.077	8.69

19(a)	2	0.43	0.37	2.98
20	6	1.30	0.118	0.95
21	2	0.43	0.47	3.79
22	2	0.43	0.21	1.69
23	5	1.08	0.137	1.10
23(a)	1	0.21	0.20	1.61
24	11	2.38	0.177	1.42
25	1	0.21	0.9	0.72
26	2	0.43	0.792	6.39
27(a)	1	0.21	0.14	1.12
28	1	0.21	0.32	2.58
29	1	0.21	0.20	1.61
30	1	0.21	0.19	1.53
31	3	0.65	0.55	4.43
31(a)	1	0.21	0.39	3.14
32	3	0.65	0.39	3.14
33	1	0.21	0.15	1.21
36	1	0.21	0.10	0.80
36(a)	4	0.86	0.59	4.68
37	2	0.43	0.22	1.77
38	1	0.21	0.11	0.88
40	1	0.21	0.26	2.09

41	8	1.73	0.108	0.87
42	1	0.21	0.12	0.96
43	1	0.21	0.6	0.48
44	1	0.21	0.30	2.42
45	1	0.21	0.69	5.56
46	1	0.21	0.24	1.93
47	1	0.21	0.31	2.50
48	1	0.21	0.34	2.74
49	1	0.21	0.47	3.79
50	1	0.21	0.30	2.42
51	1	0.21	0.88	7.1
52	1	0.21	0.33	2.66
53	2	0.43	0.32	2.58
54	1	0.21	0.12	0.96
Total	461		12.393	

Table 98 Total Counts and Weight of All Design Types in All Layers.

In the decorated sherds it was observed that some decorations co-occurred on the same sherd. The following table shows the frequency of such pairings observed in the study. A total of 10 sherds were found to have two decorative patterns on it which weighed 0.942 kg together (see Table 99 and figure 115). So, these sherds comprise around 3.71% of the entire sherds having decorative patterns. Interestingly, most of these sherds were found to occur in layer 3. Around ten such sherds were recorded which weigh around 900 gms. The designs found to co-occur with other design types mostly are 4, 24 and 41 which are stamped designs. The fabric types on which these design types occur are oxidized unslipped medium ware, oxidized unslipped medium kaolin ware, oxidized slipped medium kaolin ware with red slip and reduced slipped medium ware (see table 99).

Design (pairs)	Type	Count/ Frequency	Weight (kg.)	Layer
19, 41		1+1	0.08+0.85	3
2(b), 24		1	0.115	3
4, 48		2	0.665	3
12, 36		1	0.23	3
10, 12/14		1	0.12	3
4(a), 24		1	0.34	3
4, 37		1	0.10	4
21, 41		1	0.32	4
Total		10	0.984	

Table 99 Counts and Weight of Design Types Occurring in Pairs Along With Layers.

Figure 115 Design Type 4(a) and 24.

Types of Decorative Patterns

The decorative patterns observed amongst the Ambari ceramics are mostly incised, stamped, sometimes both incised and stamped, appliquéd and moulded designs (see table 100). The incised decorations are those that are incised on the pot surface with a pointed object. The stamped decorations are certain patterns that are stamped on the pot surface. The stamp has the pattern on its surface which when pressed on the pot surface duplicated the pattern. The incised and stamped decoration patterns are those created with the help of

both the techniques of incising and stamping. The appliqué decorative patterns are those that are attached to the surface of the pots and not created on the surface. The moulded decorative patterns are given that pattern on the pot surface with the help of moulds and clay. The most numerous of the four types of decorative patterns are the stamped decorative patterns as can be seen in the table 5. 13 design types out of the total 56 design types are incised. 31 design types are stamped out of the total 56 design types. 4 design types are stamped and incised, 7 design types are appliquéd and 4 design types are moulded. The design types which are most numerous like 2(a), 2(b), 2(c) and 3 are moulded design types 15 and 19 are stamped, design type 3 is moulded and 26 are appliquéd (see table 100).

Incised	Stamped	Incised Stamped	Appliquéd	Moulded
1, 1(a), 1(i), 25, 27(a), 37, 38, 40, 42, 43, 50, 51, 53.	4, 4(a), 5, 6(a), 10, 12, 13, 13(a), 13(b), 14, 15, 15(a), 15(b), 19, 19(a), 21, 22, 23, 23(a), 24, 29, 32, 33, 36, 36(a), 41, 46, 47.	6, 9, 44, 45.	20, 26, 28, 30, 31, 31(a), 49.	2(a), 2(b), 2(c), 3.

Table 100 Design Types According to the Technique.

The following table shows the impressed/incised, stamped, both stamped and incised and appliquéd decorative patterns in relation to the layers they occur in (see table 101).

Layer	Incised (I)	Stamped (S)	Incised Stamped (IS)	Appliquéd (A)	Moulded (M)	Total no. of designs
1		4, 5, 15, 15(a) 19, 19(a).			2(a), 2(b), 2(c), 3.	6(S), 4(M).
2	50.	15, 19, 23, 41, 47.		26.	2(a), 2(b), 2(c), 3.	1(I), 5(S), 1(A), 4(M).

3	27(a), 37, 40.	4, 6(a), 12, 13(b), 14, 15, 15(a), 15(b), 19, 19(a), 21, 22, 23, 24, 29, 36 ,36(a), 41, 46, 48, 52.	9, 45.	20, 26, 30, 31, 31(a).	2(a), 2(b), 2(c), 3.	3(I), 21(S), 2(IS), 5(A), 4(M).
4	38, 42, 51.	4, 4(a), 10, 13(b), 14, 15, 19, 21, 24, 32, 33, 36(a), 41.		49.	2(a), 2(b), 2(c), 3.	3(I), 13 (S), 1(A), 4(M).
5		13, 13(a), 14, 15, 19.		31.	2(a), 2(c), 3.	5(S), 1(A), 3(M).
6		15, 19, 41.			2(a), 2(b), 2(c), 3.	3(S), 4(M).
8					2(c).	1(M).
Unlabeled	25, 43, 53.	4, 10, 12, 14, 15, 15(b), 19. 22, 23, 23(a), 24, 54.	6, 44.	9, 28.	2(a), 2(b), 2(c), 3.	3(I), 12(S), 2(IS), 2(A), 4(M).

Table 101 Impressed/Incised, Stamped, both Stamped and Incised and Appliquéd Design Types in Relation to the Layers.

Layers 1 to 3 roughly belong to 13th to the 16th century CE period and layer 3 and beyond belongs to the early medieval period. In layer 1 the design types observed are 2(a), 2(b), 2(c), 3, 4, 5, 15, 15(a), 19 and 19(a). In layer 2 the design types observed are 2(a), 2(b), 2(c), 3, 15, 19, 23, 26, 41, 47 and 50. In layer 3 the design types observed are 2(a), 2(b), 2(c), 3, 4, 6(a),

9, 12, 13(b), 14, 15, 15(a), 15(b), 19, 19(a), 20, 21, 22, 23, 24, 26, 27(a), 29, 30, 31, 31(a), 36, 36(a), 37, 40, 41, 45, 46, 48 and 52. In layer 4 the design types observed are 2(a), 2(b), 2(c), 3, 4, 4(a), 10, 13(b), 14, 15, 19, 21, 24, 32, 33, 36(a), 38, 41, 42, 49 and 51. In layer 5 the design types observed are 2(a), 2(c), 3, 13, 13(a), 14, 15, 19 and 31. In layer 6 the design types observed are 2(a), 2(b), 2(c), 3, 15, 19 and 41. In layer 8 the design type observed is 2(c) (see table 101).

All throughout the layers the most common design types observed are 2(a), 2(b), 2(c), 3, 15, 19 and 41 (see figure 109, 110, 111, 112, 113, 114 and 116). Design types like 4, 15(a), 19(a), 23 (see figures 117, 118, 119 and 120) and 26 are found to occur only till layer 3 and not beyond. Design types 13(b) (see figure 126), 21(see figure 121), 24 (see figure 122) and 36(a) (see figure 123) are found to occur in layers 3 and 4. In layers 3, 4 and 5 design type 14 (see figure 124) is found to occur but not beyond. These occurrence tendencies among the design types have been observed. Also, it can be noticed that the largest number of design types were observed in layer 3 followed by layer 4 and jointly layers 2 and 5 respectively (see table 101).

Figure 109 Design type 2(a)

Figure 110 Design Type 2(b)

Figure 111 Design Type 2(c)

Figure 112 Design Type 3

Figure 113 Design Type 15

Figure 114 Design Type 19

Figure 116 Design Type 41

Figure 117 Design Type 4

Figure 118 Design Type 15(a)

Figure 119 Design Type 19(a)

Figure 120 Design Type 23

Figure 121 Design Type 21

Figure 122 Design Type 24

Figure 123 Design Type 36(a)

Figure 124 Design Type 14

Decorative Patterns with Layers

The following table gives an account of the frequency of occurrence of sherds having different decorative patterns in relation to the layers. In layer 1 9 designs are found to occur with a sherd count of 35. In layer 2 11 designs are found to occur with a sherd count of 53. In layer 3 35 designs are found to occur with a sherd count of 142. In layer 4 21 designs are found to occur with a sherd count of 130. In layer 5 9 designs are found to occur with a sherd count of 14. In layer 6 7 designs are found to occur with a sherd count of 16. In layer 8 1 design occurs with a sherd count of 1 (see table 102). Layers 1to 3 belong to the medieval

period. Layers 3 to 6 belong to the early medieval period. Layer 3 has the highest count of sherds followed by layer 4. In first part of the medieval period there was a spurt in the number of decorative patterns that were used in Ambari. This spurt started in the later part of the early medieval period and reached its zenith in the medieval period.

Design Type	Layer	Count	Percentage %	Weight (kg.)	Percentage %
2(a)	1	10	27.7	0.168	18.56
2(b)	1	6	16.6	0.163	18.01
2(c)	1	10	27.7	0.485	53.59
3	1	3	8.3	0.30	33.14
4	1	1	2.7	0.5	5.52
15	1	1	2.7	0.7	7.73
15(a)	1	1	2.7	0.11	12.15
19	1	2	5.5	0.17	18.78
19(a)	1	1	2.7	0.19	20.99
2(a)	2	5	10.6	0.108	6.49
2(b)	2	8	17.02	0.164	9.85
2(c)	2	18	38.29	0.303	18.20
3	2	4	8.51	0.56	3.36
15	2	3	6.38	0.41	2.46
19	2	3	6.38	0.52	3.12
23	2	1	2.12	0.90	5.40
26	2	1	2.12	0.734	44.11
41	2	2	4.25	0.17	1.02

47	2	1	2.12	0.31	1.86
50	2	1	2.12	0.30	1.80
2(a)	3	26	18.30	0.566	15.85
2(b)	3	21	14.78	0.260	7.28
2(c)	3	27	19.01	1.053	29.50
3	3	10	7.04	0.284	7.95
4	3	3	2.11	0.128	3.58
6(a)	3	1	0.70	0.18	0.50
9	3	2	1.40	0.27	0.75
12	3	2	1.40	0.55	1.54
13(b)	3	1	0.70	0.21	0.58
14	3	1	0.70	0.40	1.12
15	3	3	2.11	0.92	2.57
15(a)	3	2	1.40	0.19	0.53
15(b)	3	1	0.70	0.38	1.06
19	3	11	7.74	0.250	7
19(a)	3	1	0.70	0.18	0.50
20	3	6	4.22	0.118	3.3
21	3	1	0.70	0.15	4.2
22	3	1	0.70	0.11	0.30
23	3	2	1.40	0.36	1
24	3	2	1.40	0.64	1.79

26	3	1	0.70	0.58	1.62
27(a)	3	1	0.70	0.14	0.39
29	3	1	0.70	0.20	0.56
30	3	1	0.70	0.19	0.53
31	3	2	1.40	0.39	1.09
31(a)	3	1	0.70	0.39	1.09
36	3	1	0.70	0.10	0.28
36(a)	3	1	0.70	0.13	0.36
37	3	1	0.70	0.11	0.30
40	3	1	0.70	0.26	0.72
41	3	3	2.11	0.47	1.31
45	3	1	0.70	0.69	1.93
46	3	1	0.70	0.24	0.67
48	3	1	0.70	0.34	0.95
52	3	1	0.70	0.33	0.92
2(b)	4	8	6.15	0.127	3.80
2(c)	4	39	30	1.063	31.81
3	4	3	2.30	0.95	2.99
4	4	1	0.76	0.75	2.24
4(a)	4	1	0.76	0.4	0.11
10	4	1	0.76	0.21	0.62
13(b)	4	1	0.76	0.27	0.80

14	4	1	0.76	0.26	0.77
15	4	7	5.38	0.144	4.31
19	4	19	14.61	0.602	18.01
21	4	1	0.76	0.32	0.95
24	4	4	3.07	0.61	1.82
32	4	3	2.30	0.39	1.16
33	4	1	0.76	0.15	0.44
36(a)	4	2	1.53	0.46	1.37
38	4	1	0.76	0.11	0.32
41	4	3	2.30	0.35	1.04
42	4	1	0.76	0.26	0.77
49	4	1	0.76	0.47	1.40
51	4	1	0.76	0.88	2.63
2(a)	5	1	7.69	0.17	2.99
2(c)	5	4	30.76	0.220	38.80
3	5	1	7.69	0.27	4.76
13	5	1	7.69	0.61	10.75
13(a)	5	1	7.69	0.25	4.40
14	5	1	7.69	0.7	1.23
15	5	2	15.38	0.161	28.39
19	5	1	7.69	0.33	5.82
31	5	1	7.69	0.16	2.82

2(a)	6	1	6.25	0.21	7.74
2(b)	6	2	12.5	0.45	16.60
2(c)	6	4	25	0.51	18.81
3	6	6	37.5	0.67	24.72
15	6	1	6.25	0.7	2.58
19	6	1	6.25	0.57	21.03
41	6	1	6.25	0.23	8.48
2(c)	8	1		0.15	

Table 102 Frequency of Occurrence of Different Design Types in Relation to the Layers.

The following charts show the design counts, sherd counts and weight of all the decorated wares found in Ambari according to the layers (see figure 125a, 125b and 125c). The table distinctly shows a peak in the use of decorated wares in layer 3. There can be seen a gradual decline from layer 3 towards layer 1. The gradual rise can be seen from layer 2 toward layer 3 and then there is a gradual fall from layer 3 towards 4. The chart 125a shows the different weights of sherds collected from the different layers of Ambari. The chart 125b shows the counts of the sherds collected from the different layers of Ambari. The chart 125c shows the different varieties of decorations observed and recorded in all the layers of Ambari.

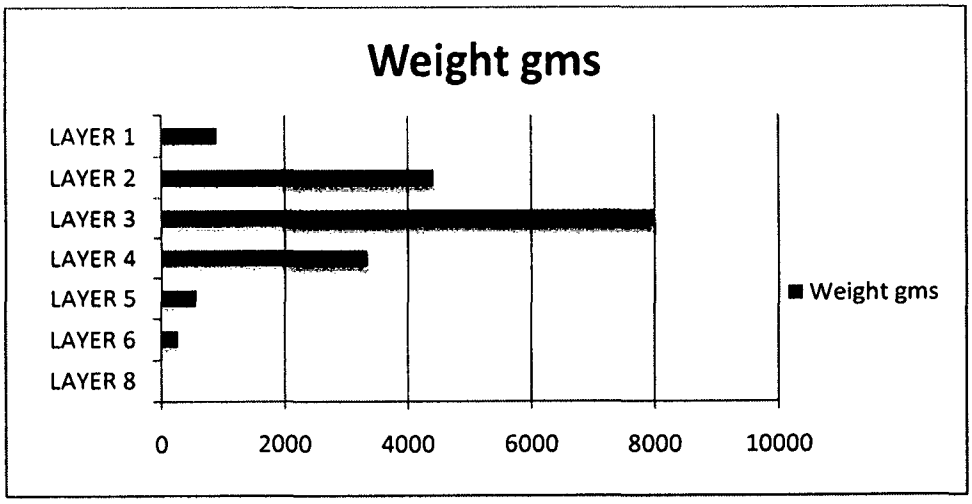

Figure 125a Weight of Sherds in the Different Layers.

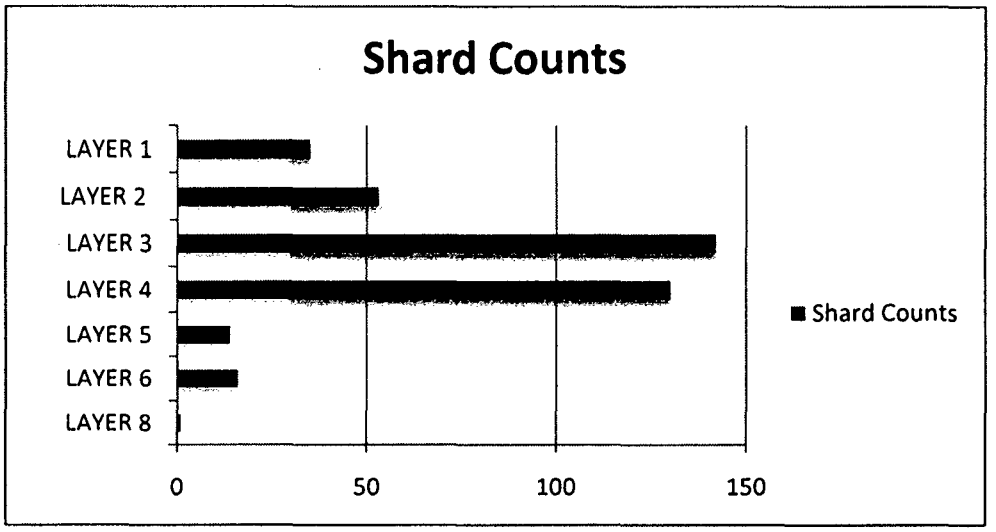

Figure 125b Sherd Counts in Different Layers.

