

**An Archaeological Study of the Maldives Islands:  
Investigating the Islamic Period Settlements**

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## **Abstract**

This thesis presents an archaeological investigation of the remote Indian Ocean islands of the Maldives during the medieval Islamic period, through the excavation of three selected sites. The importance of the Maldives in medieval Indian Ocean trade networks, due to their geographical position at a crucial transit point and their exportation of cowry shell money (*Monetaria moneta*), is well known. However, these islands have received limited archaeological research, and that has focused largely on the pre-Islamic period. An archaeological study is important because the existing historical sources are on the whole relatively late and there has been a tendency to extrapolate them uncritically to earlier periods. Moreover, the Maldivian archaeological heritage faces various threats from development and environmental issues. Therefore, with the aim of documenting heritage at risk and filling some of the existing gaps in knowledge, the research is underpinned by four objectives: (1) investigating the landscape history and archaeology of the Islamic period in the Maldives; (2) creating a detailed typology of the pottery excavated; (3) examining the extent of intra-regional differences in the material culture; and, (4) shifting the focus away from the capital Male' towards the poorly studied rural islands.

The research objectives are addressed through the study of three archaeological sites dating to the Islamic period, discovered in the course of this doctoral research and located in the north, central and far central regions of the Maldives. The core dataset is the pottery recovered, and this thesis presents the first typological study of a scientifically excavated, stratigraphically contextualized and dated pottery assemblage recovered from medieval contexts in the Maldives. Other items of material culture recovered, including faunal remains and non-ceramic material culture, are also discussed. Together, these allow an exploration of the role of the Maldives and of their place in the Indian Ocean trade system during the medieval period. Indeed, both material culture and historical sources provide evidence for connections, over the *longue durée*, to several regions of the world, such as South Asia, China, Arabia, Persia and Europe. The thesis concludes that the Maldives were a nation with a strong maritime identity and suggests that Maldivian communities played an active and autonomous role in the Indian Ocean trade network.

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# Chapter 1: Introduction

## 1.1 Introduction

The role and importance of the remote islands of the Maldives in particular during the medieval period is a well acknowledged fact among scholars who have been studying the Indian Ocean trade networks and archaeology of the Indian Ocean world (Chaudhuri 1985; Pearson 2003).

The Maldives archipelago, lying in the western region of the Indian Ocean, at the southern tip of India (Fig 1), is one of the most dispersed countries in the world, consisting of over 1200 islands spread over an area of roughly 90,000 square kilometers, with 99 percent of the country consisting of water (Fig 2). It is said to have been settled for over 3000 years and the historical timeline is divided into two periods; the pre-Islamic (mainly Buddhism dating from the 3<sup>rd</sup> century BC- AD 12<sup>th</sup> century) and Islamic period (from AD 1153 to present). This island nation is assumed to have played an important role in Indian Ocean trade networks lying at an intersection between east and west. However, despite the extensive research that has been carried out on Indian Ocean trading networks, the supposed importance of the Maldives has been assumed rather than demonstrated, because the archipelago has received very little attention among the scholars studying this topic.



Fig 1: Location of the Maldives (Source: Adapted from Venter 2017)

What is known about the role of the Maldives relies heavily on historical evidence in the near-total absence of archaeological work. Relatively late sources (from the 18<sup>th</sup> to 20<sup>th</sup> centuries) discuss the Maldives, and only a handful of earlier accounts; such as those by Al-Biruni (Maloney 2013), Ibn Battuta (Gibb 1929; Husain 1976; Luthufee 1991), or Pyrard de Laval (Gray and Bell 1887; Didi 1995), exist to suggest the character of the medieval Islamic Maldives. Furthermore, key sources such as the work of Ibn Battuta have been repeated by so many scholars as to eventually take on the appearance of solid fact, although some aspects might in reality be unreliable or unsubstantiated (Bell 1883; 1940; Vilgon 1991-1999; Mohamed 2005; 2008; 2014a; 2014b; Maloney 2013). Very limited archaeological research has been conducted on the Maldives, and what has been done has focused on the Buddhist period, and the study of monastery sites (c. AD 3- 12<sup>th</sup> century) (Bell 1883; 1940; Skjølsvold 1991; Mikkelsen 2000). Moreover, the various threats faced by Maldivian archaeological heritage, arising from development and environmental issues, raise the urgency and importance of conducting archaeological research.

The timeline of the Islamicisation of the Maldives plays a crucial role in Maldivian history. The Islamic period spans a rather long period; the initial conversion from Buddhism is placed at AD 1153 by oral traditions (Carswell 1976: 136; Forbes 1981; Romero-Frías 1999; Maloney 2013: 98-100). However, as will be seen below, this date and the oral traditions surrounding the conversion to Islam appear highly controversial and have received much historical debate (Bell 1940; Tajuddin, Muhibbuddin and Siraajuddin 1981; Romero-Frías 1999; Tajuddin 2010; Nadwi 2012).

The present doctoral research has been inspired by several observations. Firstly, the relative lack of academic interest in the Maldives was the ultimate inspiration for this project; the hope here is to introduce its study and to provide an update to the existing literature on the Maldives.

Secondly, conducting archaeological research on the medieval Maldivian Islands seemed crucially important due to the islands' potential to yield archaeological, cultural and historical information relating to Indian Ocean trade (Luthufee 1995; Romero-Frías 1999; National Centre for Linguistic and Historical Research 2004; Riyan 2011). Various accounts address the Maldives as an important transit point for travellers along the ancient Indian Ocean trade routes (Bell 1883; 1925; 1940; Gray and Bell 1887; Gibb 1929; Tibbetts 1971; Carswell 1976; Forbes 1981; Hogendorn and Johnson 1986; Ptak 1987; Vilgon 1991-1999; Ragupathy and Mohamed 2008; De Silva 2009: 173-221; Mohamed 2014a; 2014b). Monsoons played a key role in this

stopover (see Chapter 2). The key to the use of Male' as a port from Southeast Asia to the west was, according to Forbes (1981: 79), the speed of the journey, for it meant "a great deal to the profit-conscious Arab merchants and sailors." Moreover, contemporary records such as those of Ibn Battuta (Gibb 1929; Husain 1976; Luthufee 1991) and Ma Huan (Mills 1970; Ptak 1987) and many other sources (see Chapter 2) mention the many ships that passed among the Maldivian islands on their way from the coast of Bengal to the Straits of Mecca (Gray and Bell 1887; Forbes 1981: 79; Ptak 1987; De Silva 2009: 173-221; Mohamed 2008; 2014a; 2014b). Thus, it is claimed that ships from Southeast Asia, India, Sri Lanka, Arabia, Persia (Yemen, Oman), East Africa and Europe (Portuguese, Dutch and French) traded in the Maldives *en passant*. These ships also took on fresh water, provisions and other necessities and the Maldives also acted as a safe harbour during rough weather (Carswell 1976; Forbes 1981: 79; Hogendorn and Johnson 1986; Ptak 1987; Mohamed 2008; De Silva 2009: 173-221; Mohamed 2014a; 2014b). Ibn Battuta's account also provides an additional reason for a call at the Maldives by Muslim sailors (Gibb 1929; Husain 1976; Luthufee 1991). According to Ibn Battuta, Muslim sailors formed both temporary and permanent liaisons with Maldivian womenfolk, and he himself had four wives as well as concubines. After the 15<sup>th</sup> century, the attraction of Male' as a mid-Indian Ocean entrepôt increased as it allowed sailors to avoid the Malabar Coast where, after the arrival of the Portuguese, ships were often attacked (Gray and Bell 1887; Forbes 1981: 80-81; De Silva 2009: 173-221). The Maldivians have been described by local historians as "the most skillful sailors and navigators in the world who mastered the arts and crafts of boat building and who carried out long distance trade and travels from a very early stage of its history" (Mohamed 2014b: 5; see also Romero-Frías 1999; Maloney 2013).

In addition, the Maldives played a major role in the trade of cowrie shells, mostly *Monetaria moneta*, which served as a valuable commodity as well as a currency throughout many parts of the world (Browder 1969; Heimann 1980; Hogendorn and Johnson 1986; Ptak 1987; Mohamed 2008; 2014a; 2014b; Yang 2011). Several accounts of early travellers, from as early as the 1<sup>st</sup> century AD onwards, mention the Maldives as being the prime source of these shells (Bell 1883; 1925; 1940; Gray and Bell 1887; Gibb 1929; Husain 1976; Tajuddin, Muhibbuddin and Siraajuddin 1981; Hogendorn and Johnson 1986; Luthufee 1991; Vilgon 1991-1999; Didi 1995; Ragupathy and Mohamed 2008; Mohamed 2014a; 2014b). Later historical accounts record the export of cowries from the Maldives to Bengal to exchange for commodities such as rice, and from there these shells were exported to East Africa and the Middle East and through overland caravan trade and bilateral exchanges to West Africa

(Hogendorn and Johnson 1986; Ptak 1987; Mohamed 2008; Christie and Haour 2018). After the 16<sup>th</sup> century, these shells were used by Europeans to buy and sell African slaves (Hogendorn and Johnson 1986). In return, the Maldives are reported to have received rice, sugar, oil, pottery, gold, and textiles among many other things. Some sources (Bell 1940; Tajuddin, Muhibbuddin and Siraajuddin 1981; Romero-Frías 1999: 187) indicate that African slaves were also brought to the Maldives by royals and nobles from their pilgrimage in Mecca.

The significance of the present research therefore lies at several levels, and its key aims are:

- to fill the gap in existing research on the Maldivian past
- to contribute to an understanding of Western Indian Ocean trade networks
- to shed light on the important topic of medieval cowrie exchange

## **1.2. Research background and motivation**

As mentioned, despite the supposed role of the Maldives in global trade, the people of these islands and their culture have aroused little academic interest (Forbes 1980; Romero-Frías 1999). A small number of archaeological investigations have been carried out on the pre-Islamic Buddhist period; however, only two significant contributions have concerned the Islamic period (Carswell 1976; Mikkelsen 1991).

The only systematic archaeological excavation in the Maldives was carried out by Egil Mikkelsen (2000), who studied the Buddhist remains of Kaashidhoo Island between 1996 and 1998. Other small test excavations and local surveys were earlier carried out by Thor Heyerdahl's team in 1983 and 1984 (Heyerdahl 1986; Skjølsvold 1991), H. C. P. Bell (1883; 1925; 1940), John Carswell (1976) and local historian Mohamed Ibrahim Luthufee (1995). All focused on the pre-Islamic period, with the exception of Carswell (1976) and a brief contribution by Mikkelsen (1991). The Archaeological Survey of India also contributed to Maldivian archaeology through a visit in 1987 to the island of Landhoo in Noonu atoll in order to examine a Buddhist mound (Bopardikar 1992; Tripathi 1999). A few historical studies have been carried out on the Islamic period of the Maldives, especially concerning their Islamicisation (Forbes 1981) and their mosques (Forbes 1983; Reynolds 1984; Ahmad and Jameel 2012). Moreover, some anthropological studies also exist (Rossett 1886; Hockley 1935; Munch-Petersen 1982; Romero-Frías 1999; Maloney 2013). But after the aforementioned work of Mikkelsen (2000) at the Buddhist site of Kaashidhoo, no further substantial historical or archaeological work was undertaken on the Maldives. Thus, the Maldives were in dire need of new archaeological

research to address this data gap and to gain a better insight into the role of these islands during the medieval period.

Moreover, many archaeological and heritage sites of the Maldives are at significant risk of destruction from severe coastal erosion due to the rising sea levels as well as development and cultural vandalism (Luthufee 1995; National Centre for Linguistic and Historical Research 2004; Riyan 2011; Bajaj 2012). These factors have resulted in the loss of valuable information about the ancient Maldives and its people. Conducting research raises awareness of the importance of safeguarding and managing these sites.

Furthermore, after the introduction of tourism in 1972, the Maldives have been widely known to the world for their natural beauty; after global climate awareness campaigns held in 2009, the archipelago received further attention due to its vulnerability to environmental and climate changes. In recent years, the Maldives have also received attention due to their political chaos and instability. As stated above, a central motivation of this thesis is the belief that the Maldives have been understudied and that it is time to refocus attention on their rich history, heritage and archaeology. Due to the increase in the tourism sector, it is important to address the potential of cultural tourism as an economically beneficial and sustainable way of promoting and protecting Maldivian identity.

### **1.3 Research aims and objectives:**

The overarching aim of this research is to present a pioneering overview of the nature of the Islamic period archaeology of the Maldives. In order to do this, this thesis presents an archaeological assessment of three settlement sites pertaining to the Islamic period. These are Utheemu, Male' and Veyvah (Fig 2) and they were discovered as part of this doctoral research, their likely potential having been identified by consulting the existing but partial heritage inventory of the Maldives as well as other archaeological and historical sources (National Centre for Linguistic and Historical Research 2004; Riyan 2011). As such, this doctoral research constitutes the first systematic archaeological work pertaining to the Islamic period to be conducted in the Maldives.

The key data set issued from excavations at these sites is pottery. This artefact group is rather abundant in the Maldivian archaeological record, indicating its importance for past Maldivians. The prevalence of pottery is not uncommon at archaeological sites, but the Maldives present an unusual case. Indeed, the Maldives archipelago consists geologically of coral rock and its derivatives, thus does not contain naturally occurring clay and no evidence has been

found for a local manufacture of pottery (Luthufee 1995: 56-59; Romero-Frías 1999: 12; Kench, McLean and Nichol 2005). Thus all pottery recovered in the Maldives would necessarily have been imported (Gibb 1929; Husain 1976; Carswell 1976; Mikkelsen 1991; 2000; Bopardikar 1992; Romero-Frías 1999: 12). In addition, the study of ceramic assemblage is vital in understanding past Maldivian culture in common with many parts of the world; much of the material culture of the past Maldives was organic and non-durable, and would not last long in the archaeological record. Local communities built their houses with thatch and wood and used various parts of the coconut palm (Shafeeg 1989). Sand and coral stones were used as a building material for mosques, shrines, cemeteries and very few elite buildings (National Centre for Linguistic and Historical Research 2004; Riyan 2011, Ahmad and Jameel 2012). However, most of these structures have now experienced several disturbances and modern renovations and many have been destroyed. Thus, the material that is left for archaeologists is very limited and that which would last in the archaeological record is even less. The detailed study of pottery becomes a very valuable and useful approach as it provides the opportunity to not only understand the trade connections Maldivians had with other foreign countries but also to understand their daily lives through the presence/absence of certain types, their usage and functions. The present doctoral research provides the first typological study of a scientifically excavated, stratigraphically contextualized and dated assemblage recovered from medieval sites on the archipelago.

Moreover, this study also aims to investigate whether the material culture of the Maldives manifests any variations across the country in terms of the nature and proportion of finds recovered, differences in subsistence remains, presence or absence of various artefact categories, etc. Physical, cultural, historical and linguistic variations within the atolls of the Maldives have often been acknowledged. Oral history and linguistic evidence suggest that several differences exist within each atoll and island in the Maldives, especially between the North (roughly 300 km from Male') and the South (roughly 400-500 km from Male') in comparison with the capital, Male' (Luthufee 1995; Maloney 2013) (Fig 2). The most notable differences include the environment, physical appearance, linguistic and historical differences, and socioeconomic differences. However, these have never been tested and no archaeological work has investigated what differences, if any, could be traced archaeologically.

As indicated above, the archaeological research described in this thesis has been conducted in three different regions of the Maldives (Fig 2). Archaeological investigations considered Male' and two other islands; Utheemu, in the north and Veyvah, in the South central



region, both relatively far from Male' (about 140-300 kms from Male') (Fig 2). After conducting archaeological excavations, the finds were analysed and described, with a view particularly to assess any differences and/or similarities in terms, for example, of the extent of trade influence and socioeconomic aspects. This will help understand how differently or similarly each island operated despite the distance from the main city Male'. The research conducted has shifted the focus from the well-researched and well written-up capital of Maldives, Male', to the poorly studied islands far away from the capital. Internal travel between the islands and atolls as well as voyages outside the country required people to be seafarers and it would not have been easy to carry out these journeys as it is presently, with the introduction of sea planes and high speed sea boats. Past inhabitants used a sea-going vessel called *dhoani* and rafts for internal journeys and sailing boats for external travels (Romero-Frías 1999; Mohamed 2008: 65). Some of these journeys would have been carried out in rough seas against the monsoon winds and currents, resulting in several days' journey (Mohamed 2008: 67). The Maldives archipelago consists of islands mostly lying along the rim of the atolls, with sandy lagoons as wide as 24 to 64 km in the center. Moreover, the open sea between each atoll has varying width, depth, environmental features, etc. (Agassiz 1903; Luthufee 1995: 39-51). Crossing these seas can be challenging during rough weather. However, communities depended on these vessels and for islanders these journeys were unavoidable for trade and for communication purposes, as well as obtaining other day-to-day basic necessities such as food, health care, etc.; historical sources suggest that in the Maldives, international trade was centralized and controlled through the capital, Male', and that the remote islands relied on imported materials for their daily lives due to limited local resources (Romero-Frías 1999; Mohamed 2008: 67). Therefore, it is important to understand the balance between what could be produced locally on these outlying island communities and the imported goods brought from Male'. This research aims to shift the focus to the understudied island communities far away from Male' and to understand how they operated on these more rural islands.

#### **1.4 Research questions:**

The doctoral research presented here has been framed around the following questions:

1. The first set of questions relates to setting out a fundamental understanding of the range of material culture occurring on medieval sites of the Maldives:
  - a. What kind of material culture can be recovered?
  - b. What does this tell us about trade networks?

- c. What can be inferred about the history and lifestyle of communities through this material culture?
2. The second narrows the focus of the research to a specific set of material culture – the pottery recovered archaeologically:
  - a. What kind of pottery can be recovered from the Maldives pertaining to the Islamic period settlements? What is the balance between the different types of wares?
  - b. What does the pottery tell us about trade connections during that time?
  - c. What can be derived about the lives of the communities using this imported pottery and the influences on these communities from this trade and to what extent does the study of pottery contribute to our understanding of the sociocultural and socioeconomic aspects of the communities of the Maldives?
  - d. According to Carswell (1976) and later Forbes (1981), the Maldives was a stopping point for westward-bound ships more than eastward due to the recovery of predominantly Chinese pottery in Carswell's work in the Maldives (see Chapter 3). Does the pottery recovered support Carswell (1976)'s hypothesis of the Maldives being a transit point for Chinese ceramics going westbound in the Indian Ocean trade?
3. The third relates to the well documented regional differences within the Maldives:
  - a. How does the archaeology differ from each island and what are the similarities within each site? (i.e., absence or presence of certain kinds of objects and/or certain kinds of subsistence remains, etc.). What does the material culture tell about the spatial or regional variations that are said to exist within regions? To what extent does the material culture support this claim?
4. The fourth asks how the Maldives fit into trade networks, in particular the Indian Ocean trade system.
  - a. How does the evidence recovered in the Maldives support or contradict some of the models which have been proposed for the development of interregional trade, for instance, World Systems Theory?
  - b. What does the material culture as well as known historical sources tell us about the nature of trade the Maldives was involved in?

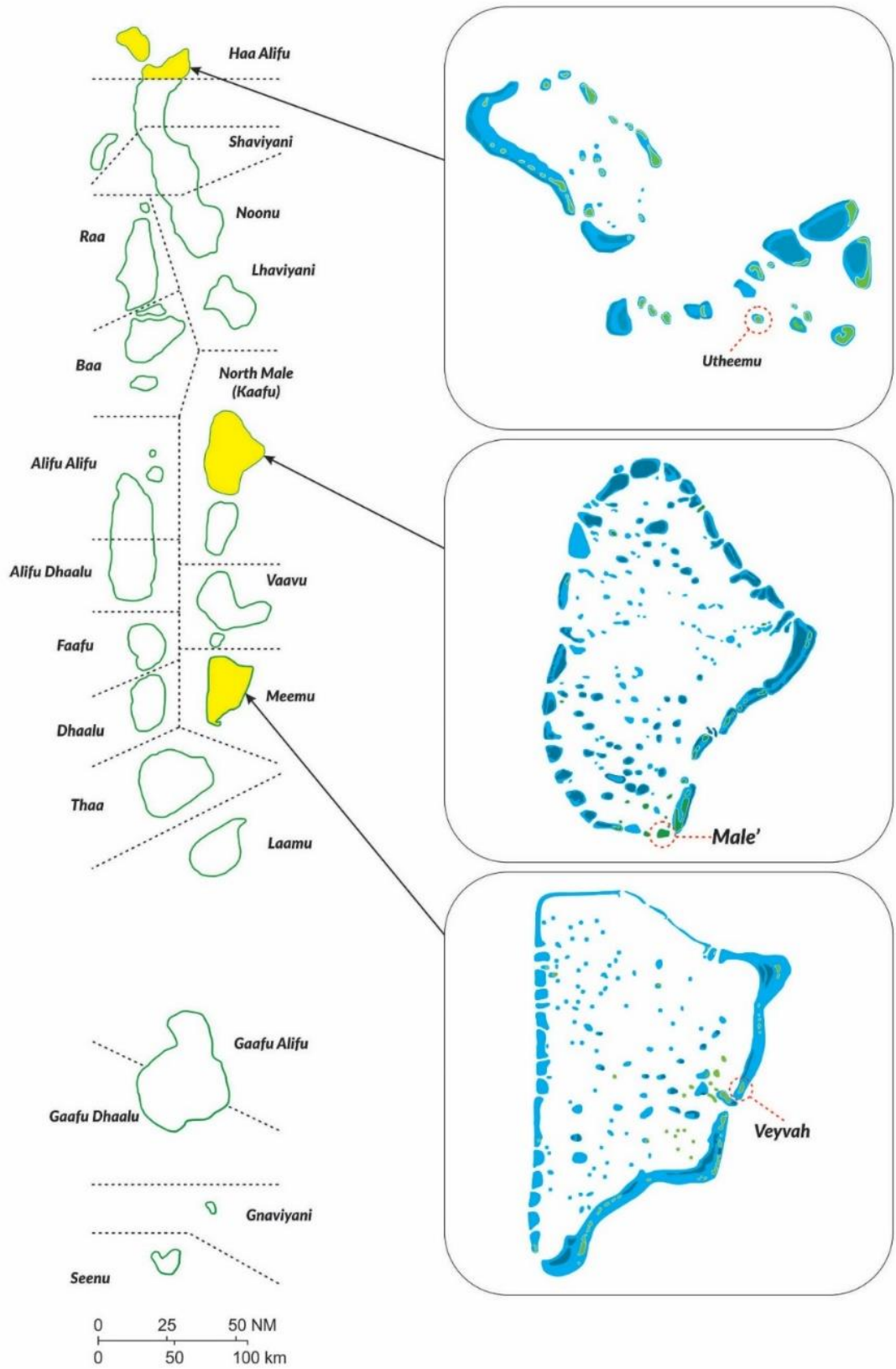


Fig 2: Left: Map of the Maldives, showing atolls with their administrative names. Right: The islands studied, shown within their atolls (Source: Abdul Samad)

## **1.5 Theoretical Framework**

### **1.5.1 World Systems Theory**

That the Indian Ocean was widely known and used by sailors, traders, religious men and migrants in search of goods and new lands from a very early date is well known (Hourani 1951; Tibbetts 1971; Beaujard 2005; Mack 2007; 2011; Hall 2010; Schenk 2015; Tripathi 2017). From the extensive literature on this movement of people including various cross-cultural exchanges, it is very clear that a range of factors (including geographical, political, religious, economic and social) shaped and influenced this flow of exchange. Long distance trade played a key role in this movement. A variety of perspectives on the complex trade and cross-cultural interaction in the Indian Ocean trade network, involving the exchange of not only goods, but also knowledge, beliefs and values, have been offered (Hourani 1951; Curtin 1984; Chaudhuri 1985; 1990; Abu-Lughod 1989; Beaujard 2005; Mack 2007; 2011; Hall 2010; Seland 2013;).

The people of the Maldives, as mentioned above, were centrally located yet have often been neglected in such discussions. For instance, discussing the interactions in the Bay of Bengal region of the Indian Ocean during the 14<sup>th</sup> to 16<sup>th</sup> century, although Hall (2010) mentions the Maldives as being on the alternative route for Red Sea mariners and other merchants trading within this region, no further mention is made of these islands despite the discussion being centered around polities that are known to have interacted with the Maldives such as China, Persia, Yemen, South India and Sri Lanka. Moreover, even though Beaujard (2005) discusses the important role of cowries and their use in Bengal and other countries, he does not mention the Maldives despite the fact that they likely supplied the Bengalis in cowries. Several other aspects very relevant to the Maldives: the spread of Buddhism, Islam, etc., are discussed at length in the above two sources but the Maldives are completely neglected.

To understand this cosmopolitan context of the Maldivian exchange network system, it is important to investigate the nature of these various cross-cultural relations and what factors shaped them. An oft-applied model in Indian Ocean studies (Beaujard 2005, 2010; Clark 2006; Litster 2016) as elsewhere (Wallerstein 1974; 1980; Stein 1998; Beaujard 2005) has been that of World Systems Theory (WST). This model was first developed as a reaction to functionalist theories by sociologist and historical scientist Immanuel Wallerstein (1974; 1980) in order to examine the rise of western capitalist economies within a global frame of reference. It has since been widely used to describe and explain long distance exchange, large scale interregional interactions and power relations between polities. Three distinctive geographic areas are envisaged in this model: the core, the periphery, and a semi periphery in between (Wallerstein

1974; Frank and Gills 1993; Stein 1998; 2002; Beaujard 2005; Litster 2016; 22). The core is defined as highly developed both economically and politically with centralized authorities directly or indirectly supporting exchange relationships within the world system, while facilitating accumulation and investment of surplus (Wallerstein 1974; Frank and Gills 1993; Stein 1998; 2002; Litster 2016: 22). The area at the outer edges of this model - the less developed periphery - is seen as created by the core through this exchange relationship, thereby pulling it into its control (Wallerstein 1974; Frank and Gills 1993). The third area, the semi periphery, acts as an intermediate between the two edges of the model both geographically and organizationally (Wallerstein 1974; Frank and Gills 1993; Stein 1998). Here, the political system is not as complex as that of the core but it is more centralized and hierarchical than the periphery.

A key proponent of this model for the Indian Ocean has been Beaujard (2005). He defines three main areas: the China Sea, the eastern Indian Ocean and the western Indian Ocean, with the last further divided between the Persian Gulf and the Red Sea. He then assigns cores to each subsystem: China, India, western Asia and Egypt. According to him, these core areas determined the nature of trade with their peripheries (Figures 3-5).

The World Systems Theory has been the subject of considerable debate and controversy, especially in terms of the timing and nature of the first 'World System' and its applicability to other parts of the world (Wolf 1982; Kohl 1987; Frank and Gills 1993; Stein 1998, 2002; Beaujard 2005, 2010; Litster 2016). Stein (1998: 220; see also Kohl 1987) has argued that World Systems Theory has been "overused and in many cases inappropriately applied", with archaeologists applying it to an extremely broad range of prehistoric, pre-capitalist, and non-western societies at every conceivable scale and level of complexity. For instance, some scholars state that no type of society has existed in any period of human existence in which world systems relationships did not affect its dynamics and structure (Collins 1992: 373). In contrast, Frank (1993) argue that a single world system has existed for the last 5000 years. Furthermore, Hall *et al* (2011) feel that the original theory, constructed as it was to apply to the modern period, is not applicable to ancient times. The WST has also been criticized for being too focused on the core or state, ignoring the potential or agency of the periphery groups (Kohl 1987; Chase-Dunn and Hall 1993). The concept of a fundamental asymmetry in power is a central part of the theory: the core has complete control of the periphery both economically and politically, and exploits it for a supply of raw materials in exchange for manufactured finished products (Stein 1998). It is assumed that it is through long-distance exchanges that all other aspects of political economy in

peripheral societies are structured, and local production and exchange, local agency and the internal dynamics at the periphery are neglected (Stein 2002). Chase-Dunn and Hall (1993) point out that interactions between societies can take a much broader range of forms: prestige goods exchange, regularized warfare, political symbolism and political protection.

To summarize, the WST was developed to explain the rise of European capitalism during the 16<sup>th</sup> to 19<sup>th</sup> century and has been used widely to explain ancient societies. It has been criticized, mostly for being too focused on the core, ignoring the potential or agency of periphery groups, and assuming that long-distance exchanges structure all aspects of political economy in peripheral societies. It is suggested here that it cannot be entirely accurate when used outside the timeframe for which it was originally developed. Doing so would neglect several aspects of past interactions.

The World System Theory's applicability to the Maldivian case is questionable. I concur with Chase-Dunn and Hall (1993) that cross-cultural interactions were not limited to bulk trade but also included the exchange of prestige goods, regularized warfare, political symbolism and political protection as forms of regularized contact. As will be explored in Chapter 7, prestige goods, political symbolism and protection were key aspects in the Maldivian network system. In addition, I would favour models which see exchange as a relationship between near equal partners, rather than an exploitative link. Two authors can be briefly cited here. In a discussion on the maritime diasporas in Asia before Da Gama, Clark (2006) highlights the misconceptions in the study of cross-cultural exchanges which result from the influence of European perspectives. According to Clark (2006: 386) the Indian Ocean only gained significance in the study of trade and cross-cultural interaction as a theatre of European colonialism where the focus of discussion was on the European mercantile trade companies - most notably the Dutch Vereenigde Oost-Indische Compagnie (VOC) and the British East India Company. Noteworthy here is the mention of Furber's work (1976) which provides a balanced treatment of Europeans and Asians, treating both parties as near equal partners, which few other writers on this topic acknowledge. However, Furber also neglected the autonomous agency of the culture and peoples of the Indian Ocean (Clark 2006).

### **1.5.2 Investigating other approaches**

Several alternative approaches have been proposed and used in the understanding the archaeology of cross-cultural exchanges. Stein (1998) has altered the WST to suggest a distance-parity interaction model. According to Stein (1998: 247), it is important to take into account

“the levelling effects of distance which gives rise to a highly variable social landscape in which the smaller, less complex polities of the periphery could and did play an active role in structuring networks of interregional interaction.” Stein (1998) suggests that the power relation of the core diminished with distance; thus, it was not successful in exercising military, political or economic control over the terms of trade in distant peripheries. Moreover, he highlights the importance of looking more closely at the local cultures in their own terms to understand the nature of exchange systems and the error inherent in viewing these exchanges as core-dominated world systems.

It is evident that for such long-distance exchanges to take place, questions of information, uncertainties and risks arise (Cohen 1971; Forrest and Haour 2018). A level of trust would have been required and, as Forrest and Haour (2018: 320) have stated “questions of trust in fact lie at the root of many of the problems faced by long-distance traders across the globe.” Trust becomes essential to the creation and maintenance of networks and relationships in instances where commercial transactions rarely involved the simultaneous exchange of goods and payment. To rely upon and cooperate with foreign partners whose behaviour could not be directly monitored would have required a certain level of trust and a set of rules and conditions (Seland 2013; Forrest and Haour 2018). When examining the ways this necessary trust was established between different parties, a measure of political and legal authority would have been required and thus it is important to understand the role of the government and its laws. As will become evident in subsequent chapters, I agree with Colvin (1971)’s notion of a largely state-regulated order – in other words, the fact that political authority was established through tight governmental control of trade where rulers regulated the price to be asked, where and how markets could be established, and what merchandise could be sold.

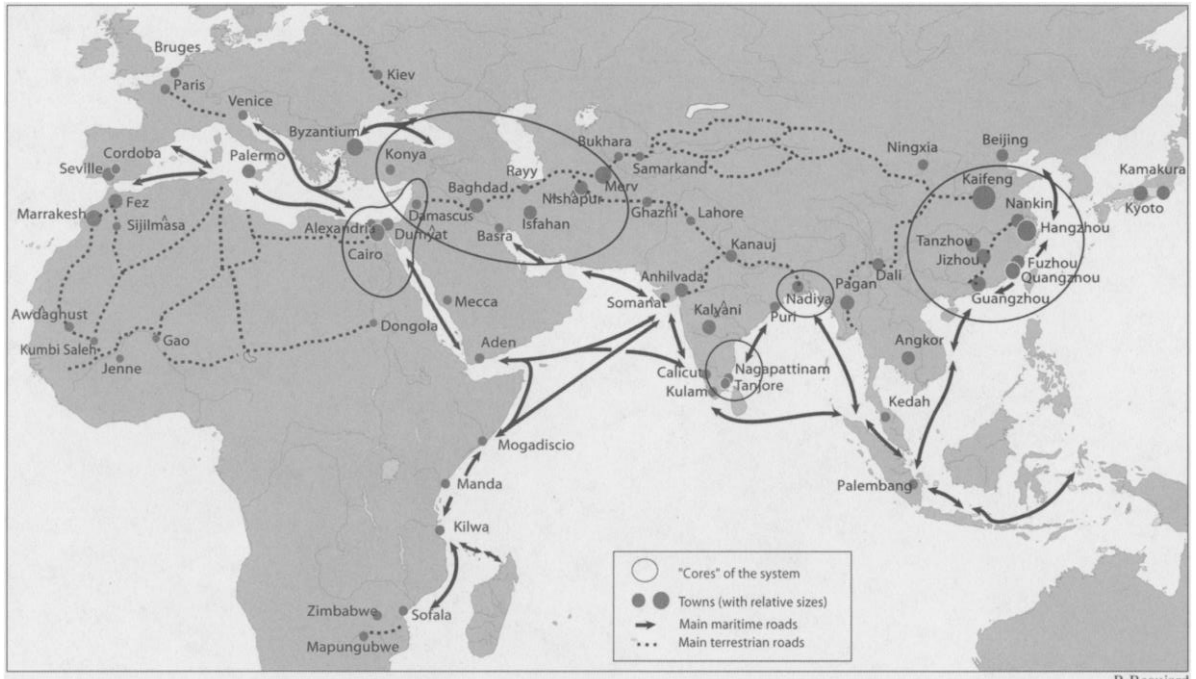
The existence of political and legal authorities is not, however, sufficient in itself. Another means by which trust was fostered among traders is the existence of shared practices and beliefs. The model of trade diasporas has been a popular way of conceptualizing the formation of trust (Curtin 1984; Chaudhuri 1990; Clark 2006; Hall 2010). This approach is comprised of specialized merchant groups that are spatially dispersed and distinct culturally, organized cohesively and socially autonomous from their host communities but maintain a high level of economic and social ties with communities related to them who are defined as belonging to the same general culture (Cohen 1971). Curtin (1984) argues that the role of merchants in trading diasporas was central to the development of regional economic and culture in many societies. The concept of trade diasporas was developed by Abner Cohen to understand relations

between enclaves of Hausa traders and their Yoruba host communities in West Africa (Cohen 1971). Although Cohen (1971) originally developed the model to illustrate a case in Nigeria in the 1950s, he did suggest that the model could be applied to earlier periods, and in other parts of the world. Merchant groups who are experts on home culture settle down, coexist, intermingle (through marriage) and become accustomed to the host society by learning the language, customs and commercial practices. This in turn makes them experts in the host culture and aids them in the establishment of the necessary trust to build closer relationships between the host society and their home culture (Curtin 1984; Seeland 2013). In this model, interactions were structured by a combination of various factors such as local agency, environmental parameters (such as distance), demography, and macrolevel aspects of political economy on both sides (Stein 2002).

I will argue that this theory can be applied to some extent to the Maldives. However, even though shared cultural practices and ideologies did contribute in the establishment of trust, the extent and limits of this trust was restricted to a certain degree. Examples exist in the Maldives in which some groups attained a high status, forming close ties with the state and some instances where they were treated as hostile by the Maldivians. For those groups accepted, there are cases where there is also a shift in the level of acceptance - where some merchant communities became unwelcome and were in due course viewed as threats to the host culture for various reasons. As Forrest and Haour (2018: 343) state, “all these elements of building trust were situated in time, that is, within relationships that changed over their duration, and which influenced and were influenced by other dynamic relationships.”

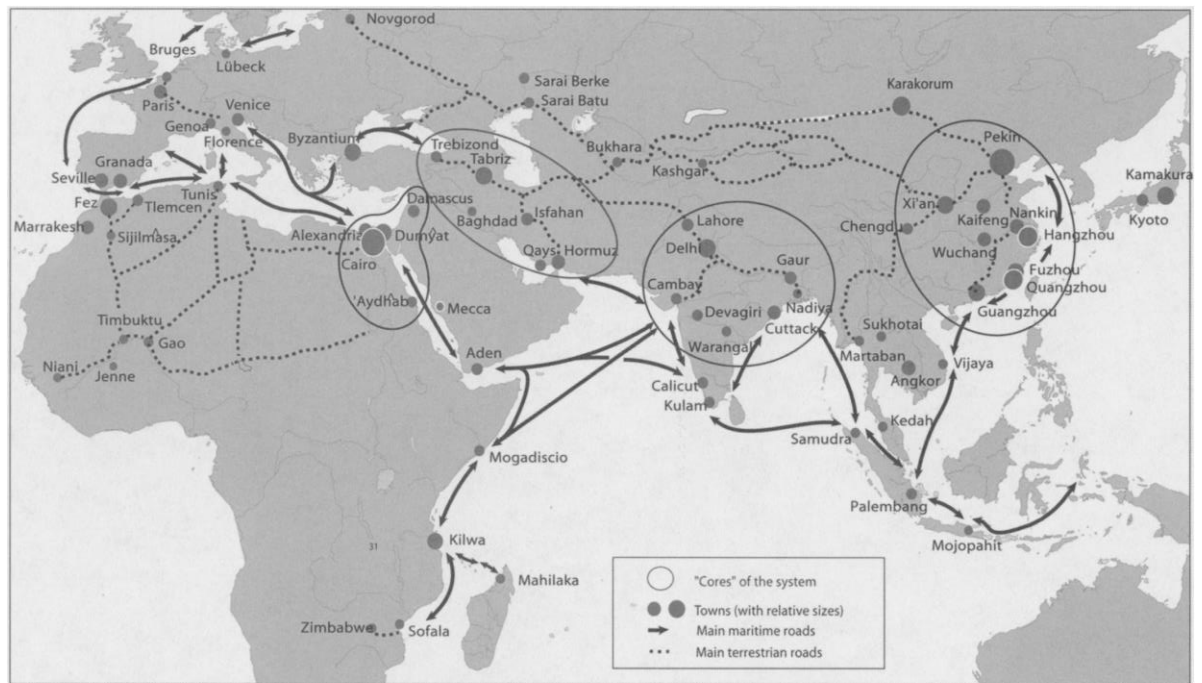
I mentioned above that Beaujard (2005) has applied World Systems theory to the case of the Indian Ocean. I find his geographical division of the Indian Ocean problematic, but crucially, he highlights the role of religious networks and relations of production as well as that of political dominion and conflict. He also discusses the importance of considering internal politics and dynamics within individual parties: periods of decline and disorder, from a range of causes, as well as political struggles for the control of wealth and state apparatus, will have alternated with periods of renewed exchanges (Beaujard 2005: 432). I fully agree with this claim that resource availability, production and labour played a role in the exchange system as well as to some extent political control.





P. Beaujiard

Fig 3: The Eurasian and African world-system from the 11<sup>th</sup> to the early 13<sup>th</sup> century (Source: Beaujiard 2005: 427)



P. Beaujiard

Fig 4: Eurasian and African world-system in the 13<sup>th</sup> and 14<sup>th</sup> centuries (Source: Beaujiard 2005: 428)

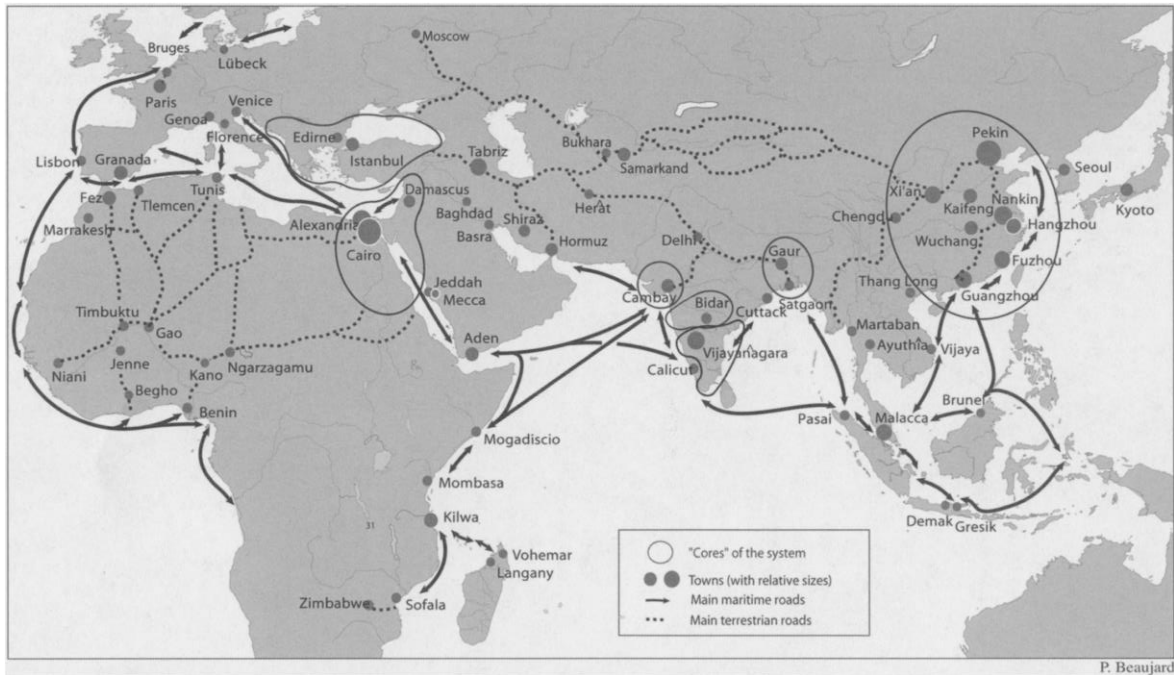


Fig 5: Eurasian and African world-system in the 15<sup>th</sup> century (Source: Beaujard 2005: 429)

Writing specifically about the case of the ancient Indian Ocean network, Seeland (2013) discusses several ways of establishing the necessary infrastructure of trust that shaped networks and social cohesion. Trust was sought through communities of resident merchants on foreign ground, that is, trade diasporas. According to Seeland (2013), factors such as geographical origin, ethnicity and ideology (religion) played crucial roles in the shaping of the networks and social cohesion between various polities in the Indian Ocean exchange network. Networks were based on the knowledge of the geography or the familiarity of the geography of the Indian Ocean (such as the knowledge of seafaring and navigation including monsoonal winds, currents, tides, weather conditions, ship building, maritime structures, etc. (Tripathi 2017), ethnicity (in terms of a common language and similar cultural identity), as well as networks based on faith (mostly Buddhism and Islam) (Seeland 2013).

Commenting on the nature of interactions in the Bay of Bengal region of the Indian Ocean between 1300 and 1500, Hall (2010: 113) believes that the end of this period saw the rise of more port-centered regional states, whereas in the earlier times polities had been based on their “productive agricultural hinterlands and viewed maritime trade as an appended source of tax revenues and exotic luxury goods.” He further states that there was “no hierarchical trade structure corresponding to markets with a single clearing house or a single core with peripheries with which it traded in terms of unequal exchange” (Hall 2010: 113). Rather, the regional trade

in the Bay of Bengal was a poly-centric network realm. Factors such as the exchange of religion and cultural values alongside goods are discussed as well. He concludes, stating that “the integrity of the early Indian Ocean maritime port-polity networks was less the product of political, economic or cultural initiatives of local elites, but was more due to successful networking among the sojourning merchants and religious clerics who travelled to, and traded in, the regional ports” (Hall 2010: 138).

In summary, several alternative approaches exist to the study of cross-cultural exchanges. Distance was clearly one factor that influenced the level of control over polities and highlights the importance of studying each party closely on their own terms. Moreover, the importance of establishing trust between groups is crucial and various ways existed in the establishment of trust such as through state-regulated control and the establishment of trade diasporas. Aspects such as shared cultural values, geographical origin, ethnicity and religion shaped the formation of the necessary trust required. In addition, resource availability, production and labour as well as political exchanges shaped the nature of cross-cultural exchanges.

### **1.5.3 The Maldives in World Systems Theory**

Having established the background for the theoretical framework for this research, this final section will comment on how successfully it can be used to establish where the Maldives fits into this exchange network (which will be discussed in Chapter 7).

While I agree with the scholars in the claim that Wallerstein’s world systems theory, or at the very least a variant of this model, existed before the 16<sup>th</sup> century, as I will go on to discuss in Chapter 7, I argue that this model cannot be used to explain the broader themes encompassing the nature of interactions between the Maldives and its exchange partners. The WST does not support the major assumptions provided by the model, namely the core- periphery division, as well as the three major assumptions: core dominance, core control over an asymmetric exchange system and the casual primacy of long-distance interaction in structuring the political economy of the periphery. To fit the Maldives into one of the three geographical areas in WST would neglect taking into consideration the various internal and power dynamics of the Maldives and its trading partners which shifted through time. The Maldives and its partners need to be viewed in their own terms in order to be best understood.

I argue that the historical sources suggest that the Maldives was an autonomous community which had full control over the operation of the country and had a much more active

role and some level of control over certain aspects of the trade and exchanges that took place. Moreover, as will be evident in Chapter 7, no foreign party was able to dominate all aspects of trade with the Maldives (especially fragmentary military influence) and the degree of control as well as the aspects controlled varied through time due to several factors, mostly internal such as internal politics, importance of imports, religion, cultural values, etc.

The Maldives were an active agent in the Indian Ocean network and had considerable power over trade goods and partners, and the nature and degree of outside influence or control. I will argue that one of the methods of establishing trust was through governmental control of the terms and nature of trade and political order. As will be highlighted, the products received in return for the goods exchanged were very important for the Maldives. These factors would have played a key role in this network. There appear periods where the nature of the interactions and the level of agency varied and shifted, where the Maldives exerted less control over its trade and other aspects of the nation (such as political and military dominance, economic, conflict, etc.) and the reasons for these changes.

It is of course difficult to answer the questions of what shaped Maldivian cross-cultural interactions solely by the analysis of material culture. However, I will argue that the material culture (namely the pottery, fauna and other finds) strongly supports the notion of Maldives being a highly maritime culture (in almost every aspect of the local lives and operation of the country) with a heavy reliance on trade and import items, pottery being one of the most important commodities traded in and cowries being one of the most important commodities traded out. The dominance of such imported goods in the material culture attests to the intensive trade interactions that would have taken place and the various factors that shaped this exchange. In addition to the material culture, historical sources will also be used to interrogate the nature of interactions as few sources exist that describe in elaborate detail the nature of trade and networks that existed with certain parties (Hogendorn and Johnson 1986; Ptak 1987; De Silva 2009; Mohamed 2014b).

I also agree that it was not just trade goods which shaped the networks within which the Maldives was situated (although as mentioned above, the Maldives relied heavily on imported goods). Along with these exchanges came religious knowledge, cultural practices and beliefs as well as geographical knowledge especially on seafaring and maritime practices. These are not only evident in the material culture, but also in the standing remains, including the Islamic mosques as well as cultural, linguistic, administrative, political and economic aspects of the Maldivian community. As will be evident below in the following chapters, it was not just due

to the availability of cowries that the Maldives became a stopover but also due to the archipelago's location in the Indian Ocean. The role of monsoons, speed of route as well as the events happening around the Indian Ocean (such as the capture of ships by the Portuguese) shaped this network and determined such aspects as which route to take or which route was safe or faster. However, despite the heavy reliance on foreign partners with the Maldives, there were certain aspects that had minimal change and influence, for instance the religion, and the 'maritimeness' (Westerdahl 1992; Parker 2001; Breen and Lane 2003; Cooney 2003; Tuddenham 2010) - i.e., fishing and the exploitation of marine fauna as a subsistence basis to be discussed in detail in the thesis.

To comment on the nature of cultural exchanges of the Maldives, one needs to understand that this was a very dynamic system that shifted and changed through time with periods of boom and depressions, with varying levels of agency and control, with several trade partners at different periods of time. Thus, instead of using a single approach to explain the varying nature of the Maldives in the Indian Ocean network, as outlined above a variety of approaches needs to be applied in order to better understand what shaped these interactions. Factors such as distance, the importance of trust and the various methods that were used to establish this trust (such as the nature and level of acceptance of trade diasporas [of shared cultural practices and beliefs], geographical knowledge, ethnicity, religious networks), local agency (including availability of local resources) as well as internal affairs (such as political relations and conflict) played a crucial role in shaping this network which will be further explored. Trust was a problematic issue for the Maldives as well and even though it cannot be attested in the material culture, historical sources certainly help in understanding this.

To better understand these factors, material culture and historical sources are used to explore who the major partners were who traded with the Maldives and when this was taking place. After the conversion to Islam in the 12<sup>th</sup> century, the major polities reported to have interacted with the Maldives include Persians and Arabs, Indians and Sri Lankans, Chinese and Europeans (mainly Portuguese, Dutch and finally the British). I examine the nature of interactions for each group individually and will argue that for each trade group, various factors shaped the interactions depending on both the conditions of the Maldives as well as the merchant groups. The model of trade diaspora is also somewhat applicable to the Maldives and some examples are cited in explanation of the nature of these communities and to what extent trust was gained by them.

In the conclusion, efforts are made to study the Maldives not from a single perspective but adopting multiple models and factors to explain the nature of their role in the wider Indian Ocean network. Questions such as why the Maldives traded with certain parties and why certain parties traded with the Maldives and the nature of these exchanges will be explored.

## **1.6 Thesis structure**

This thesis consists of seven chapters. The first chapter has provided an introduction and set out the research context for this project. It has highlighted the motivation for this doctoral study and presented the research aims, objectives and the research questions to be explored. The theoretical framework deployed draws on the World System Theory. A discussion of its main tenets and aspects of its relevance to the study of interregional interactions have been identified.

Chapter 2 will present the physical setting of the Maldives. It will outline the environmental and cultural setting of the Maldives and provide a historical background of the Maldives along with a historical timeline.

Chapter 3 will then discuss the previous archaeological work done on the Maldives, serving as a basis to establish the methodology followed for this research. The methodology will also outline the historical background for each site excavated in this research.

Chapter 4 will then move to the current research and present the three sites excavated as part of this research: test pits were excavated on the islands of Utheemu, Male' and Veyvah. It will provide the details of excavations as well as comment on the stratigraphy, fauna and chronology of the dated contexts.

Chapter 5 will focus on the ceramic assemblage recovered from the sites discussed above. After highlighting the (limited) previous work carried out on archaeological ceramics of the Maldives, it will outline the methodology used for this analysis and present the assemblage recovered.

Chapter 6 will discuss the small finds resulting from excavation: that is, the non-ceramic material such as glass, metal, stone, etc., as well as items classified as ceramic finds but not related to pottery.

The final chapter will summarize the results of the research and outline the progress made towards addressing the questions discussed at the outset. Finally, it will present some concluding remarks on this research and suggest ways forward in the study of Maldivian archaeology.

## **Chapter 2: Geographical and historical setting**

### **2.1 Introduction**

This chapter outlines the environmental and historical setting of the Maldivian islands which sets the background to any historical or archaeological enquiry about the archipelago and its people. This chapter is divided into 3 sections. The first will set out the environmental nature, the second section provide a brief description of the major historical events that took place in the country, roughly divided into two historical periods; the Pre-Islamic Buddhist period and the Islamic period. Finally, the chapter will move its focus to summarize the most substantial historical accounts of the Maldives written by travellers, traders, writers, geographers and historians from various regions of the world. While some of these are primary accounts of eye-witness descriptions, others are secondary accounts by individuals who did not visit the Maldives, and it is not always easy to distinguish between the primary and secondary sources.

### **2.2 The physical setting**

This section presents the physical setting of the Maldives by briefly summarizing the geography, environment and climate of the country, including a consideration of issues surrounding recent sea level changes. A number of authors contributed much towards the early understanding of the geography and environment of the Maldivian islands. Among these, we can cite firstly the Admiralty charts made by Moresby and Powell from 1834 to 1836 (Moresby 1835; 1844), representing a remarkable contribution to the understanding of the Maldivian environment which facilitated and were used extensively by many subsequent researchers. The next person who contributed to this field in the Maldives was Gardiner (1903-1906), who provided an enormous wealth of information on the fauna and geography of the archipelago (including various atoll and island comparisons) drawn from his expeditions within the years 1899-1900. The work of Agassiz (1903; 1910-1911) is another yet remarkable contribution. Agassiz conducted surveys during his expedition within the years 1901-1902. His book “The Coral Reefs of the Maldives” provides detailed information about the geographical and environmental characteristics of the Maldives, divided into sections dedicated to each atoll. Lastly, the work of Maldivian historian Luthufee (1995) deserves a mention as this was the first time a contribution is made in the local Dhivehi language, being thus accessible to non-English speaking Maldivians and presenting others’ contributions in this field and providing a local’s comments and

observations. In his book “An Introduction to Maldivian Geography” (1995), Luthufee provides lengthy details of the geography, environment (including flora and fauna) as well as the historical significance of each atoll and island in the Maldives, drawing on his own research over 25 years as well as commenting on other sources such as those mentioned.

### **2.2.1 Geography**

The Maldives, locally known as *Dhivehi Raajje*, is an independent Republic, a South Asian island country located in the center of the Northern Indian Ocean, situated in the Arabian Sea (Fig 1). This isolated carbonate platform lies southwest of Sri Lanka and India. The atolls are made up of live coral reefs and sand bars located atop the Chagos-Laccadive Ridge which is a vast submarine mountain range in the Indian Ocean. Each atoll has distinctive characteristics in terms of its history as well as environmental characteristics such as climate, vegetation, rainfall, monsoon, currents, winds, tides, etc. (Gardiner 1903-1906; Agassiz 1903; Luthufee 1995).

The archipelago consists of over 1200 coral reef islands; less than 300 of which are inhabited, grouped in a double chain of 26 ring-like atolls stretching from *Ihavandhippolhu* (Haa Alifu) Atoll in a distance north to Addu (Seenu) Atoll in the south. From north to south it covers of 850 km and from east to west 125 km, yet it comprises a landmass of only 300 km<sup>2</sup>, 99 percent of the country is thus comprised of water, making it the largest chain of atolls in the world as well as one of the world’s most geographically dispersed countries (Luthufee 1995) (Fig 2). The Maldives is also the smallest Asian country by land area and population.<sup>1</sup>

### **2.2.2 Environment**

With regards to the Islands of the Maldives, Luthufee (1995: 7) terms them as *vodigiraa* (meaning eroding islands) with characteristics of the disappearance of existing islands and formation of new islands (Agassiz 1903: xiv). This is also evident in the historical sources including the work of Al Biruni where he states that “it is peculiar to the Diva islands that they rise slowly; first, there appears a sandy tract above the surface of the oceans; it rises more and more and extends in all directions. Till at last it becomes firm soil, whilst at the same time

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<sup>1</sup> Note that although there are 26 naturally occurring atolls in the Maldives, for administrative purposes the Maldivian government organized these atolls into twenty-one administrative divisions (Fig 2) (Luthufee 1995).



another island falls into decay and melts away, finally is submerged, and disappears in the ocean. As soon as the inhabitants become aware of this process, they search for a new island of increasing fertility, transport there their cocoa-nut palms, date palms, cereals and household goods, and emigrate to it” (Maloney 2013: 419, see also Carswell 1976: 135; Luthufee 1995: 7).

Moreover, it is also a common occurrence in the Maldives that neighbouring islands become joined to each other, thereby becoming one island or of islands becoming divided into 2 or 3 islands due to erosion (Luthufee 1995: 7).

Most of the islands lie along the coral rims of the atolls, with a lagoon in the center that can be as wide as 24 to 64 km across and not more than 20 meters in depth. Moreover, the body of water between each of the 26 atolls, or the open sea area between each atoll are labelled as the major seas of the Maldives. Hence there exist 20 different major seas in the Maldives and, similar to the atolls, each of the major seas also has distinctive characteristics including varying width and depth, history as well as environmental features (Agassiz 1903; Luthufee 1995: 39-51). During rough weather, crossing these inter-atoll seas tends to become very challenging, resulting in many ships (both local and foreign) often being wrecked in these waters (Gray and Bell 1887; Didi 1995; Collings 2010; Lane 2012; Jaufar 2012b).

### **2.2.2.1 The increasing environmental issues in the Maldives**

With an average natural ground-level of only 1.5 meters above sea level and the average surface area of many inhabited islands being less than 1 km<sup>2</sup>, this island nation is the world's lowest country. Due to this extremely low elevation and surface area, the Maldives is claimed to be at high risk of being submerged due the risks posed by the rising of sea levels. According to the UN’s environmental panel, the Maldives is to become uninhabitable in 50 to 100 years as a result of the sea level rising high enough to completely flood the country (IPCC 2001). However, this has been the subject of much scholarly debate over the last century. Gardiner (1904) was among the first scholars to comment on the sea level rise of the Maldives well over a century ago. He evidently recognized the erosion process and recalled “fresh conditions tend to be found on its reefs” (Gardiner 1904: 293). While it is commonly claimed that the Maldives faces a higher rising of present sea level, many argue otherwise and claim that there is no indication of a higher than present sea level to be found in the Maldives based on their observations (Mörner, Tooley and Possnert 2004; Mörner 2007; Gischler, Hudson and Pisera 2008). Whatever the case

may be, sea level changes are thought to have been quite minimal in the period under consideration in this thesis.

Despite the debates, it is clear that the Maldives has a rather fragile ecosystem and early and modern-day Maldives has and is presently facing several environmental issues. Five main problems that have been identified include climate change, sea level rising, severe coastal erosion, as well as problems due to human interference such as limited freshwater resources, waste management, air pollution and biodiversity conservation (Mörner, Tooley and Possnert 2004). Among these, one of the issues that is a current and a huge threat to the archaeology of the Maldives is the issue of coastal erosion (Mörner, Tooley and Possnert 2004). There is evidence of a number of archaeological sites being subjected to severe destruction due to erosion as well as examples of sites that have already been destroyed due to this factor. They include but are not limited to, the Buddhist mound located in the coast on the island of Gan in Laamu Atoll (Fig 6) which has lost part of its structure to the water, and the past settlement site in the island of Himithi in Faafu atoll (Figs 8 and 9) which is now completely underwater. Even though measures are being taken by the government to address the environmental threats to the local communities, limited action is being taken to protect the archaeology from these threats. For instance, the mound in L. Gan is protected by a concrete sand bag structure of about a meter tall to reduce wave erosion (Fig 7).



Fig 6: Buddhist period mound in L. Gan (Photo by Annalisa Christie, February 2017)



Fig 7: Concrete sandbag structure to reduce wave erosion (Photo by Annalisa Christie, February 2017)



Fig 8: Area of the past settlement as evidenced by the occurrence of archaeological remains, now underwater due to erosion in F. Himithi (Source: Adapted from Department of National Planning 2009)



Fig 9: Vulnerable archaeology at F. Himithi (Source: Shiura Jaufar)

### 2.2.3 Climate

The climate of the Maldives is tropical and is dominated by two monsoon periods: the dry season (*Iruvai*) associated with the winter northeastern monsoon and the wet season (*Hulhan'gu*) associated with the summer southwestern monsoon which brings plentiful rain, strong winds and storms (Hogendorn and Johnson 1986: 22; Luthufee 1995: 65). The southwest monsoon occurs from April to November while the northeast monsoon continues from November to March. The humidity is relatively high and the temperature varies little ranging between 24 and 30 degrees Celsius.

The ancient Maldivians used their own local monsoon calendar which consists of 27 time periods (*Nakai'*). This calendar begins from the dry season and has 9 months during this season and continues to the next season consisting of 18 months during the wet season. Each of these months consist of various patterns of the climate including amount of rainfall, the direction



and strength of the winds, currents, trades and waves as well as the presence/absence of certain kinds of flora and fauna.

The monsoons played a vital role and had significant impacts on the mechanisms of trade in the Indian Ocean that was an integral part of the livelihood of many communities around the Indian Ocean (Fig 10). Several scholars have studied the role of monsoon in the movement of people, trade and exchange in the Indian Ocean (Tibbetts 1971; Carswell 1976; Hourani 1951; Chaudhuri 1985; Pearson 2003; Seland 2013; Litster 2016). The direction of winds, currents, waves and tides influenced the flow of trade and related activities in the Indian Ocean. The communities involved in this trade had to rely on monsoon cycles to move around in the Indian Ocean. They had to acquire the skills of navigating around these weather systems knowing when to travel and when to avoid travelling as well as where to travel during different monsoons. Likewise, in the case of the Maldives, ancient seafarers are said to have excelled in the skills of navigation by learning the “vagaries of the ocean and its currents, and the north-east and south-west monsoons that were a major influence on travel, and therefore on their lives” (Mohamed 2008: 65). Carswell (1976: 133) identifies the Maldivian ancient seafarers as being “among the finest sailors in the world”, with one of the strongest and practical seagoing vessels.

Thus, foreign ships coming in and out of the Maldives are said to have followed specific timescales. It is said that trading vessels from the eastern region of the Indian Ocean were brought in during the north-east monsoon and they stayed (for about six months) in the capital and continued trading until favorable winds arrived from the south-west monsoon to return home (Carswell 1976; Mohammed 2008; 2014b). During the south west monsoon trading ships arrived from the eastern littoral regions of Africa and from Arabia and Persia on their way to the east (Carswell 1976; Mohammed 2008: 65; Mohamed 2014b: 38).



Fig 10: Indian Ocean Monsoon chart: The red arrows on the left indicate the direction of winds during the summer monsoon and the green arrows on the right indicate the direction of the winds during the winter monsoon (Source: ESRI & National Geographic)

### **2.3 The cultural setting**

This section will move the focus to present the cultural setting of the Maldives. It will first present a summary of the most substantial historical accounts concerning the Maldives followed by a description the Maldivian people and their cultural and historical background (including a historical timeline of major events provided in Appendix 1).

#### **2.3.1 Most substantial written sources on the Maldives**

The Maldives have been visited and written about by a variety of people coming from various professions (travellers, scientists, geographers, historians, writers, monks, etc.) and many cast ashore by shipwrecks. The islands have been referred to in Indian and Sri Lankan, Greek and Roman, Arab and Persian, Chinese and European sources, the earliest possibly dating back to 500-250 BC. While some of these are primary accounts of eye-witnessed descriptions, others are secondary accounts and it is not always so easy to distinguish between the primary and secondary sources. In the following section, a brief overview of the major sources on Maldives will be mentioned below. For a more detailed version please refer to Gray's "Early Notices of the Maldivian Islands" in Gray and Bell 1887: 423-492; Maloney 2013: 415-426; Mohamed 2014b.

##### **2.3.1.1 Pre-Islamic period**

###### *i- Indian and Sri Lankan sources*

At the current state of knowledge, the first possible mention of Maldives is found in the Indian and Sri Lankan Buddhist sources referring to events around 500-250 BC, according to Maloney (2013: 38-47) and Skjølsvold (1991: 11). These are the Buddhist *Jatakas* (stories of the previous lives of the Buddha, 500-250 BC) and the Sri Lanka Chronicles (*Dipavamsa*, dating to early 4<sup>th</sup> century BC, and *Mahavamsa* dating between AD 3<sup>rd</sup>- 5<sup>th</sup> century). The *Jatakas* mention the islands that are probably identifiable as Maldives and one King Bharu is mentioned as being exiled to these islands as a punishment for accepting bribes (Maloney 2013: 38-47). According to *Dipavamsa*, Sri Lankan aboriginals were evicted to a verdant island called *Giri*, which has been identified as the Maldives (Maloney 2013: 38-47). Moreover, one verse in *Mahavamsa* also mentions *Dipavamsa*'s legend of eviction of aboriginals to another island and also provides a further reference to the voyage of Vijaya's womenfolk to Mahiladipa, again probably the Maldives (De Silva 1970; Maloney 2013: 38-47). According to these earliest sources, it has

been suggested that the islands were settled some centuries before Christ and there was definite cultural contact from Gujarat as the *Jataka* contains tales both set in Gujarat and Sri Lanka (Maloney 2013: 38-47). Thus, the Archaeological data (which will be outlined later) confirm the idea that the Maldives were settled before Christ, and by people who apparently practised Buddhism, even though it is acknowledged that the archaeology cannot tell us where they came from.

## *ii- Classical sources*

Several quotations in classical scripts also possibly refer to the Maldives, from as early as the 2<sup>nd</sup> century onwards (Mikkelsen 2000: 21-22; Mohamed 2014b: 10-12). The information they give may suggest that the Maldives were known in the classical Mediterranean world. The earliest reference to Maldives among the classical sources is to be found in the *Periplus of the Erythrean Sea* (c. AD 120), who speaks of tortoise shells from the islands of Limurike (possibly Maldives) (Forbes 1980: 75; Huntingford 1980; Casson 1989; Mohamed 2014b: 11). In about AD 140, the Greek scientist from Alexandria Claudius Ptolemy also writes of 1378 islands situated in front of Taprobane (Sri Lanka) and includes the islands of Maldives in his drawing of a geographical chart (Skolsvold 1991: 11; Mohamed 2008: 69; 2014b: 11). Other major sources include Ammianus Marcellinus (AD 362), and scholars who have previously studied his work (Gray and Bell 1887: 426-427; Skjølsvold 1991: 11; Mohamed 2008: 70; 2014b: 11) suggests that he mentions the Maldives sending deputies, bringing gifts to the Roman Emperor Julianus. The other source is the first probable eye-witness reference to Maldives, when an Egyptian monk called Cosmas Indicopleustes travelled to India and the Malabar Coast in the Indian Ocean in AD 522 (Gray and Bell 1887: 427; Mikkelsen 2000; Mohamed 2008; 2014b: 11). In his geography he provided information about the Maldives, which he refers to as Marallo and where they were geographically situated, namely at the distance of about 5 days and nights from the continent Serendib (Old Persian name for Sri Lanka). He mentions the occurrence of fresh water and the coconut trees (McCrindle 1897: 364; Mohamed 2014b: 11) and he also mentions two export articles from the islands: the *clank* shells and *alabandenum* (ambergris) (Charton 1855: 27-29), products that have been exported from Maldives since the early 6<sup>th</sup> century up to the recent centuries (McCrindle 1897: 364; Mohamed 2008; 2014b: 11). Mikkelsen (2000) and Mohamed (2008: 73) suggest that the clank shells referred here means cowrie shells. Furthermore, they suggest that this is possibly the first time the export of cowries and ambergris mentioned in written sources concerning the Maldives, however, the nature of

clank shells remains obscure and other authors have not identified them as cowries. It is likely that clank shells may be referring to another type of shell (and not cowries) considering there are a range of shells found in the Maldives including a variety of non-*Monetaria* cowrie species (such as *Pustularia cicercula*, *Palmadusta aselus*, *Erosaria lamarckii*, *Helvola argella*, *Cypraea Sp etc.*) and other shell species, for instance bivalves (such as *Atactodea Glabrata* and *Tridacninae*) and sea-snail species (such as those from *Strombidae*, *Neritidae*, *Conidae* families) (see faunal report on Chapter 4 and Appendix 2).

### **iii- Chinese sources**

The next group of written sources elucidating the Maldives are Chinese documents and writers. Among these include two sources by a Chinese Buddhist monk and a Chinese Prime minister, both recognized as secondary sources. The most important are documents from AD 658 and 662, which tell that the Maldives sent ambassadors to the king of China (Tang Dynasty), giving ‘tributes’ of their country’s products (Mohamed 2008: 70; 2014a: 80; 2014b: 20). Here, the usage of the term ‘tribute’ by the authors requires some critical evaluation. As will be discussed below and in Chapter 7, it is argued that the relationships between China and the Maldives were not hostile but friendly, and trade oriented and that the Maldives was not controlled by the Chinese in any form. Therefore, it is suggested that tribute here refers to voluntary, diplomatic gifts in order to maintain good relationships between the two parties and their trade. This visit has been suggested to be the first of its kind to China offering gifts from the Maldives (Mohamed 2014b: 20). The Chinese Prime minister of the Tang Dynasty (AD 618-907) Du You, offers more details on the Maldives (Forbes 1980; Mikkelsen 2000: 22; Mohamed 2014b: 20). In his document written in AD 792, Du You mentions the connections that existed between Maldives and China during AD 581-618 (Mohamed 2014b: 20). He also provides references to the production of salt in Maldives and the successful trade of salt between Maldives and India at that time (Mohamed 2014b: 20). Commenting on the tributes paid to the Chinese, Mikkelsen (2000: 22), states that “this must be interpreted as a sort of gift exchange between the two countries. The same sources mention the Maldives’ dependence on a king of South India. These sources show the well-developed political and social relation that had been established during the 7<sup>th</sup> century, with China as well as with India.”

*iv- Persian and Arabic sources*

During the period AD 850-1150, several Persian and Arabic sources make references to Maldivian culture and trade (Mohamed 2014b: 11). This was a time when Arab sailors dominated the sea-trade in the Indian Ocean (Hourani 1951; Tibbetts 1971). One of the most important sources includes the work of Sulaiman (AD 850), the first probable Persian sources mentioning the Maldives (Hogendorn and Johnson 1986: 23; Maloney 2013; Mohamed 2014b: 11). He was a merchant, however his actual identity has not been verified and it is likely that he did not visit the Maldives but got his information from other travellers (Hogendorn and Johnson 1986; Maloney 2013). He makes detailed references to geographical, political and social conditions on the islands (Skjølsvold 1991: 11; Maloney 2013; Mohamed 2014b: 11). This is the first more detailed description of the islands and describes the wealth of the Maldives as being cowries, its use and the method of fishing of cowries and the royal monopoly of these shells by a woman (Gray and Bell 1887: 428; Heimann 1980: 49; Hogendorn and Johnson 1986: 23; Maloney 2013: 418; Mohamed 2014b: 11). He goes on to describe the usage of cowries as currency in Bengal and Burma (Heimann 1980: 49). Moreover, he also describes details of Maldives and its skillful inhabitants in boat building, weaving and house construction, the location of Maldives having 1900 islands and also refers to the coconut palms and ambergris found in the islands (Carswell 1976: 135; Heimann 1980; Vilgon 1991-1999; Maloney 2013; Mohamed 2014b: 11). This has been attributed as the first work directly mentioning cowries in the Maldives.

Furthermore, historian and geographer Abdul Hassan Ali El Masudi, who visited Sri Lanka in AD 916, also provides detailed accounts on Maldives where he writes about the islands and their governance by a queen and how skillful the native artisans are. He also writes about the sewn boats, export of coconuts, occurrence of ambergris in the islands and follows Sulaiman's description of cowrie use, trade and method of fishing and the royal monopoly of the cowrie trade by a queen (Sprengrer 1841; Heimann 1980: 49; Hogendorn and Johnson 1986; Maloney 2013: 418; Mohamed 2014b: 11). He adds the important detail that "traders from Oman and Siraf had made the voyage to the islands, in addition to many navigators, an initial hint of the trade routes running west toward the Mediterranean" (Hogendorn and Johnson 1986: 23; see also Carswell 1976: 135; Forbes 1981: 69; Mohamed 2014b).

There is some confusion for the following three works of Abu Zayd (916), Abu El Hassan (1026) and Al Biruni (1030) within the scholarly work. According to Mohamed (2008; 2014b), Abu Zayd, a classical geographer from Iraq, was the first writer to distinguish between



the Maldives and the Laccadives according to their principal production; Maldives- *Diva Kauza* or The Cowrie Island and the Laccadive Islands- *Diva Kanbar* or The Coir Islands. As mentioned above, according to Mohamed (2008: 73), the same remark was made by later writers including Al Biruni. However, according to Maloney (2013: 419), it was Abu El Hassan from northern Persia who wrote about the two classes of Islands. Moreover, he also wrote about the boats leaving the islands with dried fish, tortoise shells, white cowries sent to Africa and a large oyster shell sent to Italy to make cameos (Maloney 2013: 419; Mohamed 2008; 2014b). Moreover, according to another group of scholars (Heimann 1980: 49; Forbes 1981: 69; Hogendorn and Johnson 1986: 24), it was the scholar and scientist Al-Biruni who made the first clear distinction between Maldives and Laccadives which he divides, according to their chief products, into *Diva Kanbar* (Coir Island, or Laccadives) and *Diva Kudha* (Cowrie Islands, or Maldives). He also describes the process of island formation and disappearance due to erosion and how early inhabitants coped with this process (Carswell 1976: 135; Maloney 2013: 419).

The next important work comes from Al- Idrisi (1150) from his book “*Kitab Nuzhat Almushaq Fikhtiraq Alafaq*” (Forbes 1981: 69; Vilgon 1991-1999; Maloney 2013; Mohamed 2014b: 13). He provides the best description of the pre-Islamic culture of Maldives, written just before the conversion of Maldives to Islam. Drawing on various earlier authorities, he also gives descriptions of cowrie use, trade and fishing and its royal monopoly now held by a sultan (Heimann 1980: 49; Hogendorn and Johnson 1986: 24; Maloney 2013). He gives detailed descriptions of the royal monopoly (now held by a Sultan, his queen and their resident place Male’) and the skillful craftsmanship of the Maldivians (boatbuilding and other wood-related activities). He describes the occurrence of sea-turtles and how they are tracked by Maldivians for their shells and the function of these shells as ornaments and combs (Carswell 1976: 136; Mohamed 2014b: 11). Other commodities such as coconut, coir rope, ambergris and *Al-baba* (sperm whale) oil are also described in this very detailed account of Maldives (Mikkelsen 2000: 22; Mohamed 2014b: 11). However, Forbes (1981) states that he did not make the distinction between the Maldives and the Laccadives.

These writers mentioned above give detailed information about the Maldives, its pre-Islamic society and life, production, trading routes and merchandise. Nearly all of them are concerned about the Maldives being ruled by a woman, a queen, except the latter work by Idrisi. “Her wealth was to a large degree based on the large quantities of cowrie shells which she kept in the royal depot. She collected taxes from her people and gave some of her wealth back as charity” (Mikkelsen 2000: 22). Products mentioned in the Arabic sources also include tortoise

shells, ambergris, coconut ropes, dried fish, and cowrie shells - most of them not visible in the archaeological material (Mikkelsen 2000: 22; Mohamed 2014b: 11).