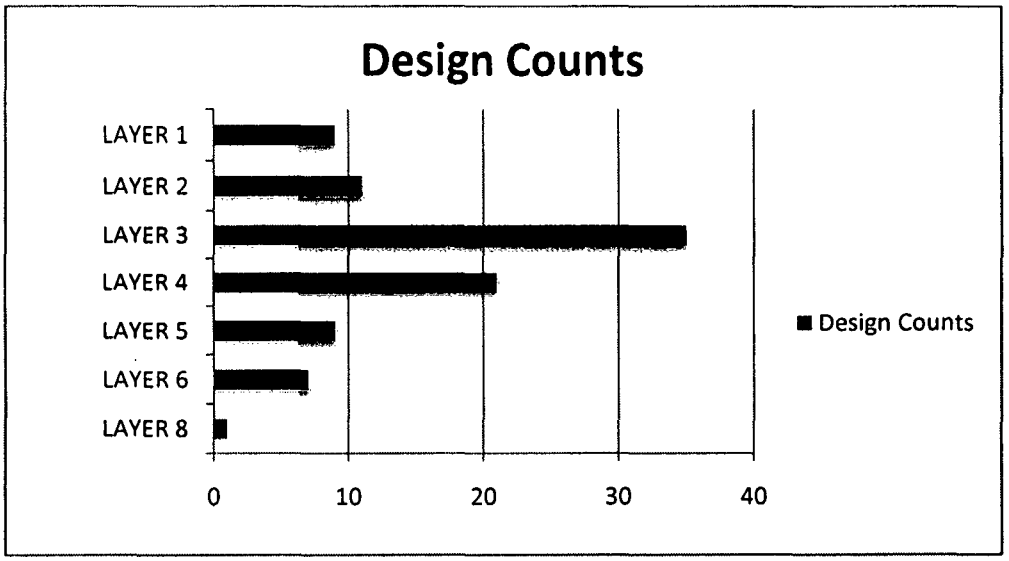

Figure 125c Design Counts in Different Layers.

Individual Design Types with Fabric Types and Layers

The following table shows the decorative pattern 2(a) in relation to the fabric types of the ceramics in all the layers (see table 103). This design type is found to have the highest sherd counts in layer 4 (29) and followed by layer 3 (24). This design type has the lowest sherd count in layer 6 and 8 (both 1) (see table 103 and figure 109) The most used fabric is oxidized slipped medium kaolin ware with red clay slip (39) followed by oxidized unslipped medium kaolin ware (19).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O1M		5	0.84
	O2M(K)	Red clay slip	4	0.66
	O1M(K)		1	0.17
2	O1M		1	0.10
	O2M(K)	Red clay slip	2	0.54
	O1M(K)		2	0.44
3	O1M		1	0.99
	O2M(K)	Red clay slip	16	0.295
	O1M(K)		7	0.127
4	O1M		4	0.164
	O2M(K)	Red clay slip	15	0.252
	O1M(K)		9	0.320
	R1M		1	0.9
5	O2M(K)	Red clay slip	1	0.17
6	O2M(K)	Red clay slip	1	0.21

Table 103 Design Type 2(a) in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 2(b) in relation to the fabric type of the ceramics, in all the layers. The highest sherd counts in this design type are observed in layer 3 (21) and the lowest sherd count observed in layer 6 (see table 104 and figure 110). In design 2(b) the most used fabric is oxidized slipped medium kaolin ware with red clay slip (18) followed by oxidized unslipped medium kaolin ware (16).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O1M		4	0.98
	O2M(K)	Red clay slip	2	0.75
2	O1M		4	0.120
	O2M(K)	Red clay slip	1	0.20
	O1M(K)		3	0.24
3	O2M(K)	Red clay slip	10	0.107
	O1M(K)		11	0.164
4	O1M		3	0.43
	O2M(K)	Red clay slip	3	0.48
	O1M(K)		2	0.23
6	O2M(K)	Red clay slip	2	0.45

Table 104 Design Type 2(b) in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 2(c) in relation to fabric types of the ceramics in all the layers. The layer having the highest count of sherds is layer 4 (39) and the layer with the lowest count of sherds is layer 5, 6 (both 4) and layer 8 (1) respectively (see table 105 and figure 111). In 2(c) the most used fabric is oxidized slipped medium kaolin ware with red clay slip (58) followed by oxidized unslipped medium ware (32).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O1M		3	0.130
	O2M(K)	Red clay slip	6	0.201
	O1M(K)		1	0.154
2	O1M		5	0.114

	O2M(K)	Red clay slip	12	0.170
	O1M(K)		1	0.19
3	O1M		6	0.211
	O2M(K)	Red clay slip	13	0.252
	O1M(K)		1	0.68
	O1C		6	0.513
4	O1M		14	0.408
	O2M(K)	Red clay slip	23	0.569
	O1M(K)		1	0.101
	O2C(K)	Red clay slip	1	0.25
5	O1M		3	0.182
	O2M(K)	Red clay slip	1	0.38
6	O1M		1	0.13
	O2M(K)	Red clay slip	3	0.37
8	O2M	Red clay slip	1	0.15

Table 105 Design Type2(c) in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 3 in relation to the fabric type of the ceramics in all the layers. Layer three (10) has the highest count of sherds and Layer five (1) has the lowest count of sherds (see table 106 and figure 112). In design 3 the most used fabric is oxidized slipped medium ware (10) and followed by oxidized slipped medium kaolin ware (8).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O1M		1	0.19

	O2M(K)	Red clay slip	2	0.11
2	O1M		2	0.17
	O2M(K)	Red clay slip	1	0.22
	O1M(K)		1	0.17
3	O1M		5	0.95
	O2M(K)	Red clay slip	2	0.36
	O1M(K)		3	0.166
4	O1M		1	0.43
	O2M(K)	Red clay slip	1	0.8
	O1M(K)		1	0.43
5	O1M(K)		1	0.27
6	O1M		1	0.11
	O2M(K)	Red clay slip	2	0.25

Table 106 Design Type 3 in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 4 in relation to the fabric type of the ceramics in all the layers. Layer three (3) has the highest count of sherds followed by the other two layers which are 1 and 4 (both 1 count) (see table 107 and figure 117). In design type 4 the most used fabric is oxidized unslipped medium ware (4) followed by oxidized slipped medium ware (1).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O1M		1	0.5
3	O1M		3	0.128
4	O2M	Red clay slip	1	0.75

Table 107 Design Type 4 in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 13(b) in relation to the fabric type of the ceramics, in all the layers. 13(b) has the same sherd count of one in both the layers 3 and 4 (see table 108 and figure 126). Design type 13(b) occurs with one sherd each in oxidized unslipped medium ware fabric and oxidized slipped medium kaolin ware with red clay slip fabric.

Figure 109 Design Type 2(a)

Figure 110 Design Type 2(b)

Figure 111 Design Type 2(c)

Figure 112 Design Type 3

Figure 117 Design Type 4

Figure 126 Design Type 13(b)

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M		1	0.21
4	O2M(K)	Red clay slip	1	0.27

Table 108 Design Type 13(b) in Relation to the Fabric Types in All the Layers

The following table shows decorative pattern 14 in relation to the fabric type of the ceramics in all the layers. All the layers 3, 4 and 5 have a sherd count of 1 (see table 109 and figure 124). In design 14 the most used fabric is oxidized slipped medium kaolin ware with red clay slip (2) followed by oxidized slipped medium ware fabric (1).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M		1	0.40
4	O2M(K)	Red clay slip	1	0.26
5	O2M(K)	Red clay slip	1	0.7

Table 109 Design Type 14 in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 15 in relation to the fabric type of the ceramics in all the layers. The highest sherd count can be seen in layer 4 (6). The lowest sherd count is seen in layer 1 and 6 (both one count) (see table 110 and figure 113). In design 15 the most used fabric is oxidized slipped medium kaolin ware with red clay slip (7) and oxidized unslipped medium ware (5).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O2M(K)	Red clay slip	1	0.7
2	O1M		2	0.29
	O2M(K)	Red clay slip	1	0.12
3	O2M(K)	Red clay slip	1	0.55
	O1M(K)		1	0.6

	O2M	Red clay slip	1	0.31
4	O1M		1	0.7
	O2M(K)	Red clay slip	3	0.72
	OIM(K)		1	0.14
	O2M	Red clay slip	1	0.26
5	O1M		2	0.167
6	O2M(K)	Red clay slip	1	0.7

Table 110 Design Type 15 in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 15(a) in relation to the fabric type of the ceramics in all the layers. Layer 3 has a sherd count of 2 and layer 1 has a sherd count of 1 (see table 111 and figure 118). In 15(a) design type the only used fabric is oxidized slipped medium kaolin ware with red clay slip (3).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O2M(K)	Red clay slip	1	0.11
3	O2M(K)	Red clay slip	2	0.19

Table 111 Design Type 15(a) in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 19 in relation to the fabric type of the ceramics in all the layers. The layer with the highest count of sherds is layer 4 (19). Layers with the lowest count of sherds are layer 5 and 6 (see table 112 and figure 114). In design 19 the most used fabric is oxidized unslipped medium ware (18) and followed by oxidized slipped medium kaolin ware with red clay slip (13).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O1M		1	0.6
	O2M	Red clay slip	1	0.11

2	O1M		1	0.18
	O2M(K)	Red clay slip	1	0.28
	OIM(K)		1	0.6
3	O1M		4	0.137
	O2M(K)	Red clay slip	4	0.89
	OIM(K)		1	0.5
	O2M(K)	Kaolin clay slip	1	0.18
4	O1M		12	0.428
	O2M(K)	Red clay slip	6	0.155
	OIM(K)		1	0.2
5	O2M(K)	Red clay slip	1	0.33
6	O2M(K)	Red clay slip	1	0.57

Table 112 Design Type 19 in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 19(a) in relation to the fabric type of the ceramics in all the layers. Both layers 1 and 3 have a sherd count of 1 each (see table 113 and figure 119). In 19(a) design type the only used fabric is oxidized unslipped medium ware (2).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
1	O1M		1	0.19
3	O1M		1	0.18

Table 113 Design Type 19 (a) in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 21 in relation to the fabric type of the ceramics in all the layers. Both layers 3 and 4 have 1 sherd count each (see table 114 and figure 121). In design type 21 one sherd occurs in each oxidized slipped medium ware and oxidized slipped medium kaolin ware with red clay slip fabric.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O2M	Red clay slip	1	0.15
4	O2M(K)	Red clay slip	1	0.32

Table 114 Design Type 21 in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 23 in relation to the fabric type of the ceramics in all the layers. The layer 3 has a sherd count of 2 while layer 2 has a sherd count of 1 (see table 115 and figure 120). In design type 23 oxidized unslipped medium kaolin ware, oxidized slipped medium kaolin ware with red clay slip and reduced unslipped medium ware fabrics each occurs once.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
2	R1M		1	0.90
3	O2M(K)	Red clay slip	1	0.5
	OIM(K)		1	0.31

Table 115 Design Type 23 in Relation to the Fabric Types in All the Layers.

Figure 124 Design Type 14

Figure 113 Design Type 15

Figure 118 Design Type 15 (a)

Figure 114 Design Type 19

Figure 119 Design Type 19(a)

Figure 121 Design Type 21

Figure 120 Design Type 23

Figure 122 Deign Type 24

The following table shows decorative pattern 24 in relation to the fabric type of the ceramics in all the layers. Layer 4 has a sherd count of 5 and layer 3 has a sherd count of 2 (see table 116 and figure 122). In design type 24 the most used fabric is oxidized slipped medium kaolin ware with red clay slip (4) followed by oxidized unslipped medium kaolin ware (3).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O2M(K)	Red clay slip	2	0.64
4	O1M		3	0.14

	O2M(K)	Red clay slip	2	0.47

Table 116 Design Type 24 in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 26 in relation to the fabric type of the ceramics in all the layers. Both layers 2 and 3 have a sherd count of one in fabric type oxidized unslipped medium ware and oxidized slipped medium kaolin ware with red clay slip (see table 117).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
2	O1M		1	0.734
3	O2M(K)	Kaolin clay slip	1	0.58

Table 117 Design Type 26 in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 36(a) in relation to the fabric type of the ceramics in all the layers. Layer 4 has a count of 2 and layer 3 has a count of 1 (see table 118 and figure 123) In design 36(a) the most used fabric is oxidized slipped medium kaolin ware with red slip (2) followed by oxidized unslipped medium ware (1).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M		1	0.13
4	O2M(K)	Red clay slip	2	0.46

Table 118 Design Type 36 (a) in Relation to the Fabric Types in All the Layers.

The following table shows decorative pattern 41 in relation to the fabric type of the ceramics in all the layers. Layer 3 (3) has the highest count of sherds and layer 6 (1) has the lowest count of sherds (see table 119 and figure 116). In design 41 the most used fabric is oxidized slipped medium kaolin ware with red clay slip (5) and followed by oxidized unslipped medium ware (3).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
2	O1M		1	0.5
	O2M(K)	Red clay slip	1	0.12

3	O1M		1	0.27
	O2M(K)	Red clay slip	2	0.20
4	O1M		1	0.7
	O2M(K)	Red clay slip	1	0.17
6	O2M(K)	Red clay slip	1	0.23

Table 119 Design Type 41 in Relation to the Fabric Types in All the Layers.

Figure 123 Design Type 36(a)

Figure 116 Design Type 41

The following tables show decorative patterns 4(a), 6(a), 9, 10, 12, 13, 13(a), 15(b), 20, 22, 27(a), 29, 30, 31(a), 32, 33, 36, 37, 38, 40, 45, 46, 47, 48, 49, 50, 51 and 52 which occur respectively in only one layer in relation to the fabric type of the ceramics. Design type 4(a), 10, 33, 38, 49 and 51 are found to have only one sherd count in layer 4. Design type 6(a), 15(b), 22, 27(a), 29, 30, 31(a), 37, 40, 45, 46, 48 and 52 has one sherd count in layer 3. Design Type 9 and 12 has sherd count of 2 in layer 3. Design Type 13 and 13(a) are both having one sherd count in layer 5. Design Type 20 is having a sherd count of 6 in layer 3. Design Type 32 has a sherd count of 3 in layer 4. Design Type 47 and 50 has a sherd count of 1 in layer 2 (see table 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146 and 147 respectively and figures 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149 and 150).

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
4	O2M(K)	Red clay slip	1	0.4

Table 120 Design Type 4(a) in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O2M(K)	Red clay slip	1	0.18

Table 121 Design Type 6(a) in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O2M(K)	Red clay slip	2	0.27

Table 122 Design Type 9 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
4	O2M(K)	Red clay slip	1	0.21

Table 123 Design Type 10 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M		1	0.13
	O1M(K)		1	0.21

Table 124 Design Type 12 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
5	O2M(K)	Red clay slip	1	0.61

Table 125 Design Type 13 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
5	O2M(K)	Red clay slip	1	0.25

Table 126 Design Type 13(a) in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O2M(K)	Red clay slip	1	0.38

Table 127 Design Type 15(b) in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M		6	0.118

Table 128 Design Type 20 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M		1	0.11

Table 129 Design Type 22 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O2M(K)	Red clay slip	1	0.14

Table 130 Design Type 27(a) in Relation to the Fabric Types in All the Layers.

Figure 127 Design Type 4(a)

Figure 128 Design Type 6(a)

Figure 129 Design Type 9

Figure 130 Design Type 10

Figure 131 Design Type 12

Figure 132 Design Type 13

Figure 133 Design Type 13(a)

Figure 134 Design Type 15 (b)

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	R1M		1	0.20

Table 131 Design Type 29 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	OIM(K)		1	0.11

Table 132 Design Type 30 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	R2M	Clay Slip	1	0.39

Table 133 Design Type 31(a) in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
4	O1M		2	0.28
	O2M(K)	Red clay slip	1	0.11

Table 134 Design Type 32 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
4	O1M		1	0.15

Table 135 Design Type 33 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M		1	0.10

Table 136 Design Type 36 in Relation to the Fabric Types in All the Layers.

Figure 135 Design Type 20

Figure 136 Design Type 22

Figure 137 Design Type 27(a)

Figure 138 Design Type 29

Figure 139 Design Type 31(a)

Figure 140 Design Type 32

Figure 141 Design Type 33

Figure 142 Design Type 36

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M(K)		1	0.11

Table 137 Design Type 37 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
4	O1M		1	0.11

Table 138 Design Type 38 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O1M		1	0.26

Table 139 Design Type 40 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O2M(K)	Red clay slip	1	0.69

Table 140 Design Type 45 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	O2M(K)	Red clay slip	1	0.24

Table 141 Design Type 46 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
2	O2M(K)	Kaolin clay slip	1	0.31

Table 142 Design Type 47 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	R2M	Clay slip	1	0.34

Table 143 Design Type 48 in Relation to the Fabric Types in All the Layers.