### 2.3.1.2 Islamic period

The first detailed source on Maldives during this period is a lengthy account by Ibn Battuta, a Moroccan traveller who visited the archipelago twice between AD 1343 and again in AD 1346 (Fig 11). He stayed in Maldives for about one and half years during his first visit, acted as a *Qadi* (Muslim Judge) in Maldives and had four Maldivian wives and a number of concubines (Gibb 1929; Husain 1976; Luthufee 1991). This is the first detailed account of the islands, its culture, politics and economy and gives detailed references to its internal and external trade activities and export and import commodities (Gibb 1929; Husain 1976; Luthufee 1991). He provides extensive details on cowrie production in

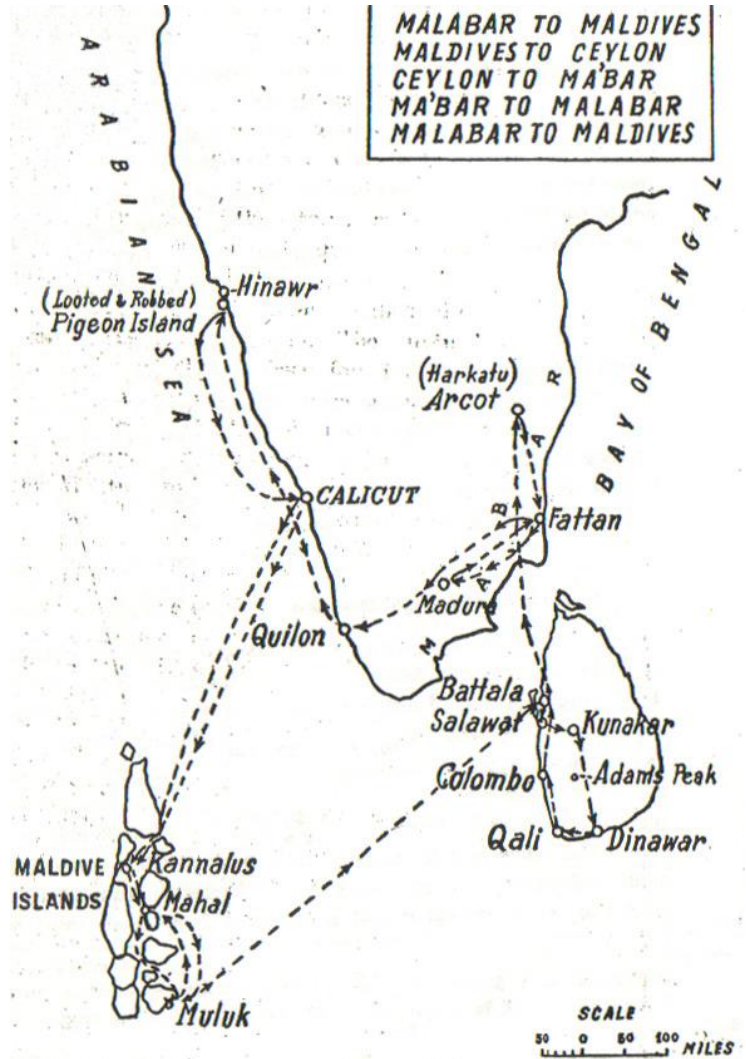


Fig 11: Ibn Battuta's voyages between India, Maldives and Ceylon (Source: Husain 1976)

Maldives and the exchange of these shells to Bengal for rice and the export of Maldivian cowrie shells to be used as a currency in different parts of the world (such as Yemen and Burma) and how it played a pivotal role in the African slave trade (Hogendorn and Johnson 1986; Mohamed 2014b: 17). According to him (Hogendorn and Johnson 1986; Mohamed 2014b: 11), one gold Dinar was equal to 1150 Maldivian cowries at that time (11<sup>th</sup> century) in West Africa. Moreover, during the mid- 14<sup>th</sup> century, when the crossing of the Sahara Desert started to take place and while the gold and slave trade was going on in Yemen, Morocco and Qahira, the Maldivian

cowrie shells were in greater demand and became very valuable (Hogendorn and Johnson 1986: 25-26; Mohamed 2014b: 17). He also states that trading ships came to Male' and loaded them with plenty of these shells before departing (Hogendorn and Johnson 1986: 25-26). Moreover, he is the first traveller to describe the preparation of dried fish and he wrote devotedly about the effect of a diet of fish and coconuts on his virility (Gibb 1929; Husain 1976; Carswell 1976: 136; Luthufee 1991). In his detailed account, he also describes the conversion story of Maldives to Islam and according to him, Maldives was converted to Islam by a fellow-countryman named Abu Al-Barakat Al-Barbari in the year AD 1153 (Gibb 1929; Husain 1976; Carswell 1976: 136; Forbes 1981; Luthufee 1991).

The Maldives were also visited by the famous fleets of Cheng Ho during his maritime expeditions to the Indian Ocean during the Ming Dynasty in the 15<sup>th</sup> century (Carswell 1976: 137; Ptak 1987; Mohamed 2014a: 80-87). It is not entirely clear how many of the expeditions the Maldives was visited and it is said that the Maldives and Laccadives were still not clearly distinguished from each other in Ming sources (Ptak 1987). Recent work by Mohamed (2014a: 80-87) suggests that Maldives was visited thrice during their third (AD 1410-1411), fourth (AD 1413-1415) and fifth (AD 1417-1419) expedition (Fig 12).

Analysing the various Ming sources relevant to Cheng Ho's fleet, Ptak believes that while the first three expeditions do not indicate a visit to the Maldives, the fourth expedition (1413-15), where Ma Huan (a Chinese Muslim who served with Cheng Ho) joins, could possibly have visited the Maldives and this is based on a poem with reference to the Maldives and is suggested to be reports made on the observation made during this expedition as well as later Ming records of Chinese ships being sent to the Maldives during this voyage (Ptak 1987). The fifth expedition (1417-19) mentions Cheng Ho receiving orders to take back to their native countries many foreign envoys, including possibly from the Maldives who are said to have visited China in the same year thus, suggesting that the Maldivian envoy returned to Male' on a Chinese vessel (Ptak 1987). The sixth expedition (1421-22), again with Ma Huan, Cheng Ho receives similar orders as before to return to their native places the envoy of 16 countries among which Maldives was one. However, Ptak states that this was a rather short visit (Ptak 1987). The seventh and final visit (1431-33) is said to have involved Chinese vessels being sent to the

Maldives possibly along with Cheng Ho and his companions. However, the authenticity of this record remains questionable (Ptak 1987).

What is certain is that the Maldives sent tributes (suggested to be referring to diplomatic gifts, see page 43) to China from the early 15<sup>th</sup> century onwards, but the years and the number of tribute delegations and the nature of tributes paid are not clear (Ptak 1987). One account of the tributes paid mentions silver coins, cowrie shells, *yakut* stones, blue sapphires, dark red? stones, lakawood, ambergris, cups made of coconut shells, embroidered silken kerchiefs, gold-woven square kerchiefs and dried bonito fish (Ptak 1987). The reason for this payment is explained as follows: Cheng Ho scared the Maldivian king upon refusing to welcome their arrival by showing the captured king of Sri Lanka and the severed head of the Sri Lankan chief of the army (Ptak 1987; Mohamed 2014a: 80-87). According to Mohamed (2014a: 80-87), the Maldives paid tributes to China for about 20 years after this event.

There exist several accounts from the Ming period describing the Maldives. For instance, Ma Huan (Mills 1970), provides details of Maldives including its geography, environment and culture (Mills 1970: 146-151; Carswell 1976: 137; Forbes 1980: 75; Hogendorn and Johnson 1986: 25; Maloney 2013: 44; Mohamed 2014a: 80-87). He describes the geography of the Maldivian atolls, islands and reefs

and provides a perspective of the islands from the sea. He also provides details of the Maldivian people, religion, food, traditional activities (such as boat building), and production and export of local resources (such as coconut, coconut ropes, ambergris, dried fish and textiles). Furthermore, he discusses in great detail the production and trade of cowrie shells to Thailand

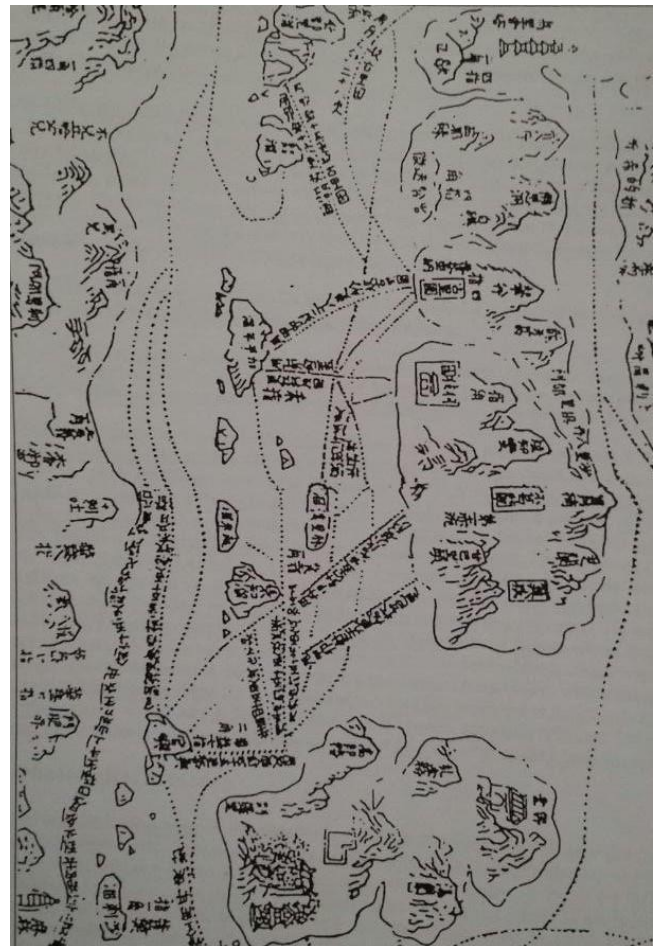


Fig 12: Cheng Ho's chart of the Arabian Sea: Maldives and Minicoy in the center, India to the right, Ceylon at the bottom and Africa to the left (Source: Mohamed 2008: 74)

and Bengal (Mills 1970: 146-151; Carswell 1976: 137; Hogendorn and Johnson 1986: 25; Maloney 2013: 44; Mohamed 2014a: 80-87).

The longest account of the Maldives was written by François Pyrard de Laval, a French castaway whose ship *Corbin* foundered on the reef of Goidu (in Baa atoll, Maldives) and was detained in Male' between 1602 and 1607 (Gray and Bell 1887; Carswell 1976: 140; Didi 1995; Mohamed 2014b: 25). He learned to speak the local language and recorded a remarkably detailed “ethnographic” account of life in the early 17<sup>th</sup> century. Among the various details of his work, one observation is of special interest in the context of this research’s study when he talks about the table manners of Maldivians. According to Pyrard (Gray and Bell 1887: 170), the vessels used as basins to wash their mouths after and before every meal is made of “*fayence, fashioned in the native style, and imported from Cambaye [a town in the Indian state of Gujarat]; or else it is of China porcelain, which is very common and used by almost all. But they use not any plate of earthenware or porcelain, saving one kind of round box, polished and lacquered, with a cover of the same, it is manufactured on the island....even the poorest use these covered dishes, for the boxes cost but little...The sultan’s plate is.... of porcelain, or of other China fabric.*”

Here, it is important to note that as it has been mentioned earlier, that ceramic vessels were not made in the Maldives, yet Pyrard’s account promotes confusion by discussing these round boxes alongside pottery. The round box mentioned in his description actually refers to the lacquer vessels made of wood in the Maldives (Fig 13) which is still a practice used during special occasions and Ibn Battuta also describes this feasting ritual along with the use of these wooden round boxes (Husain 1991).

Various other shapes and sizes of similar wooden lacquered vessels were made in the Maldives and are still made and used as well as sold at a very high price to tourists. Like Battuta and other visitors, he also describes the production, usage and trade of cowrie shells to Bengal, and the usage and trade of tortoise shells to India. Records (Julia 1987; Watt and Ford 1991) show that the Chinese were the first to manufacture and trade lacquer and, although there is a significant



Fig 13: Wooden lacquered rounded box for serving (Source: National Centre for Linguistic and Historical Research 2004)



lack of written sources on this craft in the Maldives, a few local records (Ali 1994: 102-104; Riyan 2011: 33) suggest that this craft was brought to the Maldives in the 17<sup>th</sup> century from China where it played a significant role in the Maldivian economy, as an article of export. Riyan (2011: 33) also suggests that it is very likely that the origin of this craft may have come from China based on the characteristics of the lacquer work items found in the Maldives and China, especially due to the fact that there was significant trade between China and parts of South Asia since ancient times.

Later studies of the Maldives include the survey conducted by the Bombay government which resulted in the publication of the first detailed references to the islands since Pyrard, namely Young and Christopher's "*Memoir on the Inhabitants of the Maldiva Islands*" (Young and Christopher 1844; Luthufee 1995: 5). Christopher and Young spent some months on Male', and made notes on the Language and other subjects of interest (Young and Christopher 1844). As a result of this survey, the first detailed maps of the archipelago were published (Admiralty maps of the Maldives), and an equally detailed description of the islands became available to mariners in the *West Coast of India Pilot* (Forbes 1980: 75).

Moreover, the work of the British civil servant H.C.P. Bell during the years 1879, 1920 and 1922 somewhat served as a work picked up from where Pyrard left off but specializing in the archaeology of mostly the pre-Islamic period of the Maldives. This is also one of the first works conducted on the archaeology of the Maldives and will be discussed further in the next chapter.

In 1896 C. W. Rosset published a lengthy article in German as a result of anthropological researches undertaken at Male' a decade earlier (Rosset 1886; 1887; 1896). She took photographs and collected artefacts and specimens while staying in Male' from 29<sup>th</sup> October until 21<sup>st</sup> December 1885.

Mention should also be made of three other sources; T. W. Hockly's (1935) popular account of his visit to Male' in 1934 and two more recent and rather important scholarly works by Clarence Maloney (1980; 2013) in the 1970s and by Xavier Romero-Frais (1999).

Maloney was an American anthropologist who produced the first detailed modern book of anthropology and culture history of Maldives and presents an excellent ethnographic account of the life of the recent period of Maldives. Being a specialist on South Asiatic cultures, "*he realized the complexity of Maldivian culture simply by studying the composition of the present-day population and their language. He agreed that the principal cultural affinities were with the Sinhalese, but he stated that we must be prepared to accept that the cultural history of the*

*Maldives is more complicated than has been thought, and that different groups of peoples reached these remote islands independently in prehistoric times. He assumes, for instance, that Hinduism was present in the Maldives before the Buddhist period. This is indicated by many Hindu words which might have been brought to the Maldives by early settlers from the coast of North-Western India, or they might have come to the Maldives by way of South India*” (Skjølvold 1991: 10-11; see also Maloney 2013: 48-51). Despite Maloney’s rather careful avoidance of the country’s political affairs, his pioneering research into the origins of the Maldivian people, their culture and religion led to the publishing of several copies of the two editions of his book ‘People of the Maldivian Islands’ (1980; 2013) in which the first edition was censored by the authorities between 1978 and 2008.

Romero-Frias’ work is also rather crucial as he became more familiar with the Maldivian culture than any other author by living in the Maldives for 13 years and becoming fluent in the local language studying its different dialects. He produced a monograph *The Maldivian Islanders, A Study of the Popular Culture of an Ancient Ocean Kingdom* (1999). However, his criticism of the ‘Arabization’ of the country during the 1980s and 90s proved controversial with the Maldivian authorities. He also collected traditional folk tales during his visits which led to the publishing and illustration of the book *Folk Tales of the Maldives* (2012).

Another important contribution to Maldivian history is the work by Thor Heyerdahl (1986) who conducted archaeological excavations on the pre-Islamic sites in the Maldives. More details of his work will be given in the next chapter.

Finally, the work of the Swedish collector Lars Vilgon is also worth mentioning here. After his visit to the Maldives as a tourist in 1971, he amassed a collection of Maldivian literature surpassed only by the country’s national library, producing several books, documents and manuscripts covering all of the Maldivian recorded history. The most notable work includes his complete biography, nine volumes of his privately published ‘Maldivian Odd History: The Maldivian archipelago and its people’ (1991-1999; 2001) where English translations of some of the earliest travel encounters with the islands are featured.

Note that the contributions to Maldivian history and culture are not limited to the above mentioned writers. Several other authors documented various aspects of the Maldivian islands but, only the most substantial sources have been mentioned in this chapter. For a more detailed listing of the works done on the Maldives refer to Maloney 2013; Vilgon 2001.

### 2.3.2 The historical background

*“The story of a people who have no history can only be gleaned from the records of strangers who have settled among them, or by an examination of their own language. The early history of these islands is buried in obscurity-the natural result of their complete isolation and comparative insignificance. Indeed, except for scant glimpses afforded by the accounts of a few casual travellers, whom accident has taken thither from time to time, the world, in this the latter half of the 19<sup>th</sup> century, knows little or nothing of the whole past of the Maldives”* (Bell 1883: 21).

To draw on the rather scarce local primary sources for Maldivian history one has to consider oral traditions, written chronicles, epigraphic sources and archaeological sites (Forbes 1980; Mohamed 2008). Written chronicles include those titles *Tarikh* (Bell 1940: 201-204; Tajuddin, Muhibbuddin and Sirajuddin 1981; Luthufee 1998a-c; Tajuddin 2010) and *Radavalhi* (Bell 1940: 198-200; National Centre for Linguistic and Historical Research 1979). Epigraphs (Fig 14) include inscriptions and grave epitaphs (Bell 1924: 283-303; 1940: 179-186; Carswell 1976: 26-30; Forbes 1983; Forbes 1987; Lambourn 2004; Mohamed and Ragupathy 2005; Kalus and Guillot 2005; Ahmad and Jameel 2012), copperplates bearing royal grants (*Loamafanu*) (Fig 15) (Bell 1931: 539-578; 1940: 179-186; Maniku and Wijeyawardene 1986; Mohamed 2002: 2-4; Mohamed and Ragupathy 2005; Mohamed 2014a), paper or vellum grants bearing the royal seal (*Fai'kolhu*) (Bell 1940: 187-198; Abduh Sattar 2010) and numismatic records (Allan 1912; Bell 1940: 75-86; Browder 1969; Heimann 1980; Hogendorn and Johnson 1986).

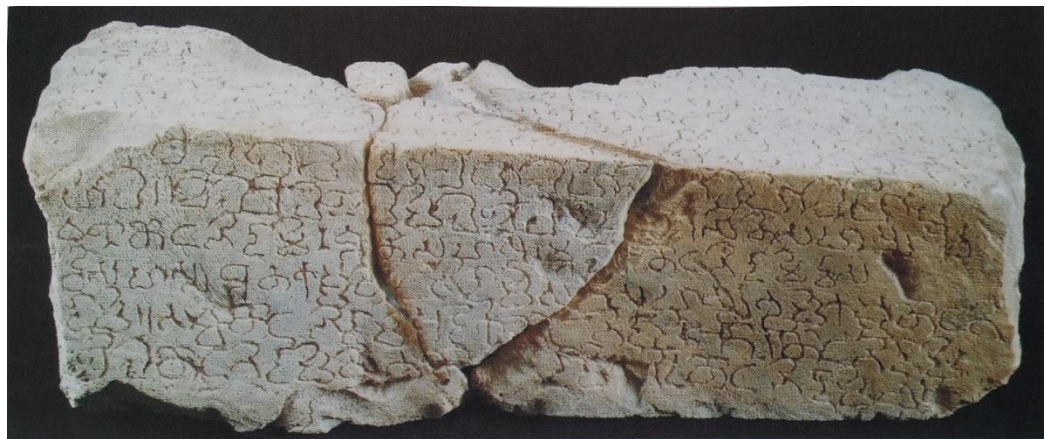


Fig 14: Coral Stone found in N. Landhoo with an inscription in the late Brahmi of Pallava style, dated to AD 6<sup>th</sup> century (Source: Mohamed and Ragupathy 2005: 13)





Fig 15: Loamafanu found in L. Isdhoo: the earliest known written history of Maldives dating to AD 1194 and written in the old Maldivian alphabet Eveylyaa script. Loamafanu are specifically records of official grants given by the ruling king to individual mosques, bestowing on them the benefits from various islands for their expenditure and upkeep (Source: Mohamed 2002; National Centre for Linguistic and Historical Research 2004: 45)

### 2.3.2.1 Peopling of the Maldives

According to history and tradition, the Maldives has been peopled for over 3000 years (Mohamed 2005; 2014a: 19), and the first settlers were a tribe called *Dheyvis* from *Kalibangan* in the Indian subcontinent. Mohamed (2008: 65) suggests that the first settlers arrived by sea (as no other way could have been possible to reach the Maldives at that time), initiating the nautical culture of Maldives and if they did not understand the movements of the seas upon arrival, they soon learned the vagaries of the ocean and its currents, and the north-east and south-west monsoons that were a major influence on travel, and therefore on their lives, eventually becoming expert navigators. After the *Dheyvis*, other tribes including the *Redis*, *Kunbis* and later, *Sarandivis* arrived (Mohamed 2005; 2008: 65).

Moreover, it is stated that it was around 500 BC that *Aryan* immigrants from India and Sri Lanka came to Maldives (Bell 1883: 21; Mohammed 2005; 2008; 2014a: 19-26; Riyan 2011; Maloney 2013). This suggestion is supported by the strong kinship between Maldivian and Sinhalese languages (Bell 1883: 21; Mohamed 2005; Maloney 2013) and this is also recorded in the *Loamafanu* (Fig 15) copperplate inscription. Bell (1883: 21) suggests that “*it may be preferable to assign the original colonization of the group a date synchronic with that of Ceylon itself by a distinct isolated party of the same Aryan adventurers, and to presume a subsequent direct immigration from this island.*” It is stated that it was with the arrival of *Aryans*, people

from South India settled in some of the northern atolls at this time and the Hindu religion was also introduced to the country (Mohammed 2008: 65-66). The tradition of having a ruling monarch is also claimed to have begun around this time and the first king is said to have been a prince from *Kalinga* (a kingdom described in the *Mahabharata* - a legendary Indian text and said to be located in the historical Kalinga region which is present-day Odisha and Andhra Pradesh (Majumdar 1996) who was banished from his country by his father (Mohamed 2008: 65-66; 2014a: 24).

Maloney (2013: 41-47) provides further comments on the topic of early settlers of Maldives. Based on the *Dipavamsa* (a Sri Lankan chronicle) and Ma Huan's (a Chinese Muslim who joined the famous Ming naval commander Cheng Ho's expeditions, see below) geography of the Indian Ocean (Mills 1970; Ptak 1987), upon settling in Sri Lanka the Sinhala chased or exiled some of the aborigines to the Maldives (Maloney 2013: 41-47). Moreover, he further states that the Tamils or other Dravidian-speakers were settled in the Maldives before the Sinhala or other Indo-Aryan speakers arrived (Maloney 2013: 41-47). Based on the Buddhist *Jatakas* and Sri Lankan chronicles, Maloney (2013: 38-40) suggests that the Maldivian islands were settled some centuries before Christ and that early culture contact or settlement originated from Gujarat and not just from Sri Lanka. Eventually, the islands gradually received an influx of Arabs and occasional importation of African slaves from contact and intercourse with incomers to the Indian coast (mainly Malabar Mapillas) (Bell 1883: 21).

More recently, in her thesis on "Cowrie shell Money and the Monsoon Trade: The Maldives in Past Globalizations" (Litster 2016: 259), Litster also reviews the various waves of early occupation to the Maldives and concludes that the Maldives were settled due to the abundance of natural resources mainly the *moneta* cowrie, as well as "in conjunction with the fortuitous monsoon conditions, which provided the impetus for human settlement of a remote island group by a global culture (Buddhism)" (Litster 2016: 4), a proposition also given by Mikkelsen (2000). Furthermore, she also argues that the Maldives was one of the first island groups to be settled in the Indian Ocean based on current evidence.

### ***Koimala origin myth***

According to traditions, there is only one myth of the origin of the Maldivian people, though it contains possible elements of earlier myths. It is called the *Koimala* story and consists of five versions (Bell 1940: 16-19; Maloney 2013: 28-47; Romero-Frías 1999). To present one version, the following was recorded by Bell in 1922 (Bell 1940: 16; Maloney 2013: 29);

*“Once upon a time, when the Maldives were still sparsely inhabited, a prince of royal birth named Koimala, who had married the daughter of the king of Ceylon, made a voyage with her in two vessels from Serendib [Sri Lanka] Island. Reaching the Maldives, they were becalmed and rested awhile at Rasgethimu island in North Malosmadulu Atoll. He remained in Maldives upon the request of the Maldives Islanders ultimately becoming their king at Rasgetimu, “the original ‘King’s Island.” Koimala and his spouse migrated thence to Male’ about 500 AH (early twelfth century) and settled there with the consent of the aborigines of Giravaru Island, then the most important community of Male’ Atoll. The two ships were dispatched to Lanka, and brought over other people of the Lion Race (Sinhala). To Koimala and his queen was born a male child who was called Kalaminja. He reigned as a Buddhist for twelve years, and was then converted to Islam, ruling for thirteen years more before finally departing for Mecca. This ruler’s daughter married the chief minister and reigned as a nominal Sultana. She gave birth to a son also called Kalaminja, who, in turn, married a lady of the country. From them the subsequent rulers of the Maldives were descended.”*

There is, to some extent, historical authenticity to this myth since *Koimala* is confirmed in the *Loamafanu* copper-plate inscription. According to both the copperplate and *Radavalhi* (National Centre for Linguistic and Historical Research 1979), *Koimala Kalo* is said to be the first named king who was from Rasgethemu island in Raa atoll and these sources mention the above description of Bell’s version (Ragupathy and Mohamed 2008; Maloney 2013: 29).

It is difficult to state with certainty the exact origin of the inhabitants of the Maldives though the hypothesis was from India and Sri Lanka. What is certain though, is that the Maldivian culture has been heavily influenced and modified by visitors from different parts of the world and this is clearly evident in the Maldivian culture and heritage. Maldivians display a mix of physical features resembling African, Arab, South Asian and South East Asian people and their heritage is also based on a blend of many cultures. “More particularly is this case in the northern atolls, which have necessarily been more exposed to foreign influence than those lying further south” (Bell 1883: 21). These influences can also be seen from the language and religion of the islands; the Maldivian language is said to be Indo-Aryan with influences from Sinhalese, Tamil, Sanskrit, Persian, Urdu and Arabic (Bell 1940; Geiger 1996; Mohamed and Ragupathy 2005; De Silva 2009; Maloney 2013) and the existence of Hinduism and Buddhism in the Maldives before Islam.

To comment on the language of the Maldives; it is an Indic idiom called Dhivehi, with its own script and is very closely related to Sinhalese (an Indo-Aryan branch of the Indo-European languages) which is the native language of the Sinhalese people in Sri Lanka (Mohamed 2008: 66; 2014a: 35-40). It is argued that the Maldivian language emerged through a simultaneous separation from a Prakrit language (which is any of the several middle Indo-Aryan languages formerly spoken in India) along with Sinhalese (De Silva 2009; Maloney 2013: 88; Mohamed 2014a: 36). It is also claimed that Dhivehi emerged from Sinhalese no earlier than the 10<sup>th</sup> century (Geiger 1996; Reynolds 2003). Maloney (2013: 88) states that there is an Indo-Aryan element in Dhivehi which is not of Sinhala origin, but closer to old Prakrit forms in North India. Since the formation of Dhivehi, the writing system used in the Maldives has gone through three stages of derivation (Bell 1940; Mohamed and Ragupathy 2005; Mohamed 1999). The current script known as Thaana was invented in the 16<sup>th</sup> century after the Portuguese interlude and its first nine consonants were derived from the Arabic numerals which are used as consonants with diacritical marks above and below inspired by the Quran and written from right to left as is Arabic (Carswell 1976: 133; Reynolds 2003; Maloney 2013: 92). Dhives akuru, which was a more evolved version of an earlier script known as Evela Akuru, was used before the invention of Thaana akuru. Dhives akuru was used in one of the 4 copperplates found in the Maldives (the fourth and latest grant dated 1356-57) as well as on some royal grants, tombstones and some old documents (Mohamed and Ragupathy 2005; Maloney 2013: 92-93; Mohamed 2014a). This script is said to resemble the Sinhala script of the 10<sup>th</sup> through 12<sup>th</sup> centuries (Bell 1940). The earliest script of Dhivehi alphabet Evela, is said to strikingly resemble medieval Sinhala script (Bell 1940). Evela script is said to have only been used to write the first 3 copperplates dating between AD 1195-1238 (Bell 1940; Maniku and Wijeyawardene 1986; Mohamed and Ragupathy 2005; Maloney 2013: 92; Mohamed 2014a) (Fig 12). Maloney (2013: 92) states that it is very likely that the wave of Buddhist influence in the 9<sup>th</sup> century caused this Sinhalese influence in this script. Many dialects of Dhivehi exist across the atolls, especially notable in the southern region of the Maldives but they are all somewhat mutually intelligible. Commenting on this, Maloney (2013: 89) states that the dialects used in the 3 geographical atolls of the south (Huvadhu, Fuvahmulah and Addu) retained old forms of Dhivehi and was also influenced by medieval Sri Lanka.

### 2.3.2.2 Pre-Islamic period

There are few sources of information about the pre-Islamic period of Maldives. Available information based on the limited historical sources (Maniku 1993; Mohammed 2002) indicates that during this period, Maldives had a “matriarchal society, with myths and magicoreligious beliefs, a system of class distinctions instead of the caste system in existence in many other South Asian countries, a king who was a father figure and whose power was supreme, and a ruling system, which was guided by time honored customs and traditions” (Maniku 1993: 39; see also Forbes 1987; Mohamed 2002).

As seen above, Maldivians practised both Hinduism and Buddhism prior to Islam. Although not much work has been done on the Hindu period, it has been suggested that Hinduism was introduced to Maldives with the arrival of Aryans to the country (Mohamed 2008: 65-66). The presence of Hinduism is also indicated by the many Hindu words which might have been brought to Maldives by early settlers from the coast of northwestern India or by way of South India (Maloney 2013: 48-51).

It is said that Buddhism was introduced to Maldives by a group of people who came to Maldives from Bairat in India at the time of Emperor *Asoka* in the 3<sup>rd</sup> century BC (Mohamed 2008: 65-66). Buddhism was practised in Maldives for more than a thousand years, the evidence of which are the numerous ruins of Buddhist artefacts and structures that still exist in many of the atolls (Fig 16-18) (Bell 1940; Skjølvold 1991; Gupta 1995; Mikkelsen 2000; National Centre for Linguistic and Historical Research 2002; 2004; Jaufar 2017a) and linguistic evidence (Bell 1883: 75; Mohamed and Ragupathy 2005; Maloney 2013). The 9<sup>th</sup> and 10<sup>th</sup> century artefacts found in some islands and in the capital Male’ (Figs 16 and 17), show that the *Vajrayana* sect of Buddhism had a place in Maldives in the later centuries of the Buddhist period, before Maldives embraced Islam (Mohamed 2002; Mohamed 2008: 66). A further insight into the Buddhist practices in Maldives was gained by Dr. Ragupathy’s deciphering work of two pre-Islamic Buddhist artefacts, the gold leaf from Th. Veymandoo (Fig 16) and the engraved pictures on a coral stone casket from F. Nilandhoo (Fig 17); the first of its kind to understand the symbols and inscriptions used during the *Vajrayana* Buddhist period in Maldives (Fig 14) (Mohamed 2002; Mohamed and Ragupathy 2005). According to Mohamed and Ragupathy (2005), the gold leaf may be referencing the king and his monument (praising the king) and is evidence to royal connections and the fact that the emblem was stamped on a gold leaf suggests that it was often used as a regular seal. Moreover, engravings and legends on the casket from F. Nilandhoo also have similar connection i.e., references to the king and his

monument, salvation and praising the king, as well as some holding the emblem for royal insignia (depicted by the 3 fish on a lotus similar to Fig 17). Moreover, the Nilandhoo caskets also provide useful information about the stupa complexes in the Maldives and according to Mohamed and Ragupathy (2005: 30), “the purpose, the practice and for whom they were made, are all pictorially explained in the Nilandhoo casket.” Furthermore, they also suggest that it was “only the elite of that time who might have had the privilege of having a relic monument made for them in the stupa complexes of the Maldives” (Mohamed and Ragupathy 2005: 30).

There is quite a lot of archaeological evidence of Buddhist practice (Fig 18) such as Kaashishoo, Nilandhoo and the sites investigated by Bell. This evidence will be outlined later.



Fig 16: Gold Leaf found inside a coral casket from Th. Veymandoo. The script on the leaf is said to belong to the genre of the Grantha alphabet of the 10<sup>th</sup>- 11<sup>th</sup> centuries AD used by the Cholas in South India (Source: Mohamed and Ragupathy 2005: 8)

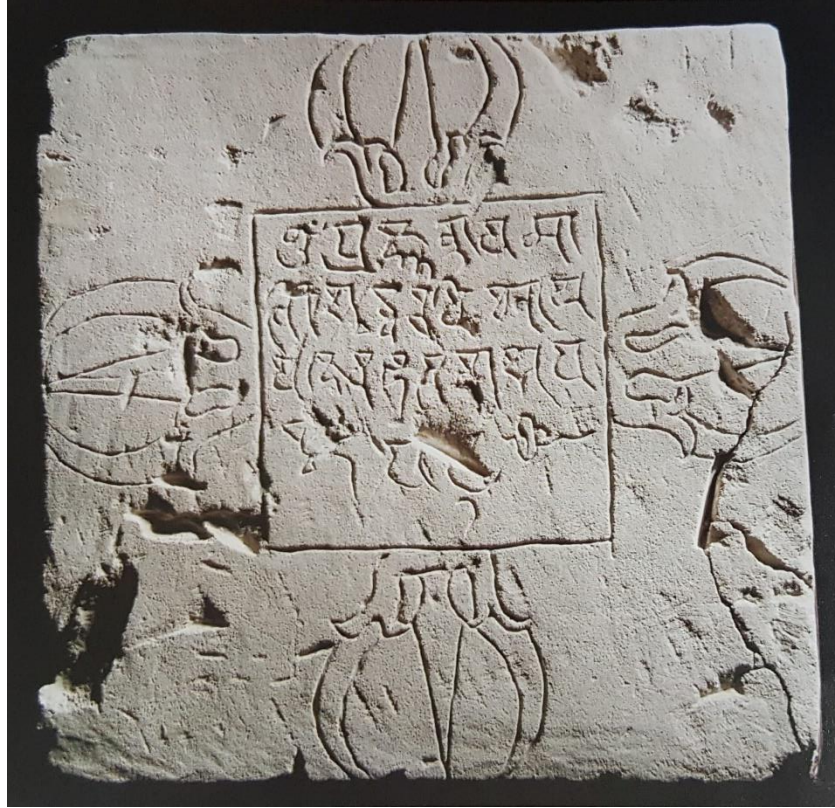


Fig 17: Lid of coral stone casket from F. Nilandhoo showing Nagari alphabet of Eastern India (AD 9<sup>th</sup>-10<sup>th</sup> century) (Source: Mohamed 2002: 29)



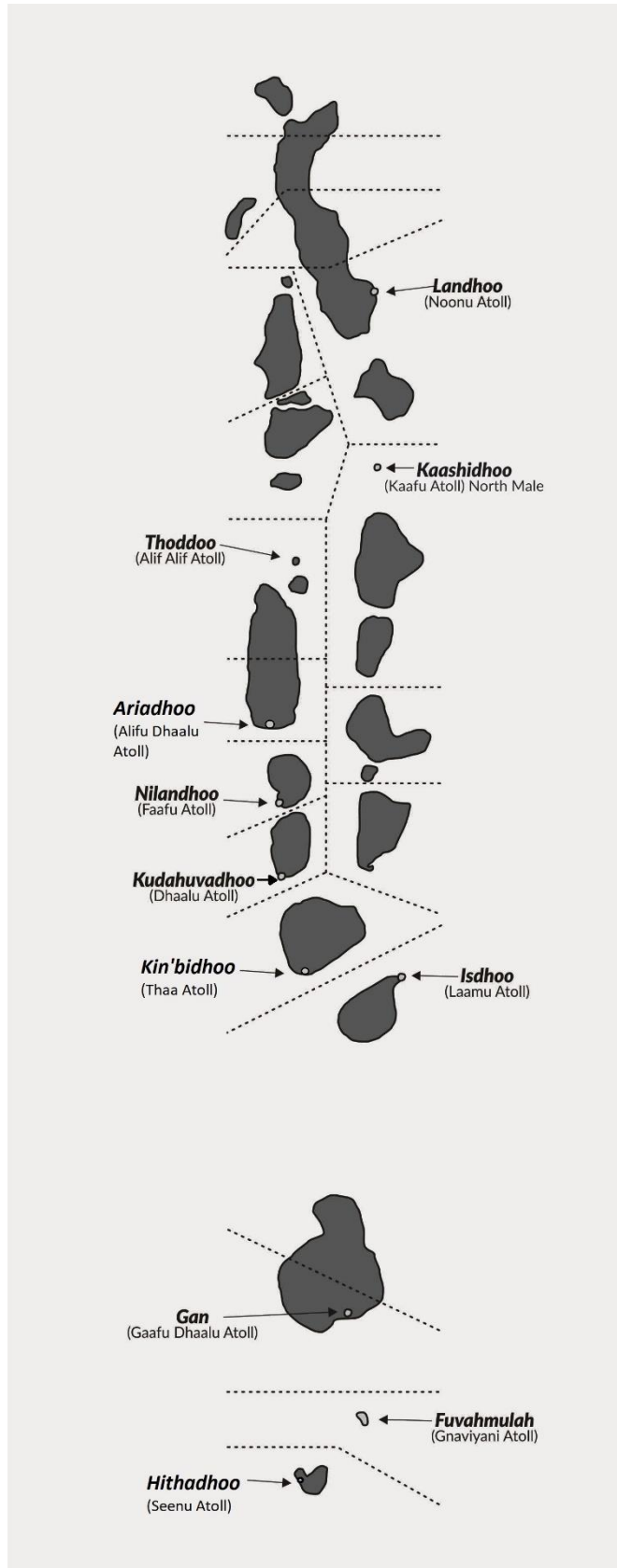


Fig 18: Some of the major Buddhist sites found in the Maldives (Source: Abdul Samad)



### 2.3.2.3 The early Islamic period: AD 1153-1500

As mentioned above it appears that, for over a thousand years the people of the Maldives practiced Buddhism. Based on literary records, the pre-Islamic period is claimed to have ceased in AD 1153, when a learned scholar converted the king of the Maldives to Islam (Gibb 1929; Carswell 1976; Husain 1976; Forbes 1981; Maloney 2013: 98-100). According to traditions (Bell 1883; 1940; Forbes 1981; Luthufee 1991; National Centre for Linguistic and Historical Research 2004; Nadwi 2012; Maloney 2013), the conversion was effected by a Moroccan called Abu al-Barakat al-Barbari the Berber, and there exists a well-known tale of how Barbari overcame an evil *jinn* (monster) from the sea, who had a greedy appetite for virgins recurring at regular monthly intervals-an event that started 15 years after *Koimala* came to Male'. Ibn Batuta and Pyrard also describes the same event to be the cause of conversion by Barbari (Gray and Bell 1887; Gibb 1929; Husain 1976; Luthufee 1991; Didi 1995).