Figure 143 Design Type 37

Figure 144 Design Type 45

Figure 145 Design Type 46

Figure 146 Design Type 47

Figure 147 Design Type 48

Figure 148 Design Type 49

Figure 149 Design Type 50

Figure 150 Design Type 52

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
4	O2M(K)	Red clay slip	1	0.47

Table 144 Design Type 49 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
2	O1M(K)		1	0.30

Table 145 Design Type 50 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
4	O1M		1	0.88

Table 146 Design Type 51 in Relation to the Fabric Types in All the Layers.

Layer	Fabric type	Slip/Wash	Count	Weight (kg.)
3	R2M	Clay slip	1	0.33

Table 147 Design Type 52 in Relation to the Fabric Types in All the Layers.

Sherd Counts According To Fabrics Layer wise

In the following table the data from table 103 to 113 in layer 1 has been compiled and compared. The sherd counts of oxidized unslipped medium ware (16) and oxidized slipped kaolin medium ware with red slip (16) are the highest (see table 148). In layer 1 the most popular fabrics are oxidized unslipped medium ware (16) and oxidized slipped kaolin medium ware with red slip (16).

Design Type	O1M	O1M(K)	O2M	O2M(K) with red slip	O2M(K)	R1M	R2M
2(a)	5	1		4			
2(b)	4			2			
2(c)	3	1		6			
3	1			2			
4	1						
15				1			
15(a)				1			
19	1		1				
19(a)	1						
Total	16	2	1	16			

Table 148 Sherd Counts of all the Design Types in All Fabric Types in Layer 1.

In the following table the data from table 103 to 119 in layer 2 has been colmpiled and compared. The highest count of sherds is observed in oxidized unslipped medium ware (21) (see table 149). In layer 2 the popular fabric is oxidized unslipped medium ware (21).

Design Type	O1M	O1M(K)	O2M	O2M(K) with red slip	O2M(K)	R1M	R2M
2(a)	1	2		2			
2(b)	4	3		1			
2(c)	5	1		12			
3	2	1		1			
15	2			1			
19	1	1		1			
23						1	
26	1						
41	1			1			
47					1		
50		1					
Total	21	8		19	1	1	

Table 149 Sherd Counts of all the Design Types in All Fabric Types in Layer 2.

In the following table the data from table 103 to 119 in layer 3 has been compiled and compared. The highest count of sherds was in oxidized slipped medium kaolin ware with red slip (61) (see table 150). In layer 3 the popular fabric is oxidized slipped medium kaolin ware with red slip fabric (61).

Design Type	O1M	O1M(K)	O2M	O2M(K) with red slip	O2M(K)	O1C	R1M	R2M
2(a)	1	7		16				
2(b)		11		10				

2(c)	6	1		13		6	
3	5	3		2			
4	3						
6(a)				1			
9				2			
12	1	1					
13(b)	1						
14	1						
15		1	1	1			
15(a)				2			
15(b)				1			
19	4	1	1	4			
19(a)	1						
20	6						
21			1				
22	1						
23		1		1			
24				2			
26					1		
27(a)				1			
29							1
30		1					

31	1			1				
31(a)								1
36	1							
36(a)	1							
37	1							
40	1							
41	1			2				
45				1				
46				1				
48								1
52								1
Total	36	27	3	61	1	6	1	3

Table 150 Sherd Counts of all the Design Types in All Fabric Types in Layer 3.

In the following table the data from table 103 to 119 in layer 4 has been compiled and compared. The highest count of sherds is observed in oxidized slipped medium kaolin ware with red slip (63) (see table 151). In layer 4 the popular fabric is oxidized slipped medium kaolin ware with red slip (63).

Design Type	O1M	O1M(K)	O2M	O2M(K) with red slip	O2M(K)	O2M(K)	R1M	R2M
2(a)	4	9		15			1	
2(b)	3	2		3				
2(c)	14	1		23		1		

3	1	1		1		
4			1			
4(a)				1		
10				1		
13(b)				1		
14				1		
15	1	1	1	3		
19	12	1		6		
21				1		
24	3			2		
32	2			1		
33	1					
36(a)				2		
38	1					
41	1			1		
49				1		
51	1					
Total	44	15	2	63	1	1

Table 151 Sherd Counts of all the Design Types in All Fabric Types in Layer 4.

In the following table the data from table 103 to 112 in layer 5 has been compiled and compared. The highest count of sherds is observed in oxidized slipped medium kaolin ware with red slip (6) (see table 152). In layer 5 the popular fabric is oxidized slipped medium kaolin ware with red slip (6).

Design Type	O1M	O1M(K)	O2M	O2M(K) with red slip	O2M(K)	O1C	R1M	R2M
2(a)				1				
2(c)	3			1				
3		1						
13				1				
13(a)				1				
14				1				
15	2							
19				1				
31		1						
Total	5	2		6				

Table 152 Sherd Counts of all the Design Types in All Fabric Types in Layer 5.

In the following table the data from table 103 to 119 in layer 6 has been compiled and compared. The oxidized slipped medium kaolin ware (11) with red slip has the highest count of sherds (see table 153). In layer 6 the popular fabric is oxidized slipped medium kaolin ware with red slip (11).

Design Type	O1M	O1M(K)	O2M	O2M(K) with red slip	O2M(K)	O1C	R1M	R2M
2(a)				1				
2(b)				2				
2(c)	1			3				

3	1	2
15		1
19		1
41		1
Total	2	11

Table 153 Sherd Counts of all the Design Types in All Fabric Types in Layer 6.

In the following table the data from table 105 in layer 8 has been compiled and compared. The only sherd reported from layer 8 is in oxidized slipped medium ware (see table 154).

Design Type	O1M	O1M(K)	O2M
2(c)			1
Total			1

Table 154 Sherd Counts of all the Design Types in All Fabric Types in Layer 8.

The following chart shows the usage of different types of fabrics within the decorated wares from the site of Ambari in the different layers. All throughout the layers it seems for the decorative ceramics the most preferred fabric is oxidized slipped medium kaolin ware with red clay slip [O2M(K)] followed by oxidized unslipped medium ware (O1M). Also the count of sherds in the fabric oxidized slipped medium kaolin ware with red slip is the highest in layers 4 and 3 (see table 148 to 154 and figure 151). The following figure suggests that the use of oxidized slipped medium kaolin ware with red clay slip had picked up in the layer 3 and layer 4. Then its usage gradually declined but it did not go out of use. In the layer 2 and layer 1 the oxidized unslipped medium ware began to be used equally along with the slipped medium kaolin ware with red clay slip. The fabric oxidized unslipped medium kaolin ware is also used the most layer in 3 and layer 4. But its peak can be seen in layer 3.

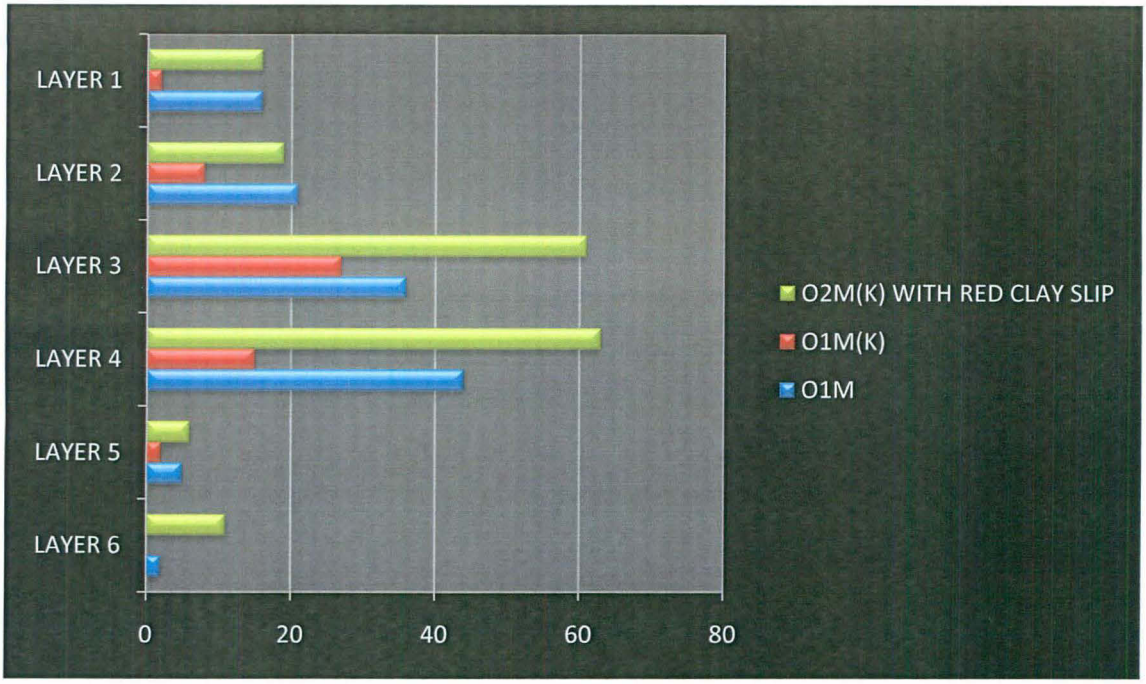

Figure 151 Counts of O1M, O1M(K) and O2M(K) with Red Clay Slip in All the Layers.

Issue of Standardization

In the moulded and stamped designs the measurement of design types was done to ascertain the standardization or lack of standardization that can be observed amongst them in terms of their dimensions. The dimensions of the different decorative patterns were taken in order to see if there is any uniform pattern observed in their dimensions or is there a wide variability. Also, this may enable us to get a better picture of the tools like stamps which were used in the decoration process. The following table shows the different sizes and its frequency observed in design pattern 2(c) which is a moulded design type (see table 155). In design type 2(c) we see some uniformity in the sizes taken for the sherds with oxidized slipped medium kaolin fabric with red clay slip. The 3 mm to 4 mm is the common sizes for this fabric type across all layers. From layers 1 to 4 the three common sizes are 3mm, 4mm and 6mm. But after the layer 4 6 mm sizes are not recorded any more. In the oxidized slipped medium fabric type the sizes commonly observed are 3mm to 4 mm from layer 2 onwards (see table 155). The measurements were taken of the space between the two parallel ridges formed by the mould (see figure 152, area shown by the straight line).

Fabric Type	Layer	Measurements	Count	Percentage %
O2M(K) with red clay slip	1	0.4	1	6.59
		0.5	4	
		0.6	1	
O1M	1	0.7	1	2.1
		0.8	1	
O2M(K) with red clay slip	2	0.3	1	12.08
		0.4	4	
		0.5	5	
		0.6	1	
O1M	2	0.3	1	5.49
		0.4	1	
		0.5	2	
		0.7	1	
O1M(K)	2	0.4	1	1.09
O1M	3	0.3	1	5.49
		0.4	2	
		0.5	2	
O2M(K) with red clay slip	3	0.4	1	6.59

		0.5	4	
		0.6	1	
O1M(K)	3	0.4	1	1.09
O1C	3	0.4	6	6.59
O1M	4	0.3	2	20.8
		0.4	12	
		0.5	3	
O2M(K) with red clay slip	4	0.6 0.2	2 1	23.07
		0.3	4	
		0.4	3	
		0.5	9	
		0.6	4	
O1M(K)	4	0.4	1	1.09
O1C(K)	4	0.3	1	1.09
O2M(K) with red clay slip	5	0.4	1	3.29
		0.5	2	
O1M	5	0.4	1	1.09
O2M(K) with red clay slip	6	0.4	1	3.29
		0.5	1	

		0.8	1	
O2M	8	0.5	1	1.09
Total			91	

Table 155 Different Sizes and its Frequency Observed in Design Pattern 2(c).

The following table shows the different sizes and its frequency observed in design pattern 2(b) which is also a moulded design type (see table 156). In 2(b) we can see from the sizes that compared to 2(c) there is less space and also looks finer. The common sizes throughout the layers are 2 mm to 3 mm (see table 156). Both designs 2(b) and 2(c) are moulded design types. The tools used for these designs are moulds. The sizes taken are the impressions made by the mould. The 2 (c) design type is more spaced out then 2 (b) and so the moulds also would come in different sizes and types. The measurements were again taken of the space between the two parallel ridges formed by possibly a comb (see figure 153, the area shown by the line).

Fabric Type	Layer	Measurements	Count	Percentage %
O2M(K) with red clay slip	1	0.4	1	4.76
O1M	1	0.2	1	9.52
	1	0.3	1	
O1M(K)	2	0.1	1	9.52
		0.2	1	
O1M	2	0.1	2	14.28
		0.2	1	
O2M(K) with red clay slip	2	0.2	1	9.52
		0.3	1	

O2M(K) with red clay slip	3	0.2	2	14.28
		0.3	1	
O1M	4	0.2	3	14.28
O2M(K) with red clay slip	4	0.2	2	9.52
O1M(K)	4	0.2	1	4.76
O2M(K) with red clay slip	6	0.2	2	9.52
Total			21	

Table 156 Different Sizes and its Frequency Observed in Design Pattern 2(b).

The following table shows the different sizes observed in design pattern 3 and its frequency (see table 157). This is a moulded design. The measurements were taken of the boxes or squares (see figure 69, the area shown by the line). There is one instance where one sherd is found where kaolin clay is used for this design type on top of oxidized unslipped medium fabric in layer 1 (see figure 154, photograph).

Fabric Type	Layer	Measurements	Count	Percentage %
O1M	1	0.3	1	4.5
O2M(K) with red clay slip	1	0.4	1	4.5
O2M(K) with red clay slip	2	0.5	1	4.5
O1M	2	0.4	1	9.09
		0.5	1	
O1M	3	0.3	1	22.7

		0.4	2	
		0.5	1	
		0.7	1	
O2M(K) with red clay slip	3	0.3	2	9.09
O1M(K)	3	0.6	1	9.09
		1.5	1	
O1M(K)	4	0.3	1	4.5
O2M(K) with red clay slip	4	0.4	1	4.5
O1M	4	0.3	1	4.5
O2M(K) with red clay slip	5	0.3	1	4.5
O2M(K) with red clay slip	6	0.4	1	9.09
		0.3	1	
O1M	6	0.4	1	9.09
		0.5	1	
Total			22	

Table 157 Different Sizes and its Frequency Observed in Design Pattern 3.

The following table shows the different sizes observed in design pattern 4 and its frequency. Design type 4 is a stamped design that occurs in layers 1, 3 and 4 in sizes that do not go beyond 1 cm (see table 158). The measurements were taken of the diameter of the circular design pattern (see figure 155, the area shown by the straight line).

Fabric Type	Layer	Measurements	Count	Percentage %
O1M	1	1	1	20
O1M	3	0.8	2	60
		1	1	
O2M	4	0.9	1	20
Total			5	

Table 158 Different Sizes and its Frequency Observed in Design Pattern 4.

The following table shows the different sizes and its frequency observed in design pattern 14 which is a stamped design pattern (see table 159). Design Type 14 has a uniform breadth of 5 mm and its length is around 1 cm across all layers. The measurements taken were those of the length and the breadth (where it curves) of the design type (see figure 156, the area shown by the two straight lines).

Fabric Type	Layer	Measurements	Count	Percentage %
O1M	3	0.5 x 1.1	1	33.3
O2M(K) with red clay slip	4	0.5 x 1	1	33.3
O2M(K) with red clay slip	5	0.5 x 1.2	1	33.3
Total			3	

Table 159 Different Sizes and its Frequency Observed in Design Pattern 14.

Figure 152 Image and Sketch of 2(c) Design Pattern with the Area Measured.

Figure 153 Image and Sketch of 2(b) Design Pattern with the Area Measured.

Figure 154 Image and Sketch of 3 Design Pattern with the Area Measured.

Figure 155 Image and Sketch of 4 Design Pattern with the Area Measured.

Figure 156 Image and Sketch of 14 Design Pattern with the Area Measured.

The following table shows the different sizes observed in design pattern 15 and its frequency (see table 160). In design type 15 which is a stamped design pattern the common sizes in the fabric oxidized slipped medium kaolin ware with red clay slip are 1.8 cm and 1.6 cm respectively. The design types 4 and 15 are similar to a great extent. The design 15 has more concentric circles as compared to design 4. The measurements taken were those of the diameter of the circular design pattern (see figure 157, the area shown by the straight line).

Fabric Type	Layer	Measurements	Count	Percentage %
O2M(K) with red clay slip	1	1.8	1	7.6
O1M	2	0.9	1	15.3
		1.4	1	
O2M(K) with red clay slip	2	1.6	1	7.6
O2M	3	1.5	1	7.6
O2M(K) with red clay slip	3	1.8	1	7.6
O2M	4	1.7	1	7.6
O2M(K) with red clay slip	4	1.6	1	15.3
		1.8	1	
O1M	4	1.2	1	7.6
O1M	5	1.5	1	15.3
		1.8	1	
O2M(K) with red clay slip	6	1.8	1	7.6

Total	13

Table 160 Different Sizes and its Frequency Observed in Design Pattern 15.

The following table shows the different sizes observed in design pattern 19 and its frequency (see table 161). In design type 19, which is again a stamped design pattern, the common sizes across all layers are from 1.8 cm to 2.2 cm. The measurements were taken of lengths and breadths of the design pattern (see figure 158, the area shown by the two straight lines).

Fabric Type	Layer	Measurements	Count	Percentage %
O1M	2	1.8	1	4
O1M(K)	3	2.1	2	8
O2M(K) with red clay slip	3	1.8	2	16
		2.1	2	
O2M(K) with kaolin slip	3	2.2	1	4
O1M	3	1.6	1	8
		1.8	1	
O2M(K) with red clay slip	4	1.8	2	24
		1.9	3	
		2.1	1	
O1M	4	1.8	1	28
		2.3	1	
		2	1	

		2.1	1	
		2	1	
		2.2	1	
		2.4	1	
O2M(K) with red clay slip	5	2.4	1	4
O1M	6	1.6	1	4
Total			25	

Table 161 Different Sizes and its Frequency Observed in Design Pattern 19.