However, the *Tarikh* (Bell 1940: 201-204; Tajuddin, Muhibbuddin and Sirajuddin 1981; Luthufee 1998a; 1998b; 1998c; Tajuddin 2010) instead suggests that the conversion was the work of a Persian saint, Yusuf Shams al-Din of Tabriz (Carswell 1976: 136; Forbes 1981; Romero-Frías 1999; Maloney 2013: 98-100), also sometimes referred in the history as Sheikh Abu Rikab Yusuf At-Tabrizi (Luthufee 1991). Local legends especially belonging to Addu atoll and many other islands claim that the conversion by the Persian took place before Barbari. However, this is not a highly accepted version as most Maldives accept the Barbari version (Maloney 2013: 98-101). Nevertheless, this is an important area of further research in order to investigate which of the claims is right. Both of them are revered in the Maldives and have shrines built on their burial grounds in the Maldives (National Centre for Linguistic and Historical Research 2004; Riyan 2011). Here, it is thought that even though 1153 is given as the date of the introduction of Islam to the Maldives, it is unlikely that the country converted en masse. It is believed that 1153 could possibly have been the year the king residing in the capital Male' accepted Islam but different regions of the Maldives adopted Islam at different times. According to Ibn Battuta (Luthufee 1991: 57; see also Gibb 1929; Husain 1976), after the conversion of the king, "the idols were broken and the temples were razed to the ground and the people of the Island embraced Islam and sent messengers to other islands whereby they embraced Islam as well." The *Tarikh* also mentions a similar account of sending emissaries to different atolls and every inhabitant was converted without exception whether willing or unwilling and mosques were built everywhere while all traces of idolatry were erased (Bell

1940: 18; Tajuddin, Muhibbuddin and Sirajuddin 1981; Luthufee 1998a; 1998b; 1998c; Tajuddin 2010).

After the conversion, Maldives was frequently visited and traded with by the Arabs and Persians who dominated the trade in the Indian Ocean trade at that time. As mentioned above, the influence of Arabs and Persians is evident in the Maldivian culture including language (Bell 1940; Maloney 2013; Mohamed 2014a: 35-40), religious customs (including administrative system and standing mosques) (Forbes 1981; Reynolds 1984; Ahmad and Jameel 2012) as well as Persian cultural influences (music and dance forms) (Young and Christopher 1844: 74-75). Moreover, according to Maloney (2013: 106, see also Gray and Bell 1887; Allan 1912; Bell 1925; Browder 1969), the first ‘coins’ made in the Maldives which were folded up lengths of silver, were inspired by the Persian coin *lāri*. Pyrard mentions Maldivians using silver *lāri* and these were copied by the Sultans in the 16<sup>th</sup> century and called *digu* (long) *lāri* which was of double silver wire stamped with the Sultan’s name. In addition, Forbes (1981) discusses the role of Southern Arabia (Yemen and Hadramawt) on the Maldivian culture where mention is given to the important trade relations and religious ties that existed between the Maldives and Yemen as well as the influx of Arabs in the northern Maldivian atolls. It is also said that the Maldives, upon conversion to Islam, followed the *Mālikī madhhab* (one of the four Islamic schools of Jurisprudence) introduced by Barbari. However, this was changed to *Shāfi’ī* by the teachings of a Jamal al-Din who is said to have studied at the *Shāfi’ī* centres in Yemen and Hadramawt for fifteen years (Forbes 1981). Nowadays, the *Mālikī madhhab* is widespread in North and West Africa, and *Shāfi’ī madhhab* is widespread in the Western Indian Ocean including Maldives and the East African Coast.

#### **2.3.2.4 The Maldives between AD 1500-1900: a period of political control**

The Maldives went through various stages of control by foreign influences which are better documented after the conversion. For instance, Maloney (2013, see also Mohamed 2014b) describes the long existing Cola trade (Tamils from South India) influence over the Maldivian trade system which pre-dated the conversion and continued even after the Portuguese invasion (see below). These influences can be evident from several aspects of the Maldivian culture, most notably the Tamil influence on many words related to trade as well as the use of swing beds which are very popular and still used in the Maldives. Moreover, other notable parties that played a crucial part in the history of the Maldives and its trade and culture include the Chinese/Southeast Asia (Ptak 1987; Mohamed 2014b), Malabar coast (most notably Kerala)

(Mohamed 2014b), North India (most notably Gujarat) (Kalus and Guillot 2005) and the Portuguese and the British (see below). However, the influence on the Maldives by each of these parties varied in terms of the degrees of influence and on which aspects of the local culture (for details see Forbes 1981; Tajuddin, Muhibbuddin and Sirajuddin 1981; De Silva 2009; Tajuddin 2010; Maloney 2013: 104- 130; Mohamed 2014b).

However, it is noteworthy here to mention the Portuguese and the British influence. Even after the conversion, Maldives retained its system of government of a monarchy ruled by dynasties of kings and queens over a long unbroken period until AD 1968, with the exception of a period of Portuguese occupation of 15 years from AD 1558 (Bell 1932; Hogendorn and Johnson 1986; Skjølsvold 1991; Mohamed 2008: 66; De Silva 2009) and a brief period of presidential rule in AD 1953 (Skjølsvold 1991). In an attempt to expand their political and economic power in the east, it is said that the Portuguese played an important role during a period when the Maldives began to have strategic importance due to the Muslim ships passing through them instead of the Malabar coast which caused bitter rivalry and infighting within the royal family (Bell 1932; Tajuddin, Muhibbuddin and Sirajuddin 1981; Hogendorn and Johnson 1986; De Silva 2009; Tajuddin 2010; Maloney 2013; Mohamed 2014b). Before the Portuguese ruled the Maldives, several rulers who took over the sultanate around this time sided with the Portuguese in exchange for their support in their sultanate and in return the Portuguese controlled the trade activities (Hogendorn and Johnson 1986; De Silva 2009; Maloney 2013; Mohamed 2014b). This in turn led to the 15-year occupation. In describing the Portuguese occupation in the Maldives, it is said that “the Portuguese continued to draw compulsorily the produce of the islands, paying for it according to pleasure and even robbed goods off the dock” (Maloney 2013: 122). The sultan of the Maldives fought against them and was victorious. However in 1558, the reigning Sultan fled and sought help of the Portuguese to regain his throne, the Portuguese killed the rival Sultan and established their rule and Christians were to take charge of the Maldives and enforced submission (Mohamed 2008: 66; Maloney 2013: 122-125). The 15-year period that followed is described in the *Tarikh* as a period of oppression and resulted in several periods of political chaos and struggle within the monarchy as well as military and economic control over the Maldives (Bell 1932; Tajuddin, Muhibbuddin and Sirajuddin 1981; Hogendorn and Johnson 1986; De Silva 2009; Tajuddin 2010; Maloney 2013; Mohamed 2014b). It is said that the Maldivians were forced to give up their religion and “the Portuguese and Christians were a treacherous, cruel and iniquitous people. The sea ran red with Muslim blood. Property was seized publicly, and the people harshly treated” (Maloney 2013: 124).

Mohamed Thakurufaanu, from Ha. Utheemu is remembered as an important historical figure. He, his two brothers and a small group of their compatriots are said to have finally defeated the Portuguese in 1573 and it is said that this defeat occurred on the same day the Christians had decided to command all Maldivians to become Christian on pain of death (Tajuddin, Muhibbuddin and Sirajuddin 1981; Mohamed 2008: 66; De Silva 2009; Tajuddin 2010; Maloney 2013: 124). The Portuguese fought for power for three years afterwards until a treaty was signed forcing them to leave the Maldives and in return the Maldives to pay tribute to their king as well as for the Maldivian Sultan to not assume royal titles (Maloney 2013: 124). Several subsequent attempts to invade Male' were defeated. In an attempt to protect Male' from these invasions, a fortification was built around Male' during the 17<sup>th</sup> century with eleven bastions which no longer exist (Fig 19). Here, it is suggested that the reasons for paying tribute to the Portuguese were different from that of the Chinese. Even though tributes to the Chinese have been suggested to be a form of voluntary diplomatic gift offerings (see page 43) to encourage trade relations between the two parties, it is suggested here that this was more complicated with the Portuguese. In addition to establishing good relations between the two parties and their trade connections, the Maldives seems to have had a hostile relationship with the Portuguese thus, they would have been obliged to pay tribute to the Portuguese in order to remain an independent nation thereby avoiding Portuguese rule over their country. Therefore, it is likely that paying tribute to the Portuguese involved some level of compulsion and there seem to have been negative consequences upon failure of the payment. Hogendorn and Johnson (1986: 33) also provides some details of the tributary nature between the two parties, "after three years of Portuguese attempts at reoccupation, a treaty was concluded that provided for a fixed annual tribute in cowries, coir, and other goods, payable in part to the Christian ex-sultan who took up residence at Cochin, and to his successors." Furthermore, they also state that the exact details of the tribute are unknown but four ships of 150 tons each were carried annually and one third of it was paid to the Portuguese government by the Christian claimant as a contribution (Hogendorn and Johnson 1986).

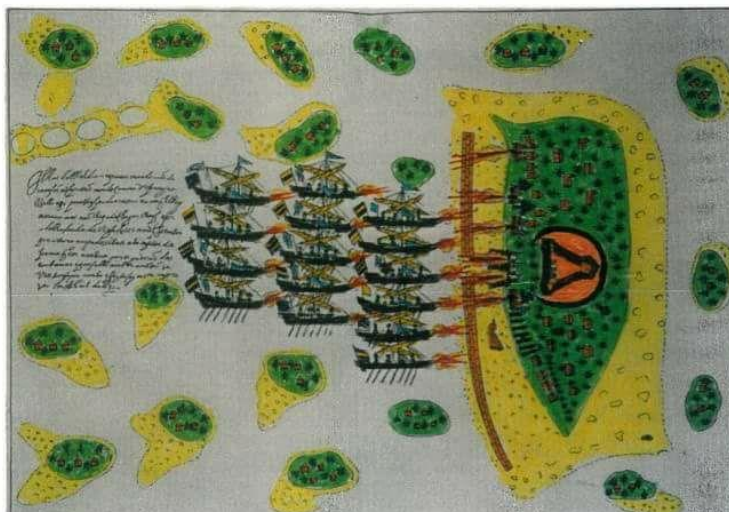


Fig 19: The attack on Male' by Portuguese Admiral Belliagio in 1632 (Source: De Resende 1970)

It is said that along with the Portuguese, the Dutch and the British competed for the Maldivian trade (Bell 1933; Hogendorn and Johnson 1986; Skjølsvold 1991; Mohamed 2008; 2014b). Maldives refused foreigners afterwards and were hostile to them after the impact of the Portuguese until the establishment of the British East India Company. The tribute that the Maldivians were paying to the Portuguese was transferred to the Dutch who gained support from the Maldives and later on to the British rulers (Bell 1933; Hogendorn and Johnson 1986; Maloney 2013: 126; Mohamed 2014b). However, it is suggested here that this payment was similar to the nature of tribute paid to China, i.e., a friendly, diplomatic exchange of local produce to maintain good trade and diplomatic connections. During the period of the British rule in Sri Lanka, after the Dutch, several Britons visited Maldives where they gained unfavorable impressions of the islands and many ships were being wrecked in the Maldives. As mentioned above, this is when captain Moresby and Powell visited the Maldives along with Young and Christopher (see above) to conduct surveys in the Maldives. They noted that virtually no European impact was seen on the culture at the time of their visit (Maloney 2013: 126). In year 1887, the Maldivian Sultan sought protectorate from the British in Ceylon due to fiscal troubles and harassment from Portuguese and other foreign merchants. The agreement was that the “Sultan was to recognize British suzerainty and disclaim the right to make a treaty with any other state and in return the British were to protect the Maldives from all foreign enemies and to abstain from all interference in internal administration” (Maloney 2013: 126). Maldives was

visited by several foreigners who conducted valuable surveys in the country during this period (see above). The British also built temporary airstrips in S. Gan (Fig 20) (now converted in to an international airport) during the second World War and it was in the year 1965 that the Maldives gained their independence and in 1968 the sultanate was abolished hence becoming a Republican ever since (Tajuddin, Muhibbuddin and Sirajuddin 1981; Hogendorn and Johnson 1986; Tajuddin 2010; Maloney 2013: 129; Mohamed 2014b). For a more detailed version of the Maldivian historical timeline see Appendix 1.



Fig 20: Royal Air Force base in S. Gan (Source: Harcourt 1976)

## 2.4 Conclusion

This chapter has outlined the physical and cultural context of the Maldives as well as provided a brief overview of the earliest mention of the Maldives in the literary records.

Although the origins of Maldives are uncertain, it is certain through various sources that the islands have been occupied for over 3000 years and it is now very clear that after the years since its earliest habitation by neighboring Indians and Sri Lankans, Maldives has undergone several foreign influences which were eventually modified and shaped to create its own identity and language. These influences can be seen all over Maldives through its archaeological, historical and linguistic records, major changes including the change of religion from Hinduism to Buddhism to finally Islam and also the change of rule from monarchy to republican government. These early influences can be seen among Maldivian people displaying a mix of various physical features resembling Arab, South Asian and Southeast Asian people. Moreover, as mentioned above, the Maldivian heritage and language is also based on a blend of many cultures including South Asian, Southeast Asian and Arab cultures. According to scholars, it is through these earlier inhabitants that Maldives became what it is today; a seafaring nation with some of the most skillful navigators in the world.

As a result of this and also due to the location of Maldives, it became a very important entrepôt along the Indian Ocean trade network with several foreign visitors visiting Maldives and writing about them from as early as 500 BC onwards. These include the earliest mentions of Maldives in Sri Lankan and Buddhist chronicles dating between 500-200 BC, Greek sources

dating between AD 90-522, Chinese sources dating between AD 630-792 and Arab sources dating between AD 850-1150. Some of these accounts are primary sources of eye-witnessed accounts while others are secondary sources compiled from several other sources. Almost all the sources apart from the early chronicles refer to the political and social relations between Maldives and other foreign countries, especially the trade and exchange connections between Maldives and the rest of the world, giving details of the various foreign ships porting Maldives on their way from east to west and the products of the Maldives that were exchanged as trade goods and/or gifts and tribute. These include different products made from the coconut palm (such as coir ropes and coconuts), fish and other marine products (such as cowrie shells, ambergris and tortoise shells) and in return the Maldives acquired quantities of rice, Chinese products such as pottery, gold, textiles, etc. Many of these sources give detailed accounts of how the local products were fished, produced, used and traded. Nearly all of the sources give accounts of the Maldives being ruled by a woman and how her wealth was to a large degree based on the large quantities of cowrie shells which were kept in the royal depot. Much more detailed wealth of information can be obtained from the later historical sources such as Ibn Battuta and Pyrard, providing more “ethnographic”, unambiguous and trustworthy accounts of the culture, politics, economy and trade relations (internal and external) of the Maldives. These accounts serve as rather important sources of the Maldivian culture even today. From these various accounts, it is very clear of the undoubted importance of the Maldives in the global Indian Ocean trade networks.

The following chapter will focus on previous archaeological work carried out in the Maldives which will be used as a basis to establish the research methodology which was adopted for the current research.

## **Chapter 3: Previous archaeological work in the Maldives and methodology for the present work**

### **3.1 Introduction**

This chapter will outline the various strands of research work carried out as part of the present doctoral research. As this work is primarily archaeological, the first part of this chapter will present the various archaeological investigations carried out previously in the Maldives (see Table 1 for a summary of these investigations and Figs 18 and 31 for the location of sites discussed in the table) and on which the present research has built. The later part of this chapter will then detail the methodological framework that was applied for the present research. While Chapter 2 presented general sources relating to the history of the Maldives, the present chapter focuses on archaeological work.

### **3.2 Previous archaeological research carried out in the Maldives**

The first and one of the most important contributions to Maldivian archaeology is the work of Englishman H. C. P. Bell who, as a civil servant in Ceylon first visited Maldives in 1879. The purpose of this visit was merely to investigate the wreck of a British ship, but his interest continued until his death in 1937. During this initial visit Bell suggested that an archaeological survey would help to establish the Buddhist past in Maldives (Bell 1883; 1925; 1940; Hogendorn and Johnson 1986; Mikkelsen 2000; Maloney 2013). In his later visits in 1920 and 1922 he carried out extensive researches and surveys on Maldivian art, religion, linguistics, archaeology, and geography (Bell 1883; 1925; 1940), including accounts of the widespread production and trade of cowrie shells (Hogendorn and Johnson 1986). He also carried out small-scale excavations, mainly concentrating on measuring and drawing the Buddhist monuments, which established conclusively that there were many Buddhist archaeological sites in Maldives, dating back to pre-Islamic times (Mikkelsen 2000: 03).

During his later visits H. C. P. Bell studied the Buddhist mounds in Hithadhoo (Seenu atoll), Laamu atoll and Fuvahmulah in Gnaviynai atoll (Fig 21). He documented the existence of stupas, finials, capitals, pillars, carved stones, images, beads and jars and a circular relic house in Addu (Seenu atoll) and Fuvahmulah and proved the fact that Buddhism was in fact very deep rooted in Maldives due to the abundance and vastness of Buddhist religious objects (including Buddha figurines), the presence of vast religious complexes in various parts of the Maldives as



well as the close resemblance to the Buddhist structures in Sri Lanka (Fig 24) (Bell 1940; Forbes 1987; Jaufar 2017a). He was impressed by the artistic quality of the Maldivian Buddhist art which he discovered, commenting that “they were not excelled by any kindred work surviving in Ceylon” (Bell 1940: 114). His extensive and valuable research of almost 60 years has been published in two volumes; “The Maldive Islands: An Account of the Physical Features, Climate, History, Inhabitants, Productions and Trade” in 1883 and “The Maldive Islands: Monograph on the History, Archaeology and Epigraphy” in 1940. He also published twelve articles on the various antiquarian subjects and these papers are housed in the Sri Lankan National Archives (Forbes 1980; Hogendorn and Johnson 1986: 22; Skjølsvold 1991: 10). He contributed much to the Maldivian history and provided a wealth of information on the Maldivian island communities, especially on the language, Buddhist remnants, and the history of the Islamic period of the archipelago (Skjølsvold 1991: 10).



Fig 21: Ruins of a Buddhist mound in Gn. Fuvahmulah (Source: Bell 1922)



Fig 22: Buddhist remains recovered in the Maldives: left-Buddha Statue from AA. Thoddoo, top right-Bronze Buddha Statue from Laamu Atoll and Stone slab with Buddha Footprint (Source: National Centre for Linguistic and Historical Research 2004)

Subsequently, local amateur archaeologists have also carried out excavations at several Buddhist sites in the Maldives, including Fuvahmulah in Gn atoll, Kin'bidhoo in Thaa Atoll and Ariadhoo and Thoddoo in Alifu Alifu Atoll (Figs 18 and 22) (Didi 1959; Forbes 1987; Skjølvold 1991: 67; Maniku 1993; Luthufee 1995; Mikkelsen 2000: 07; National Centre for Linguistic and Historical Research 2004; Riyan 2011; Maloney 2013: 86; Jaufar 2017a). These excavations were not scientifically conducted, thereby causing extensive damage (Maniku 1993; Mikkelsen 2000: 03; Maloney 2013: 86). Some of the artefacts recovered from these excavations were never recorded and have since been lost (Jaufar 2017a).

One such excavation worth mentioning here is the excavation on the mound in AA. Thoddoo in 1958 when a well preserved Buddha statue (Fig 22) and a relic casket of white coral containing among other things two Roman coins (Fig 23) were discovered (Didi 1959; Forbes 1984; 1987; Skjølsvold 1991: 67; Mohamed 2008: 75-76). One of the coins has been suggested to be a Roman Republican *denarius* of Caius Vibius Pansa, minted in Rome in either 89 or 90 BC (Forbes 1984; Skjølsvold 1991: 67; Mohamed 2008: 75). Even though it is not certain how this coin came to be enclosed in this casket, its presence

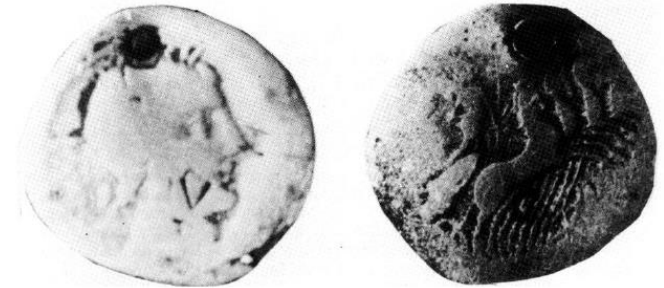


Fig 23: AA. Thoddoo archaeological site showing the *Dahaba* after excavation and the Denarius of Caius Vibius Pansa (Source: Forbes 1984: 55).

indicates the possibility of the exchange networks between Maldives and Rome; however, it could also be an indirect exchange and at a much later date than the 5<sup>th</sup> century BC (Forbes 1984; Mohamed 2008: 76). It is also suggested that, based on archaeological and documentary evidence, Maldivians visited Rome possibly between the 5<sup>th</sup>- 7<sup>th</sup> centuries AD (Mohamed 2008: 76; 2014a; 2014b).

An important work on the Maldivian pottery is that of John Carswell (Carswell 1976). During his visit to the capital Male' for a month in 1974, Carswell and his colleagues collected several potsherds from the streets of Male' where "the sands was studded with sherds of porcelain" and "each monsoon shower revealed a fresh crop" (Carswell 1976: 144). Moreover, they also collected sherds by sifting the topsoil of a cemetery and a mosque (*Hadibi Miskiy*) (Carswell 1976). After learning about the position of the walls of the old Sultan's palace (now Sultan's Park- a public garden) from a 1921 map by H.C.P. Bell, the team also excavated two trial trenches inside and outside the line of the walls of the palace (Carswell 1976). The materials (a total of 498 sherds and 9 dishes) were given as a study collection to the Ashmolean Museum and relevant papers have been published detailing the excavations and his findings (Carswell 1976; Ashmolean 2013). This corpus of materials was studied for the purpose of this research and the results of this study will be referred to later in Chapter 5.

Based on the findings, Carswell was able to attribute certain sherds to specific Chinese, Islamic and possibly Sri Lankan ware types and periods. According to Carswell (1976: 152), the earliest Chinese fragments from his findings dates to the late Sung period which include “small bowls and dishes, the majority of hard grey ware with grey or greenish glazes, some with combed and/or incised decoration and one with carved petal panels.” His findings also include probable Ming period fragments, a rare example of Islamic pottery of a fragment of buff pottery with turquoise glaze, eight Persian dishes and one Chinese ‘Swatow’ dish (Carswell 1976). A set of three fragments of Chinese pottery match a bowl excavated in 1929 at the village site of Dhlo Dhlo in Zimbabwe and this classic instance of a Chinese import being used to establish a date for the indigenous material (Carswell 1976: 154). He also believes that this example “provides incidental proof of the Maldives being on the route for Chinese porcelain bound for East Africa” (Carswell 1976: 154; Mohamed 2008: 76). Carswell (1976) interprets the pottery recovered in Male’ as evidence of uninterrupted export of Chinese porcelain for a thousand years, from the 9<sup>th</sup>- 10<sup>th</sup> century. Moreover, certain sherds excavated from the Sultan’s garden have been suggested to resemble material from Vankalai in North West Sri Lanka, therefore tentatively suggesting a definite connection between the two places (Carswell 1976: 158-160). More details of Carswell’s work on pottery will be discussed in Chapter 5.

Another notable contribution to the Maldivian archaeology was made by Thor Heyerdahl’s expeditions to the Maldives in 1983 and 1984, during which archaeological test excavations were carried out in Maldives as a joint project between the Kon-Tiki Museum in Oslo and the Maldivian government (Heyerdahl 1986; Skjølsvold 1991). The purpose of this brief expedition was to understand the character of the pre-Islamic archaeology of the island (Skjølsvold 1991). Mikkelsen (2000: 3) states that “the Kon-Tiki Museum expedition was primarily interested in finding large monuments, stone sculptures and traces of early settlement”, visiting as many islands as possible within the limited time. Excavations were limited to trenching and some minor test-excavations on a mound (*Nilandhoo Foamathi*) and its nearby area on Nilandhoo in Faafu atoll for a total of ten days (Figs 17, 18 and 24) and on a mound (*Vadamuge Havitta* or *Bodu Havitta*) on Gan in Gaafu Dhaalu atoll (Figs 18 and 25) for a total of 9 days during both seasons (Skjølsvold 1991).





Fig 24: The northwestern corner of the foundation under the mound in F. Nilandhoo (Source: Skjølvold 1991: 24)



Fig 25: The outline of the mound in GDh. Gan (Source: Skjølvold 1991: 44)

A description of the excavations and all the material encountered were published in the second volume of the Kon-Tiki Museum Occasional Papers, along with a catalogue of the material brought to Male' (Skjølsvold 1991). Artefacts recovered include several stone sculptures, limestone blocks and miniature stupas. Other remarkable finds include a bead, glass, pieces of copper and gravestone slabs. Pottery dominated among the finds and Mikkelsen (1991: 192) suggests that the pottery finds on the surface from F. Nilandu have parallels with material from Sri Lanka and India. Indonesia has also been suggested as a possible origin for some of the sherds. This seems to be based on the similar ware types as seen in South Asia such as the line decorated sherds as well as some glazed pottery which are said to have parallels from India (see Chapter 5 for details on pottery). The excavations at F. Nilandhoo revealed two monuments of Buddhist period and the large number of miniature stupas suggest that the site can be identified as a Buddhist complex (Skjølsvold 1991; Mohamed and Ragupathy 2005: 19). The beginnings of monument building on this site have been dated to the 6<sup>th</sup> century AD based on the radiocarbon dating which yielded a date between AD 540-670 from the bottom layer from the temple area (Skjølsvold 1991: 66; Mohamed and Ragupathy 2005: 19).

The Maldives also received archaeological contributions from neighboring India when a team from the Archaeological Survey of India visited Landhoo in Noonu atoll in 1987 to observe the mound (*Landhoo Maabadhige Haitha*) (Fig 18) (Bopardikar 1992; Tripathi 1999; National Centre for Linguistic and Historical Research 2004; Jaufar 2017a). They confirmed that this represented a Buddhist religious center, that the stupa present there was the biggest structure in the area, and that other structures had been destroyed (Bopardikar 1992; National Centre for Linguistic and Historical Research 2004; Jaufar 2017a). They also discovered, not far away from this area, a coral stone block with late Brahmi inscriptions (one of the oldest writing systems used in Ancient India and present in South and Central Asia from the mid-1st millennium BCE) of *Pallava* style (a Brahmic script developed under the Pallava dynasty of Southern India around the 6<sup>th</sup> century AD) engraved on four sides of the coral block (Fig 14) (National Centre for Linguistic and Historical Research 2004; Mohamed and Ragupathy 2005; Jaufar 2017a). According to scholars (Mohamed and Ragupathy 2005), this represents the oldest written inscription found in the Maldives being dated to the 6<sup>th</sup> century AD.

The most important archaeological contribution to Maldives is the first and only scientific excavations conducted in Maldives carried out by Professor Egil Mikkelsen and his team (from the Museum of Medieval Stockholm and University of Oslo) in collaboration with the National Centre for Linguistic and Historical Research, Male', over a period of three years,



from 1996 to 1998. The site was a mound in Kaafu atoll Kaashidhoo called *Kaashidhoo Kuruhinna Tharaagandu* (Figs 26 and 27). This excavation yielded much information about the Buddhist past of the Maldives and exchange relations between Maldives and the rest of the world, especially as concerns the trade of cowrie shells and the commodities received in exchange (Mikkelsen 2000).

During the three excavation seasons an area of 1880 square meters, revealing 64 ruins, was investigated. The remains are interpreted as a past monastery and the total size of the site is unknown. This Buddhist monastery site is said to have been established between the 2<sup>nd</sup>- 4<sup>th</sup> century AD based on the dates recovered from the site (Mikkelsen 2000). The structures uncovered were, except for one (which was made of coral stone), made of coarse coral stone with lime plastering and moldings in the outside; inside they were, as a rule, filled with sand or stones. There was a great variation in the size and shape of the structures: square, rectangular, circular (some with a semi-circular extension), while one was 16 sided (Fig 26).

The size of the structures varied between one meter and 11.5 meters. Some bell-shaped structures are interpreted as miniature stupas. He also notes that most of the structures were platforms of various kinds, probably designed for light buildings of wood, reliquaries or as bases for statues. Only the lowermost parts of the structures (30-40cm) had normally been preserved; the rest had been used as building material over the years. Several worked and profiled stones were collected during the excavations (Mikkelsen 2000: 11). Other remarkable artefacts recovered from this site include a pit of 62,000 cowrie shells, other cowrie and clam shell deposits, four human graves, a bronze bowl, bones of a giant tortoise, a Chinese bronze coin, small bronze rings, iron fragments, potsherds, and red, blue and black beads (Fig



Fig 26: Structures excavated in K. Kaashidhoo (Source: Department of Heritage 2009)

27) (Mikkelsen 2000: 20). Radiocarbon dates run on a sample of the 62000 cowries suggest that they were deposited sometime between AD 165-345 (1690 +/- 65, T12495).



Fig 27: Artefacts recovered at K. Kaashidhoo including one of the four graves (Source: Mikkelsen 2000: top fig 19b, bottom left fig 18, bottom right fig 17, pgs 17-19)

Recently, the author has also carried out several test-excavations in Maldives of a preliminary nature due to lack of funding and resources for systematic excavation and dating. These include the excavation of a bathing tank in Ha. Utheemu (Fig 28) (Jaufar 2012a; 2015b), test excavations to clarify the stone arrangements used in the foundation of four ancient coral stone mosques (Figs 29 and 31) to understand its architecture for a World Heritage nomination project (Ahmad and Jameel 2012; UNESCO 2013; Jaufar 2013; 2014; 2015a) and in Ha. Ihavandhoo (Fig 30) aimed at understanding a stone structure discovered by the locals (Jaufar 2016). The excavation of the bathing tank revealed that the stepped sandstone structure was built on top of cut timber blocks which were well preserved under water. The test excavations for the coral stone mosques revealed that they were built on a mix of both sand and coral stone foundation and notable features such as postholes were recovered from one mosque (Fig 29). The structures recovered from the excavation in Ihavandhoo have been suggested to resemble some of the carved stones used in the construction of ancient mosques in the Maldives (Jaufar 2015a). It is thought that the site excavated is likely to be a workshop for the coral carpentry work necessary for the construction of the ancient Mosque in Ihavandhoo.





Fig 28: Excavation of bathing tank in Ha. Utheemu with the ancient *Kan'dhuvalu* mosque and the cemetery behind the tank (Source: Shiura Jaufar 2012)



Fig 29: Test excavation in ADh Fenfushi ancient mosque (Source: Shiura Jaufar 2013)



Fig 30: Excavated structures in Ha. Ihavandhoo (Source: Shiura Jaufar 2015)

Noteworthy is also the contribution of Litster (2016) who, as part of a doctoral research project, further analysed some of the findings (including pottery, faunal remains and small finds) from previous studies at Buddhist sites in Nilandhoo (Faafu atoll), Fuvahmulah in Gnaviyani atoll and Kaashidhoo in Kaafu atoll (Figs 18 and 31). Details of this work will be described in chapters 5 and 6 as they include the analysis of pottery and other finds which were looked at for the purpose of this study too.

Lastly, the most recent contributions to the Maldivian archaeology are the work of Stéphane Pradines and the ongoing survey project by Michael Feener. Stéphane Pradines conducted a month-long research project in 2017, the aims of which were twofold; to document the archaeological site of Fan'diyaaru Mosque in the island of Meedhoo in Seenu atoll and the ancient mosque in Fenfushi (Alifu Dhaalu atoll) and to conduct archaeological and scientific surveys (including test excavations) on the two sites in order to investigate the relationship between pre-Islamic and Islamic settlements (Pradines 2018). The test excavations conducted were done for an important purpose of providing some dates for these buildings, which had

never been done before. Furthermore, the work aimed to determine whether some of the structures pre-dated the Islamic structures on this site.

According to Pradines (2018), the results from the work carried out on both these sites contradicts the widely believed fact that mosque sites in the Maldives were built on earlier Buddhist sites. He argues that no evidence was found to support this and the mosque sites investigated for this research were not built on Buddhists temples. He also claims that the mosque in Meedhoo is not as old as it was described in the oral tradition as dating to the 12<sup>th</sup> century but argues a date likely to be from the 16<sup>th</sup>- 17<sup>th</sup> centuries based on the results of the excavations. Similarly, he also believes that the bathing tank initially thought to date to the Buddhist period is a water tank built by the sultan (Pradines 2018). Documentation of these two sites revealed some new structures around them which were recorded and the results have been sent to the Maldivian Department of Heritage and UNESCO as part of the work carried out for the pilot project ‘Coralstone Mosques of Maldives towards World Heritage List’ (Ahmad and Jameel 2012; UNESCO 2013). Results of this work have not been yet published but shared with the Department of Heritage in the Maldives as well as presented at the 4<sup>th</sup> Islamic Archaeology day hosted by the University College London in 2018.

Lastly, the ongoing work of Michael Feener, who launched a two-year pilot survey project in 2018. The major aim of the project is to systematically inventory and document the endangered tangible cultural heritage in the Maldives including “mosques, Muslim grave markers, the remains of Buddhist ritual sties, and other historical structures and physical objects. This is done through digital photography, 3D terrestrial scanning, and GIS to create an open-access online heritage database” (Feener and Daly 2018; Jaufar 2018). The project also aims to document and evaluate potential threats to cultural heritage from both natural and human factors that can contribute to a heritage management plan for the Maldives. The project also plans to “train a local unit in the Maldives in heritage survey, field methods and documentation techniques, heritage management and conservation, and environmental issues as well as provide a foundation for academic output on changing history and environment of the Maldives, and its role within wider Indian Ocean maritime trade networks, based upon data collected” (Feener and Daly 2018; Jaufar 2018).

The project involves various phases over the two-year period and visits to several atolls including the capital Male’- central Maldives, Laamu, Fuvamulah and Addu Atolls in southern Maldives and Haa Alifu and Haa Dhaalu Atolls in the north (Fig 31). Other areas of potential

prominence will also be surveyed depending on the progress of work in the field. Preliminary data of this project is uploaded in a blog (Feener 2018; Jaufar 2018).

Over recent months the first phase of the project has focused on Laamu Atoll, where to date 43 islands have been surveyed. In the course of this work a total of 74 sites with 196 structures, 1183 gravestones and 33 small objects have been documented to date. These sites have included coral stone mosques, cemeteries, small pre-Islamic statues and three large Buddhist ritual complexes (Feener 2018; Jaufar 2018).

### **3.2.1 Archaeological work in the Maldives, 1920 onwards: an overview**

As has been shown above (also see Table 1), a number of archaeological enquiries have focused on the Maldives. The most important works include the research of Bell (1883; 1940) from 1920 to 1922 on Maldivian art, archaeology, religion, linguistics and geography, Thor Heyerdahl's expedition during 1983-1984 (Heyerdahl 1986; Skjølsvold 1991) which was the first archaeological excavation carried out in the Maldives which included the documentation of a stratigraphic sequence of pottery and artefacts (Mikkelsen 1991: 185), and the archaeological excavation set in K. Kaashidhoo by Mikkelsen from 1996-1998 (Mikkelsen 2000). The majority of the studies relating to the history and archaeology of the Maldives related to the pre-Islamic period, with the exception of the pottery studies carried out by Carswell (1976) and Mikkelsen (1991) on material from K. Male' and F. Nilandhoo respectively. The aims, as stated above, comes with this in mind, in an attempt to fill the gaps in the existing research on the Maldivian past as highlighted in Chapter 1. It is hoped that this will be done by conducting archaeological research on the sites pertaining to the Islamic period in Male' and other islands and presenting an updated set of data for the Maldivian archaeological record.



<b>Name of contributors</b>	<b>Year/s of research</b>	<b>Location of activities</b>	<b>Main focus of the work</b>
H. C. P. Bell	1879, 1920 and 1922	S. Hithadhoo, Laamu atoll, Gn. Fuvahmulak	Research and surveys on Maldivian art, religion, linguistics, archaeology and geography. Archaeological work include small scale excavations, mainly concentrating on measuring and drawing the Buddhist monuments
Local amateurs	During the 20 <sup>th</sup> century	Gn. Fuvahmulak, Th. Kin'bidhoo, AA. Thoddoo, AA. Ariadhoo	Excavations at Buddhist sites
John Carswell	1974	K. Male'	Pottery analysis pertaining to Islamic settlements: surface collection of pottery from the streets of Male, Hadibi Mosque and its cemetery, trial trench excavations in Male' Sultan park
Thor Heyerdah with Kon-Tiki Museum	1983 and 1984	F. Nilandhoo and G. Dh Gan	Understanding the character of the pre-Islamic archaeology through surveys and test pits- finding large monuments stone sculptures and traces of early settlements, documentation of a stratigraphic sequence of pottery and artefacts
Archaeological Survey of India	1987	N. Landhoo	Observed a Buddhist mound
Egil Mikkelsen	1996-1998	K. Kaashidhoo	First and only scientific excavation in the Maldives of a Buddhist monastery site
Shiura Jaufar	2012-2015	Ha. Utheemu, Ha, Ihavandhoo, A. Dh Fenfushi, R. Meedhoo, L. Isdhoo	Excavation of a bathing tank in Utheemu, excavation of an ancient stone structure in Ihavandhoo, text excavations to understand the foundation structure of the ancient mosques in Ihavandhoo, Isdhoo, Fenfushi and Meedhoo
Mirani Litster	2016	F. Nilandhoo, Gn. Fuvahmulak, K. Kaashidhoo	Analyse findings (pottery, small finds and fauna) previously excavated by Thor Heyerdahl and Egil Mikkelsen
Stephane Pradines	2017	A. Dh Fenfushi, S. Meedhoo	Document the mosques, conduct test excavations to investigate the relationship between pre-Islamic and Islamic settlements and provide dates for the mosques
Michael Feener and Patrick Daly	2018-2020	L. atoll, Male atoll, Gn. Fuvahmulak and Seenu atoll, Ha. And H. Dh atoll	Systematically inventory and document the endangered tangible cultural heritage (both pre-Islamic and Islamic) through digital photography, 3D terrestrial scanning, and GIS to create an open access online heritage database, evaluate potential threats (both natural and cultural), and train a local unit

Table 1: Summary of archaeological work conducted on the Maldives

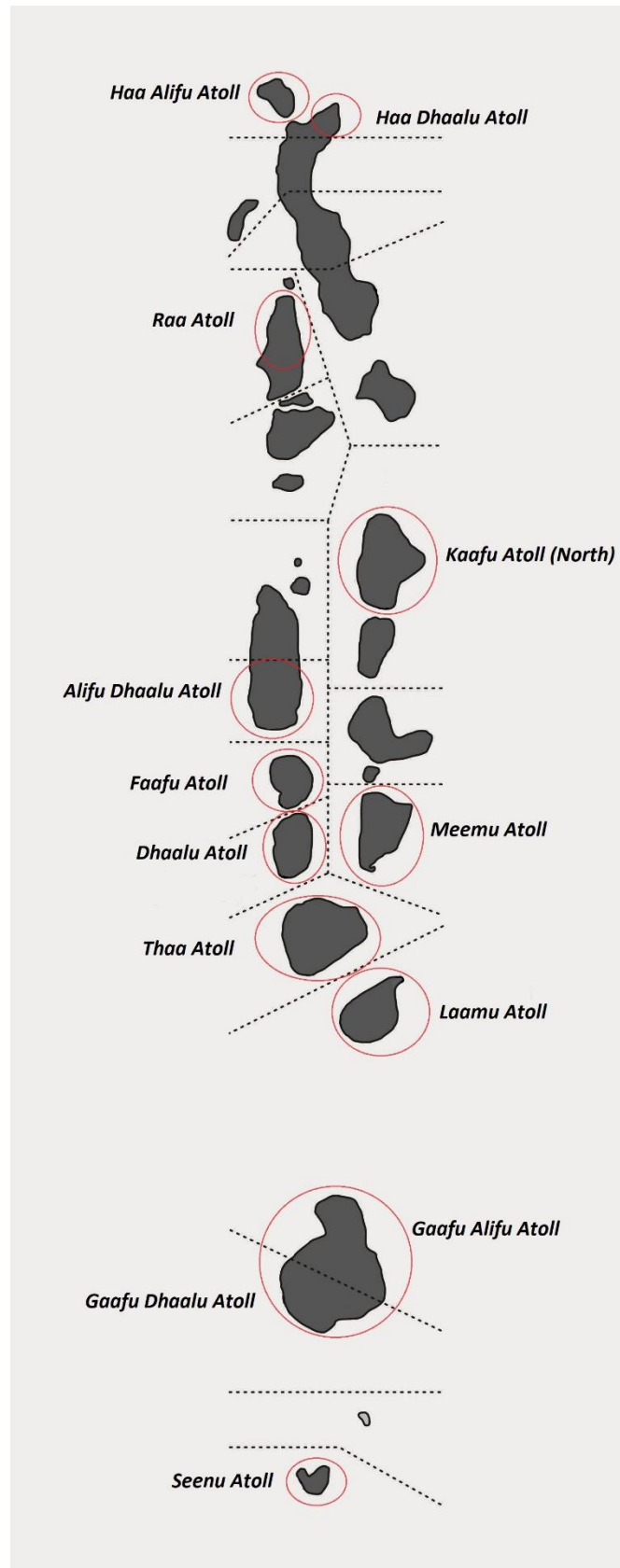


Fig 31: Map of the Maldives showing the distribution of coral stone mosques documented by Ahmad and Jameel 2012 (Source: Abduh Samad)

### **3.3 Methodological framework**

In order to answer the stated aims and questions which broadly involves the investigation of the landscape history and archaeology of the Maldives to produce an archaeological assessment of some settlement sites pertaining to the Islamic period, the present research was carried out through archaeological excavations, museological studies, and historical and ethnographic assessments.

#### **3.3.1 Overview**

The main method of data collection for this project involved archaeological test excavations at three islands. The field team consisted of Myself, Prof. Anne Haour (Supervisor), Dr. Annalisa Christie (Postdoctoral Researcher), a Maldivian archaeologist, a staff member (Research Officer) from the Department of Heritage and two to three individuals for manual labourers from each island. Finds excavated were compared to existing finds in the Maldives and UK in various museums where excavated finds were compared with what is already present and known in the local museums (National Museum of Maldives, and Loama Maamigili Museum) (National Center for Linguistic and Historical Research 2002) and other related museums such as the Ashmolean Museum in Oxford and the British Museum in London. Apart from this, the research also drew on other relevant disciplines such as history where the historical context of this project were drawn from written and oral sources (Ali 1994; Riyan 2011, 20-35).

#### **3.3.2 Historical data**

Written and oral sources were assessed as part of collecting historical data for the project. Written sources, as seen above are scarce- especially primary sources do provide a good overview of the overall history of Maldives and in some instances detailed descriptions of aspects of the Maldivian history especially after the reported conversion to Islam in AD 1153. The sources consist mainly of historical literature of the overall Maldives collected by local Maldivians including historians (National Center for Linguistic and Historical Research 1981) and some sources targeted to certain periods of certain islands (such as the story of *Boduthakurufaanu* (see below), Seenu Addu and Gaafu Dhaalu Thinadhoo Riots) (Tajuddin, Muhibbuddin and Sirajuddin 1981) and fewer foreign literature including ethnographic studies (Bell 1883; 1925; 1940; Maloney 1980; 2013; Hogendorn and Johnson 1986). Historical works by the well-known local historians Naseema Mohamed (2002; 2005; 2008; 2014a; 2014b) and

Mohamed Ibrahim Luthufee (1995) were used as a basis to obtain local historical records for this project. These sources have been outlined in Chapter 2.

### **3.3.3 Museological data**

The National Museum of Maldives currently holds the most extensive collection of Maldivian artefacts ranging from the pre-Islamic period to the 20<sup>th</sup> century AD (National Centre for Linguistic and Historical Research 2002). More importantly the museum houses some dated pottery and other Maldivian artefacts (mostly from excavations and public donations) (see Chapter 5) which was very helpful in order to understand the findings of the excavations in terms of its dating, function and origin. Therefore, finds from the research were compared to the museum holdings for a better insight. Moreover, other local museums such as Loama Maamigili Resort Museum were also consulted as they also hold a collection of well dated pottery, although fairly small compared to the National Museum.

British museums housing Maldivian artefacts were also consulted such as the Ashmolean Museum in Oxford and British Museum in London. As mentioned above, the Ashmolean Museum holds a Maldivian pottery assemblage by Carswell (1976) which was studied and this was also used as a basis for the typology of pottery discussed in the relevant chapter. An ethnographic collection of Maldivian traditional objects kept at the British Museum was also studied and some of these objects are referred to where relevant in this thesis.

### **3.3.4 Archaeological data**

#### **3.3.4.1 Excavations**

This doctoral research involved the excavation of several test pits at three different islands located in three different regions of Maldives (Fig 2). These locations were selected based on several factors including:

- Regional Diversity: North, Central and Far Central locations ensured a distribution across the archipelago.
- Known/existing archaeological evidence present in the islands pertaining to the Islamic period.
- Lack of disturbance to the site: given the limited landmass and extensive development activities, most sites in the Maldives are disturbed. The sites selected seem to be fairly less disturbed with less/no development activities carried out in the area.



- Accessibility of the island: since it was important to select sites that were easily accessible with little or no issues raised due to external factors such as development activities, distance, excavation permits, island habitation/inhabitation, available of water and electricity, etc.
- Need for research: based on the Maldivian Heritage Inventory (National Centre for Linguistic and Historical Research 2004; Riyan 2011) in which sites most needed for further research are identified.

Based on the above factors, three islands were selected for test-pitting. They are Utheemu of Haa Alifu Atoll (Northern region of Maldives), Male' of Kaafu Atoll (Central region of Maldives), and Veyvah in Meemu Atoll (Far Central Region of Maldives).

### **i. K. Male'**

Male' is the capital and most populous city in the Maldives, covering an area of 5.8 km<sup>2</sup> and playing a major role in the organization of the country both in the past and the present. Until recently, this was the only “city” in the Maldives housing one third of the entire population of about 385394 people according to the last census. The city is geographically located at



Fig 32: Satellite map of K. Male' (Department of National Planning 2009)

the southern edge of North Malé Atoll (Kaafu). Referred to as the “King’s Island” in the past and having the old name Mahal (Ragupathy and Mohamed 2008: 83, 167), it has always been the capital of the Maldives with an elite status where the king and a majority of the rulers and elites ruled and resided and where the royal palace was located.

Looking at the history of Male', the city used to be walled, surrounded by fortifications and gates (Bell 1921; Maniku 1982). A large area of the north eastern quarter of the island used to be the king's quarter where the residential and other governmental buildings were located including the Royal Palace and Garden (Fig 33). The Royal Palace, built in the 16<sup>th</sup> century (Maniku 1982) along with



Fig 33: Model of former palace structure kept at the National Museum in Male' (Source: Anne Haour)

the forts, gates and bastions were destroyed when the city underwent remodeling under President Ibrahim Nasir's rule during the late 20<sup>th</sup> century (National Centre for Linguistic and Historical Research 2004). However, some of the ancient sites still remain such as Male' Friday Mosque (Fig 35), some coral and sand stone mosques dating between 12- 18<sup>th</sup> century AD (National Centre for Linguistic and Historical Research 1986; Ahmad and Jameel 2012) and some shrines of nobles, including that of the Moroccan Imam, Abul Barakaath Yoosuf Albarbaree who is believed to have converted Maldives to Islam in AD 1153 (National Centre for Linguistic and Historical Research 2004). Moreover, there remains only one surviving site belonging to the royal palace compound, called "*Usgekolhu*", the Chief House (Fig 34) which was an addition to the royal palace ground at the beginning of the 20<sup>th</sup> century (Bell: 1921; Maniku 1982, Riyan 2011: 54). This three story building is located in the former royal garden, currently known as the Sultan's Park, and was used as the National Museum of Maldives from 1952 to 2010.

The significance of Male' the study of Maldivian history is that this was a major focus of activities where all economic transactions and trade took place, and they were heavily monopolized by the king (Hogendorn and Johnson 1986; Mohamed 2014a; 2014b). Lengthy descriptions exist of ancient traders and travellers, their transactions in Male', the administration, governing and organization of Male' and how the monopolized trade operated in Male' under the king's orders (Gray and Bell



Fig 34: *Usgekolhu* (Photo by Anne Haour, February 2016)

1887; Gibb 1929; Bell 1940; Carswell 1976; Husain 1976; Hogendorn and Johnson 1986; Luthufee 1991; Didi 1995; Maloney 2013: 9-13; Mohamed 2014b). According to most sources (as those cited above), no other island was allowed to carry out trade transactions and therefore all ships that visited Maldives had to dock in Male' to carry out their transactions. Likewise, local ships also had to dock in Male' to carry out their business transactions (Mohamed 2014b). For instance, the cowrie trade was also centered in Male' where shells were brought and buried in Male' from different islands and further distribution took place in Male'. Therefore, the coastal area of the northern Male' would have been a rather busy area, being the most important port for any trade transaction that was to be carried out in Maldives by both locals and foreigners.



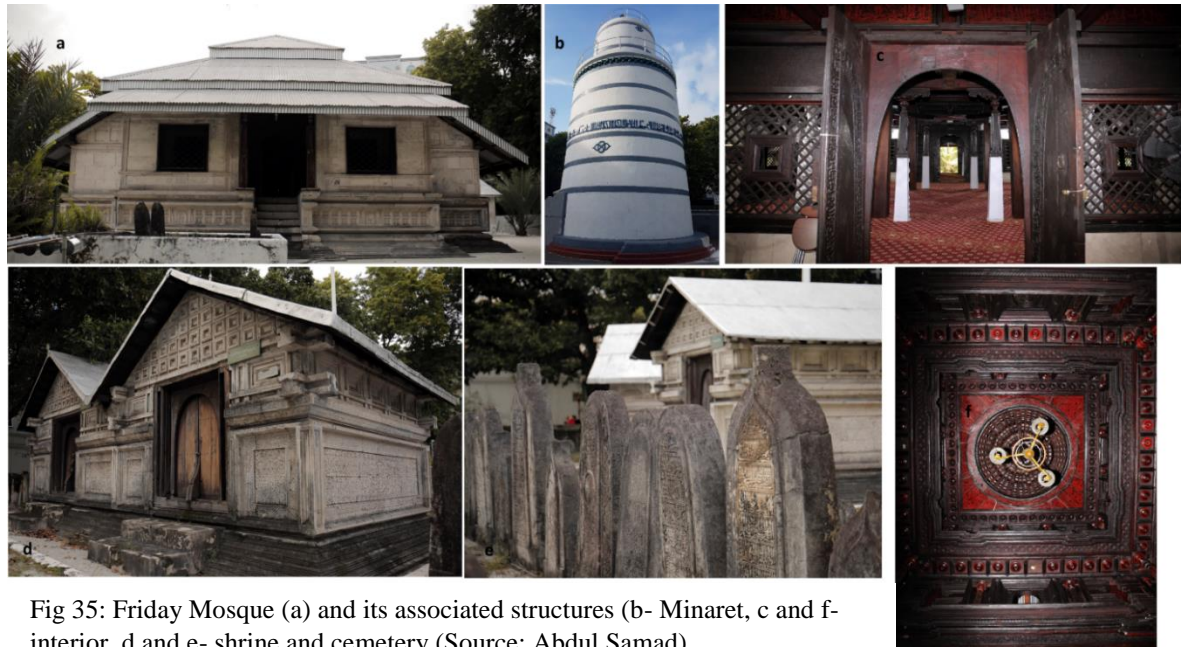


Fig 35: Friday Mosque (a) and its associated structures (b- Minaret, c and f- interior, d and e- shrine and cemetery (Source: Abdul Samad)

## ii. Ha. Utheemu

Located in the northern region of Maldives, this is another historically significant island after Male', documented as one of the most important islands in the Maldivian history as the location of the oldest house (Utheemu Palace or *Utheemu Gan'duvaru*) in the Maldives (Figs 36-38). The island and the entire atoll (Haa Alifu) is highly regarded by the Maldivians and plays a major role in the Maldivian history. It is said to be the

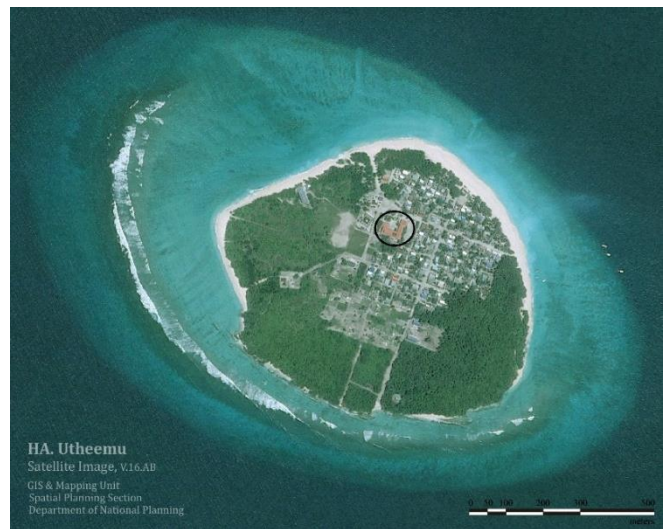


Fig 36: Satellite map of Ha. Utheemu, with the location palace circled (Source: Adopted from Department of Planning 2009)

birth place and the residential place of the Mohamed Thakurufaanu (Boduthakurufaanu) and his two brothers who are remembered as heroes who defeated the fifteen year Portuguese occupation in the Maldives in AD 1573 (Bell 1883: 28; 1932: 87-90; Forbes 1981: 91; Maloney 2013: 123-124; Mohamed 2014a: 98-101) (see Chapter 2). The island consists of several sites related to this family and their life events including the palace (Figs 37 and 38) where the family resided and the mosque where it is said that the brothers prayed for victory (Fig 28). The palace

and mosque are said to have been built during the early half of the 16<sup>th</sup> century (National Centre for Linguistic and Historical Research 2004, Riyan 2011; Mohamed 2014a: 98-101). The palace, as mentioned above, is claimed to be the oldest standing residential building in the Maldives and contains several ancient and traditional items used during that time including wooden and stone structures and artefacts (Fig 38) (National Centre for Linguistic and Historical Research 2004, Riyan 2011; Mohamed 2014a: 98-101). There is also a local branch of the Department of Heritage on this island to maintain these sites. The palace thus has received much focus and care in its maintenance and renovation by every rule who has served the country till the present. Moreover, the wooden areas of the mosque are lacquered and surrounding the mosque are some carved coral stone tombstones in its cemetery. Important shrines of the Utheemu family are also placed in this cemetery including the father and grandfather of the three brothers (Fig 28). A bathing tank also lies in the mosque vicinity which was dug in 2012 by the author (Fig 28).



Fig 37: Utheemu Palace in Ha. Utheemu (Source: Kamaldeen 2016)



Fig 38: Inside the Utheemu Palace in Ha. Utheemu (Source: Kamaldeen 2016)



On several occasions, the island exposed several archaeological remains from various parts of the island most notably the recovery of an unknown stone structure and a shell midden (Fig 39) and several artefacts in 2015 (Fig 40) (Ahmed 2017; Maldives Times 2017). These were discovered from the football field situated between the mosque and the palace which subsequently formed a focus of this investigation.



Fig 39: Shell Midden in Ha. Utheemu (Source: Boduthakurufaanu Memorial Centre 2015)



Fig 40: Artefacts recovered from Ha. Utheemu football field  
(Source: Boduthakurufaanu Memorial Centre 2015)

### iii. M. Veyvah

This island is located in Meemu atoll in the far central region of the Maldives. One of the neighbouring islands in this atoll, Mulah, also known as *Boli Mulah*, is historically associated with cowrie shells and has been mentioned as one of the cowrie rich islands in the historical records (Luthufee 1995: 31; Ponnampalam and Mohamed 2008: 11). This island as well as the atoll was also mentioned in the early records by early travellers including Ibn Majid and Ibn Battuta (Tibbetts 1971).

The island of Veyvah was chosen for study due to the historical significance of the island and the presence of ancient remains. Veyvah has a long history and this is evident by the presence of an ancient coral

stone mosque and a cemetery presumed to date more than 400 years (Figs 42 and 43) (Riyan 2011: 56). According to some oral traditions this was a mosque brought to the island from Male' after requesting for a mosque to the King.

Furthermore, as mentioned above, this research aimed to investigate field sites within a wide geographical spread thus, Veyvah was a good candidate being located in the far central region. Moreover, the island contained significant areas of undeveloped land as well.



Fig 41: Satellite map of M. Veyvah (Source: Department of National Planning 2009)





Fig 42: Ancient Friday Mosque in M. Veyvah (Photo by Anne Haour, February 2016)



Fig 43: Cemetery and carved tombstones in M. Veyvah Mosque (Photo by Anne Haour, February 2016)

### **3.3.4.2 Pottery analysis**

One of the major aims of this research was to study the pottery found in Maldives and to outline a pottery typology for the Maldives. These data were collected through excavations and these assemblages are the core data set used in the research. Here it is important to note that the Maldivians did not have clay occurring naturally in the country and there have been no evidence to the manufacture of pottery in Maldives and all evidence points to the fact that all pottery were imported to Maldives. Given the lack of data on archaeological pottery assemblages in the Maldives the primary aim of the present study was to provide a solid foundation for future studies offering a thorough descriptive account of the material uncovered. Therefore, the pottery study focused on ware type, vessel type, body parts and outer decorations in order to determine answers to questions occurring around them as to what kinds of vessels were imported, their functions, where they likely came from, when they were possibly used and who used them if able to obtain such information.

Moreover, the current research assemblage was also compared with the scarce published data on Maldivian pottery and other archaeological finds including the pre-Islamic assemblage study carried out by Heyerdahl (1986; Skjølsvold 1991), and Mikkelsen (2000) from the Maldives which was later analysed further by Litster (2016) and the Islamic pottery assemblage study carried out by Carswell (1976) in Male'. The assemblage was also compared with assemblages from regions that are evidenced to have traded with Maldives, most of the current evidence pointing to pottery coming from China and some from Sri Lanka and parts of India (Carswell 1976; Mikkelsen 1991: 185-201).

### **3.4 Conclusion**

This chapter followed the previous chapter and outlined the various archaeological work carried out on the Maldivian archaeology. As is evident, a majority of studies focus on the pre-Islamic sites and there is a lack of research on the Islamic sites. Moreover, as can be seen from above, there is a large gap between the time the last systematic research was done on the Maldivian archaeology and the present. Thus, the present research aimed to fill this gap and follow what has been done on the archaeology of the Maldives to conduct a more updated research focusing on the Islamic settlements.

The next chapter will detail the results of the sites excavated for the present research including details on excavation, stratigraphy, chronology and a brief comment on the faunal analysis.

## **Chapter 4: The excavations**

### **4.1 Introduction**

This chapter reports on archaeological test excavations conducted in the Maldives from January to March 2016. It includes details of how work was conducted as well as details of each unit: location, nature of the deposits excavated, and stratigraphy. It will also provide an interpretation for each unit with a final conclusion of the excavations at the end of the chapter. Details of pottery and small finds will be found in chapters 5 and 6.

Note that preliminary accounts of the excavation of the three sites have been published (Haour *et al* 2016; Jaufar 2017b) as well as an analysis of the shell assemblage from Unit N12 from Male' (Christie and Haour 2018).

#### **4.1.1 Attaining permission and securing collaboration**

Before conducting any work in the Maldives, research and work permits were attained through the Department of Heritage and relevant atoll/island councils were contacted for permission to carry out the work. In the case of Male', since it is the capital and the site to be excavated was a public park, permissions were attained from several relevant ministries. Prior to starting the work, in each island (with the exception of Male'), the first thing that was done was to meet the island council members to brief them about the team's purposes and aims to ensure smooth collaboration. In Male' these meetings were held with the heads of the Heritage Department. In addition, as certain analysis (such as pottery, small finds, fauna and chemical analysis) could not be carried out in the Maldives due to limited time and resources, most of the finds from the excavations were taken back to England for analysis. To this end, export permits were obtained from the Ministry of Finance in the Maldives.

#### **4.1.2 The team**

The excavation team consisted of myself, my supervisor Professor Anne Haour and the Post-Doctoral Researcher Dr Annalisa Christie. In addition, a local archaeology student, Ahmed Ikram was hired to assist the team in Utheemu and local islanders were hired to assist the team's work on each island. In the case of Male', which as a heavily urbanized context did not offer any available manual labour, an expatriate Bangladeshi worker and one of the local helpers from Utheemu were also hired together with occasional help from the staff of the Heritage

Department. In all sites, the team's work was closely supervised by the relevant island councils as well as the Heritage Department and all these authorities were updated regularly on the status of the work and consulted on any issues when necessary.

#### **4.1.3 The sites**

A total of three islands were identified for further study and excavation. In each case, a survey was first carried out in order to identify promising excavation sites likely to date to the Islamic period. This was done by carrying out surface surveys as well as consulting the locals and historical documents (if any) written on these islands. The work began at the island of Utheemu in Haa Alifu Atoll (northern region), followed by Male' in Kaafu Atoll (also the capital in the central region) and finally on the island of Veyvah in Meemu Atoll (far central region).

In the cases of Utheemu and Veyvah, since the team needed some guidance as to where possible sites were located, local informants (especially elders and knowledgeable people) were consulted as well as the council members. This helped us identify areas on the islands where archaeological remains had been reported. Having discovered potential areas on the islands, they were filtered according to the following conditions:

- Areas around or near mosques or cemeteries were avoided because of the risk of encountering burials which were not our focus and would complicate our work due to the complex ethical issues in terms of handling human remains after discovery.
- Areas with built structures on top were avoided given the likelihood of stratigraphic disturbances. This would also have complicated the process by requiring additional permits to remove parts of the building and additional time to carry out the removal. Furthermore, it was intended to recover a suitable assemblage of material culture in order to build a pottery typology.

In Male' things were done differently due to the limited areas available for research. The Sultan's Park (former palace) was the only archaeological site in Male' that was not developed and in which it was possible to excavate. Thus a map of the former palace (Maniku 1982) as well as notes from Carswell's work (Carswell 1976) were used as guides to locate potential areas for excavation in the park.

#### 4.1.4 Overall excavation methodology

For site identification, surface surveys were carried out by observing areas with the most abundant surface finds which were mostly pottery remains. Once sites were identified, necessary preparations were conducted to mark the area using nails and strings. For the first unit excavated (UTH 1601) excavation was carried out by 10cm spits whereas the rest of the units for all three sites were excavated by context. Also, as will be discussed below, test pits of various sizes were placed at various locations in both Utheemu and Veyvah while in Male', shovel test pits were carried out within the same area as this was the only available area for excavation. Levels were taken at the start of each excavation as well as after every spit/context and to mark the final depth. Trowels were used where possible, otherwise hoes were used while being careful and keeping an eye on finds within the soil. Deposits were removed from the unit using spades and dustpans and transported to the sieving area by buckets and wheelbarrows (done separately for each context). Deposits were sieved with either a 2mm or 1cm mesh, with the exception of units UTH 1601, VEY 1601 and VEY 1602 which were not sieved as the sieves were delayed in transit. For units in Utheemu and Veyvah the 2mm mesh was used, while for Male' finds were sieved through the 1cm mesh (except N12 where both meshes were used).

After sieving, all finds were bagged and labelled. Pottery, charcoal, shells/faunal remains, and small finds were bagged separately. For some deposits rich in organic remains, archaeobotanical samples were taken, in some cases the entire deposit was floated (this will be mentioned in the respective unit description). These samples have been sent for analysis and we are awaiting the results. Context sheets were completed for each context and field notes taken along the way as well as necessary photo documentation. For each unit, excavation continued until sterile sand (locally called *Dhonveli*- meaning white sand) was reached. In some rare cases it was not possible to reach sterile due to either limited time or encountering burials. Once completed, section drawings were made.<sup>1</sup> The Museum of London Archaeological Site Manual (MOLAS 1994: Section 3.2) was used as a guide for the details of stratigraphic conventions presented in this chapter.

Seven samples of charcoal (4 from Utheemu, 2 from Male' and 1 from Veyvah) were sent for radiocarbon dating and will be discussed below in the relevant unit description (Table 19).

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<sup>1</sup> Note that for some units, section drawings were not done on all four sides due to limited time. Also, some units consisted of sections resembling similar characteristics on all sides thus the most informative section was drawn. Also note that, for this chapter, the relevant Harris matrix will only be provided for nonlinear stratigraphies.

In this chapter, a brief report on the organic finds (shell and faunal analysis) will be presented and this was carried out by the team's postdoctoral researcher Dr. Annalisa Christie (for further details of this report see Appendix 2a-c).

## **4.2 Ha. Utheemu**

### **4.2.1 Introduction**

The island of Utheemu in Haa Alifu atoll was chosen for investigation for two reasons. Utheemu is documented as very important in the Maldivian history since it was the birth place and the residential island of Mohamed Thakurufaanu (*Boduthakurufaanu*) and his two brothers, who are remembered as heroes who defeated the Portuguese in AD 1573 (Bell 1883: 28; 1931: 87-90; Forbes 1981: 91; Maloney 2013: 123-124; Mohamed 2014a: 98-101). The island consists of several sites related to this family including their residential palace and a mosque, both said to date to the 16<sup>th</sup> century (Mohamed 2014a: 98-101). This palace is also claimed to be the oldest residential building still standing in the Maldives; it is carefully maintained and is open as a visitor attraction. Moreover, reports of a cowrie hoard and various artefacts (including stone features and pottery/glass vessels) (Ahmed 2017; Maldives Times 2017) recovered in the palace and during the development of a field nearby, located between the palace and the mosque in 2015, gave added reasons to investigate Utheemu.

#### **4.2.1.1 The sites**

Initially, it was planned to investigate the above mentioned football field due to its potential for recovering archaeological finds dating to the medieval period. However, upon visiting the island the locals informed us that the field was dug a year ago during the development, and the original occupation level was removed and spread on the surface while it was replaced with dredged sand from the lagoon. A quick test unit placed here (Unit 1) clearly demonstrated the archaeological layer had been disturbed and nearly destroyed. Our focus then turned towards locating other areas for potential undisturbed remains. According to the locals the western side of the island was where previous settlements were located and also where they usually recovered archaeological remains. This side of the island was also largely undeveloped and thus seemed to have the potential for preserving undisturbed remains. Thus a unit was placed in a mound behind the palace (Unit 2), one within the forest at the western end of the island (Unit 3) and two other units were placed inside the palace (units 4 and 5).

Unit 3 is not discussed in this chapter because it revealed the presence of architectural features consisting of shaped coral stone blocks. This unit could not be completed in the 2016 field season and the trench was backfilled for subsequent investigation.

#### **4.2.1.2 Previous research on the island**

Due to its significance as highlighted above and in previous chapters, this island has received much historical and architectural research on the royal family as well as the palace and other significant related sites; including the mosque and the cemetery (National Centre for Linguistic and Historical Research 2004; Mohamed 2014a: 98-101). However, very limited archaeological work has been done here, with the exception of the author's work on the excavation of a bathing tank (Jaufar 2012a; 2015b) as well as a brief surface survey of the open field in 2012 where some stone features were noted (Jaufar 2012a). This open field was also the location at which a number of chance finds of artefacts (including pottery, glass and a cowrie hoard) were subsequently made by the local community in 2015 (Ahmed 2017; Maldives Times 2017).

#### **4.2.1.3 Survey methodology**

Surface walking was the main method of site selection on this island. Frequent pottery and other find scatters, as well as the presence of some naturally occurring black coloured vegetal remains (locally called *guguri gui*) on the ground were used as indicators of where to excavate.

Four samples from Utheemu (1 from UTH 1604 and 3 from UTH 1605) were sent for dating and these will be discussed below.

### **4.2.2 Unit 1**

#### **4.2.2.1 The location**

This unit was placed in the football field which used to be an empty area (Fig 44). For the making of the field, the locals of the island dug the whole area (to about 80cm deep) and took out most of the original occupational level which was replaced by dredged sand brought from the lagoon which was the result of the dredging of the harbour. The removed sand (also the original occupational level) was spread on top of the dredged sand making it the surface layer resulting in frequent archaeological finds (mostly pottery and shells) on the surface throughout the field. To decide where to excavate in the field, the surface was investigated and an area was



selected where potsherds (including large diagnostics) were visible as well as shells, towards the inner side of the field further away from the road running in front of the field.



Fig 44: Location of Units 1601 and 1602 in Ha. Utheemu (Source: Adopted from Google map)

#### 4.2.2.2 Stratigraphy

This unit measured 0.75 x 0.75m and excavated to a depth of 0.9 m (1.05m below datum) (Figs 45 and 46). Contexts were not sieved but the spoil was carefully searched for any finds. This unit was excavated at intervals of 10cms and finds were bagged separately. Deposits from this unit were divided into 4 contexts and are described in more detail in Table 2. Note that this unit had a straight linear stratigraphy hence no Harris matrix will be provided for this unit.



Context	Description	Artefact Types
1	Surface sand; mid greyish brown medium sand, fine grained soft. Had natural inclusions of coral stone. Context throughout the unit.	Pottery, Shell, Bone, Glass
2	White coarse sand from lagoon, coarse grained loose. A sterile Context with lots of coral stone inclusions of random shapes and sizes. Context throughout the unit.	Shells, modern floor tile
3	Very shallow layer of dark brown medium sand, fine grained soft. Has very few coral inclusions (less than 5%). Context throughout the unit.	Pottery, Shell, Bone
4	Mid yellowish white medium sand fine grained and very soft. Sterile/natural sand. Context throughout the unit. End of excavation.	None

Table 2: Description of the contexts in UTH 1601

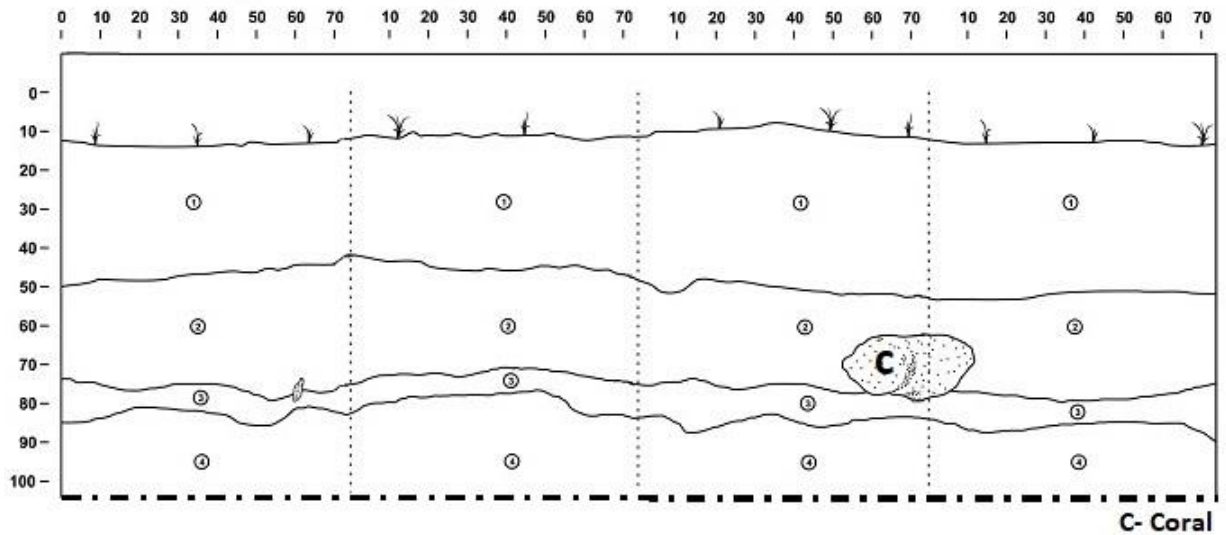


Fig 45: Stratigraphic sections at completion for all four sides of UTH 1601 (Left to right: west, north, east south) (Drawn by Anne Haour, Ahmed Ikram and Shiura Jaufar, digitised by Abdul Samad)



Fig 46: Finished sections of UTH 1601 (Photo by Anne Haour, January 2016)

### **4.2.2.3 Interpretation**

The first context included moderate finds on the surface and the soil colour became darker towards the bottom, this context was very disturbed. It seems this deposit is made up from the original archaeological level which was removed by the locals and taken out and placed over a layer of dredged sand (Context 2). The dredged sand that was brought from the lagoon was very coarse and constituted a sterile context with a lot of coral stone inclusions of random shapes and sizes and a piece of modern floor tile (SF 36). Context 3, the deposit beneath this, was the true archaeological level and contained fewer inclusions (less than 5%) with moderate finds including pottery shell and bones. Below this lay the sterile/natural sand locally known as *Dhonveli* (Context 4) and excavation for this unit ended here.