The following table shows the different sizes observed in design pattern 19(a) and its frequency (see table 162). Design 19(a) is a stamped design pattern which is very similar to the design 19. In design 19(a) compared to 19 there is an extra quadrangle or square in the decoration. The length wise and breadth wise measurements were taken of the design pattern (see figure 159, the area shown by the two straight lines).

Fabric Type	Layer	Measurements	Count	Percentage %
O1M	1	1.7 x 2.4	1	50
O1M	3	2.3	1	50
Total			2	

Table 162 Different Sizes and its Frequency Observed in Design Pattern 19(a).

The following table shows the different sizes observed in design pattern 23 and its frequency (see table 163). This is a stamped decorative pattern and similar to 4 and 15 design types. It does not have the combed design around the outer circle. The measurements taken were that of the diameter of the decorative pattern (see figure 160, the area shown by the straight line).

Fabric Type	Layer	Measurements	Count	Percentage %
RIM	2	0.8	1	33.3
O1M(K)	3	1.5	1	33.3
O2M(K) with red clay slip	3	1.4	1	33.3
Total			3	

Table 163 Different Sizes and its Frequency Observed in Design Pattern 23.

The following table shows the different sizes observed in design pattern 24 and its frequency (see table 164). In design type 24 it has been observed that in the oxidized slipped medium kaolin ware with red clay slip fabric the sizes are around 1.5 cm. In all layers it has been observed that the sizes are from 1 cm to 1.5 cm. Design Type 24 is a stamped design type and is similar to 19 and 19(a) design types. It has an additional cross within the square design pattern. The length wise and breadth wise measurements were taken of the decorative pattern (see figure 161, the area shown by a straight line).

Fabric Type	Layer	Measurements	Count	Percentage %
O2M(K) with red clay slip	3	1.5	1	33.3
		1.6	1	
O1M	4	1	1	50
		1.3	1	
		2.2	1	
O2M(K) with red clay slip	4	1.5	1	33.3
		2	1	
Total			6	

Table 164 Different Sizes and its Frequency Observed in Design Pattern 24.

Figure 157 Image and Sketch of 15 Design Pattern with the Area Measured.

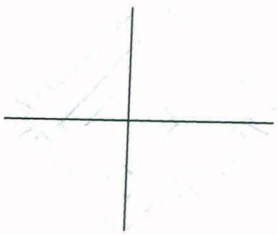

Figure 158 Image and Sketch of 19 Design Pattern with the Area Measured.

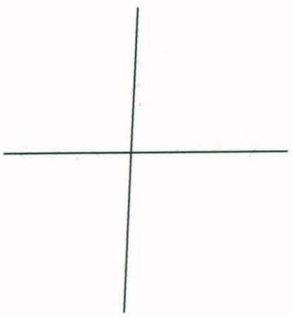

Figure 159 Image and Sketch of 19(a) Design Pattern with the Area Measured.

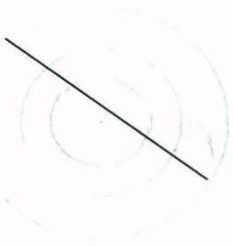

Figure 160 Image and Sketch of 23 Design Pattern with the Area Measured.

The following table shows the different sizes observed in design pattern 36(a) and its frequency (see table 165). This design type is similar to 19, 19(a) and 24 with some slight differences. The length wise and breadth wise measurements were taken of the design type (see figure 162, the area shown by two straight lines).

Fabric Type	Layer	Measurements	Count	Percentage %
O2M(K) with red clay slip	4	1.7 x 1.9	1	50
		1.7 x 2	1	50
Total			2	

Table 165 Different Sizes and its Frequency Observed in Design Pattern 36(a).

The following table shows the different sizes observed in design pattern 41 which is a stamped pattern and its frequency (see table 166). In design type 41 it can be observed that the sizes are varying between 3 mm to 4 mm in all layers. The measurements were taken of the space between the two straight lines (see figure 163, the area shown by the straight line).

Fabric Type	Layer	Measurements	Count	Percentage %
O1M	2	0.3	1	14.28
O1M	3	0.4	2	28.57
O2M(K) with red clay slip	4	0.3	1	14.28
O1M	4	0.3	2	28.57
O2M(K) with red clay slip	6	0.4	1	14.28
Total			7	

Table 166 Different Sizes and its Frequency Observed in Design Pattern 41.

Figure 161 Image and Sketch of 24 Design Pattern with the Area Measured.

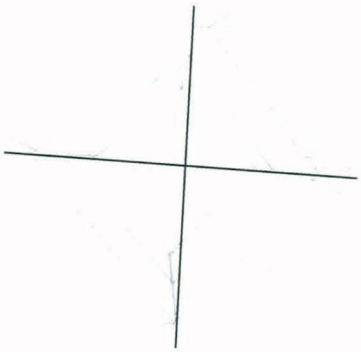

Figure 162 Image and Sketch of 36(a) Design Pattern with the Area Measured.

Figure 163 Image and Sketch of 41 Design Pattern with the Area Measured.

Trenches

The trenches of Ambari that yielded decorated wares are AMB I (Layer 3), AMB II (layer 3 and 4), AMB II A (layer 4), AMB II B (layer 3), AMB III (layer 3, 4, 5 and 6), AMB III A (layer 1, 2, 3, 4, 5 and 6) AMB III B (layer 1 and 3), AMB III C (layer 1, 2, 3, 4, 5 and 8) AMB III D (layer 1, 2, 3, 4, 5 and 6), AMB III E (layer 1 and 3), AMB IV (layer 3 and 5), AMB IV A (layer 3 and 8), AMB IV E (layer 3), AMB V (layer 3), AMB V A (layer 3 and 4), AMB V B (layer 3 and 4), AMB VI A (layer 3, 4 and 5), AMB VII A (layer 2, 3, 4 and 5), AMB VIII A (layer 3, 4 and 6), AMB IX A (layer 4) and AMB XI C (layer 2 and 3). The layers which most commonly yield the decorated

wares are layer 3 and 4. In the following figure the trenches from which decorated wares were found have been shaded (see the key boxes in figure 164). From the figure it can be assessed that the decorated wares were found to have occurred in the north eastern zone of the site in a cluster formation. The distribution of the decorated ware seems to go straight in a linear fashion (as shown below). The figure below shows the grid plan of Ambari which I have reproduced with some changes.

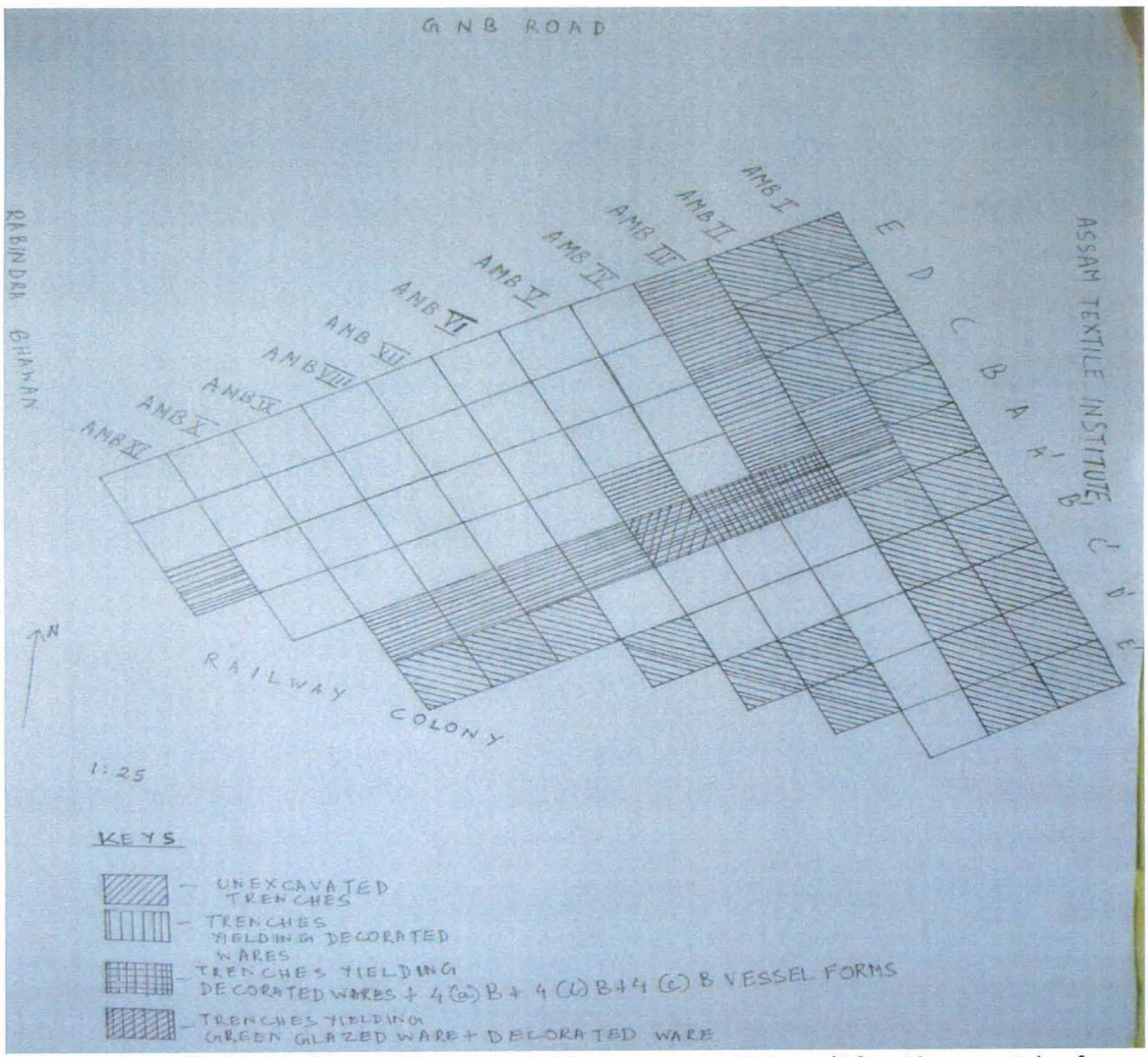

Figure 164 Ambari Grid Plan and Trenches Yielding Decorated Wares (After Sharma, Ashraf and Mahanta 2006: 52)

The table below shows the different decorative patterns that were reported in the different trenches laid in Ambari (see table 167). There were some decorations that occur only in some specific trenches like design type 20 in AMB II B, design type 52 in AMB III A, design type 45 in AMB III B, design type 50 in AMB III C, design type 37 in AMB III D, design type 48 in AMB IV A, design type 10, 13(b), 32, 33 and 49 in AMB VII A, design type 29, 32, 36, 46 and 47 in AMB VIII A and design types 12, 26 and 30 in AMB XI C.

Trenches	A	B	C	D	E'
AMB II	2(a), 15.	20			
AMB III	2(a), 2(b), 2(c), 3, 15, 19, 23 and 52.	2(c), 4, 9, 19, 21, 41 and 45.	2(a), 2(b), 2(c), 3, 4, 4(a), 5, 15, 15(a), 19, 19(a), 41 and 50.	2(a), 2(b), 2(c), 3, 15, 15(a), 19, 19(a), 37 and 41.	2(b) and 2(c)
AMB IV	2(c), 4 and 48				
AMB V	2(a), 2(b), 2(c), 3, 15 and 19.	2(a), 19, 23 and 41.			
AMB VI	2(a), 2(c), 3, 19, 24 and 36(a).				
AMB VII	2(a), 2(b), 2(c), 3, 10, 13(b), 15, 19, 32, 33 and 49.				
AMB VIII	2(a), 2(b), 15, 19, 24, 29, 32, 36, 36(a), 41, 46 and 47				
AMB IX	2(c), 19, 21, 24 and 41.				

AMB XI	9, 12, 26 and 30.

Table 167 Different Decorative Patterns in Relation to Their Trenches of Occurrence.

DISCUSSION

The decorated wares of Ambari seem to have attained a spurt in production in the period from 11th century CE to 14th century CE (layer 3 and layer 4). This period also sees a wide variety of designs in circulation at Ambari. Many designs like 15, 19 are reproduced in this aforesaid period with slight mutations. The designs that have mutated from design 15 are designs 4, 4(a), 15(a), 15(b) and 33 in the period from 11th century CE to 14th century CE (see figures 113, 165, 127, 118, 166 and 141). The 4(a) design type has some depiction in the center which could not be ascertained (see figure 127). It seems like some animal form.

Figure 113 Design Type 15

Figure 165 Design Type 4

Figure 127 Design Type 4(a)

Figure 118 Design Type 15(a)

Figure 166 Design Type 15(b)

Figure 141 Design Type 33

The designs that have mutated from design 19 are designs 19(a), 21, 22, 24, 32, 36 and 36(a) in the period from 11th century CE to 14th century CE (see figures 167, 119, 121, 136, 168, 140, 142 and 123).

Figure 167 Design Type 19

Figure 119 Design Type 19(a)

Figure 121 Design Type 21

Figure 136 Design Type 22

Figure 168 Design Type 24

Figure 140 Design Type 32

Figure 142 Design Type 36

Figure 123 Design Type 36(a)

The decorative patterns mostly have translation symmetry. One approach to pottery design and style that emerged in the late 1970s is pattern analysis or symmetry analysis (Rice 1987: 260). In this approach the design pattern is observed. There are four types of pattern observed and they are translation, bilateral, rotation and slide reflection. Translation is the simple serial repetition of an element or part along a straight line with no change in its orientation (Ibid: 261). In Ambari the most common design pattern is translation (see figure 169 and 170). Some designs seems to show the pattern of bilateral symmetry or mirror reflection [see figures 169(a) and 169(b)]. Bilateral symmetry (also called reflection or mirror reflection) refers to the repetition of an element as if it was reflected across a mirror plane (Ibid: 262). Another important aspect noticed in the patterns of the decorations on the Ambari ceramics is that in different zones of the pot there can co-exist two or possibly more designs. Usually it is seen that there is one design pattern in translation symmetry on the region next to the neck of the pot and then in the lower part there is again a different decorative pattern in a similar or different symmetry (see figure 170).

Figure 169(a) Bilateral Symmetry.

Figure 169(b)Bilateral Symmetry.

Figure 170 Two patterns on same sherd.

Overall in Ambari around 56 different decorative patterns are observed, though some decorative patterns are more frequently used than others like 2(a), 2(b), 2(c), 3, 15, 19 and 41. These are the design types commonly recorded in all the layers. There are a few decorations which are used in a certain period but whose use did not continue later as can be ascertained from this particular study. Design types like 4, 15(a), 19(a), 23 and 26 are found to occur only in the period from 13th century CE to 16th century CE. Design types 13(b), 21, 24 and 36(a) are found to occur in the period from 11th century CE to 14th century CE. Design type 14 occurs only in the period from 10th century CE to 13th century CE.

The fabric that came to be used in large scale in the period from 11th century CE to 14th century CE when there is a overall spurt in pottery production and decorations is O2M(K) with red clay slip. Also during this period O1M(K) began to be used. The period from 14th century CE to 16th century CE saw a decline in the quantity of O2M(K) ware compared with the earlier period, but it still was the most popular fabric along with O1M fabric.

The decorations are mostly made on oxidized slipped medium kaolin ware slipped with red clay. This seems to be the most preferred fabric for the pots that are to be adorned with decorative patterns. The apparent reason seems that the designs when stamped or incised on the red clay slip penetrated the slip. This renders a bi chrome effect which makes the designs very prominent as the white kaolin surface showed through the penetration of the red clay slip.

Decorations like 2(a), 2(b) and 2(c) seem to have a functional use rather than aesthetic purpose. These decorations make it easier to make the pot stand without toppling as the pots they occur with have a globular base. The decrative pattern occurs on the base of the globular pots. Decorations like 15, 19 and 41 are strictly for aesthetic reasons. The different parts in a pot where the decorative patterns have been observed in the decorated wares of Ambari are the orifice, neck, shoulder and around the spout of a pot. But, the most common area in a pot used for decorations is the shoulder area.

In a number of sherds also an additional slip of mica and clay are observed. This tends to give a glossy appearance to the pot sherds. Also, mica particles are particularly observed on top of some designs. In terms of techniques of decorating the pottery observed in Ambari it seems the stamping method is the most popular and appliqué is the least. The stamping method most probably is less time consuming and requires less amount of expertise.

Also, from the study of the sizes of the decorative patterns of Ambari it can be assessed that over a long period of time there is the continued use of certain sizes. It has been observed there is not much change in the size of a design type over different layers. So, over the period from early medieval to the medieval period the sizes remained more or less same. It has been observed that some decorative patterns are discarded over time but the size preference seems to continue with minor changes in the design type leading to its mutation. There seems the possibility that the tools used for decorating the ceramics continued to be used for a long period.

CHAPTER IV

'AMBARI WARE': THE CASE OF KAOLIN WARE AT AMBARI.

The term 'Ambari Ware' was first coined by M.K. Dhavalikar for the kaolin ware at Ambari (Ansari and Dhavalikar 1970: 80). He has used this term for this particular ware since kaolin has not been found in any other place in the country (Ibid: 80). Dhavalikar considers kaolin ware to be a distinctive feature of the 'Brahmaputra Valley Civilization' (Ibid: 80). The basis behind such a nomenclature is the cultural historical paradigm where certain pottery types are identified with certain cultures like PGW, NBPW, OCP and so forth. In a similar fashion Dhavalikar has tried identifying kaolin ware with a particular 'culture' in Brahmaputra valley.