## **4.2.3 Unit 2**

### **4.2.3.1 The location**

This unit was placed on a mound behind the Utheemu Palace (Figs 44 and 49). This location was chosen for three reasons:

- It was positioned on a line between the palace and the sea which was hypothesised as likely to have been an area of increased artefact loss in the past.
- Stones appeared on the surface which may have indicated past structures.
- The site was a mound with a slight elevation - possibly indicative of a build-up of archaeological material.

### **4.2.3.2 Stratigraphy**

This unit measured 1 x 1m and was excavated to a depth of about 0.65m (Fig 47). Deposits from this unit were divided into 4 contexts described in more detail in Table 3. As all four sides of this unit contained similar features and the stratigraphy is rather simple, only the most informative side was drawn.

Context	Description	Artefact Types
1	Top layer; greyish soil medium sand and fine grained soft. Deposit had lots of roots including some very thick ones as well as some naturally occurring stones and shells (bivalves). Deposit mostly concentrated at the southern side of the unit.	Pottery, Shell, Bone
2	White sand very fine and fine grained soft. Deposit contained few roots but very small. Deposit only recovered at the northern side of the unit together with context 1. Sterile beach sand, very soft.	None
3	Dark brown soil in a discrete patch in NE corner.	Pottery, Shell
4	Cut of fill 3, irregular in shape.	None

Table 3: Description of the contexts in UTH 1602

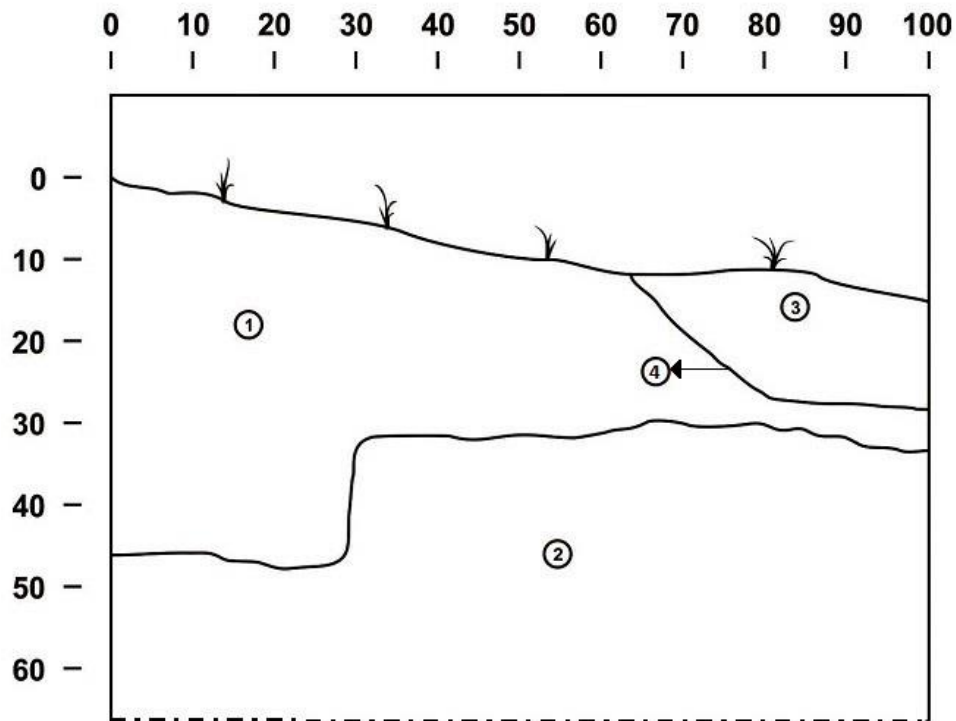


Fig 47: South facing section of UTH 1602 (Drawn by Shiura Jaufar, digitised by Abdul Samad)

#### 4.2.3.3 Interpretation

This was a very unproductive unit with very few finds and excavation ended upon reaching sterile at a depth of about 65cm. The top layer consisted of two deposits (contexts 1 and 3). Context 1 was mostly concentrated at the southern side of the unit. This context included moderate finds (supposed anthropogenic layer) as well as some non-anthropogenic shells (bivalves) and stones. The deposit below, Context 2, appeared only at the northern side of the unit and consisted of very soft, fine and loose sand. This deposit went deeper (to about 65cm

below) into the unit and excavation was stopped as a result of the lack of any finds. This did not yield any finds and was sterile. While clearing the sections for the drawing, a difference in soil was noticed at the NE corner with a dark brown soil in a discrete patch. This was noted on the section drawing labelled as Context 3 and is thought to relate to stone blocks at the NE corner of the unit. See Fig 48 for Harris matrix for this unit.

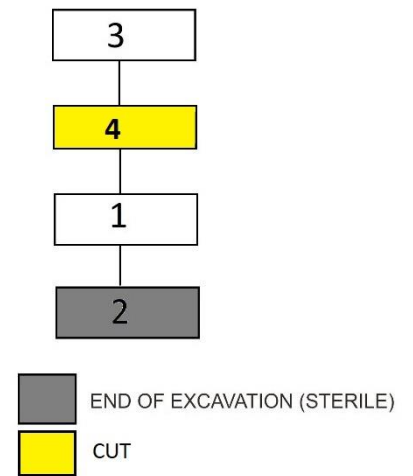


Fig 48: Harris matrix for UTH 1602 (Source: Shiura Jaufar)



Fig 49: UTH 1602 during excavation (Photo by Anne Haour, January 2016)

## 4.2.4 Unit 4

### 4.2.4.1 The location

This unit was placed inside the palace next to the north entrance (Fig 50). Excavation of this unit was due to the report of large quantities of cowries recovered in similar locations adjacent to the northeast and south gates when the locals had dug for an electric cable to be laid (Christie and Haour 2018). It was hoped that a similar cache would be found in this unit enabling us to systematically evaluate the burial conditions of such hoards.

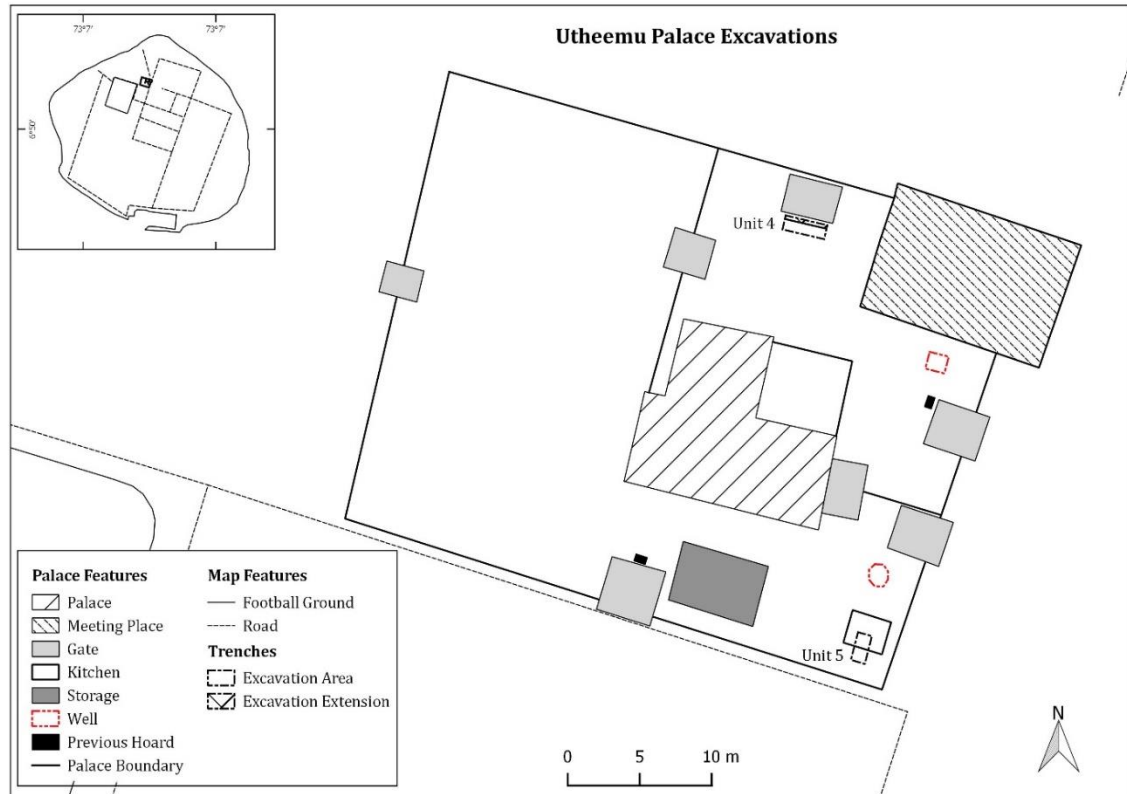


Fig 50: Units 1604 and 1605 inside Utheemu Palace; Inset: position of palace on Utheemu island (Source: Annalisa Christie)

### 4.2.4.2 Stratigraphy

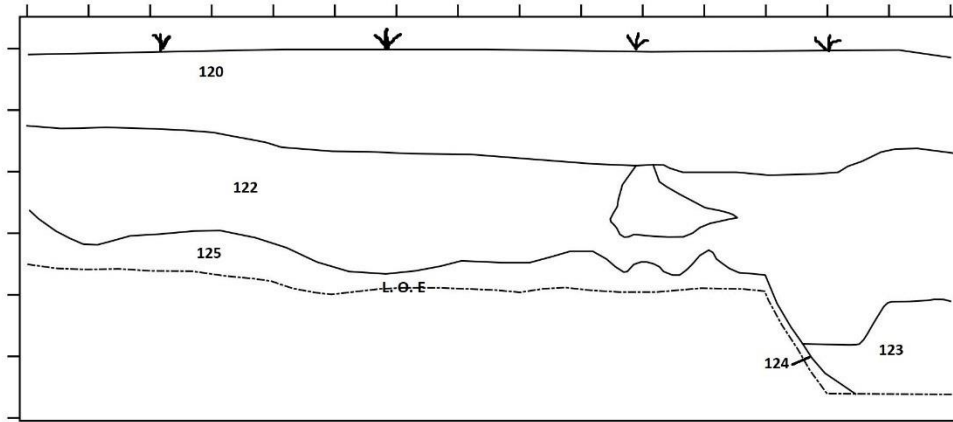
This was initially a 0.75 x 3m unit subsequently extended to 1 x 3m. The extension was placed at the northern side of the unit. This unit was stratigraphically very complex and was excavated to varying depths (see section drawings below) to about 2.79m<sup>3</sup> in total (see Figs 51, 53 and Table 18). Deposits from this unit were divided into 25 contexts described in more detail in Table 4.

<b>Context</b>	<b>Description</b>	<b>Artefact Types</b>
<b>100</b>	Top layer of sand of light yellowish white coarse soil with loose coarse grained sediment. Deposit contains occasional coral fragments and is probably contemporary. Near sterile layer with very few finds. Contexts below: 102, 106 and 120.	Pottery, Shell
<b>101</b>	Mid brownish grey compacted medium sand with fine grained friable sediment. Deposit very compact about 1-2mm thick. Possible compacted floor level. Contexts above: 100, 102 and 104. Contexts below: 103.	Pottery, Shell
<b>102</b>	Mid greyish brown sand, medium coarse sand with frequent small to medium coral inclusions. Deposit is approximately 30-35cm deep. Fill of cut 104. Archaeobotanical sampling taken. Contexts above: 100. Contexts below: 104. Radiocarbon date: 450+/- BP (AD 1420-1465) (Beta 438192).	Pottery, Shell, Bone, Metal, Glass, Charcoal
<b>103</b>	Deposit associated with 107 and 109. Contexts above: 101. Contexts below: 113, 115 and 117.	Pottery, Metal, Shell, Bone
<b>104</b>	Cut of the fill 102 and extends E-W. Cut goes across the trench going beyond the limit of excavation. Gradual slope, concave and truncated by 105 (cut) and 106 (fill of 105). Contexts above: 102. Contexts below: 101.	
<b>105</b>	Cut of the fill 106 and extends N-S. Sharp cut especially to the north of 104 and 102 and truncating 104 (cut). Contexts above: 106. Contexts below: 107.	
<b>106</b>	Mid greyish brown sand. Fill of cut 105. Contexts above: 100. Contexts below: 105.	Pottery, Shell, Bone
<b>107</b>	Mid brownish grey coarse sand with some non-anthropogenic inclusions likely the same as 103 and 109.	Pottery, Shell, Bone
<b>108</b>	Mid greyish brown coarse sand with frequent shell and coral inclusions (15%). Loose coarse grained sediment. Archaeological samples taken. Deposit associated with 110. Contexts above: 107. Contexts below: 119.	Pottery, Shell, Bone
<b>109</b>	Same as 107 in all regards. Contexts above: 105. Contexts below: 110.	Pottery, Shell, Bone
<b>110</b>	Same as 108 in all regards. Archaeobotanical sampling taken. Associated with 108. Contexts above: 109. Contexts below: 119.	Pottery, Shell, Bone
<b>111</b>	Mid greyish brown coarse medium sand with 60-70% coral and shell inclusions with loose coarse compaction. Deposit cut by 112, 114 and 116. Archaeobotanical sampling taken. Contexts above: 112, 114 and 116. Contexts below: 118.	Pottery, Shell, Bone

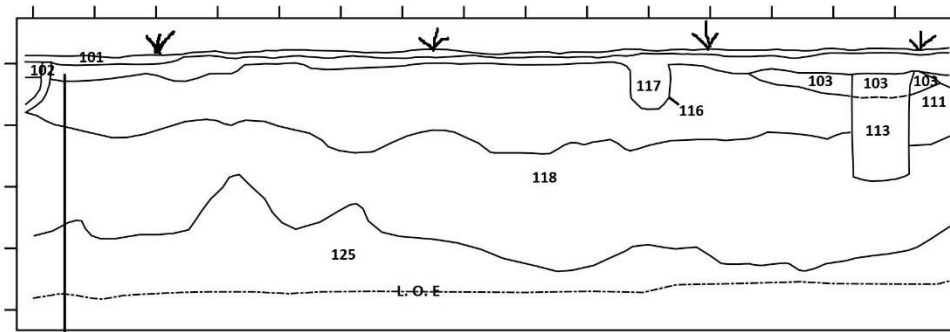
<b>112</b>	Cut of fill 113. A 38cm deep circular cut through context 111 and sharp at top, non-perceptible at base and concave at base.	
<b>113</b>	Light whitish grey medium sand coarse grained loose. Deposit is 38cm deep and 20cm at the top. Fill of cut 112. Contexts above: 103. Contexts below: 112.	Pottery
<b>114</b>	Cut of fill 115. A shallow cut of 13cm deep. Concave cut with sharp edge. Contexts above: 115. Contexts below: 111.	
<b>115</b>	Mid greyish white medium sand, coarse loose compaction. Some non-anthropogenic stone and coral non anthropogenic inclusions. Fill for cut 114 truncated by cut 104. Deposit is 13cm deep 8cm at base. Contexts above: 103. Contexts below: 114.	Pottery
<b>116</b>	Cut of fill 117 truncated by edge of trench. Cut is gradual at the top and concave and non-perceptible at base. Context above: 117. Context below: 111.	
<b>117</b>	Mid light grey medium sand with loose coarse sediment. Deposit has some small natural coral inclusions. Very shallow fill of cut 116, 4cm deep and 16cm wide at top. Truncated by southern side of the trench. Context above: 103. Context below: 116.	Metal, Shell, Bone
<b>118</b>	Mid greyish brown medium sand, fine grained soft. Charcoal at various several small patches. Occasional roots as well as natural stones. Context above: 111. Context below: 119.	Pottery, Shell, Bone, Metal, Glass, Charcoal
<b>119</b>	Mixed layer from section cleaning. Context above: 1108, 110 and 118. Context below: 122.	Pottery, Shell, Bone
<b>120</b>	Gritty mid brown layer. Associated with 102. Context above: 100. Context below: 121.	Pottery, Glass, Lime plaster, Shell, Bone
<b>121</b>	Cut of fill 120. Context above: 120. Context below: 122.	
<b>122</b>	Continuation of context 118. Context above: 119 and 121. Context below: 125. Very rich in archaeological material.	Pottery, Metal, Shell, Bone, Stone
<b>123</b>	Greyish brown fine sand. Fill of cut 124. Context above: 125.	Pottery, Shell, Bone
<b>124</b>	Cut for fill 123. Context above: 123.	
<b>125</b>	End of excavation. Sterile sand. Context above: 122.	

Table 4: Description of the contexts in UTH 1604



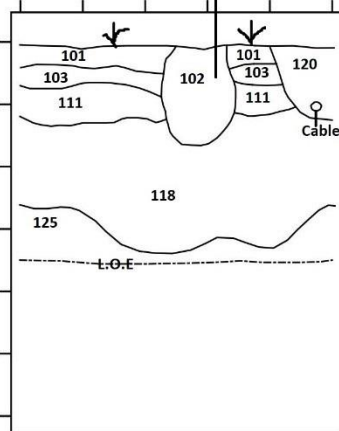


Section facing south - At end of second session



Section facing north - At end of second session

UTH 1604  
 450 BP (Beta 438192)  
 1420-1465 AD



Section facing east - At end of second session

Fig 51: Finished sections of UTH 1604 (Source: Annalisa Christie)

#### 4.2.4.3 Interpretation

Six features were uncovered for this unit. A linear cut (104) was initially thought to have been intended for a modern cable which bisected the unit from east to west. The purpose of this cut is unclear however, since carbon dating results from the fill of this cut (102) indicate this was a rather early deposit. It could possibly be that the workers laying the modern cable simply refilled the cut with soil taken from an older deposit. A second linear cut (121) in which the modern cable was actually located was subsequently identified. Three pits (106, 113 and 117) were recovered from this unit of varying depth which were filled with sterile white sand. Ethnographic data from the islands suggest these might represent putrefaction pits for cowrie shells. A final pit (124) cut the sterile layer (125) but it was not possible to fully excavate the fill (123) of this feature within the time constraints of the excavation, but it is unlikely that it extended much deeper.

Archaeological remains including pottery, bone and shell were recovered in most contexts, with a high number of *Monetaria moneta* (264) found in deeper contexts in the centre of the trench. Despite the numbers of cowries recovered, they remain too few and too disparately distributed to be considered a hoard. Other finds include glass (SF 9, 11a-c) and several metal fragments, including a broken bolt (SF 6a-d) and nails (10a-b) as well as two fragments of lime plaster (SF 12a-b) and two possible foreign stones (SF 14ab). See Fig 52 for the Harris matrix of this unit.

Charcoal from context 102 from this unit was dated to sometime between AD 1420-1465 (Beta 438192). This pre-dates the existence of the palace which is said to be from the 16<sup>th</sup> century.

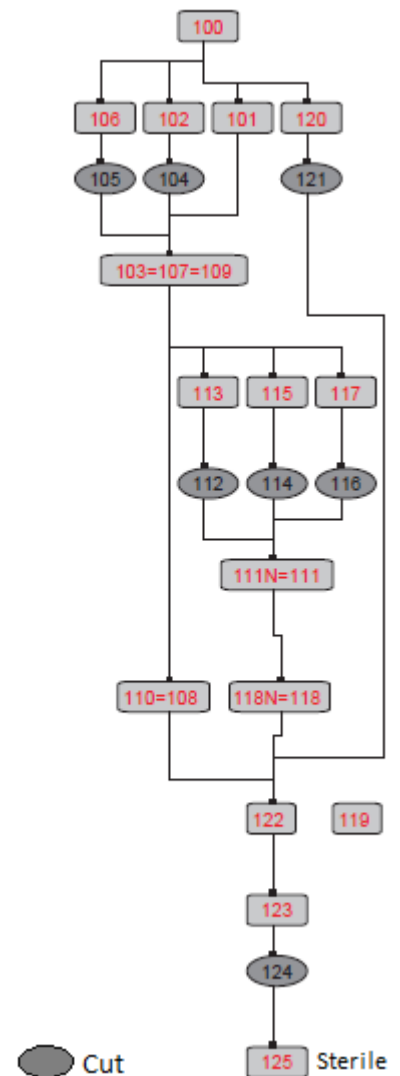


Fig 52: Harris Matrix for UTH 1604 (Source: Annalisa Christie)

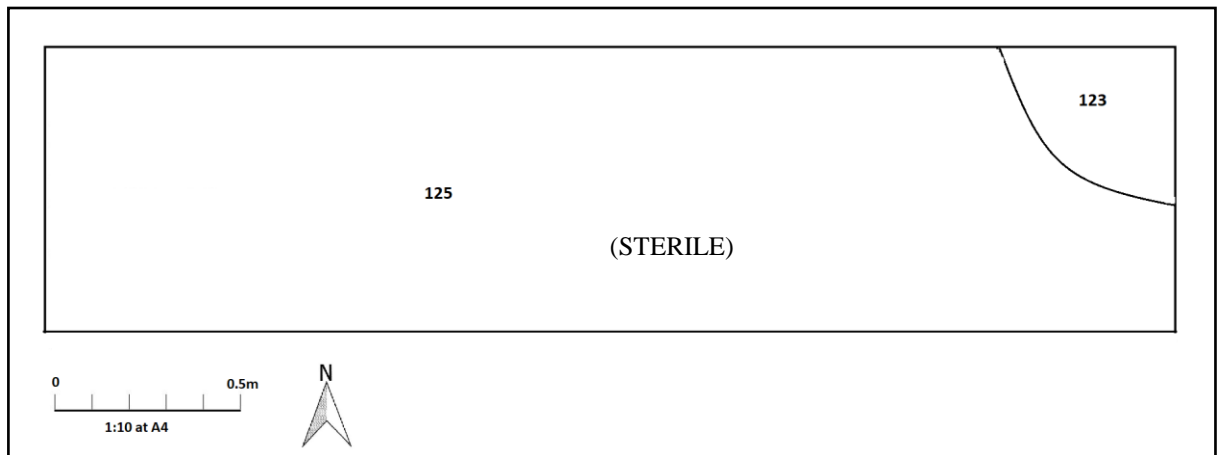


Fig 53: Plan of UTH 1604 upon completion, showing contexts dug to two different depths, Context 125 at 0.90m and Context 123 at 140m (Source: Drawn by Annalisa Christie, digitised by Shiura Jaufar)

## 4.2.5 Unit 5

### 4.2.5.1 The location

Unit 5 was placed within the alleged kitchen within the women's quarter inside the palace (Figs 50, 55 and 57). A quadrangular structure stood here which was said to be constructed a century ago according to the locals as a later addition to mark the kitchen area. Thus this unit was placed bisecting the southern wall of the structure.

### 4.2.5.2 Stratigraphy

This was a 1 x 2m unit and excavated to a depth of about 1.17m. Forty contexts were identified and are described in more detail in Table 5. The excavation of this unit was greatly complicated by the fact that a wall (Context 209) cut across the unit. Thus, contexts in this unit were divided into three different quadrants (north of the wall 201, in between wall 201 and 209 and south of wall 209) (see Figs 55 and 57). Due to time constraints sections could not be drawn for this unit.

<b>Context</b>	<b>Description</b>	<b>Artefact Types</b>
<b>200</b>	Surface deposit at both the northern and southern quadrant of the wall (201) marked kitchen. White coarse sand with lots of coral and shell inclusions of about 1cm deep. Contexts below: 202 and 203.	None
<b>201</b>	A rectangular grey plastered sandstone wall placed to mark the kitchen area of the palace.	None
<b>202</b>	Brownish coarse and gritty sand with a lot of coral and shell inclusions at the northern quadrant of the wall 201. Gravelly deposit. Contexts above: 200. Context below: 206.	Pottery, Metal, Shell, Bone
<b>203</b>	Light greyish coarse gritty deposit with coarse grained loose sand at the southern quadrant of the wall 201. Lots of coral and shell inclusions. Gravelly deposit as well but less gravelly and coarse and lighter in colour than context 202. Context above: 200. Context below: 204.	Pottery, Metal, Modern roof tiles, Shell
<b>204</b>	Dark brown fine grained soft deposit at the southern quadrant of the wall 201. Deposit divided when a further wall was encountered almost in the middle of this quadrant. Thus, all deposit north of this new wall was labelled as context 204 and a new context was given to deposit south of the new wall. Context above: 203. Contexts below: 209 and 211.	Pottery, Metal, Shell, Bone
<b>205</b>	Cut of the wall 201 from the southern quadrant. Cut not visible and clear. Associated with 207. Context above: 201.	None
<b>206</b>	Dark brown fine grained soft sand at the northern quadrant of the wall 201. Deposit very wet and soft. Had few small roots. Context above: 202. Contexts below: 212.	Pottery, Metal, Shell
<b>207</b>	Cut of the wall 201 at the northern quadrant of the wall 201. Associated with 205. Context above 201.	None
<b>208</b>	Cut of the wall 209 at the northern side. Cut not visible or clear. Associated with 210. Context above: 209. Context below: 2.	None
<b>209</b>	A sandstone rectangular wall, brownish grey in colour. Running almost parallel to wall 201 and extends from the east and west side of the unit. There are three stones visible and one is shaped. Context above: 204. Contexts below: 208 and 210.	None
<b>210</b>	Cut of the wall 209 at the southern side. Cut not visible or clear. Associated with 208. Context above: 209.	None

<b>211</b>	Light greyish brown fine grained loose sand. Very wet deposit. Context created after recovering the second wall 209 thus this deposit lies at the southern side of the wall 209. Context above: 204.	Pottery, Shell, Bone
<b>212</b>	Dark brown fine grained soft deposit. Very wet and contained lots of charcoal deposits especially at the NE corner. Deposit also contains plastered sandstone fragments of medium size. Context above: 206. Contexts below: 215 and 216. Context belongs to the northern quadrant of the wall 201.	Pottery, Metal, Lime plaster, Shell, Bone
<b>213</b>	Lime plastering of wall 201 visible at the southern side. Context above: 201. Context below: 214.	None
<b>214</b>	Light brownish fine sand recovered north of the wall 209. Lime plaster of wall 201 visible on the surface of this deposit. Contexts above: 204 and 213.	Pottery, Plaster, Metal, Glass, Shell, Bone
<b>215</b>	Very dark almost blackish brown very hard, compact and somewhat wet sand of about half a cm deep. A burnt floor possibly a kitchen floor located roughly half of the northern quadrant at the northern side while the other half of the unit is not burnt and labelled context 216. Lots of charcoal fragments especially concentrated at the NE corner. Contexts above: 212. Contexts below: Context belongs to the northern quadrant of the wall 201. 70 +/- 30 BP (AD 1690-present) (Beta 438868).	Pottery, Charcoal, Stone with metal
<b>216</b>	Fine brown deposit with fine grained loose sand. Located roughly half of the northern quadrant at the southern side while the other half of the unit is the burnt floor 215. Small stone and plaster fragments and a lot of charcoal within the deposit. Contexts above: 212. Contexts below: 219 and 221. Context belongs to the northern quadrant of the wall 201.	Pottery, Charcoal, Metal, Plaster, Bone
<b>217</b>	Mid brown fine layer with a lot of stone inclusions. A shallow lens of different sand (221) appears within this context. Contexts above: 219 and 221. Context belongs to the northern quadrant of the wall 201.	Pottery, Stones, Modern roof tile, Shell, Bone

<b>218</b>	Layer of fine light grey soil underneath 215 with a lot of charcoal patches.	Charcoal, Metal
<b>219</b>	A second possible burnt floor below 223. Similar in texture to 215. Context belongs to the northern quadrant of the wall 201.	Pottery, Shell, Bone
<b>220</b>	Two shallow ashy layers at the eastern side of the northern quadrant of the wall 201. Charcoal deposits between these two layers that belongs to 223. 150 +/- 30 BP (AD 1665- present) (Beta 438869). A possible hearth?	Pottery, Shell, Bone, Roof tile
<b>221</b>	A light whitish lens/patch of fine sand with some roots appearing within 217. Very shallow lens.	Metal
<b>222</b>	A circular shallow ashy layer at the northern corner of the old wall (209) which was located below 214. Layer on top of 225 and cuts it. Many charcoal and ash in it. Context belongs to the northern side of the wall 209.	Pottery
<b>223</b>	Dark brown fine sand, very moist and very hard and compact layer with charcoal concentrated at the eastern side of the unit between two ashy lenses (220). Context belongs to the northern quadrant of the wall 201.	Modern roof tile, Metal
<b>224</b>	Another ashy layer found below 220 and 223 at the eastern side of the unit but it is thought to be the same context as no difference from 220. Many charcoal patches and very clayey. Context belongs to the northern quadrant of the wall 201.	Pottery, Shell, Bone
<b>225</b>	Light brown layer recovered from the northern quadrant of wall 209 and located roughly half of the unit between the two walls (201 and 209) while the ashy layer 222 lies south of this deposit and 226 at the western half of the unit.	Pottery, Shell, Bone
<b>226</b>	Similar to 225 but different in colour more dark brownish. Lies between the two walls (201 and 209). Layer only appears at half of the unit at the western side.	Pottery, Shell, Bone
<b>227</b>	Same as 227 but lies at the southern quadrant of wall 209 and only occurs at the western corner near 209.	Pottery, Shell, Bone
<b>228</b>	Same as 226 but more moist. Also located next to 209 at the southern quadrant of the wall 209 at the eastern corner next to the wall 209.	Pottery, Shell, Bone
<b>229</b>	Light brown in colour and finer sand. Located at the southern side of 209 with 227 and 228 near the wall 209. Overlies the fill of the grave. 820 +/- 30 BP (AD 1165-1265) (Beta 438870).	Pottery, Shell, Bone
<b>230</b>	Cut of pit 222, circular and not so clear within the soil. Lies right next to the wall 209.	None

<b>231</b>	Cut of fill 228, not clear within the soil.	None
<b>232</b>	Cut of 227, not clear within the soil.	None
<b>233</b>	An ashy layer of sand which was exposed under the wall 209 after it collapsed. Very moist and very dark in colour and very clayey almost impossible to sieve.	Pottery, Shell, Bone
<b>234</b>	A finer layer of light brown soil located under 233.	Pottery, Shell, Bone
<b>235</b>	Grave cut, elongated in shape.	None
<b>236</b>	Fill of the grave. Darker brown soil and lies in between white sand (237) and underlying 229 at the southern quadrant of the wall 201 and at the northern quadrant of the wall it lies on top of 225 and 226.	Pottery, Shell, Bone
<b>237</b>	Very fine almost looking like sterile white sand discovered under 229 at the south side of the wall 209. This white sand appears both at the western and eastern sides of the southern quadrant of the wall 201 and overlies the fill of the grave (236). It also appears at the northern quadrant of the wall at the northern corner going around the fill of the grave.	None
<b>238</b>	A dark brown layer lying at the southeastern corner (next to the wall 201) at the northern quadrant of the wall 201. Somewhat lies next to the fill of the grave as well as 237.	Pottery, Shell, Bone
<b>239</b>	A strip of rectangular shaped lens of light brown fine sand located within 237 next to the fill of the grave at the western side of the northern quadrant of the wall 201.	Pottery
<b>240</b>	Grave - female skeleton placed in a north-south direction facing west.	

Table 5: Description of the contexts in UTH 1605



### 4.2.5.3 Interpretation

As mentioned, this unit was positioned in order to bisect a wall visible at the surface (Wall 201, see Figs 54-57). This unit recovered several remarkable features including a second wall (209) a little lower than the existing wall. This wall is made of sandstone and lower than, and running parallel to wall 201 (Figs 55-57). It is assumed according to the locals that this is the original foundation of the kitchen. At the northern quarter of the unit two burnt floors (215 and 219) and a possible hearth (220) were identified. Numerous charcoal and ash deposits were also recovered throughout this unit. The most remarkable feature was the unexpected recovery of a burial (240) encountered at about 1m deep. Its position was consistent with an Islamic burial lying N-S and facing west (Fig 55). The pelvic area of the skeleton was not visible as it lay beneath wall 201 and thus the sand beneath this wall could not be excavated. It was highly unexpected to find a grave within the palace. According to local informants, human burials had been encountered during construction of a mosque on an adjacent plot. Therefore, it seems likely that a cemetery once extended towards the palace. Upon the recovery of the burial, the relevant authorities were informed and excavation was terminated. Frequent amounts of pottery, bone, shell and many metal fragments, including a nail (SF 34) were recovered from this unit. Fragments of stone (SF 25a-c and 27a-d), a broken piece of plaster (21a-d), several modern roof tile fragments (SF 17a-b, 28a-I, 31, 39) and two glass fragments (SF 24a-b) were also among the finds within this unit.

Three of the charcoal samples from this unit were sent for radiocarbon dating (Table 19). The oldest of the three samples comes from context 229 (right above the fill of the grave) which is dated to sometime between AD 1165-1265 (Beta 438870). The other two dates are younger, and after calibration fall anytime between AD 1665 and the present (Beta 438868 and 438869). They are from 215 (the first burnt floor) and from 220 (the hearth) which lay below 216.