Kaolin ware has been reported from other sites as well apart from Ambari. They are Bhismaknagar in Arunachal Pradesh, Dah Parbatiya in Tezpur district in Assam, Nagaon district in Assam, in Guwahati around Saraniya hills, Navagraha temple and Kamakhya temple (Ibid: 81), site of Suryapahar in Goalpara district and Bhaitbari in the west Garo hills in the state of Meghalaya (Medhi 2003: 322). Interestingly, all these sites lie along the bank or are in close proximity of the Brahmaputra River (see figures 171a and 171b). This variety of clay was used in the Deccan to make figurines (Sonowal 2006: 83).

The chemical composition of the kaolin clay is $Al2O_3.2SiO_2.2H_2O$ (aluminum silicates with hydrates) (Saikia et al 2003: 93). It is white in color and its chemical composition is 46.54% SiO_2, 39.50% $Al2O_3$ and 13.96% H_2O (Ibid 2003: 93). In North-East India it is found in Karbi Anglong, Golaghat and Lakhimpur districts of Assam and at Mawphlong of Meghalaya (Tahir and Ahmed 1998: 179) (see figure 172). In Karbi Anglong good quality kaolin deposits have been discovered at Silbheta, Silonijan and Deopani areas (Ibid 2003: 93). Saikia et al in their article have brought to light the presence of large amounts of Kaolin in the Deopani area. Deopani in Karbi Anglong district of Assam is endowed with a deposit of about 1.0 million tonnes of workable kaolinite (Saikia et al 2003: 95). Kaolin clay is also called 'china' clay. It is somewhat similar to fuller's earth or multani mitti which has cosmetic uses.

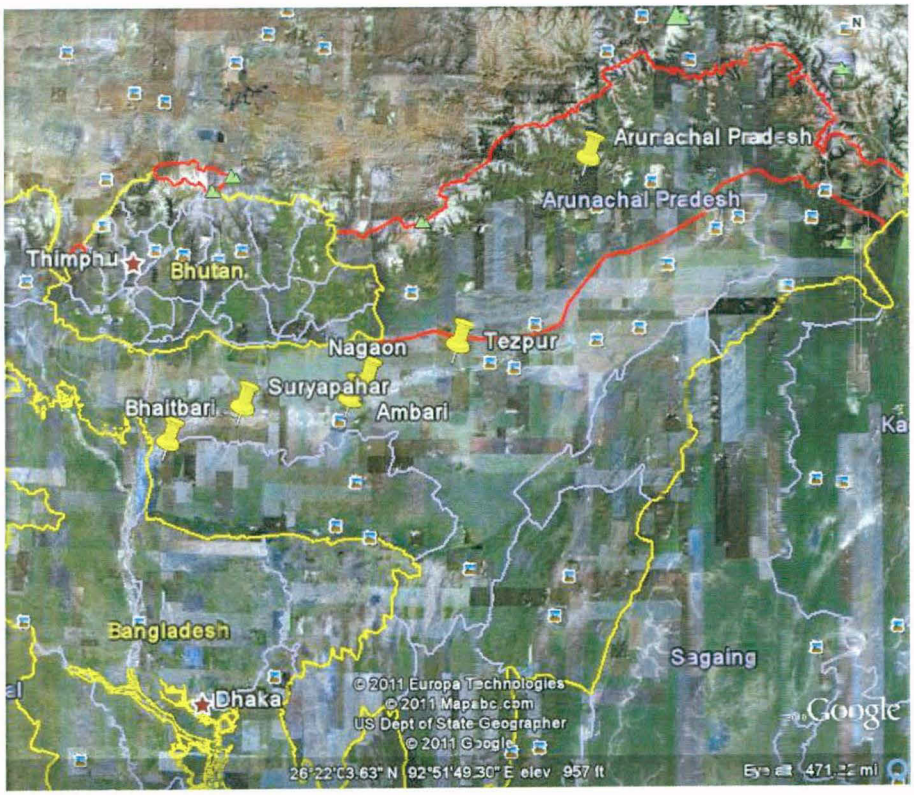

Figure 171a Map of Assam.

Figure 171b Map of Guwahati.

Figure 172 Kaolin Deposits in the Region.

Source of Kaolin Clay, Terracotta Boat and Linkages

The kaolin clay it seems was regularly transported or the finished pottery was transported to all the sites where kaolin ware has been reported from the possible source. The medium of this transportation seems to be the fluvial route of Brahmaputra (see figures 171 and 172). Even today the potters living in north Guwahati on the north bank of Brahmaputra transport their wares through the fluvial route (Sharma Ashraf and Mahanta 2006: 50). Boats seem to have played a very important role which is testified by the evidence of a terracotta boat found at the foot hill of Navagraha (Ansari and Dhavalikar 2006: 17) (see figure 171b). The dimensions of the boat are 2.95m length, 85 cms width and 25 cms height. The boat is well baked with the clay being a mixture of both kaolin and red clay as used in the kaolin pottery of Assam (see figure 173). The interior is smoothened compared to the exterior part. It seems the boat was placed in a pit especially dug for this purpose (Ibid: 17).

The effort taken to make this terracotta boat of such life size dimensions and then transporting this boat as well as placing this boat on the riverine landscape cannot be unintentional. Also, this boat was found amidst kaolin pottery. There was some inside it too. Two other such boats have also been reported in Guwahati. One is a terracotta boat and the other a stone boat (Sharma, Ashraf and Mahanta 2006: 50).

Figure 173 Terracotta Boat.

There is a suggestion through the above evidence of the local networks that existed in the region. The river facilitated these networks through riverine communication which played an important role in the socio-economic lives of the people. The depiction of these boats in terracotta seems to pertain to possible rituals surrounding the boat which played a vital role in the riverine connection. The kaolin pottery surrounding the boat seems to be part of the ritual.

Classification and Analysis

Amongst all the sites Ambari seems to have recorded a large quantity of kaolin clay pottery. This can be ascribed to the extensive nine seasons of excavation where as the other sites have not been subjected to such extensive excavations. The following table shows the quantity recorded of kaolin pottery in different fabrics amongst the diagnostics, non-diagnostics and decorated wares in Ambari (see table 168). The fabric having the highest counts in the diagnostics, non-diagnostics and decorated wares is the O2M(K) with red clay slip fabric. In the diagnostics the O1M(K) fabric has the highest counts followed by the

O2M(K) with red clay slip. But in terms of weight O2M(K) with red clay slip has the highest weights in all the three.

Type	Fabric	Count	Count %	Weight	Weight%
Decorated Wares	O1M(K)	54	2.55	1.445	1.81
	O2M(K) with kaolin slip	3	0.14	0.107	0.13
	O2M(K) with red slip	176	8.31	4.176	5.25
Diagnostics	O1M(K)	557	26.3	18.179	22.87
	O2M(K) with kaolin slip	5	0.23	0.132	0.166
	O2M(K) with red slip	542	25.6	26.065	32.80
Non-Diagnostics	O1M(K)	347	16.39	11.259	14.16
	O2M(K) with kaolin slip	2	0.09	0.070	0.08
	O2M(K) with red slip	431	20.7	18.029	22.68
Total		2117		79.462	

Table 168 Counts and Weight of Kaolin Fabrics within Decorated Wares, Non –diagnostics and Diagnostics.

The following table shows the counts and weights in the fabric O1M(K) in the diagnostics, non-diagnostics and decorated wares at Ambari (see table 169). In diagnostics it can be seen that the highest counts and weight are recorded.

Type	Counts	Count %	Weights	Weight %
Decorated Wares	54	5.63	1.445	4.67
Diagnostic	557	58.14	18.179	58.86
Non-Diagnostic	347	36.22	11.259	36.45
Total	958		30.883	

Table 169 Counts and Weight of O1M(K) Fabric within Decorated Wares, Non –diagnostics and Diagnostics.

The following table shows the counts and weights in the fabric O2M(K) with kaolin slip in the diagnostics, non-diagnostics and decorated wares in Ambari (see table 170). The O2M(K) with kaolin slip seems was not a popular fabric in Ambari. In all total 10 sherd were recorded which may be just one pot.

Type	Counts	Count %	Weights	Weight %
Decorated Wares	3	30	0.107	34.62
Diagnostic	5	50	0.132	42.71
Non-Diagnostic	2	20	0.070	22.65
Total	10		0.309	

Table 170 Counts and Weight of O2M(K) with Kaolin Clay Slip Fabric within Decorated Wares, Non diagnostics and Diagnostics.

The following table shows the counts and weights in the fabric O2M(K) with red slip in the diagnostics, non-diagnostics and decorated wares in Ambari (see table 171).

Type	Counts	Count %	Weights	Weight %
Decorated Wares	176	15.31	4.176	8.65
Diagnostic	542	47.17	26.065	53.99
Non-Diagnostic	431	37.5	18.029	37.35
Total	1149		48.27	

Table 171 Counts and Weight of O2M(K) with Red Clay Slip Fabric within Decorated Wares, Non diagnostics and Diagnostics.

The following table shows the counts and weights of kaolin ware in all the fabrics in Ambari (see table 172). In comparison to the other two types of fabrics O1M(K) and O2M(K) with kaolin slip the O2M(K) with red clay slip is the most numerous in terms of counts and also weight.

Type	Counts	Count %	Weights	Weight %
O1M(K)	958	45.25	30.883	28.16
O2M(K) with kaolin slip	10	0.47	0.309	0.28
O2M(K) with red slip	1149	54.27	48.27	71.55
Total	2117		79.462	

Table 172 Counts and Weight of All Kaolin Fabrics.

The following chart shows the counts of different fabrics within kaolin pottery (see figure 174). In all the layers amongst the diagnostics, non diagnostics and decorated wares the highest counts is observed in the O2M(K) fabric with red clay slip. The count of O2M(K) fabric with kaolin slip is minimal.

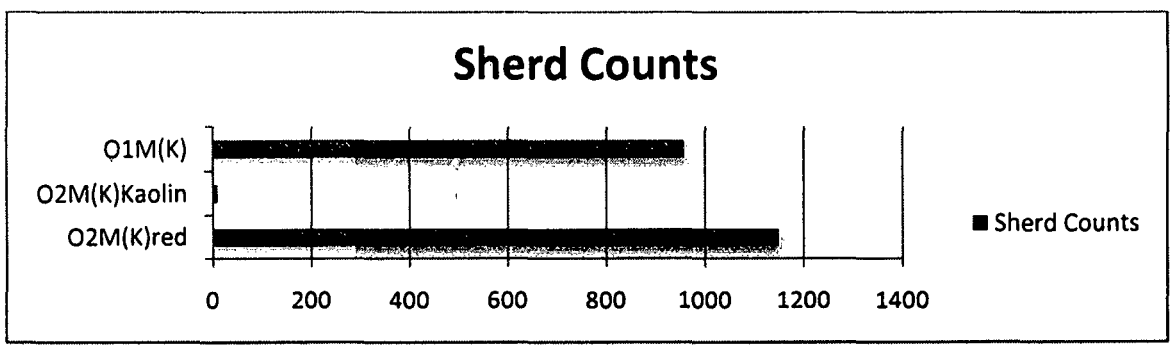

Figure 174 Total Counts of All Kaolin Fabrics.

The following chart shows the weights of different fabrics within kaolin pottery (see figure 175). The O2M(K) fabric with red clay slip is having the highest weight followed by O1M(K).

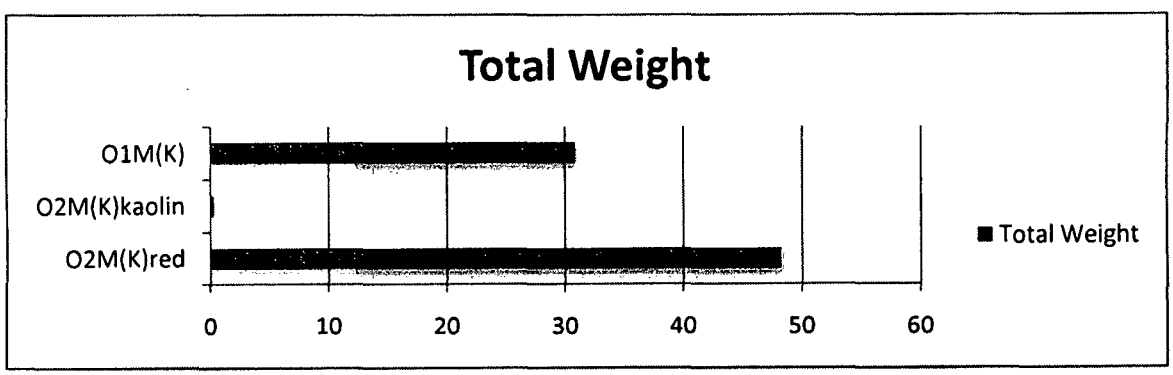

Figure 175 Total Weight of All Kaolin Fabrics.

The following table shows the total counts and weights of the fabrics in diagnostics and non diagnostics along with their percentages (see table 173). The kaolin ware both slipped and unslipped calculated together is 1282 in sherd counts and 47.624 kgs in weight. The plain red ware stands at 1352 in terms of sherd counts and weigh 72.171 kgs.

Fabric	Counts	Percentage (%)	Weight	Percentage (%)
O1M	1310	44.39	69.442	54.10
O1M(K)	730	24.73	21.315	16.54
O2M	39	1.32	2.349	1.82
O2M(K)	5	0.16	0.132	0.10
O2M(K) with red clay slip	547	18.53	26.177	17.98
O1C	3	0.10	0.380	0.29
O3F(GG)	203	6.87	3.783	2.93
O3F(CLD)	4	0.13	0.280	0.21
R1M	46	1.55	1.539	1.19
R2M	64	2.16	3.439	2.66
Total	2951		128.836	

Table 173 Total Counts and Weight of All Fabrics.

The following figure shows the total counts of the different fabrics among the both diagnostics as well as non diagnostics (see figure 176). The highest counts can be seen in O1M fabric followed by O1M(K) and O2M(K) with red clay slip respectively.

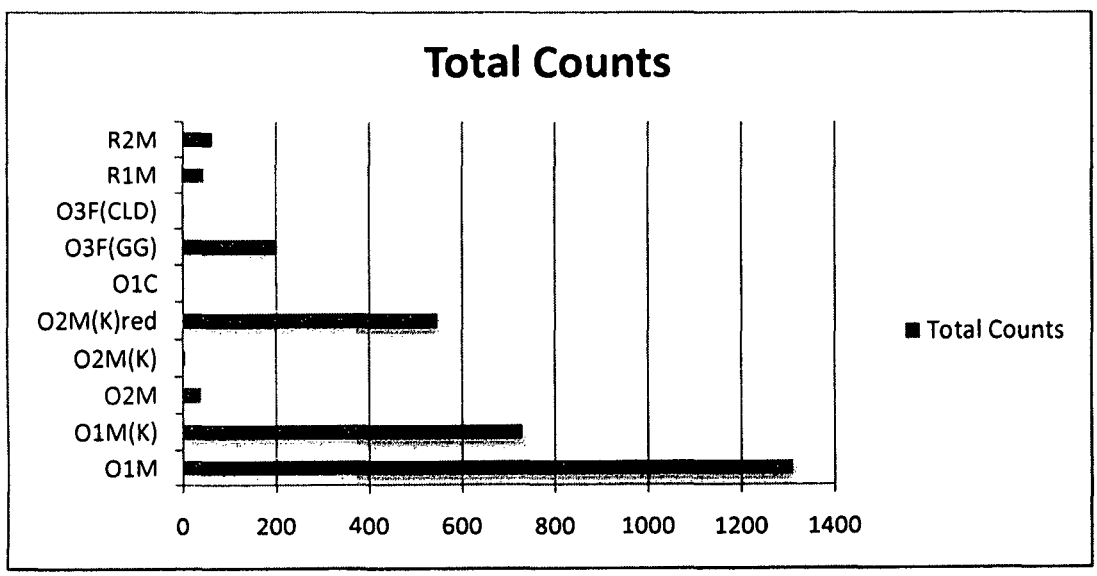

Figure 176 Total Counts of All Fabrics.

The following figure shows the total weights of the different fabrics among the both diagnostics as well as non diagnostics (see figure 177). The highest counts can be seen in O1M fabric followed by O2M(K) with red clay slip and O1M(K) respectively.

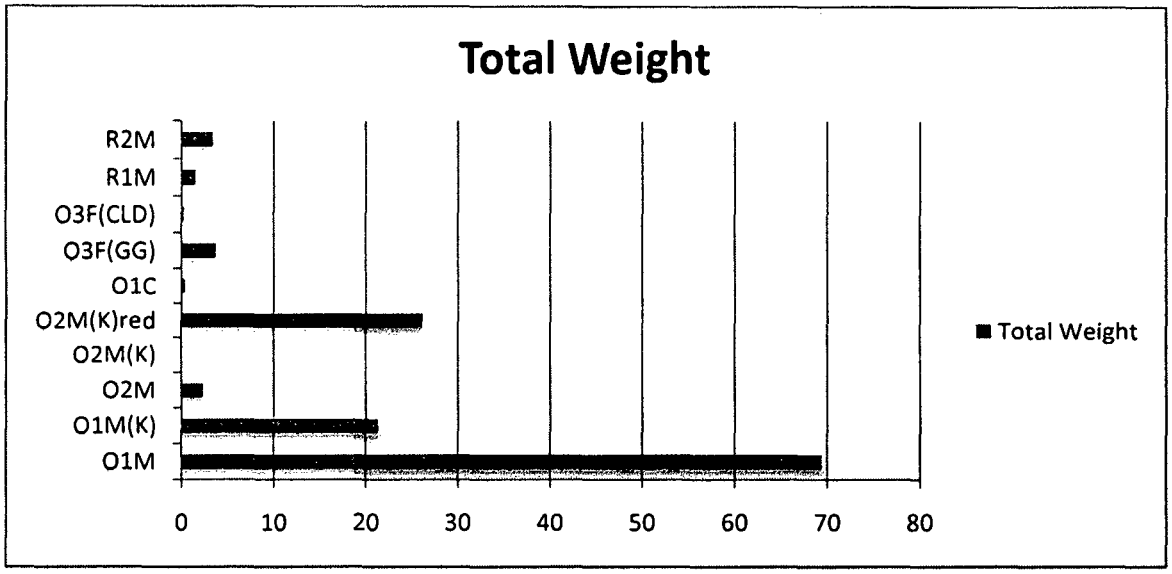

Figure 177 Total Weight of All Fabrics.

The picture projected through the tables 1 to 6 is that of a substantial quantity of kaolin pottery in the Ambari ceramics. It is apparent that though the plain red ware has the highest count and weight among the Ambari ceramics the kaolin pottery forms around half of the total amount of ceramics in Ambari.

The following table shows the quantity of oxidized unslipped medium Kaolin ware [O1M (K)] amongst the non-diagnostics in the different layers (see table 174).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
1	25	14.45	0.444	14.15
2	65	37.57	1.573	50.15
3	30	17.34	0.567	18.08
4	37	21.38	1.173	37.40
5	6	3.46	0.248	7.90
6	10	5.78	0.131	4.17
Total	173		3.136	

Table 174 Counts and Weight of O1M(K) Fabric within Non Diagnostics in All Layers.

The following table shows the quantity of oxidized slipped medium Kaolin ware [O2M (K)] with red clay slip amongst the non-diagnostics in the different layers (see table 175).

Layer	Count	Percentage%	Weight (kg.)	Percentage%
2	1	20	0.31	27.67
3	2	40	0.50	44.64
4	2	40	0.31	27.67
Total	5		0.112	

Table 175 Counts and Weight of O2M(K) Fabric with Red Clay Slip within Non Diagnostics in All Layers.

The following figure shows the sherd counts of O1M(K) fabric in the non diagnostics in all the layers (see figure 178). The layer 2 witnesses a wide usage of this fabric which pertains roughly to the period 14th century CE to 16th century CE.

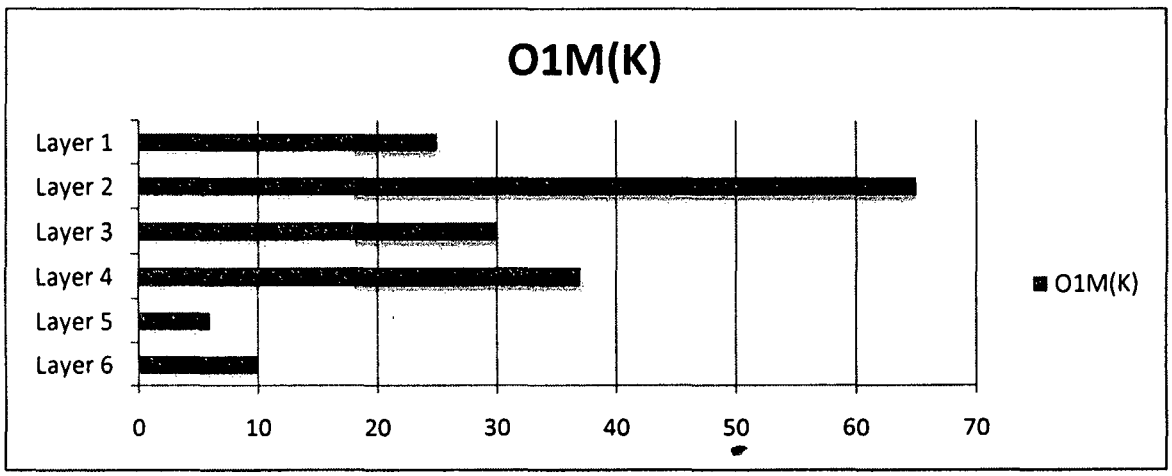

Figure 178 Total Counts of O1M(K) Fabric within Non diagnostics.

The following figure shows the total counts of the sherds in O2M(K) fabric with red clay slip in the non diagnostics in all the layers (see figure 179). In non diagnostics the O2M(K) fabric with red clay slip experiences maximum usage in layer 3 and layer 4. Layer 3 and layer 4 roughly pertain to period 11th century CE to 14th century CE.

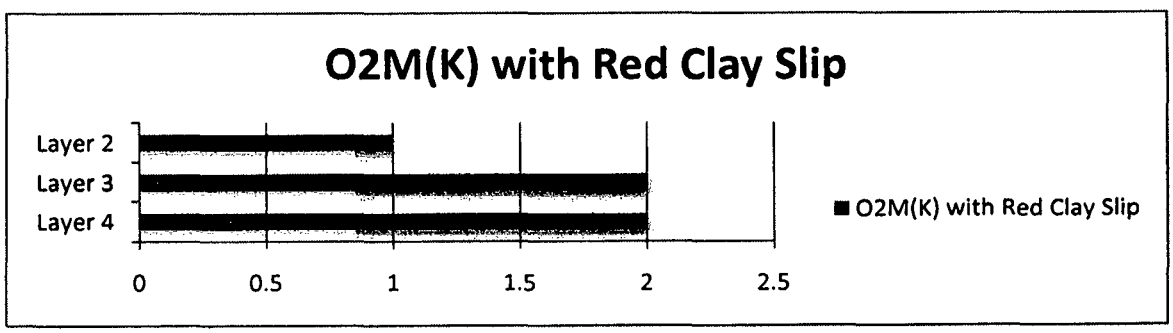

Figure 179 Total Counts of O2M(K) Fabric with Red Clay Slip within Non diagnostics.

The following table shows the counts and weights recorded in O1M(K) fabric in all the layers within the diagnostics (see table 176).

Layer	Count	Weight (kg.)
1	29	0.681
2	42	0.857
3	102	4.376
4	235	8.688
5	46	1.512
6	95	2.645
7	3	0.062
8	4	0.121
Total	556	18.942

Table 176 Counts and Weight of O1M(K) Fabric within Diagnostics in All Layers.

The following table shows the counts and weights recorded in O2M(K) fabric with red clay slip in all the layers within the diagnostics (see table 177).

Layer	Count	Weight (kg.)
1	68	1.562
2	56	1.551
3	89	4.7
4	249	14.222
5	45	2.209
6	34	1.769
8	1	0.052
Total	542	26.065

Table 177 Counts and Weight of O2M(K) Fabric with Red Clay Slip within Diagnostics in All Layers.

The following table shows the counts and weights recorded in O2M(K) fabric with kaolin clay slip in all the layers within the diagnostics (see table 178).

Layer	Count	Weight (kg.)
3	1	0.018
4	4	0.114

Table 178 Counts and Weight of O2M(K) Fabric within Diagnostics in All Layers.

The following figure shows the counts of the fabrics O1M(K), O2M(K) with red clay slip and O2M(K) with kaolin clay slip in all the layers among the diagnostics (see figure 180). In layers 5 and 6 we can observe that there is a gradual decline in the count of the O1M(K) fabric and an increase in the count of the O2M(K) fabric with red clay slip. The peak in the counts of both the fabrics is recorded in the layer 4 where O2M(K) with red clay slip fabric counts surpass the counts of O1M(K) fabric.

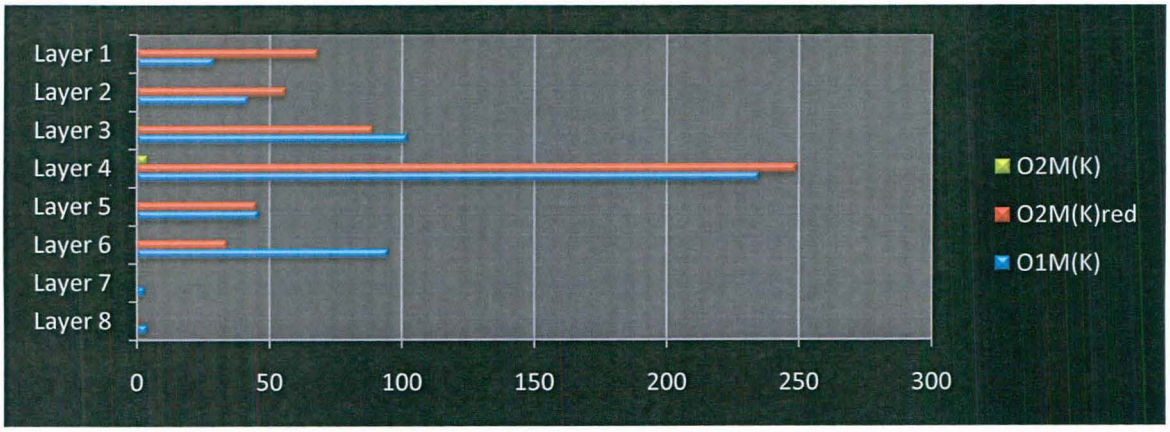

Figure 180 Total Counts of O2M(K) Fabric within Diagnostics in All Layers.

The following figure shows the total weight of the fabrics O1M(K), O2M(K) with red clay slip and O2M(K) with kaolin clay slip in all the layers among the diagnostics (see figure 181). The weight recorded has a similar tale like the counts. The layers 5 and 6 witness a fall in the O1M(K) fabric and a rise in O2M(K) fabric with red clay slip with the peak observed in Layer 4.

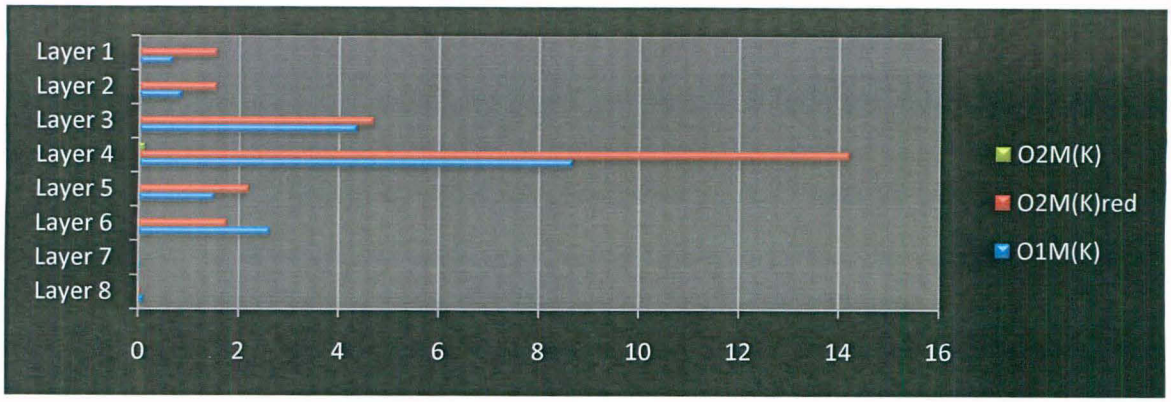

Figure 181 Total Weights of O2M(K) Fabric within Diagnostics in All Layers.

Figures 10 and 11 clearly show that in the layers 5 and 6 the use of O1M(K) fabric gradually reduced and O2M(K) with red clay slip gradually increased. The layers 5 and 6 pertain to roughly the period of 9th to 11th century CE. Also during this period the consumption of ceramics in Ambari quantitatively is less compared to the later period which is represented by the layer 4 and layer 3. The layer 4 and layer 3 belong to the 11th to the 14th century CE which records an increased consumption of ceramics especially in the layer 4 which is roughly the period of 11th to 12th century CE. After layer 4 a fall is witnessed from layer 3 towards layer 1. The period from 14th century CE to 17th century CE records a fall but there is continued consumption of pottery with O2M(K) fabric with red clay slip recording a higher quantity than O1M(K) fabric.

Issue of Standardization

The following table shows the diameters recorded in the different diagnostic types like rims, bases, lids, knobs and spouts in the O1M(K), O2M(K) with red clay slip and O2M(K) fabric (see table 179).

Form Codes	O1M(K)	O2M(K)red	O2M(K)kaolin
1R	21(1), 27(3), 19(1), 24(7), 22(1), 21(4), 25(1), 18(1), 26(1), 23(2), 10(1)	16(1), 24(3), 32(1), 27(1), 23(1)	24(2)
2R	20(1), 25(1), 42(1), 24(1), 23(1), 27(1), 19(1), 26(1)	13(1), 35(1), 41(1), 14(1), 25(1), 32(1), 19(1)	
3R	22(3), 25(2), 27(1), 26(1),	22(3), 14(2), 24(3), 26(2),	

	24(1), 36(1), 32(2)	23(2), 20(1), 27(1), 21(1)	
4R	22(1)	25(1)	
5R	28(1), 19(1), 20(1), 23(1), 16(1), 27(1), 6.3(1), 17(2)	16(1), 15(2), 12(2), 14(2), 36(1), 23(2), 25(2), 20(3), 19(2), 27(2), 21(2), 24(5), 28(1), 22(2), 26(5), 17(1), 30(1)	
6R	20(2), 23(1), 24(1), 27(1), 36(1)	37(1), 32(1), 19(1), 22(1), 21(1)	
7R	18(1), 23(7), 24(7), 12(1), 25(2), 22(3), 29(4), 26(2), 20(2), 27(1), 21(1), 19(2), 17(1), 30(1)	18(2), 19(2), 15(1), 11(1), 22(2), 17(2), 27(1), 21(1), 20(2), 14(1), 29(1), 24(4), 25(1), 16(1), 33(1)	
8R	11(1), 23(5), 17(3), 18(2), 27(1), 22(7), 24(4), 25(2), 30(1), 13(1), 26(1), 28(1), 19(1), 15(2), 34(1), 33(1), 20(1), 14(1), 21(2)	11(1), 18(2), 12(1), 22(4), 42(1), 20(3), 19(1), 25(2), 10(1), 24(5), 31(1), 14(1), 15(1), 34(1), 27(1), 21(1)	
9R	27(5), 19(1), 16(1), 30(2), 28(1), 43(1), 21(1), 18(1), 23(1), 42(1), 34(1), 25(1), 24(1), 22(1), 33(1)	20(3), 16(1), 29(4), 24(1), 36(1), 28(3), 23(2), 25(2), 33(2), 27(3), 38(1), 43(2), 40(1), 32(1), 39(1), 22(2), 37(2), 26(1), 30(3), 11(1), 41(1), 34(1)	
10R	16(1), 20(2), 28(2), 23(1), 22(2), 24(4), 29(1), 25(3), 26(2), 27(2), 12(1)	14(1), 27(1), 15(1), 16(1), 21(1), 25(2), 28(2), 24(1), 32(1), 33(1), 31(1)	
11R	11(1), 24(2), 39(1), 30(1), 28(2), 22(1), 19(1), 16(1), 20(1)	22(1), 12(1), 28(2), 31(1), 35(2), 24(3), 38(1), 36(1), 40(1), 33(1)	
12R	21(2), 23(2), 20(2), 15(1), 22(2), 16(1), 25(1), 18(1)	25(4), 12(3), 17(1), 16(2), 18(2), 22(1), 15(2), 21(1), 24(1)	
13R	26(1), 24(1), 25(1), 20(3),	23(2), 17(1), 15(1), 25(2),	

	23(1)	34(1), 21(2)	
14R	27(1), 26(1), 24(3), 22(2), 25(3), 23(3), 21(2), 12(1)	23(1), 10(1), 21(1), 19(1), 28(2), 24(1), 26(1), 33(1)	
15R	25(1), 22(1), 15(1), 23(2), 24(1), 29(1), 7.4(1)	22(1), 13(1), 26(1), 30(1), 24(1), 17(1), 20(1), 23(1), 33(1), 29(1), 37(1)	
16R	17(1), 34(1), 23(1), 19(3)	18(1), 21(1), 19(2), 22(1), 20(1)	
17R	24(1), 13(1), 23(1)	12(2), 13(2), 18(1), 24(1)	
19R		20(1), 31(2), 29(3)	
20R	18(2), 26(1), 23(3), 13(1), 21(1), 17(1)	18(1), 13(2), 27(1), 25(1), 30(1), 15(2), 36(1), 16(1), 11(1), 26(1), 29(1), 23(1), 24(1), 22(1), 19(1), 20(1)	
21R	30(1), 28(1), 24(1), 29(1), 22(1), 14(1)	26(1), 24(3), 30(1)	
22R	14(1), 19(1), 16(1), 29(1)	19(1), 11(1), 23(3), 15(1), 26(1), 22(3), 20(2), 14(1), 28(1), 18(1), 25(1), 21(1), 32(1)	
23R	27(1), 30(1), 22(3), 23(1)	22(3), 11(1), 24(4), 16(1), 18(1), 15(1), 28(1), 39(1), 23(1), 25(1), 38(2)	
24R	26(1), 27(1)	25(1), 28(2), 20(2), 17(1), 27(1)	
25R	11(1)		
26R	9(1), 3.3(1)	11(1)	
27R	38(2),	38(1), 18(1)	28(1),
28R		24(1)	
29R	26(1), 14(2), 28(1), 13(1)	14(2), 15(1), 16(1)	
32R	19(1)	20(1), 17(1), 18(1), 16(1)	
33R	27(1), 16(2), 14(1), 15(1), 17(1)	13(1), 14(4), 15(3), 18(1), 22(1), 17(1), 30(1)	
34R	14(3), 32(1), 41(1), 15(1)	25(1), 22(1)	