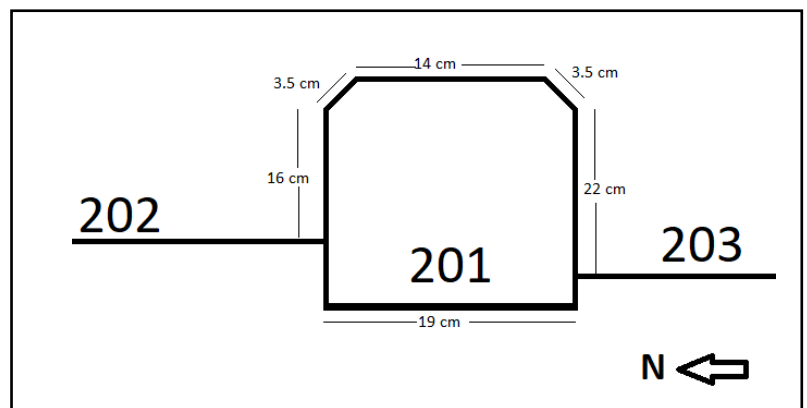


Fig 54: Dimensions of the modern wall (Context 201) (Source: Shiura Jaufar)

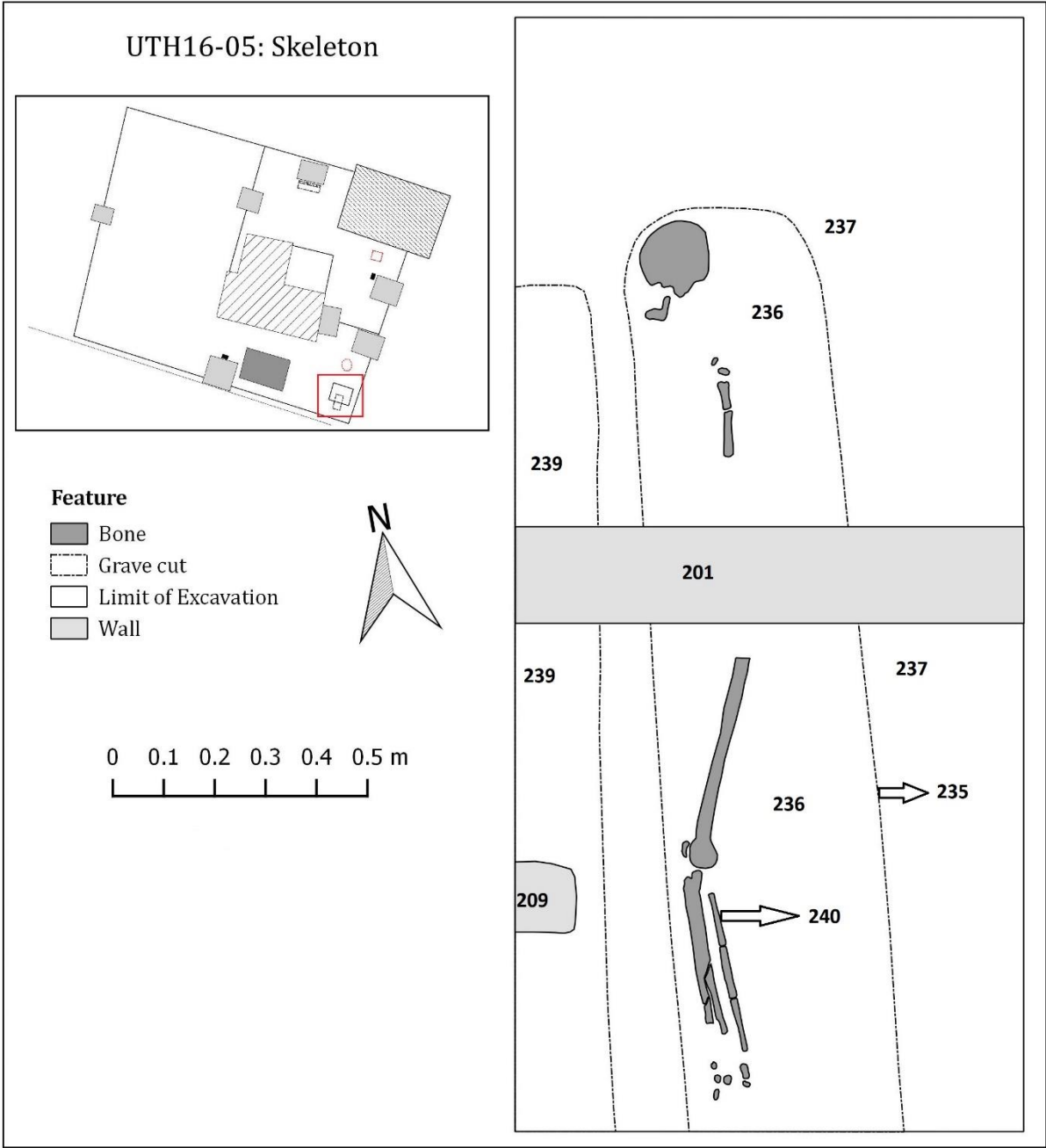


Fig 55: Plan of the burial in Unit 1605, Inset: Location of Unit 05 (marked inside a square) inside the palace (Source: Annalisa Christie)

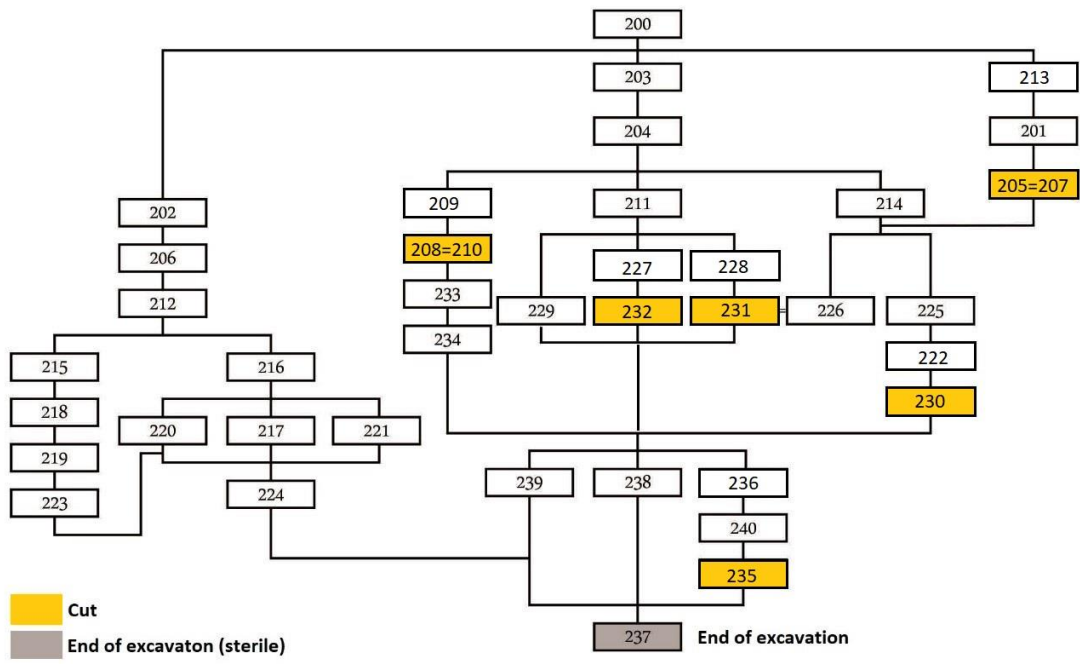


Fig 56: Harris matrix for UTH 1605 (Designed by Shiura Jaufar, digitised by Abdul Samad)



Fig 57: Walls 201 and 209 of UTH 1605 during excavation (Source: Shiura Jaufar)

#### **4.2.6 Overall interpretation of sites excavated in Ha. Utheemu**

The four trenches excavated in Utheemu yielded a variety of stratigraphical results and material finds. Two trenches in Utheemu (UTH 1604 and 1605) seemed to have a connection with members of the elite at first glance, being located within the palace while the other two units did not have a known connection with elites. It is interpreted here that the reason for the variety and rich quantity of finds (both fauna and other material culture) from UTH 1604 and 1605 represented sites of active occupation of elite nature with some modern disturbance in Unit 4 and possible pre-elite occupation at the earlier phases in Unit 5. Furthermore, the lack of finds from UTH 1602 could perhaps be due to the location of the site being possibly less used with less occupation in this area. Unit 4 also represented an area of importance due to the recovery of cowrie hoards by the locals in the past. In addition, the presence of a comparative abundance of fauna and ash deposits in Unit 5 supported the suggested function of the area being used as a kitchen. The presence of a burial at a deeper level in this unit suggests the presence of a cemetery during an earlier phase of occupation, presumably prior to the existence of the palace as it is not an Islamic practice for burials to be placed within houses. Unit 2 on the other hand is likely to have represented an area likely to be inactive or less used in the past, or it could have been heavily used (for example as a road), but did not lead to a great number of finds. The lack of finds from this unit as well as the simple, plain stratigraphy may also be due to the unit being located closer to the sea. UTH 1601, located in the present-day football field, seems to represent a different picture. Based on the amount of material culture (especially an abundance of pottery), it is likely that UTH 1601 represents an important area of active occupation in the past. It is difficult to be conclusive on this point, given the high degree of recent disturbance. Our informants suggest that the entire area of the present-day football field was reworked a few years ago. They were clear, however, that soil had not been brought in from elsewhere, and we can therefore be confident that the remains encountered in Unit 1 give a sense of the nature of this part of the island, especially once we take into account previous reports of a variety of finds (including cowrie hoards, pottery and glass finds) from the vicinity, confirming the idea that this area was intensively occupied in the past. Therefore, Unit 1 is likely to represent a possible domestic habitation.

## **4.3 K. Male'**

### **4.3.1 Introduction**

The island of Male' is the capital of the country. As mentioned above, our method of locating sites was limited here since this is one of the world's most densely populated islands and so there were very limited undisturbed areas for study. Thus the Sultan's park was chosen as this is one of the only remaining open spaces in Male' with the potential for recovering undisturbed remains.

#### **4.3.1.1 The site**

The Sultan's park is a part of the former royal palace grounds which was built in the 16<sup>th</sup> century (Maniku 1982). According to information collected from historical sources (including historical maps and photographs) about the palace (Bell 1921; Maniku 1982), within this park once stood many buildings of the royal palace structure including several rooms as well as two bathing tanks (Fig 33). However, most of the royal palace was demolished during the late 20<sup>th</sup> century with the exception of one three storey building locally known as *Usgekolhu* (Fig 34), which has been an addition to the royal palace grounds at the beginning of the 20<sup>th</sup> century (Maniku 1982; Riyan 2011: 54). Thus, the gardens (Sultan Park) became a public park and now only the three storey building *Usgekolhu* and the massive iron gate at the entrance speak of its former glory.

#### **4.3.1.2 Previous research in the park**

Carswell carried out test excavations in the park during his visit to the Maldives in 1974 (Carswell 1976). Two 2 x 1m test pits were excavated inside and outside the line of the palace walls (inferred by reference to a 1921 map by HCP Bell) and the water table was reached at 1m below the surface. According to Carswell (1976: 144), this resulted in "limited stratigraphic evidence and a few sherds". This material is now housed in Oxford at the Ashmolean Museum and discussed further in Chapter 5.

#### **4.3.1.3 Survey methodology**

Prior to excavation, the team had to select an area on the park for excavation. Therefore, using Carswell's work as a guide as well as the old map of the palace (Maniku 1982), two perpendicular lines (towards north and east) were set out on an area adjacent to the standing

structure *Usgekolhu*. A total of seven 0.5 x 0.5m shovel test pits were excavated along the lines (Figs 58 and 59). This method was used in order to give as extensive a picture as possible of the buried remains given the very limited area available for excavation. Although all of the seven units resulted in some productive information, one unit (N12) stood out as exceptional with the most number of finds, hence it was expanded to a 1 x 1m unit. Archaeobotanical sampling and flotation was carried out on some contexts of Unit E14 and N12, due to the presence of charcoal and an increasing number of other archaeological finds. These were conducted in the Maldives and finds were analysed by Dr. Annalisa Christie in the UK, and the results of the analysis will be presented in the section below in the faunal report (see Appendix 2a-c). Two samples from this park were sent for dating (E14 and N2) which will also be discussed below. Below will be presented a detailed description of each unit with an interpretation for each at the end.

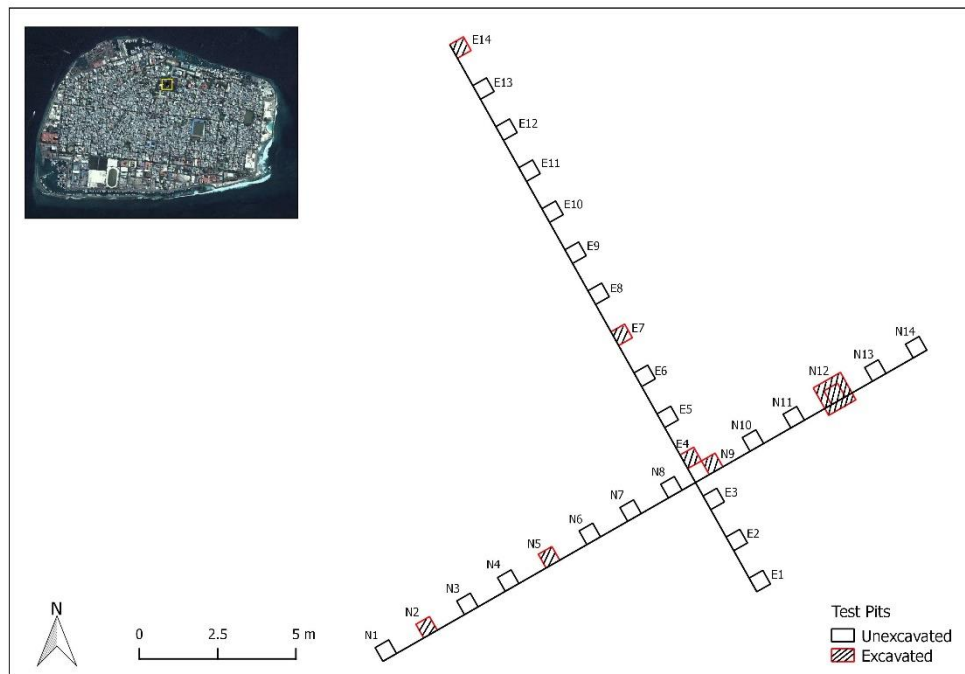


Fig 58: Plan of shovel test pits placed in Sultan's park, Inset: Male Island, with the Sultan's park marked by a square (Source: Annalisa Christie)





Fig 59: Units E4, N9 and N12 during excavation (from right to left) (Photo by Anne Haour, February 2016)

## **4.3.2 Unit E4**

### **4.3.2.1 The location**

Fourth unit along the eastern line.

### **4.3.2.2 Stratigraphy**

This unit was excavated to a depth of about 0.8m (Fig 60) and the deposits were divided into 6 contexts described in more detail in Table 6. Only one section is drawn for this unit as all four sections were similar.



<b>Context</b>	<b>Description</b>	<b>Artefact Types</b>
<b>1</b>	Light whitish grey compact deposit overlaying white beach sand (modern deposit) which is treated as single context. Medium coarse sand with a coarse grained loose compaction. The white sand had 60% coral and shell inclusions (non-anthropogenic). Context throughout the unit.	Modern Debris, Shell
<b>2</b>	Mid dark grey medium deposit with coarse grained compact loose soil. Straight horizontal interface between contexts 1 and 2. Context throughout the unit.	Pottery, Shell, Modern Debris
<b>3</b>	Mid brown medium coarse deposit with a coarse loose compaction. Deposit contains several beach coral and shell inclusions. An electrical cable was encountered at the base of the context. A lot of roots in this context. Context throughout the unit.	Pottery, Shell, Metal, Bone
<b>4</b>	Mid greyish brown coarse deposit with poorly sorted coral inclusions and large pebbles. Very coarsely compacted. Context throughout the unit.	Pottery, Shell, Stone, Metal, Bone
<b>5</b>	Mid brown medium coarse loose sand but quite wet. Gets increasingly damp with depth. White gritty inclusions within the deposit. Context throughout the unit.	Pottery, Shell, Bone, Glass, Bracelet, Metal
<b>6</b>	Not excavated, presumed sterile and close to water table. Limit of excavation. Very moist and shapes into a ball. Context throughout the unit.	None

Table 6: Description of the contexts in MAL E4

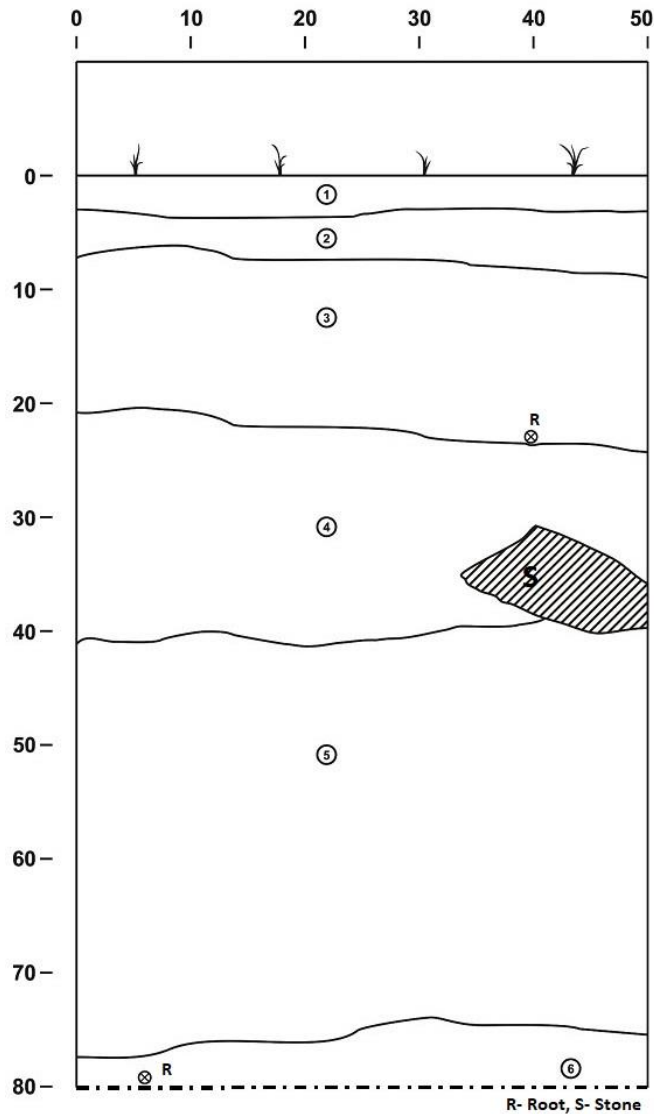


Fig 60: East facing section of E4 (Drawn by Annalisa Christie, digitised by Abdul Samad)

#### 4.3.2.3 Interpretation

The stratigraphy of this unit was very simple with some archaeological finds. The surface deposit was very compact due to trampling and very coarse white beach sand appearing just after breaking ground. This context included some modern debris and no archaeological finds. There appeared a rather straight horizontal interface between this and the next context (2). Context 2, unlike Context 1, included archaeological remains (although very few) along with the modern debris such as 1 glass toy marble, 1 possibly D battery end, 1 spherical plastic bead and various likely sweet wrappers. The following context (3) was very rooty and seems to have been disturbed as an electric cable was encountered at the base of the context. Context 3 featured more frequent archaeological finds including pottery and shell (mostly *Monetaria moneta* and

a few bivalves). Underneath this lay a very coarse deposit (4) with poorly sorted coral inclusions as well as several large pebbles. This deposit was difficult to excavate with a trowel and featured fewer archaeological materials. Several large stones were recovered in the section and in the deposit. The next context underneath (5) was quite wet and became increasingly damp with depth. This deposit featured the most abundant archaeological remains (including a bracelet SF 45 and two glass fragments SF 43 and 69) and was much easier to excavate than Context 4, but the division between the Contexts 4 and 5 was otherwise not that clear. Sterile sand occurred underneath (Context 6).

### 4.3.3 Unit E7

#### 4.3.3.1 The location

Seventh unit on the eastern line.

#### 4.3.3.2 Stratigraphy

This unit was dug to a depth of about 0.83m (Fig 61) and deposits were divided into 5 contexts described in more detail in Table 7. Note that only one section was drawn due to time constraints.

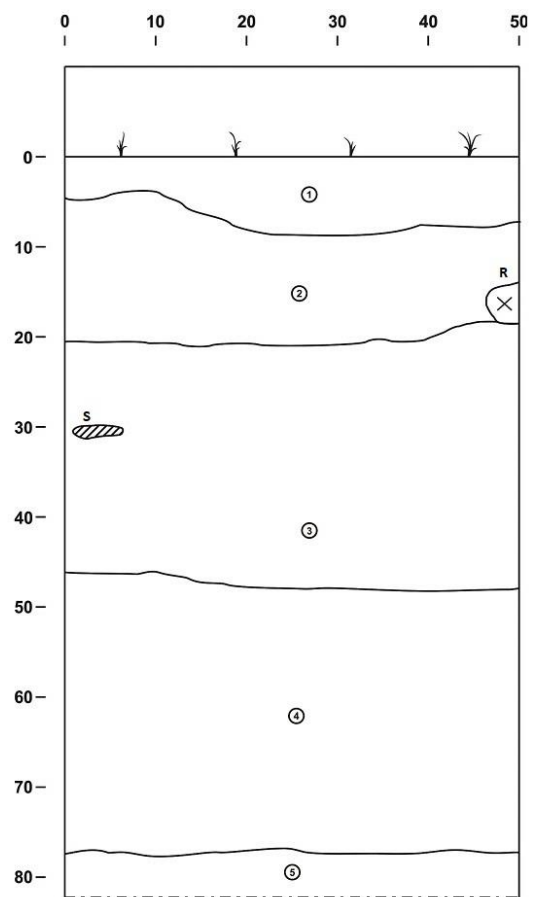


Fig 61: North facing section of E7 (Drawn by Annalisa Christie, digitised by Abdul Samad)

<b>Context</b>	<b>Description</b>	<b>Artefact Types</b>
<b>1</b>	Mid light grey deposit with coarse loose compaction. This is the modern surface layer with mostly modern debris and is packed by trampling. Context throughout the unit.	Pottery, Modern Debris
<b>2</b>	Mid greyish brown coarse sand with fine medium sized pebbles and very gritty. Coarse loose compaction. Deposit includes a lot of little stones. Significant root disturbance with several major roots and some stones, some faced and plastered fragments. Context throughout the unit.	Pottery, Shell, Metal, Stone, Glass, Bone
<b>3</b>	Brown sand with grey lenses. Medium coarse compact sand with a lot of roots in it. Deposit also has sandstone and coral stone fragments. Context throughout the unit.	Pottery, Bone, Shell, Metal, Stone, Plaster, Bracelet, Glass
<b>4</b>	Mid dark brown medium sand with a coarse loose compaction. Looser than context 3. Context throughout the unit.	Pottery, Shell, Metal, Plaster, Bone
<b>5</b>	Unexcavated white beach sand presumed sterile. Limit of excavation. Context throughout the unit.	None

Table 7: Description of the contexts in MAL E7

#### **4.3.3.3 Interpretation**

The surface deposit was packed by trampling and contained modern debris as well as some archaeological material, although very little. The deposit underneath (2) was very gritty with pebble and stone inclusions. This deposit evidenced significant root disturbance with several major roots as well as some stone fragments. Some of these stones were faced and plastered. Medium frequency archaeological materials were recovered from this deposit including a glass fragment (SF 48) and two nails (SF 46 and 47). The next context (3) had comparatively little archaeological material although a lot of varied finds including a piece of metal (SF 52), pieces of painted plaster (SF 53a-c and 54), a glass fragment (SF 48) and a bracelet fragment (SF 50). This deposit was impeded by the presence of major roots. A human phalanx was recovered from this context and after recording, it was reburied. Some sand and coral stone fragments were recovered as well as a fragment of a glass vessel resembling a perfume bottle (SF 51). There was not much of a difference between this Context (3) and the one below (4) other than the latter

having looser soil. In addition, Context 4 yielded more archaeological finds with the most number of finds from this unit. Underneath this was sterile sand (Context 5).

#### **4.3.4 Unit E14**

##### **4.3.4.1 The location**

Fourteenth unit along the eastern line.

##### **4.3.4.2 Stratigraphy**

This unit was excavated to a depth of about 0.9m and deposits were divided into 7 contexts described in more detail in Table 8 (Fig 62). Note that due to time constraints none of the sections were drawn for this unit.



Fig 62: Unit E14 during excavation (Photo by Anne Haour, February 2016)

<b>Context</b>	<b>Description</b>	<b>Artefact Types</b>
<b>1</b>	Topsoil and the layer below (beach sand). Light greyish brown medium and whitish sand coarse. Topsoil is fine grained soft and white sand is coarse grained loose. Few roots and frequent coral inclusions within the deposit. Context throughout the unit.	None
<b>2</b>	Light yellowish fine white deposit with fine grained soft sand. Appears in small patches at different parts of the trench and appears to be deep in two corners. Context throughout the unit.	Modern weathered cable
<b>3</b>	Mid greyish brown medium deposit with fine grained soft sand. Frequent coral inclusions. Context throughout the unit.	Pottery, Bone, Shell, Stone, Plaster, Metal
<b>4</b>	Dark greyish coarse deposit with coarse grained loose sand. Deposit filled with coral rubble and frequent stones of different kinds. Context throughout the unit.	Pottery, Shell, Bone, Metal, Stone
<b>5</b>	Dark brown medium deposit with pits of black soil and fine grained soft sand. A possible hearth? Archaeobotanical samples taken from this deposit. Context throughout the unit. 830 +/- 30 BP (AD 1160-1265) (Beta 438195).	Pottery, Shell, Bone, Metal, Stone, Charcoal, Glass
<b>6</b>	Dark grey very clayey sand but fine and fine grained soft sand. Context throughout the unit. Comparatively increased number of root activity in this context including a huge root at the eastern side of the unit going across the unit from the north to south.	Pottery, Shell, Bone, Charcoal, Glass, Metal
<b>7</b>	Light whitish yellow fine deposit with fine grained soft sand. Presumed sterile and very moist.	None

Table 8: Description of the contexts in MAL E14

#### **4.3.4.3 Interpretation**

This unit had a very compact surface with a layer of modern white beach sand underneath the top soil which was very thin. This deposit (Context 1) contained no archaeological material, only frequent roots and lots of corals. The context below this deposit (2) appeared in small patches at different parts of the unit and was especially deep in two corners. Modern debris (a very weathered cable) was recovered from this unit and still no archaeological material. Context 3 underneath Context 2, contained many coral pieces and roots and, unlike the above deposits,

yielded some archaeological material including a 5 x 9cm cement block presumed to belong to the palace ruins. The next context (4) was difficult to trowel as it was filled with coral rubble and lots of different kinds of stones were exposed during the excavation. This deposit had the highest number of archaeological material from this unit and a lot of cut coral. Context 5 (a possible hearth) lay underneath 4 and this was a rather moist deposit with fewer inclusions of stone rubble compared to the above context. It was finer than 4 and had a lot of charcoal appearing in patches thus samples were taken for archaeobotanical sampling from the NE corner and at the centre. Stones associated with charcoal were also found at the eastern side together with a lot of stones all around the trench. A glass fragment (SF 70) was also recovered from this deposit. The last context (6) before reaching sterile for this unit was very clayey and had a comparatively increasing number of root disturbances including one large root at the eastern side running across the entire unit. Few archaeological materials were recovered from this context including a glass fragments (SF 65) and some charcoal fragments.

Out of the two samples sent for dating from the park, Context 5 of this unit is the oldest of the two with a date, which after calibration, falls between AD 1160- 1265 (Beta 438195).

### **4.3.5 Unit N2**

#### **4.3.5.1 The location**

Second unit along the northern line.

#### **4.3.5.2 Stratigraphy**

This unit was excavated to a depth of about 0.8m (Fig 63) and 6 contexts were identified and are described in more detail in Table 9. As all sections were similar, one side was drawn as a representative.



<b>Context</b>	<b>Description</b>	<b>Artefact Types</b>
<b>1</b>	Surface deposit, light grey coarse compact layer with coarse grained loose sand. Context throughout the unit.	Modern metal, Shell
<b>2</b>	Mid brown coarse layer with coarse grained loose sediments. Frequent roots in this context. Context throughout the unit.	Pottery, Plastered stones, Shell
<b>3</b>	Mid greyish brown medium coarse deposit with loose to coarse grained sand. Comparatively few roots as well as few sandstone inclusions and frequent stones. Context throughout the unit.	Pottery, Glass, Metal, Shell, Bone
<b>4</b>	Greyish brown coarse deposit with frequent little white coral inclusions. Many medium and small stones some shaped. Context not on a level and parts of the section came out while excavating. Also small pebble like coral nodules (smoothed) within the deposit. Context throughout the unit. 470 +/- 30 BP (AD 1415-1450) (Beta 438193).	Pottery, Stone, Painted plaster, Charcoal, Shell, Bone
<b>5</b>	Mid brown medium coarse sand very wet and coarse grained loose sand. Large roots within the deposit. White gritty shell and coral inclusions in the deposit. Context throughout the unit. End of excavation.	Pottery, Shell, Stone, Glass, Plaster, Bone
<b>6</b>	Unexcavated whitish clayey damp sand presumed sterile. Large roots going across the unit.	None

Table 9: Description of the contexts in MAL N2

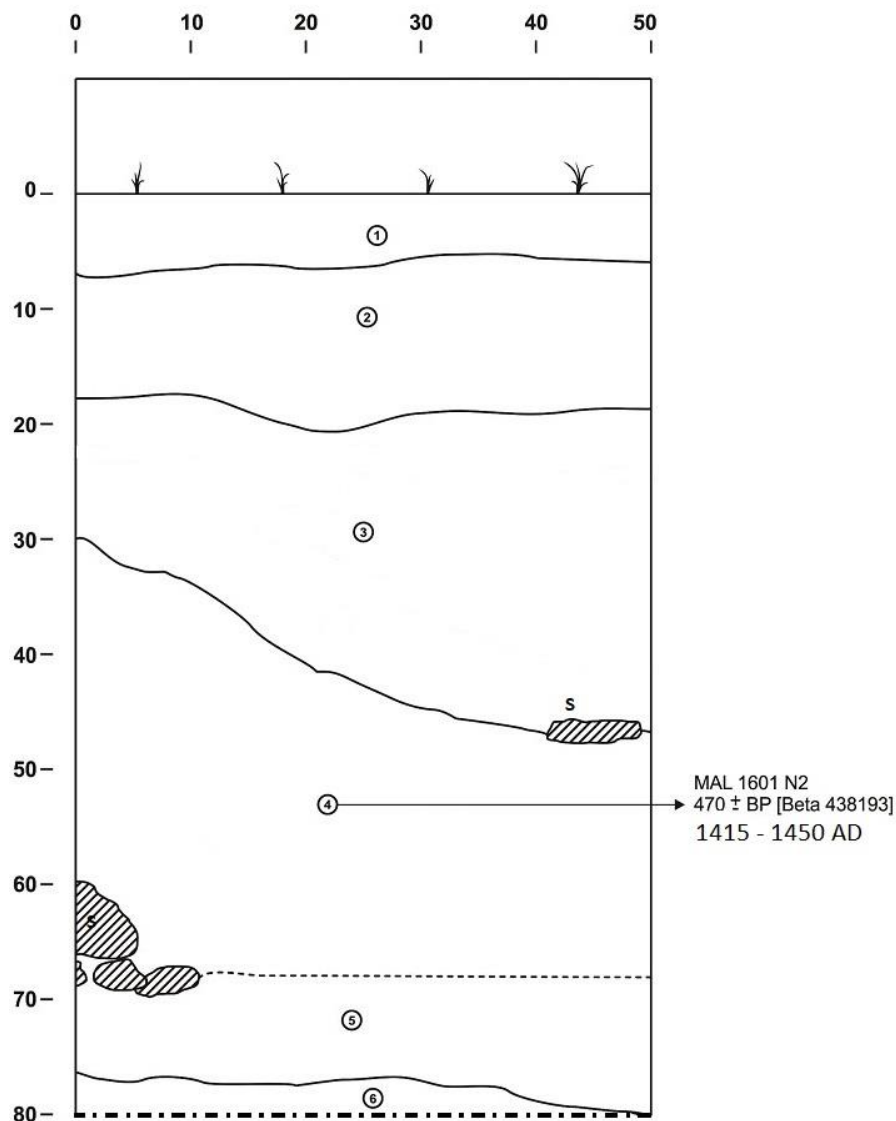


Fig 63: West facing section of N2 (Drawn by Anne Haour and Shiura Jaufar, digitised by Abdul Samad)

#### 4.3.5.3 Interpretation

The surface of this unit was also compact with coarse grained sand immediately underneath. The first layer of soil did not yield any archaeological material but modern metal fragments (SF 1). However, the deposits underneath (2) yielded a few finds (including plastered stone) and some roots. The third context contained sandstone and frequent pebble inclusions and archaeological finds such as pottery, glass (SF 3) and metal, including an octagonal shaped metal object (SF 4), while the deposit underneath (4) was very coarse and contained a lot of white coral inclusions as well as comparatively more finds including sizeable pottery, fragments of black surfaced plaster and lime plaster inclusions with decayed patches. This deposit also recovered many medium and small stones including shaped stones, small pebble like coral

nodules and one large sandstone brick shaped stone. Some of the pebbles are very smooth and it is not clear whether this is a result of natural or anthropogenic action. The presence of these stone remains could be assumed to be a possible wall collapse. This deposit was not on a level and many parts of the deposit came out of the sections. Context 5 was very wet and easily troweled and was not readily distinguishable from the above layer (4) during excavation. However, it evidenced fewer stones and very large roots and hence was created as a separate context in order to improve stratigraphic control. A shaped coral stone was recovered at the base of the context suggesting a wall collapse. This deposit yielded the most number of finds from this unit (including pottery, shell, stone, glass SF 6, plaster) and also had very large roots at the depth of 70cm (not seen at this depth in other units). This deposit overlay context 6 which was unexcavated as it was demonstrated to be sterile with no finds. However, this also had large roots in it.

This is the second unit from the park which was dated from Context 4 dating to sometime between AD 1415-1450 (Beta 438193).

#### **4.3.6 Unit N5**

##### **4.3.6.1 The location**

Fifth unit along the northern line.

##### **4.3.6.2 Stratigraphy**

Deposits from this unit were divided into 2 contexts described in more detail in Table 10. Note that on 6<sup>th</sup> February it was noticed that the unit had been poorly set out and measured 50 x 56cm and due to the time constraints and the large roots disturbance, it was decided to call an end to this unit and to record the contexts found. No sections were drawn for this unit.

Context	Description	Artefact Types
1	Light greyish white medium deposit with fine grained soft sand. This is the surface layer containing light grey soil just underneath. There appears to be a very shallow layer of white soil in random patches throughout the unit. Frequent coral and roots within the deposit, some very big roots. A very shallow deposit. Context throughout the unit.	Shell, Metal
2	Dark brown medium deposit with coarse grained loose sand with frequent root disturbance some very large ones. Frequent coral inclusions in the deposit. Context throughout the unit. End of excavation.	Pottery, Shell, Bone, Glass, Metal

Table 10: Description of the contexts in MAL N5

#### 4.3.6.3 Interpretation

This was an incomplete unit and was very shallow at about 18cm deep, with a very thin surface layer of about 6cm deep. The surface deposit had random white sand patches and a lot of roots, some very big ones, and metal fragments. A few archaeological materials were recovered including a bolt (SF 8), a lot of coral inclusions but no pottery. However, the deposit underneath (2) had comparatively more archaeological finds including a metal nail (SF 9) and four pieces of glass (SF 11a-d) but this context also had several roots and a lot of cut corals of different sizes and shapes. This was the last context excavated in this unit before ending work on this unit.

#### 4.3.7 Unit N9

##### 4.3.7.1 The location

Ninth unit along the northern line.

##### 4.3.7.2 Stratigraphy

This unit was excavated to about 0.8m (Fig 64) and deposits were divided into 6 contexts described in more detail in Table 11. Sections were similar thus just one side is drawn as a representative.

<b>Context</b>	<b>Description</b>	<b>Artefact Types</b>
<b>1</b>	Surface deposit: Light whitish grey medium coarse, compact and trampled layer over coarse grained loose white beach sand (modern deposit), treated as a single context. White sand especially visible in the north face. Shell inclusions in white sand (non anthropogenic). Context throughout the unit.	Shell, Modern Debris
<b>2</b>	Modern layer of mid dark greyish medium sand hard picked thus had to be hoed. Some roots and coral inclusions as well as a lot of modern debris. Context throughout the unit.	Modern Debris, Shell
<b>3</b>	Mid brown medium coarse loose sand with a lot of roots and some modern plastic at the top of the context. Very large coral stone in the eastern section removed from this deposit. Context throughout the unit.	Pottery, Modern Debris, Metal, Shell, Bone
<b>4</b>	Mid greyish brown coarse sand with poorly sorted stones and rocks, coarse compact. Context throughout the unit.	Pottery, Stone, Charcoal, Glass, Bracelet, Shell, Bone
<b>5</b>	Mid brown medium coarse loose deposit with very gritty sand. Quite wet increasingly so with depth. Context throughout the unit.	Pottery, Metal, Shell, Bone
<b>6</b>	Unexcavated presumed sterile sand. Greyish, very soft and clay. Context throughout the unit.	None

Table 11: Description of the contexts in MAL N9

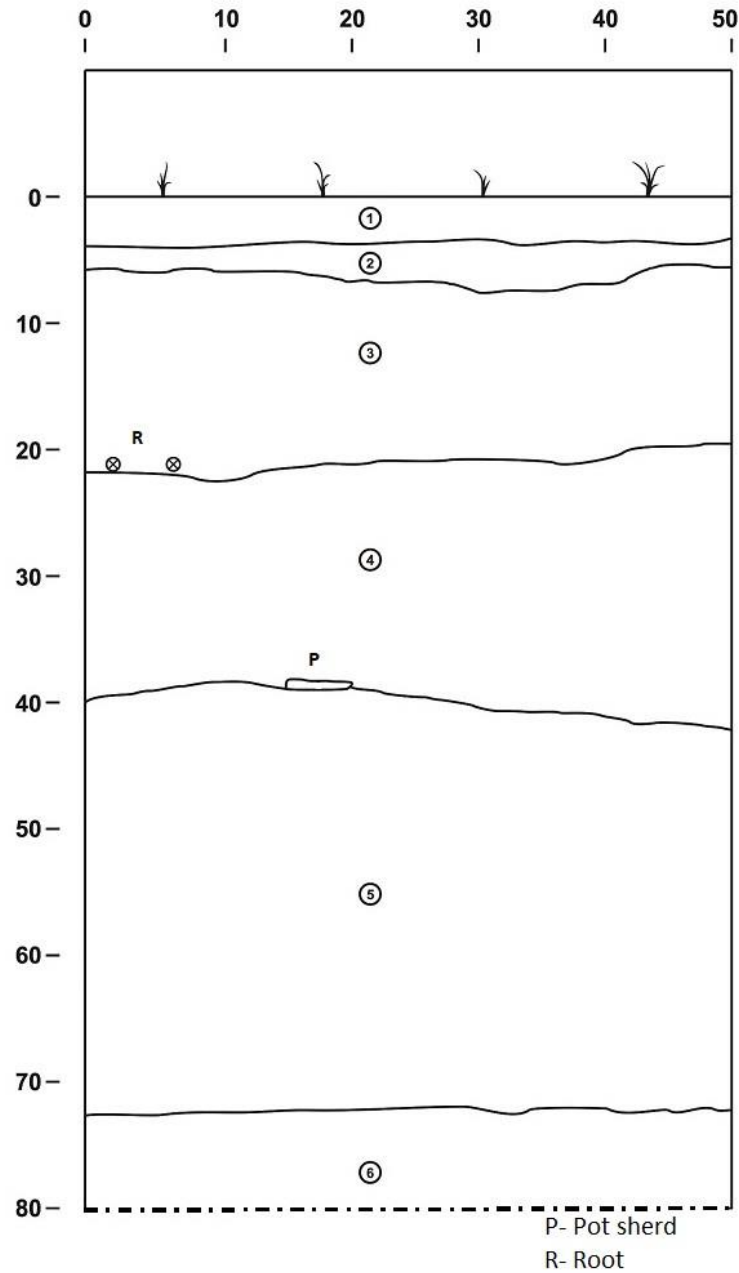


Fig 64: South facing section of N9 (Drawn by Anne Haour and Shiura Jaufar, digitised by Abdul Samad)

### 4.3.7.3 Interpretation

The surface deposit of this unit was compact due to trampling and in the upper levels; modern white beach sand was encountered and there were no archaeological finds, but modern debris was encountered including possible non anthropogenic shell inclusions. The second context was difficult to trowel since it was hard packed; it was hoed and a very straight horizontal interface was identified between this and Context 1 above. This deposit is also assumed to be modern due

to the absence of much archaeological material and more modern debris recovered including one piece of corrugated red glass (car/motorcycle rear light?), one plastic tube (drinks straw, lollipop stick?) and various shreds of plastic (duct tape, sweet wrappers). The context below (3) also featured some modern plastic at the top but had more finds. A very large coral stone was removed from the east section in this deposit. The next context (4) was very compact and difficult to trowel and it contained many large and medium stones (none faced or shaped), sandstone fragments, coarse white coral stones and charcoal. These stone fragments again indicate a possible wall collapse. This deposit recovered other finds including metal glass (SF 13a) and a fragment of a bracelet (13b) as well. The last deposit to be excavated before reaching sterile was Context 5, becoming increasingly wet with depth and much easier to excavate than Context 4. Context 5, which was hoed, did not yield obvious features but plentiful finds, including some large pottery and metal (SF 72 and 14ab).