35R	12(1)	15(2), 22(1)	
36R	19(1), 17(2)	24(1), 17(2),	
37R		14(1)	
38R	27(1), 14(1), 40(1), 31(1), 17(1)	24(1), 14(2), 20(1), 13(1)	
39R	19(1)	17(1), 18(2)	
40R	14(1), 17(2), 30(1), 10(2), 8(1), 15(1), 10(1)	14(3), 23(1), 22(1), 13(2), 21(1), 15(3), 12(1), 16(1), 17(1)	
41R	37(1)		
42R	24(1), 15(2)	25(1),	
43R		19(1), 41(1), 24(1)	
44R	20 (1), 26(1), 28(1), 22(1), 30(1)	22(1), 21(1), 24(1), 9(1)	
45R	21(1)	20(1), 23(1)	
46R	20(1), 34(1), 14(2), 22(1), 18(1), 19(1), 8(1)	18(1), 25(2), 22(2), 16(2), 23(1), 26(1), 13(1), 21(1), 14(1), 19(1), 27(1), 11(1), 12(1)	
48R	14(1), 22(3), 16(3), 8(1),	13(3), 14(1), 7(1), 16(2), 20(1), 24(1), 19(1)	
50R	20(1), 23(1), 19(1)	17(1), 13(1), 20(1), 12(1), 18(1), 19(1), 14(1), 21(1)	
52R		13(1), 20(1), 14(1),	
53R		15(1)	
36Ra	22(1), 20(1), 13(1), 77.8(1), 31(1), 18(1)	32(1), 16(1), 18(1), 26(1), 19(1)	
29Ra	13(1), 12(2), 9(1)	10(1), 16(1)	
37Ra		22(1)	
1B	3(1), 4.9(1), 5.7(1), 6.7(1), 5.9(2), 6.1(1), 5(1), 4.6(1), 5.3(1), 4.2(1)	4 (1), 3.5(2), 13(1), 4.3(2), 4.9(1), 5(1), 4.6(1), 4.2(1), 4.1(1), 4.5(1), 5.2(1), 5.6(1), 3.6(1), 3.8(1)	
2B	4.1(2), 5.3(2), 5.8(1), 5.4(1),	18 (1), 5.2(1), 4.9(1), 4.5(1),	

	5.2(1), 6.2(1), 5.7(1), 4.8(2), 5.1(1), 5.6(2), 6(1), 3.7(1)	5.7(2), 4.2(1), 4.4(1), 5.1(1), 4.8(1), 4.3(1)	
7B	5(1), 4.5(1)	4.2(1), 3.3(1), 2.1(1), 3.7(1), 18(1), 4.3(1), 4.4(1), 4(1), 19(1), 4.9(1)	
8B	4.1(3), 4(1), 3.9(1), 10(1)	6(1), 4(2), 5.1(1), 4.8(1), 3.9(2), 10(1), 4.3(1), 23(1)	
9B	5.4(1)	5 (1), 5.6(1), 4.6(1), 5.5(1)	
4aB	4.4(3), 8(1), 4.2(3), 3.9(2), 4.5(2), 3.3(6), 3.6(6), 3.1(2), 4.1(1), 3.7(3), 3.5(2), 2.7(1), 3.4(3), 3.2(2), 3(1), 4.6(2), 2.8(1), 4.3(1), 3.5(1), 5.5(1), 3.8(1)	4.3(1), 4.5(1), 3.6(2), 3.5(1), 4.2(1), 3.2(2)	
4bB	5.9(1), 5.2(4), 4.3(3), 6(4), 4.6(2), 4.5(4), 4.7(2), 5.6(3), 4.8(3), 4.9(3), 5.1(5), 4.6(2), 6.5(1), 5.5(1), 5(1), 4(1), 4.2(1), 4.1(2), 5.7(1), 4.4(1)	4.6(2), 7.9(1), 3.7(1), 5.3(1), 4.9(2)	
4cB	3.5(3), 4.7(1), 4.6(1), 3(1)	7.3(1), 2.7(1), 4(2)	
1L	8.2(1)		
1S	1.7(2), 2.3(1)	3.7(1), 2.8(1)	
9S		2.8(1), 1.2(1)	
10S	2.9(1)		
12S	4.4(1)		
1K	3.2(1),	3.4(1)	
3K		5.9(1)	
4K	4.1(1)		
5K	2.6(1), 3.3(1), 3.7(1)	3.5(1),	
6K	1.2(1)	1.9(2)	
9K	3.1(1), 5.1(1)	3.5(1)	
10K	3.1(1), 3.2(1), 3.5(1), 5.1(1)	2.9(1), 4.8(1), 4.1(1), 5.1(1)	
11K		3.1(1)	
12K	3.7(1)	4.9(1)	

14K		3.2(1)	

Table 179 Diameters of All Diagnostics in Kaolin Fabric.

Rims

The following table shows the groups in which the rim diameters have been divided to look at the extent of standardization through their frequency of occurrence (see table 180). The Group E which includes diameters between 21 to 25 cms has the highest counts followed by Group D.

Diameter Groups (in cms.)	Frequency of occurrence
B (6-10 cms.)	16
C (11-15 cms.)	118
D (15-20 cms.)	158
E (21 -25 cms.)	265
F (26- 30 cms.)	114
G (31-35 cms.)	37
H (36-40 cms.)	21
I (41-45 cms.)	10
P (76-80 cms.)	1

Table 180 Rim Measurement Groups.

The following figure shows the frequency counts in the rim diameter groups (see figure 182).

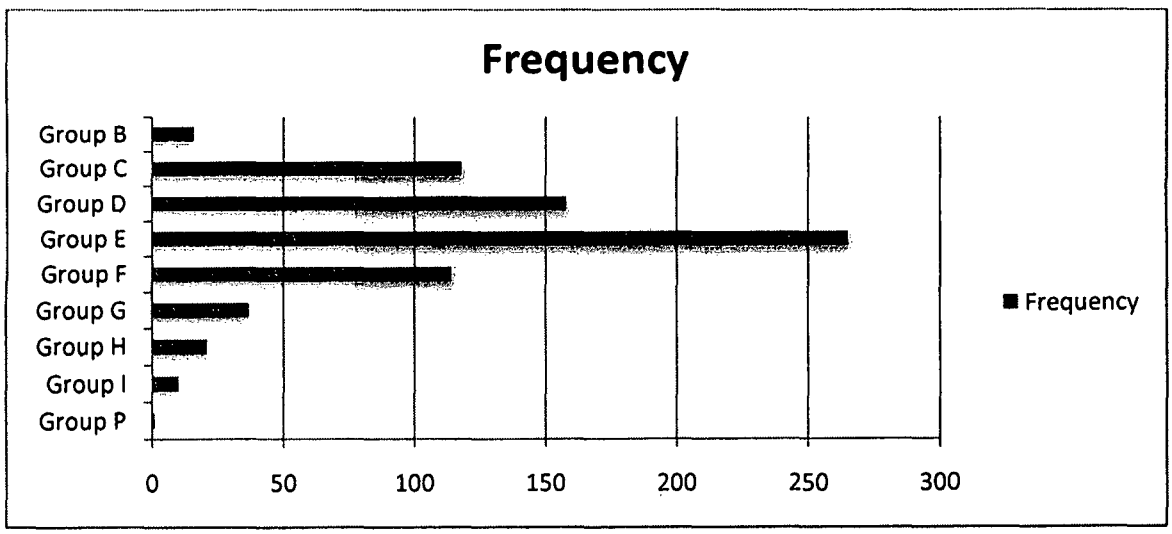

Figure 182 Frequency of Rim Measurement Groups.

Bases

The following table shows the groups in which the base diameters have been divided to look at the extent of standardization through their frequency of occurrence (see table 181). The Group E which includes diameters between 4.1 to 5 cms has the highest counts followed by Group D.

Diameter Groups (in cms.)	Frequency of occurrence
C (2.1-3 cms.)	7
D (3.1-4 cms.)	55
E (4.1-5 cms.)	78
F (5.1-6 cms.)	44
G (6.1-7 cms.)	4

Table 181 Base Measurement Groups.

The following figure shows the frequency counts in the base diameter groups (see figure 183).

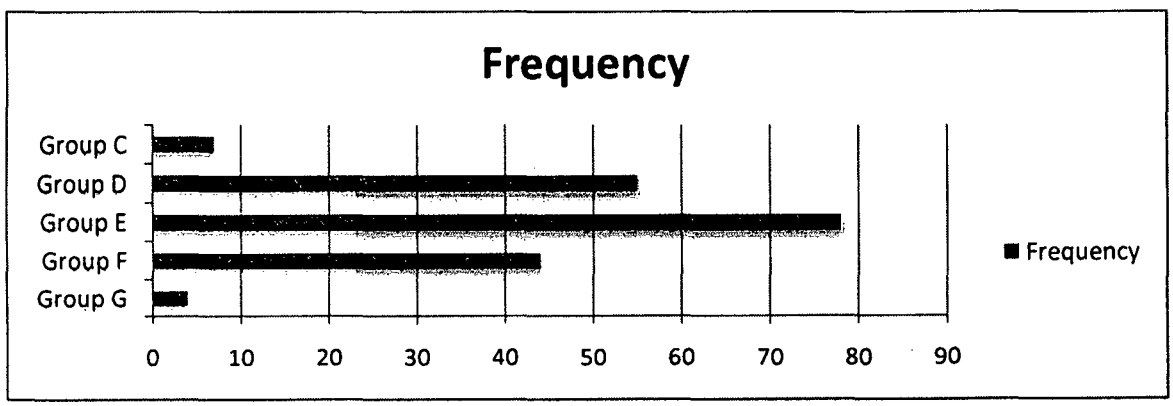

Figure 183 Frequency of Base Measurement Groups.

Spouts

The following table shows the groups in which the spout diameters have been divided to look at the extent of standardization through their frequency of occurrence (see table 182). The Group C which includes diameters between 2.1 to 3 cms has the highest counts followed by Group B.

Diameter Groups (in cms.)	Frequency of occurrence
B (1.1-2 cms.)	3
C (2.1-3 cms.)	4
D (3.1-4 cms.)	1
E (4.1-5 cms.)	1

Table 182 Spout Measurement Groups.

The following figure shows the frequency counts in the spout diameter groups (see figure 184).

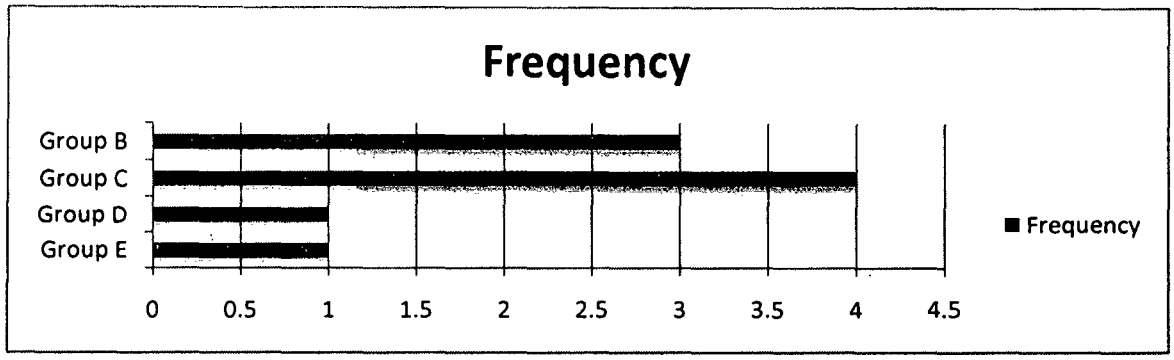

Figure 184 Frequency of Spout Measurement Groups.

Knobs

The following table shows the groups in which the knob diameters have been divided to look at the extent of standardization through their frequency of occurrence (see table 183). The Group D which includes diameters between 3.1 to 4 cms has the highest counts followed by Group E and F.

Diameter Groups (in cms.)	Frequency of occurrence
B (1.1-2 cms.)	3
C (2.1-3 cms.)	2
D (3.1-4 cms)	13
E (4.1-5 cms.)	4
F (5.1-6 cms.)	4

Table 183 Knob Measurement Groups.

The following figure shows the frequency counts in the knob diameter groups (see figure 185).

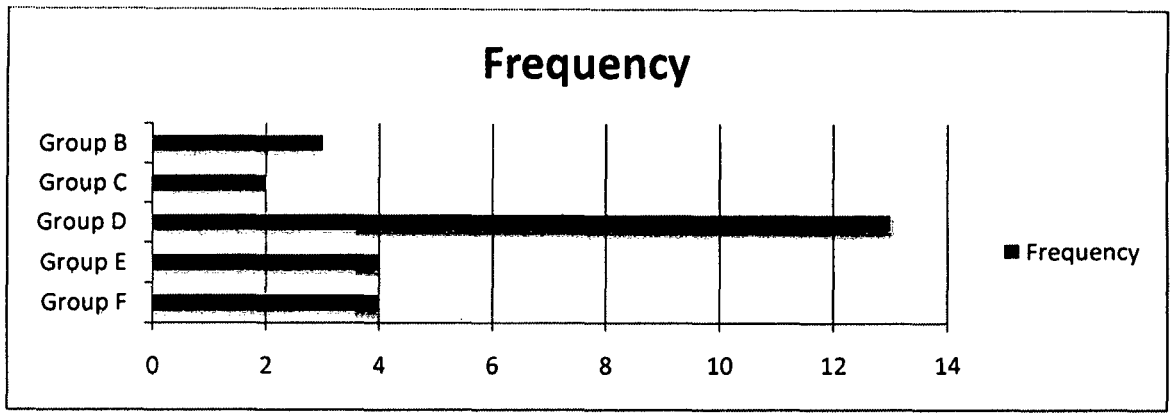

Figure 185 Frequency of Knob Measurement Groups.

DISCUSSION

The kaolin ware found in Ambari has been termed as 'Ambari Ware' by Dhavalikar but this ware has been reported elsewhere too. The other places in Assam where kaolin ware has been found are the sites of Suryapahar in Goalpara, Nagaon and Tezpur. It has been found also in the neighboring states of Meghalaya and Arunachal Pradesh in the sites Bhaitbari and Bhismaknagar respectively. So, there is a problem with the usage of the term 'Ambari Ware' since it leads to the assumption that kaolin ware is associated with only the site of Ambari. Thus, in this study the kaolin ware has been referred to as O1M(K) ware, O2M(K) ware and O2M(K) ware with red clay slip. They are respectively oxidized unslipped medium kaolin ware, oxidized slipped medium kaolin ware and oxidized slipped medium kaolin ware with red clay slip.

In Assam the kaolin deposits have been reported in the districts of Goalpara, Lakhimpur and Karbi Anglong. In neighboring Meghalaya it is found in Mawphlong. As, has been discussed earlier these places are situated along the bank of Brahmaputra which provided an ease in the transportation of clay or the finished ware. The places where the kaolin ware has been reported are also situated on the upstream fluvial route of Brahmaputra. If it is assumed that the places from where kaolin clay has been reported in Assam were also making the kaolin wares then it was a downstream journey from the districts of Lakhimpur, Goalpara and Karbi Anglong towards Tezpur, Nagaon, Ambari, Suryapahar and Bhaitbari. This might have favored the transportation process compared to the upstream journey. At Ambari in the excavations of 2002-03 the excavators have claimed to have found a furnace for burning terracotta objects and pottery (Dutta and Kouli 2006: 98). Then it is also possible that from

the sources of kaolin deposits the clay was transported downstream. And the pottery was made in the respective places of use.

Also, the terracotta boat find on the hill overlooking the Brahmaputra River in Guwahati dated to the period around 11th century CE shows the growing importance of the fluvial route, fluvial space and riverine transportation in the area. Interestingly around this same period there is an increase in ceramic consumption pattern at Ambari. There is specifically an increase in the quantity of O2M(K) ware with red clay slip and it replaces the O1M(K) ware in the period of 11th century CE to 14th century CE. The boat is in O1M(K) fabric where the kaolin clay is mixed with some amount of red clay. The recovery of the boat boat suggests that kaolin clay was gaining importance as a favored medium for earthen wares in the region where kaolin is not locally found. Also the boat shows the amount of mutual dependence between potters and the riverine transport community in the region. Though it is very much possible that the potters may have owned boats themselves but not everyone of them.

Through the tables 179 to 183 and figures 12 to 15 the issue of standardization in the kaolin pottery of Ambari has been looked at. The standardized pottery sizes suggest a common source where it was made or some strict codes governing the sizes of certain pottery styles. From the above tables and figure it can be ascertained that there were certain sizes or measurement groups which were popular amongst the rim sizes, base sizes and knob sizes. These groups were having a high frequency of occurrence. This evidence again points towards a common source for the kaolin pottery of Ambari. It is possible that this common source is the place where kaolin clay is locally available. There is also the possibility that a certain section of potters specialized in kaolin pottery.

The ceramic classification of the Ambari ceramics revealed that a very small percentage of Ambari pottery was made of pure kaolin clay and which was usually small in size (see figure 186). Kaolin clay is a very fine variety of clay with no inclusions. This renders this clay not very suitable for pottery making and the resultant pottery made out of it to fragile in nature. So usually this clay is used in combination with red clay which makes the pots more resilient.

Figure 186 Kaolin pot

Further during the ceramic classification it has been observed the kaolin ware in O1M(K), O2M(K) and O2M(K) with red clay slip type is a mixture of kaolin clay with some amount of red clay (see figure 187).

Figure 187 Kaolin Ware

The O2M(K) ware with red clay slip has a high percentage of occurrence at Ambari among diagnostics, decorated wares and the non diagnostics as can be seen in table 173 and figures 4 and 5. The following chart shows the usage of different types of fabrics within the decorated wares at the site of Ambari in the different layers. All throughout the layers it seems for the decorative ceramics the most preferred fabric was oxidized slipped medium kaolin ware with red clay slip [O2M (K)] followed by oxidized unslipped medium ware (O1M) (see figure 188).

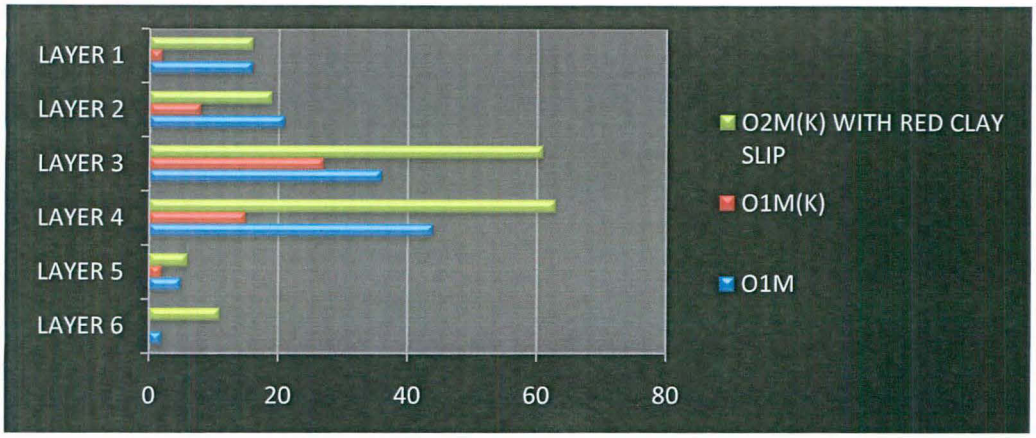

Figure 188 Kaolin Fabrics and O1M Fabric in Decorative Wares in All Layers.

The rise in the consumption pattern of ceramics coincides with the rise in the usage of the O2M(K) decorated wares with red clay slip in the period from 11th century CE to 14th century CE. In the period from 14th century CE to 17th century CE there is a fall in the consumption of decorated wares which again coincides with fall in the usage of O2M(K) decorated wares with red clay slip. The quantity of O1M(K) and O2M(K) with red clay slip in this period is similar with no striking difference characteristic of the earlier period. The O2M(K) ware with red clay slip rendered a bichrome effect when the decoration stamped or incised penetrated the red clay slip and revealed the kaolin surface after firing (see figure 189).

Figure 190 Bichrome effect of O2M(K) ware with red clay slip.

In the city of Guwahati apart from the site of Ambari the other places where kaolin ware has been reported is around the area of Kamakhya temples, Navagraha temples and Saraniya hills (Dhavalikar 1973). Incidentally the terracotta boat was found from the foothills of the Navagraha hills which overlooks the river Brahmaputra. These places especially Navagraha

temple and Saraniya hiils are in close proximity of Ambari. This suggests the widespread usage of kaolin ware around the city of Guwahati in the early medieval period. Thus it seems kaolin ware catered to the populace at a wide scale and there was an equally high demand for it.

Ambari excavations have revealed large quantities of kaolin ware that had been in use in early medieval Guwahati. Apart from Ambari there are other sites in north eastern India that have evidence of kaolin ware in their ceramic assemblage. This shows the wide scale popularity of this medium of earthen ware fabric in the region during this period. There are some problems encountered in the study of kaolin ware as all the other sites where kaolin has been reported have not been excavated for more than one season. Also some sites have not been excavated at all but have been surveyed randomly like in the case of the kaolin findings within the city of Guwahati. So out of all the sites where kaolin has been reported Ambari is the only site which has been excavated for multiple seasons.

The Palas shifted the capital from Tezpur to Durjaya (Guwahati) in the first half of 11^{th} century CE. This may have played an important role in bringing the region of Guwahati in the focus of the political power in the region. This in turn may have attracted migration of population since from this period onwards Ambari records a drastic increase in the consumption pattern. The specificities associated with the increase in the consumption pattern is an increased use of O2M(K) with red clay slip fabric and increased use as well as use of a wide array of decorations on pots. The impetus to this growth can be seen in the transfer of the potical seat from Tezpur to Guwahati. This in turn might have encouraged migration of different sections of the population to the capital. The population might have included potters who specialized in making pots of kaolin ware specifically O2M(K) ware with red clay slip with decorations. Their migration may have been facilitated by the demand for this ware in the Guwahati region after the transfer of the capital.

Kaolin ware is a strikingly different medium of earthen ware fabric which has been found in large quantity among the ceramic assemblage of Ambari. The effort that went in the sourcing and preparation of the kaolin clay and then subsequent slipping, decoration and firing and finally its transportation suggest its importance in the everyday lives. In a period when pottery was the only medium of vessels available kaolin ware definitely had a significant following in the region. Through the study of the kaolin ware in Ambari the changes in the consumption pattern in certain periods can be looked at. Also, habitation pattern of a site can be assessed. Thus the 'Ambari Ware' which has been reported in a

number of places on the fluvial route of Brahmaputra can provide interesting insight about the early medieval period in the area.

CHAPTER V

CONCLUSION

Ambari is a single site in Assam which has seen multiple seasons of excavations. The ceramics collected are huge but they are not kept at one place and which has in turn led to the destruction of contextual evidence. This was a problem faced during my study as well. This study is the first attempt to study the ceramics of Ambari in such micro details. The decorated wares have so far not been looked at in such detail earlier. Also this is an attempt to use ceramics for understanding the habitation and consumption patterns of a site and where other sources are absent. This study is thus an attempt at understanding the history of a region. This is also one of the first attempts at fusing together the archaeological evidence with the historical narrative of the region of Brahmaputra Valley.

In this study I have attempted looking at the site of Ambari through the ceramic remains. The consumption pattern of the ceramics was studied to get an insight at the habitation pattern of Ambari. I have tried contextualizing Ambari in the historical narrative of the region through the evidence gathered from the ceramic analysis. This study of Ambari ceramics has been divided into five chapters. They are Introduction, Non diagnostics and Diagnostics: Classification and Analysis, Decorated Wares: Classification and Analysis, 'Ambari Ware': The Case of Kaolin Ware at Ambari and the present chapter Conclusion.

The first chapter of the dissertation is Introduction where I have introduced the site of Ambari and outlined the history of excavation work. The site of Ambari has been contextualized within the historical narrative of the region. Finally a review of the significant studies on ceramics has been included. The review includes works which have been a land mark in the field of ceramic studies in the world. Also, the works which have set the precedent to ceramic studies in the sub continent has been dealt with. In the end the studies related to Ambari ceramics has been discussed.

The second chapter includes the classification and analysis of non diagnostics and diagnostic sherds. The fabric types, diagnostic forms, standardization of sizes of the different forms have been dealt with separately. The different aspects related to the ceramics have been analyzed in a detailed manner to get a better picture of Ambari.

The third chapter has looked into the decorated wares of Ambari. The different design types have been studied according to their fabric types and layer. The micro details like aspect of

standardization have been looked at. The attempt was made to get a comprehensive insight of Ambari.

The fourth chapter deals with kaolin ware which has been found in large number at Ambari and also called 'Ambari Ware'. This shows the significance of this ware in Ambari. The kaolin ware has been separately studied according to the fabric types and forms. Through the study of kaolin I have attempted at understanding Ambari in the larger context of the linkages and networks in the region.

The overall picture that emerges from my study of Ambari ceramics is that there is an increase in the consumption of ceramics and concentration of habitation in the period from 11th century CE to 14th century CE. This is ascertained from the increase in the ceramic density in the layers (3 and 4) pertaining to this period. This increase can be seen in non diagnostics, diagnostics, decorated wares and kaolin ware.

The density of ceramics is very minimal in the period before 9th century CE. It gradually rises in the period from 9th century CE to 11th century CE. The peak can be observed in the period from 11th century CE to 14th century CE. The period from 14th century CE to 16th century CE experiences a gradual fall and then hiatus sets in from 17th century CE onwards. The site of Ambari is completely forgotten from the period of 17th century CE onwards till it was discovered in the mid 20th century.

The rise in consumption and the changed habitation pattern in Ambari can be situated in the changes in the political sphere of the region. During the period from mid 7th century CE to the last decade of 10th century CE, the area of Brahmaputra valley was under the control of the dynasty of Salastambha dynasty with the political power centered at Haruppesvara (Tezpur). The Palas came to power in the last decade of 10th century CE and they changed the capital from Haruppesvara (Tezpur) to Durjaya (Guwahati).

This westward shift of the seat of political power possibly played a very important role in the rise in consumption and the changed habitation pattern at Ambari. This might have led to migration of the population which in turn led to an increase in demand for certain goods and commodities. Ambari might have attracted potters with an expertise of making pottery with kaolin clay mixed with some amount of red clay mounted with a slip of red clay with some distinctive design patterns. There might have been a demand in the region suddenly for this ware.

The area of Tezpur is closer to the source of kaolin clay in the region. The kaolin clay is found in the Lakhimpur, Golaghat and Karbi Anglong districts of Assam which is upstream from Tezpur. The kaolin ware has been reported from Tezpur and so possibly kaolin was already used in making pottery in Tezpur in the period before the shift of capital. In Ambari the kaolin ware is found from the period of 9th century CE onwards but their number is very less.

Their number picks up only from 11th century CE onwards. This strengthens the possibility that slipped and unslipped varieties of kaolin ware were manufactured on a large scale at Ambari only after the shift of the capital. The discovery of furnaces at Ambari in the excavations of 2002-03 supports this evidence. The excavators date the furnaces to the period from 7th century CE to 13th century CE.

The other evidence that support an increase in the habitation density at Ambari are the structural remains which are dated to the period from 7th century CE to 13th century CE. In the 1997-98 excavations a square shaped water body similar to a bath has been found which also has a brick inlaid steps leading to it. This has been also dated to the period from7th century CE to 13th century CE. From the excavations at Ambari 364 sculptures dated to the period from 10th century CE to 14th century CE have been recovered. The sculptures are Brahmanical icons with a large number of *Sakti* icons, *lingas* and *yoni pithas*.

There was a further shift of capital westwards when in the first two decades of 12th century CE the Palas shifted the capital from Durjaya (Guwahati) to Kamrupnagara. This was done by Palas since they were extending their control westwards and thus the capital shifted. But Guwahati continued to be under the control of the Palas which is supported by the Ambari stone pillar inscription of the 13th century CE. The Pala control over the region of the Brahmaputra Valley dwindled from the mid 13th century CE onwards. The strong tribal chiefdoms of Bodo-Kachari kingdoms and Chutiyas emerged in the western Assam in the period from mid 13th century CE. The central Assam region saw the emergence of the group of 'Hindu' chiefs called Bara Bhuyans in the same period. This might be the reason behind the westward shift of the Pala control and finally its dissolution. In its place emerged the kingdom of Kamata in the western Assam area which ruled from mid 13th century CE till the beginning of the 16th century CE.

The inscription found next to the Ambari site is the Ambari stone inscription. The inscription says "Samudragupta who was like the Sun God has this Sattra establishment within his jurisdiction, in which rituals were performed and was attached to the royal residence, the

inmates of the Sattra being the yogis or siddhas, residing at a particular spot or as inmates called Yogihati. The sannyasins say that piety occurs from dana. The inscription is dated saka 1154 (AD 1232) and was composed by one Mudha (possibly the name of the composer is not given but he addresses himself in a Vaisnava manner as ignorant)" (Choudhury (reprint) 2006: 26). The inscription probably refers to the last king of the Palas Samudrapala.

Thus, after the Palas established their capital Kamrupnagar, Ambari continued to be in their jurisdiction. Also this shift failed to arrest the growth of the habitation of Ambari. In fact the peak in ceramics is observed from 11th century CE to 14th century CE. The peak continued even after the shift of the capital in the 12th century CE. After the end of Pala rule in the Brahmaputra Valley and a change of power equation the ceramic density gradually reduced at Ambari. There can be a number of reasons for this fall which finally leads to the abandonment of the site in 17th century when the Ahoms emerged as the single political authority over the Brahmaputra Valley.

The fall in ceramic density at Ambari from the period of 14th century onwards can be attributed to a number of factors. Firstly, there might have been problems in getting the raw material kaolin from its sources since it was under the jurisdiction of the tribal chiefdoms. Secondly, there could have been problems in navigating the Brahmaputra since there were different political authorities in different parts of the Brahmaputra Valley. Thirdly, there might have been a fall in the demand for certain types of ceramics. Fourthly, with the fall of Palas there might have emerged new centers of political authority which might have attracted migrations.

The Ambari stone inscription mentions the land grant by a king called Samudragupta (Samudrapala) to yogis who are residing at one place (yogihati). This suggests the non domestic character of Ambari. Also, the ceramics found at Ambari are mostly storage vessels and table ware. The percentage of vessels with soot evidence is negligible and which may suggest their use for cooking is minimized as the monks probably depended on alms. So this again suggests that possibly Ambari was not a site of domestic character. Also the excavations have taken place in a limited area so possibly the cooking space of the monastic establishment has not been excavated yet and thus the ceramics found has no evidence of cooking. The evidence of furnace and large amount of sculptures suggest that the space of Ambari witnessed these craft activities. The inscription clearly talks of a *sattra* establishment of siddhas which suggest a monastic settlement. There is a possibility that these craft

activities and monastic settlement shared the same space and had close associations. Also the evidence of a bath with brick pathway suggests the space was of a public nature.

In the period from 8th century CE onwards the landscape of Guwahati witnessed the emergence of Kamakhya as an important pilgrimage center. The settlement of Ambari if it was a *sattra* or monastery of the siddhas then it possibly had association with the temple of Kamakhya in the vicinity. The nature of sculpture that has been found at Ambari is mostly *Sakti* icons, *lingas* and *yoni pithas*. This indicates a strong connection with Kamakhya Temple which was the seat of a Sakti cult in the region. In the Kamakhya Temple even today rent free land is given to potters who in return make the temple pottery. In Ambari we can see the possibility of a similar phenomenon.

The ceramics that suggest a ritual character of the site include 4(a)B, 4(b)B and 4(c)B vessels in the period of 9th century to 10th century CE. In the period of 11th century CE to 14th century CE we see the dish on stands coming up which also had a ritual role. The 4(a)B, 4(b)B and 4(c)B vessels have been found in a few trenches at Ambari. This is possibly because the density and area of habitation in Ambari in the period of 9th century CE was limited which expanded from 11th century CE onwards.

Ambari was a site which was under habitation from the 7th century CE onwards till 17th century CE. In the present study I have attempted a micro study of the ceramics of Ambari to understand the character of the site and contextualize it with narrative of a in the regional history. This is also an attempt to use ceramics as a source of study of the past where the other sources are absent.

In the north east region the period before the advent of the medieval period is shrouded in darkness. This is because the sources available for this period are negligible and which makes archaeology a viable mode of study. In archaeology too there is an over emphasis on the study of the pre history and not the later period. Further the approach which is predominant in archaeology is the cultural historical framework wherein the attempt is to trace the origin and influence either from the Gangetic Valley or South East Asia. The period between prehistory and medieval period has not been looked at much possibly due to the paucity of sources.

Most of the archaeological pursuits in the north east have so far been undertaken by the Archaeological Survey of India (ASI) and State Directorate of Archaeology except in the field of prehistory where Guwahati University Anthropology Department has done some explorations and excavations. The ASI tends to project a particular narrative of the past and

which often marginalizes all dissenting trends. Through the control over excavations the ASI also ends up hegemonizing the production of archaeological knowledge.

In my study I have talked of the way the collection process during excavations is controlled by the authority where some 'antiquities' are seen as valuable and others as not. As a result some artefacts and ceramics are collected and the others are discarded. This partial recovery of artefacts and ceramics thus limits the proper understanding of a site and the changer over time. Also most sites have not been excavated for more than one season. Further even the ones that have been excavated the excavated material has not been analyzed rigorously due to the bureaucratic procedures employed by the ASI.

The site of Ambari possibly a monastic space but definitely a site of non residential character emerged as a result of the westward shift of the Pala power in the Brahmaputra Valley in the early medieval period. The ceramic assemblage includes celadon ware and rouletted ware which shows the linkages that Ambari had. The connections that Ambari shared with the other sites in Brahmaputra Valley are very important for understanding the networks of kaolin clay and decorative patterns. The ceramics of the other sites have to be studied in greater details to get a fuller picture.

The sites of Rajpat in Cooch Behar, Bhaitbari in Meghalaya, Paglatek in Dhubri district, Suryapahar in Goalpara district, Nagaon, Tezpur and so forth have yielded ceramics that need to be studied in greater details similar to this study. This will help in understanding the relations between the forms, fabrics and decorative patterns of the ceramics in the Brahmaputra Valley. This will also help in understanding the patterns of networks, linkages, consumption and habitation pattern of the region.

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