#### **4.3.8 Unit N12**

##### **4.3.8.1 The location**

Twelfth unit along the northern line.

##### **4.3.8.2 Stratigraphy**

This unit was dug to about 1m and deposits were divided into 5 contexts described in more detail in Table 12. This unit was extended to a 1 x 1m unit upon the recovery of many cowries (*Monetaria Moneta*) from the second context. At this stage the unit was expanded to a further 0.5 x 0.5m and context sheets were prepared both for the test pit and the extension for contexts 1 and 2. Therefore, while two sheets were made for each of the first two contexts (0.5m unit plus extension), the rest of the context sheets related to a 1 x 1m unit. Finds from the first two contexts were sieved through the 1cm mesh and, upon the recovery of cowries, the following finds (as well as finds from the extension) were sieved through the 2mm mesh. This unit turned out to be the most productive from of the excavation units from the Sultan's park, with the greatest number of finds including pottery and shell. Archaeobotanical samples were taken from this unit as well. Note that half of this trench was excavated to a depth of 1m while the other half was excavated to a depth of 0.70m (Figs 65-67).

As shown on Figs 66 and 67, this unit yielded a complex stratigraphy. Although the various stratigraphic layers were visible in the section once it had dried out (and are thus shown



on Figs 66 and 67), only broad contexts had been identified during excavation which are described in Table 12 as the soil differences were not recognised during excavation.

<b>Context</b>	<b>Description</b>	<b>Artefact Types</b>
<b>1</b>	Light whitish grey medium coarse compact and trampled overlaying white beach sand (modern deposit) coarse grained loose. Treated as a single context. Shell inclusions in white sand (non anthropogenic) and completely sterile otherwise. This context was extended a further 0.5m on all sides. Context throughout the unit (corresponds to layers roughly between 0-5cm on Figs 66-67).	Shell
<b>2</b>	Very rich mid brown loose soil. Extension of this unit was made in view of the number of cowries recovered after digging this context but without going deeper. Context throughout the unit (corresponds to layers roughly between 5-25cm on Figs 66-67).	Pottery, Shell, Stone, Bracelet, Metal, Glass, burnt clay fragment, Modern Debris, Bone
<b>3</b>	Now a 1x1m context, and the deposit is similar to the one above with a whitish layer in the south face. This deposit was defined as a new context for stratigraphic control more than the soil difference and in this section there does seem to be a clear difference. Context throughout the unit (corresponds to layers roughly between 25-55cm on Figs 66-67).	Pottery, Shell, Plaster, Metal, Glass, Bracelets, Bone, Stone
<b>4</b>	Deposit is similar to the above. This deposit was defined as a new context for stratigraphic control more than the soil difference. Context throughout the unit (corresponds to layers roughly between 55-75cm on Figs 66-67).	Pottery, Metal, Glass, Bracelet, Painted plaster, Shell, Bone
<b>5</b>	Light grey soil very loose and easy to dig. Very fine soil with few or no inclusions and shapes into a ball. Reaches sterile pretty quickly. Only half of the unit excavated (corresponds to layers roughly between 75-100cm on Figs 66-67).	Pottery, Shell, Bone

Table 12: Description of the contexts in MAL N12

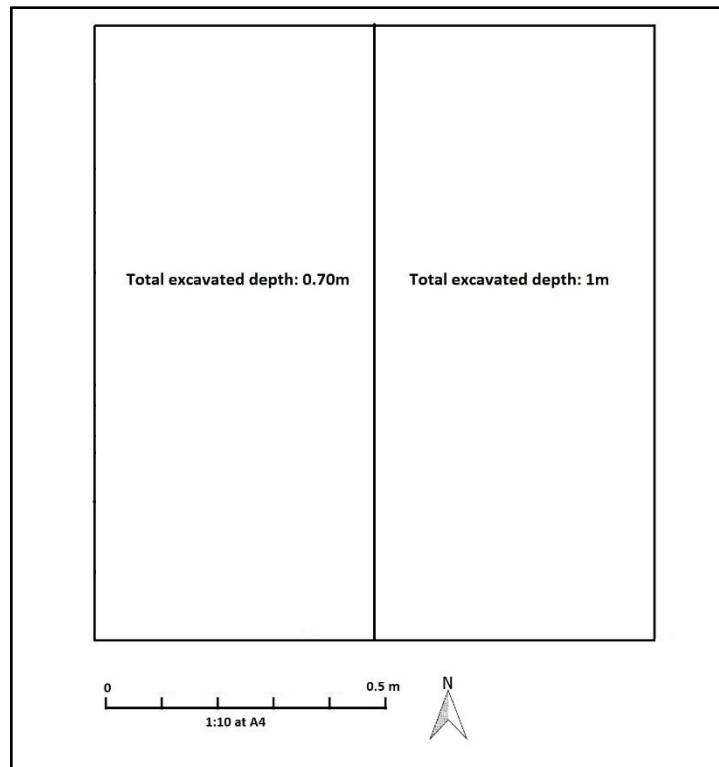


Fig 65: Plan of N12 upon completion showing the two halves of the trench (Source: Shiura Jaufar)

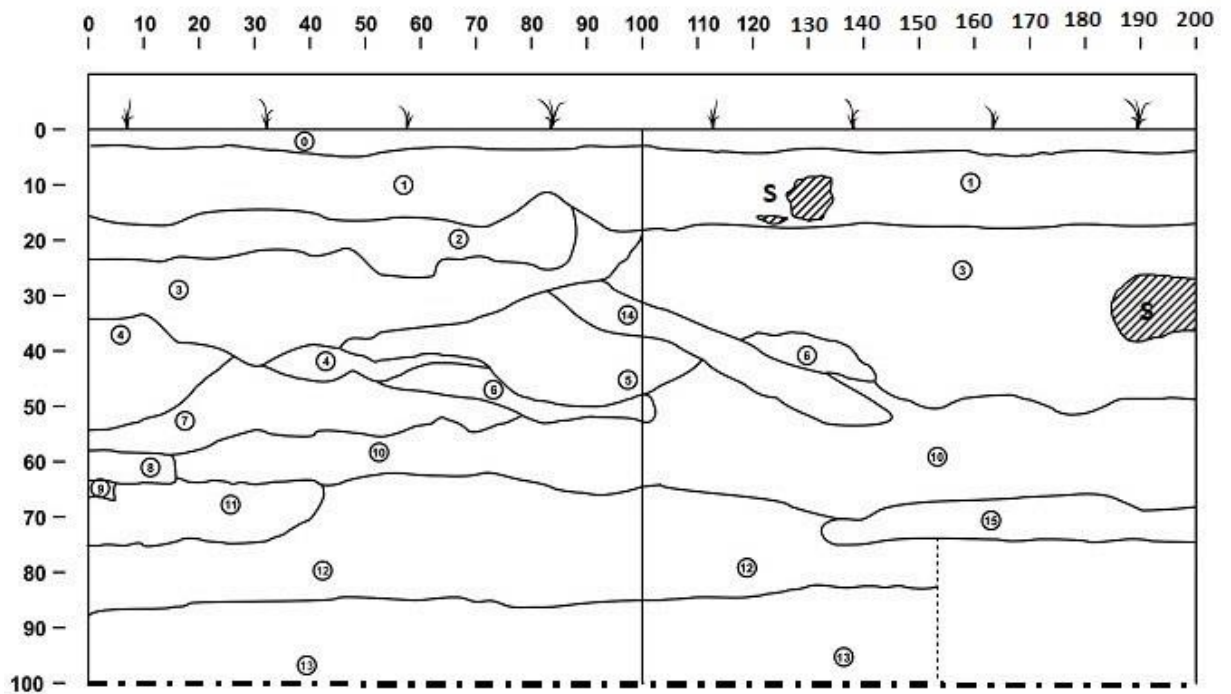


Fig 66: Section at completion for N12, context numbers do not match those in the discussion/Table 12 as they were not identified during excavation (left: west facing section, right: north facing section) (Drawn by Anne Haour and Shiura Jaufar, digitised by Abdul Samad)

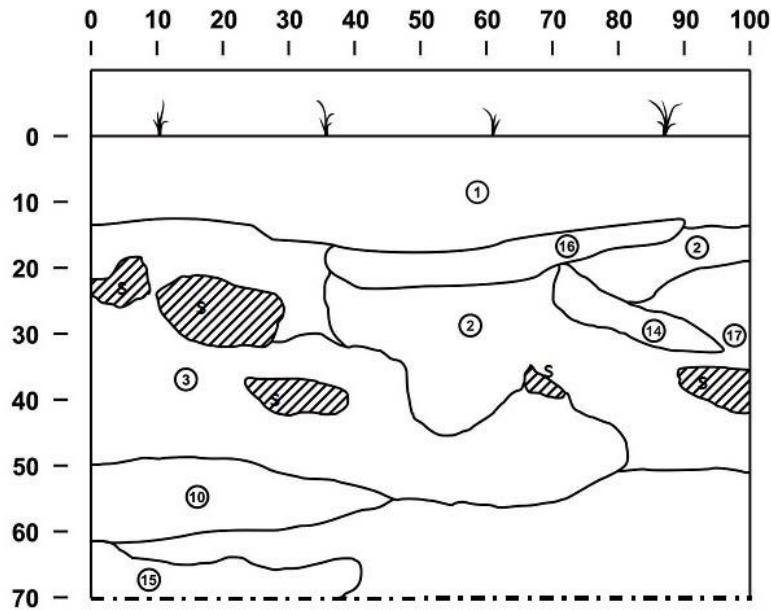


Fig 67: Section facing east at completion for N12, context numbers do not match those in the discussion/Table 11 as they were not identified during excavation (Drawn by Anne Haour and Shiura Jaufar, digitised by Abdul Samad)

#### 4.3.8.3 Interpretation

Unit 12 was the most productive unit. After recovering a large number of cowries (n=1246) from Context 2, it was decided to expand the unit to see whether we were faced with a possible cowrie hoard. The surface deposit was compact with trampled shallow topsoil and modern sterile white beach sand underneath with no finds. The extension of this context was thus done quite quickly at the level of Context 2 underneath Context 1. Context 2 was very productive with the recovery of many finds including pottery, stone, a few pieces of metal and a glass fragment (SF 19), cowries as well as some modern debris (a piece of pink tape). Initially, all units from this site, including the first deposit for this unit, were sieved through the 1cm mesh. However, upon recovering the cowries from this deposit (Context 2) all finds were now sieved through the 2mm mesh. Remarkable finds from this deposit include a broken fragment of a glass bracelet (SF 20) and an unidentified burnt clay fragment (SF 67). Extension of the unit was made while digging this context without going deeper. The extended soil from this context was identical in all regards with the smaller N12. The extended deposit also recovered some modern finds including a white plastic bottle top marked MAWC and a piece of corrugated plastic, as well as many cowries and large shaped stone block. From the next context (Context 3) onwards, the unit was now a 1x1m trench. The third context was excavated the day after the extension

and this deposit had an interesting white layer in the south section. This was assumed to have been a possible cut related to the cowrie deposition. This context was not different to the deposit above but it was defined as a new context for stratigraphic control more than the soil difference and in this section there does seem to be a clear difference. This layer yielded the most number of finds from the site of Male'. They include pottery, shell, several pieces of plaster, metal fragments including a nail (SF 27b), many glass fragments (SF 29, 31a-b, 32, 33a, 39a-c), charcoal and 6 broken bracelet fragments (SF 30a-c, 33b and 37a-b). During the section cleaning some finds were recovered from a mix of contexts 1-3 including a glass fragment (SF 28), a metal bolt and nail (SF 22a and 22b) and a piece of lime plaster (SF 34). Context 4 underlying Context 3, was also the same as contexts 2 and 3 and was only defined as a new deposit for stratigraphic control. In terms of finds, similar material was recovered from this deposit, including another bracelet (SF 39b), two glass fragments (SF 39a and c), a metal tube (SF 38a) and a painted plaster (SF 40). Context 5 was not excavated throughout the unit but only across half of the trench in order to ascertain the depth of the stratigraphy. This deposit was very loose and very easy to excavate. Very few finds were recovered from this context and only at the top (interface with 4) and the colour of the soil became white as depth progressed and soon became sterile.

Despite the number of cowries recovered from this unit (n=1445), they remain too few and too disparately distributed to be considered a hoard but this was certainly a discrete deposit (Christie and Haour 2018).

#### **4.3.9 Overall interpretation of sites excavated in K. Male'**

Even though the 7 units excavated in Male were all located within the area previously occupied by the palace, the picture presented by the various units was highly diverse. They yielded differing amounts of material, though this material was broadly homogeneous and the stratigraphic sequences were similar across units. The recovery of painted/plastered stones (similar to the still-standing building *Usgekolhu*, sole remnant of the palace) and metal fragments support the claim made by written sources that the palace structure was destroyed in the 1960s. Unit N12, the most productive unit (as well as being the unit with the highest volume excavated in Male'), is suggested to represent an area with a more active and intense occupation compared to the other 6 units. The comparative lack of marine fauna (as well as the presence of the only terrestrial fauna from the three islands excavated), abundance of cowries, glass and bracelet fragments, and a comparative abundance of glazed pottery (including the most number

of rim sherds) from this unit represents a unique and different elite material culture from that of Utheemu. These finds could perhaps suggest a wealthier elite representation compared to Utheemu, due to the presence of a variety of glass items (bracelet and bottle fragments), terrestrial fauna (only present in Male') and a comparative abundance of glazed ware.

#### **4.4 M. Veyvah**

##### **4.4.1 Introduction**

The island of Veyvah in Meemu atoll was selected for two reasons:

1. The presence of an old coral stone mosque and a cemetery on the island presumed to date to more than 400 years ago (National Centre for Linguistic and Historical Research 2004; Riyan 2011: 56) which was described as being in the woodlands away from the present settlement and thus providing good prospects for undisturbed levels. Moreover, Meemu atoll was also mentioned in the early records by Ibn Majid and Ibn Battuta (Tibbetts 1971).
2. Having studied Male' and an island to the north of Male' (Ha. Utheemu), the geographical location of Veyvah was also useful as it is located to the south of Male', therefore giving us a good spread of locations studied.

##### **4.4.1.1 The site**

Working in Veyvah was difficult because the early settlement area was located in a part of the island currently heavily vegetated. Moreover, several locations had to be avoided due to reports of human remains and the presence of large trees. Much consultation with the council members and the locals of the island was necessary in order to identify appropriate excavation locations.

##### **4.4.1.2 Previous research on the island**

No work had been done on this island except for the mention of the coral stone mosque and its cemetery reported in the Maldivian heritage inventory (National Centre for Linguistic and Historical Research 2004; Riyan 2011). However, the neighboring island of Mulah has been mentioned as one of the cowrie rich islands (*Boli Mulah*) in the historical records (Luthufee 1995: 31; Ragupathy and Mohamed 2008: 11) and this island, as well as the atoll, was mentioned by early travellers including Ibn Battuta (Gibb 1929; Husain 1976; Luthufee 1991).

#### 4.4.1.3 Survey methodology

Surface walking was carried out within the field looking for any archaeological remains (in this case pottery) and five trenches measuring 1x1m each were placed within the woodlands in a clearing (Fig 68). None of the units provided much productive information except for the fifth and final unit. Materials could not be sieved for Units 1 and 2 as we were awaiting the arrival of the sieves. However, the rest of the three units were sieved through the 2mm mesh and archaeobotanical sampling and flotation was carried out on some contexts of Unit 5. Below a detailed description of each unit with an interpretation for each at the end will be presented.

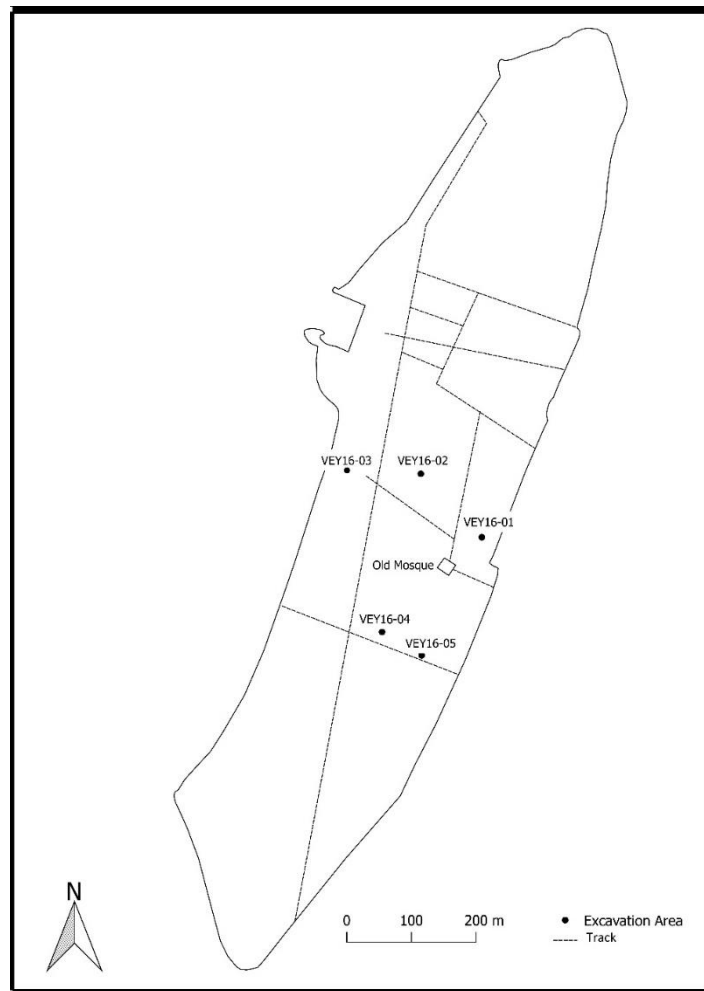


Fig 68: Location of trenches excavated in Veyvah (Source: Annalisa Christie)

## 4.4.2 Unit 1

### 4.4.2.1 The location

This unit was within a field, in a clearing of a coconut grove and other trees close to the eastern shore of the island. The surface of the unit was covered with small shrubs and grasses which were removed and the surface was cleared out for the excavation.

### 4.4.2.2 Stratigraphy

Deposits from Unit 1 were divided into 3 contexts reaching to a depth of about 0.42m (Fig 69) and these are described in more detail in Table 13. Note that this unit was not sieved but careful attention was given to the spoil during excavation. Only one section was drawn for this unit as other sides appeared similar and the stratigraphy was very simple.

Context	Description	Artefact Types
1	A thick layer of mid-greyish brown topsoil, coarse loose sand with a lot of small coconut palm roots within it. This layer contains more roots than soil hence very spongy and soft. Context exists throughout the unit.	Pottery, Shell, Bone, Unsorted Burnt Coral Fragments
2	Dark greyish brown soil, coarse loose deposit with a lot of white grains of non anthropogenic coral and shell inclusions. Context exists throughout the unit.	Pottery, Shell, Bone
3	Light whitish brown in colour and medium sand with some roots. Coarse loosely compacted with a lot of non anthropogenic coral and shell inclusions. Colour of soil gets lighter to yellowish white as it gets deeper. Context exists throughout the unit. End of excavations.	None

Table 13: Description of the contexts in VEY 1601



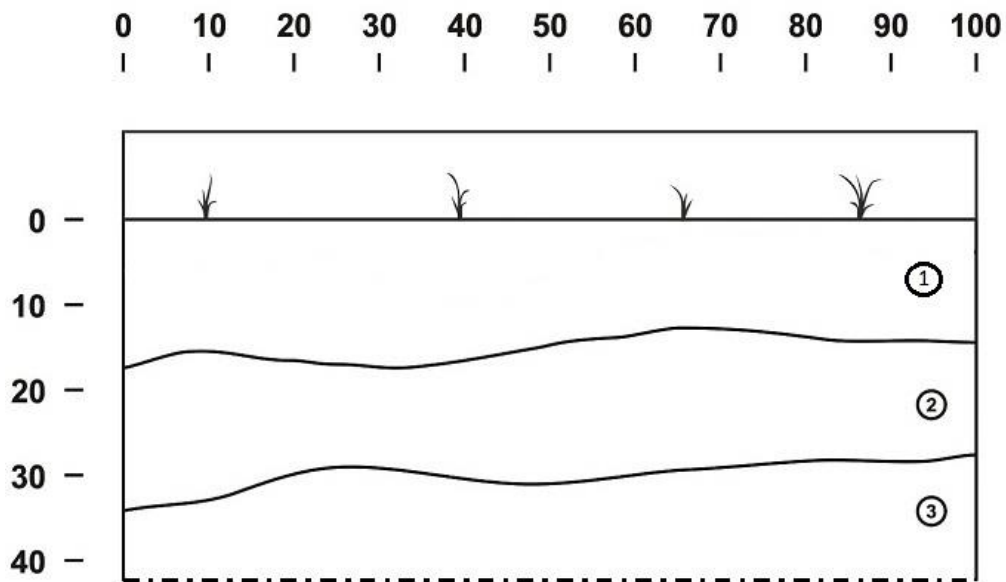


Fig 69: South facing section of Vey 1601 (Drawn by Shiura Jaufar, digitised by Abdul Samad)

#### 4.4.2.3 Interpretation

Deposits in this unit were not very deep and did not reveal much productive information other than a medium amount of pottery, shells (including cowries and bivalves -*Atactodea glabrata* or locally called 'Rindheli') and fish bones. The topsoil (Context 1) from this unit was rather dark in colour, thick and very spongy due to the frequent amount of coconut palm roots within the soil. The deposit below (Context 2) looked similar in colour and texture but fewer root occurrence and had much more inclusions of coral and shell fragments. The last deposit (Context 3) before reaching sterile, was lighter and also had coral and shell inclusions and the soil got yellower as it went deeper. Sterile sand was not excavated thus does not appear on Table 13/ Fig 69.

#### 4.4.3 Unit 2

##### 4.4.3.1 The location

Within the field, in a clearing of a coconut grove and other trees close to the western shore of the island (Fig 70). This unit was very similar in terms of stratigraphy, to Unit 1. The surface of the unit was covered with small shrubs and grasses and these were removed and the surface was cleared out for the excavation.



Fig 70: VEY 1602 during excavation (Photo by Anne Haour, February 2016)

#### 4.4.3.2 Stratigraphy

Deposits from Unit 2 were divided into 3 contexts reaching to a depth of about 0.40m (Fig 71) and described in more detail in Table 14. Note that this unit was also not sieved hence careful attention was given to the spoil for finds. Only one section was drawn for this unit.

Context	Description	Artefact Types
1	A thick and damp layer of dark-greyish brown topsoil, coarse grained loose medium sand with a lot of small and medium sized and very few bigger roots within it. This layer contains more roots than soil hence very spongy and soft. The top 04cm of this layer was very dense with almost more than half of the deposit composed of small roots (probably coconut palm roots). Context exists throughout the unit.	None
2	Light grey loose coarse soil of coarse grained sand. Very coarse deposit with a lot of chipped coral rubble and stones of various shapes and sizes ranging from small to medium. Frequent medium sized roots as well as some larger roots across the unit. Context exists throughout the unit.	Shells (non anthropogenic bivalves)
3	Very hard layer of sterile ' <i>Dhonveli</i> ' sand. Yellowish white and medium soil consisting of coarse grained loose sand. Context exists throughout the unit. End of excavations.	None

Table 14: Description of the contexts in VEY 1602

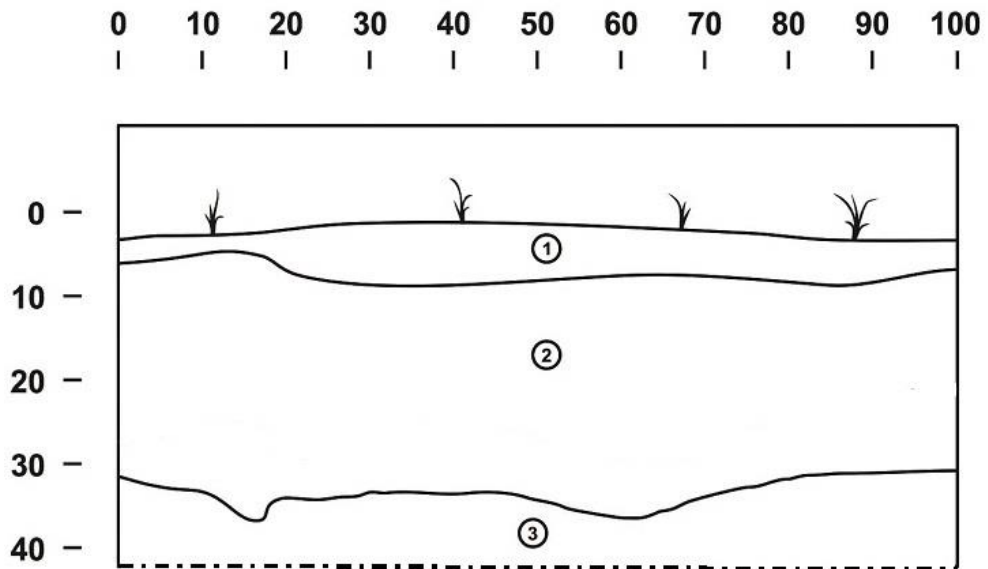


Fig 71: South facing section of VEY 1602 (Drawn by Shiura Jaufar, Digitised by Abdul Samad)

#### 4.4.3.3 Interpretation

Deposits in this unit were not very deep (about 40cm) and did not reveal any artefact finds other than some non-anthropogenic shells mostly bivalves (*Atactodea glabrata* or locally called *Rindheli*). The topsoil from this unit (Context 1) was also rather dark in colour, thick and very spongy due to the frequent amount of coconut palm roots within the soil as well as bigger roots. Context 2 below was rather coarse and had much more inclusions of chipped coral rubble and stones of varying sizes as well as some root action. This was the last deposit excavated before reaching sterile (Context 3).

#### 4.4.4 Unit 3

##### 4.4.4.1 The location

This unit was placed on the side of a track which was created years ago for ease of access in the field according to the locals of the island who also mentioned pottery finds around this area and upon investigation the team also discovered surface pottery and broken worked stone remains.

##### 4.4.4.2 Stratigraphy

This unit was dug to a depth of about 0.36m and deposits were divided into 5 contexts described in more detail in Table 15. Due to heavy rainfall and flooding inside the unit, section drawings could not be completed.

Context	Description	Artefact Types
1	Top soil; very moist light greyish brown medium soil with coarse grained loose sand. Deposit contained few stones and roots as well as a modern burnt battery and a worked stone. The surface soil was hardened due to walking. Context exists throughout the unit.	Pottery, Shell, Bone, Stone
2	Light grey loose sand. This deposit was soft but very coarse and gritty and had many shell and coral flake inclusions. Included many roots within the sediment. Context exists throughout the unit as well as cut by Context 3.	Pottery, Shell, Bone, Charcoal
3	Mid greyish medium moist deposit with fine grained loose sand. Cuts through Context 2 but cut not clear. Stones of medium size within the soil. Context does not exist throughout the unit and consists of soil from Context 2 at the same level.	Pottery, Bone, Shell
4	Very moist light greyish white medium deposit with fine grained loose sand. A gritty layer exists on the top of this context but becomes less gritty and finer as it goes deep. Few roots within the soil. Context exists throughout the unit.	Pottery, Shell
5	Very damp and moist light greyish white fine soil with fine grained loose sand. Includes a lot of roots mostly small and medium but also a few larger roots. Sterile sand. Context exists throughout the unit. End of excavations.	Shell (non-anthropogenic)

Table 15: Description of the contexts in VEY 1603

#### 4.4.4.3 Interpretation

At its conclusion, this unit was about 36cm deep and rather disturbed (Fig 72). It was poor in finds. The topsoil (Context 1) was modern and this is well illustrated by the presence of modern metal pieces, a burnt battery and a worked stone (SF 1). This worked stone is assumed to have come from a small mound nearby with similar broken worked stones. Context 2 seems to have been disturbed and cut by Context 3 at the

same level. Context 3 only appeared at the NW corner of the unit. Context 4 was very moist and was gritty at the top but became finer with depth with few finds and roots. Context 5 underneath was sterile and contained many roots.

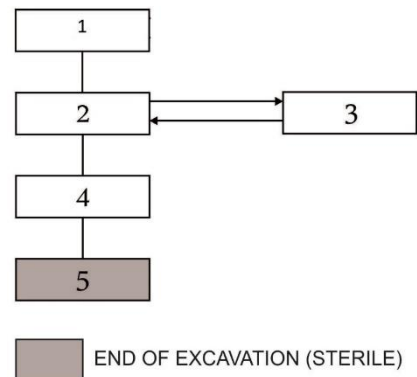


Fig 72: Harris Matrix for VEY 1603 (Source: Shiura Jaufar)

#### 4.4.5 Unit 4

##### 4.4.5.1 The location

This unit was placed in a local's farm land after attaining permission. The area was cleared before by the farmer and a well was dug few metres away from the unit.

##### 4.4.5.2 Stratigraphy

Three contexts were recognized in Unit 4 reaching to a depth of about 0.27m and described in more detail in Table 16. This unit yielded no archaeological materials and no sections were drawn.

Context	Description	Artefact Types
1	Mid brown fine medium soil with loose fine grained sand. Some coral and shell inclusions as well as some modern rubbish. Context exists throughout the unit.	Shell, Bone
2	Mid greyish brown coarse soil with coarse loose grained sand and a lot of coral and shell inclusions. This context is almost sterile with a very fine grained deposit overlying context 3. Context exists throughout the unit.	Shell, Bone
3	Non excavated yellowish white medium sand presumed sterile 'Dhonveli'. Very loose and sticky.	None

Table 16: Description of the contexts in VEY 1604

##### 4.4.5.3 Interpretation

This was a very shallow unit about 27cm deep. Modern day rubbish as well as heavily weathered cowries (possibly beach washed) were found within Context 1. Other contexts did not produce any archaeological finds.

#### 4.4.6 Unit 5

##### 4.4.6.1 The location

The final unit on this island was placed on the side of the 'old road' which runs approximately east-west across the island to the south of the coral stone mosque (Riyan 2011). This area was selected for excavation due to the presence of remains of another potentially older mosque. It was decided not to excavate too close to this structure to avoid any possible human remains and

a location for excavation was identified after surface walking, based on the occurrence of surface pottery scatters (Fig 73).

Due to heavy rain and time constraints, this unit could not be excavated to sterile but bulk samples were taken for archaeobotanical sampling (see below section on faunal report).

#### 4.4.6.2 Stratigraphy

This unit was excavated to a depth of about 0.85m (Figs 74-75) and 12 contexts were identified, described in more detail in Table 17.



Fig 73: VEY 1605 under excavation (Photo by Anne Haour, February 2016)



Context	Description	Artefact Types
1	Surface deposit of light grey coarse soil with coarse loose grained sand. A lot of surface pottery and some roots. Context exists throughout the unit.	Pottery, Stone, Modern plastic, Shell, Bone
2	Mid brown coarse compact sand, very hard to excavate thus part of the deposit had to be hoed. Large number of roots. Context exists throughout the unit.	Pottery, Shell, Bone, Glass
3	Mid greyish brown coarse soil with very coarse loose grained sand. Context includes natural coral and shell inclusions and large number of roots. Overlies contexts 4 and 5. Context was partly excavated by trowel and hoe and part excavated wet as a result of rain. Large number of pottery from this context. More pottery was recovered from this context than from the entire island. Context throughout the unit.	Pottery, Shell, Bone
4	Dark brown coarse soil with coarse loose grained sediment. Appears at the SW corner of the unit. Very wet due to rain and excavated by a trowel. Context overlies contexts 5 and 6. Large numbers of bones, shells mainly cowries (non moneta). Archaeobotanical sampling taken for this context. 410 +/- 30 BP (AD 1435-1615) (Beta 438194).	Pottery, Shell, Bone, Metal, Charcoal, Two beads, Bracelet,
5	Light greyish brown sand, with grey coarse flakes in fine silty sand. Very sticky, strongly cemented and coarse with small coral and shell inclusions. Contexts 4 and 3 lie above and context 7 lies below. This context is associated with context 6. Large numbers of big roots. Excavated in entirety and 100% floated but hard to float due to roots.	Shell, Bone
6	Dark brown coarse sand, weakly cemented. Wet sieved, archaeobotanical samples taken for this context. A lot of stones, coral and shell inclusions (non-anthropogenic). Context does not appear on the sections.	Shell, Bone
7	Dark greyish brown coarse loose sand. Contexts above 4,5 and 6 and context below 8. Excavated when raining hence wet sieved and 100% floated.	Pottery, Shell, Bone
8	Light greyish coarse grained sand with grey flakes and very compact. Weakly cemented and very rooty. Deposit has a lot of stone, coral and shell inclusions. Archaeobotanical samples taken for this context.	Shell, Bone
9	Dark brown coarse compact sand with grey flakes, loose in parts but came out in chunks at times. Required a mattock to excavate. Deposit very wet. Contexts above 8 Context below 10. Archaeobotanical samples taken for this context. Deposit was quite wet and restricted to SW corner. A lot of roots in this sediment.	Pottery, Shell, Bone
10	Dark brown coarse sand with light grey flecking. Weakly cemented. 100% archaeobotanical sampling taken for this context. Context has more roots than sand and very hard to float. Also has some coral inclusions within the soil. Deposit was very wet when excavated and smelled like a latrine and part excavated with a hoe.	Bone
11	Sterile sand	None
12	Cut of pit (Context 4)	None

Table 17: Description of the contexts in VEY 1605



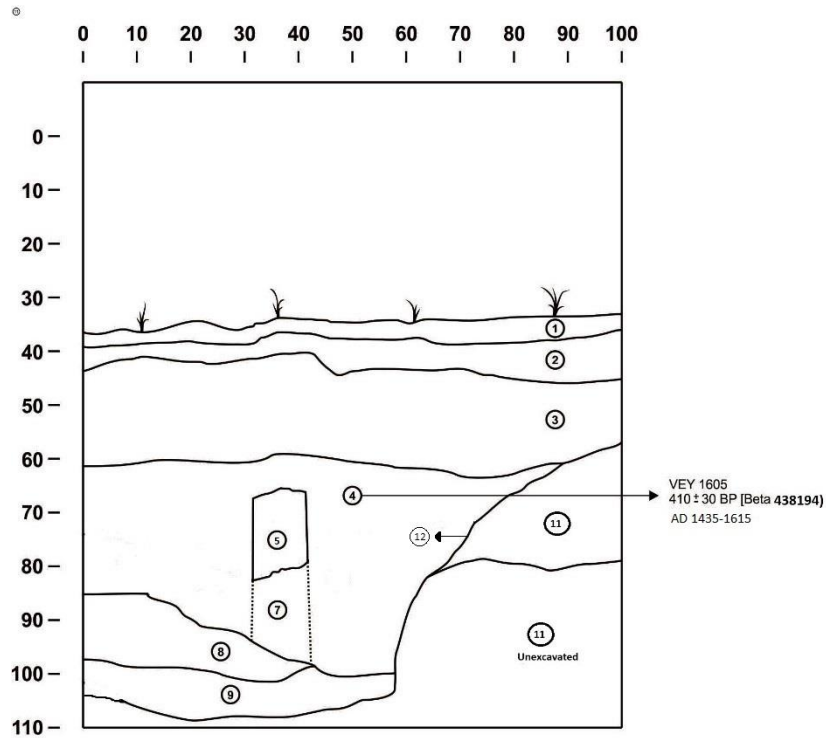


Fig 74: East facing section of VEY 1605 (Source: Drawn by Annalisa Christie, digitised by Abdul Samad)

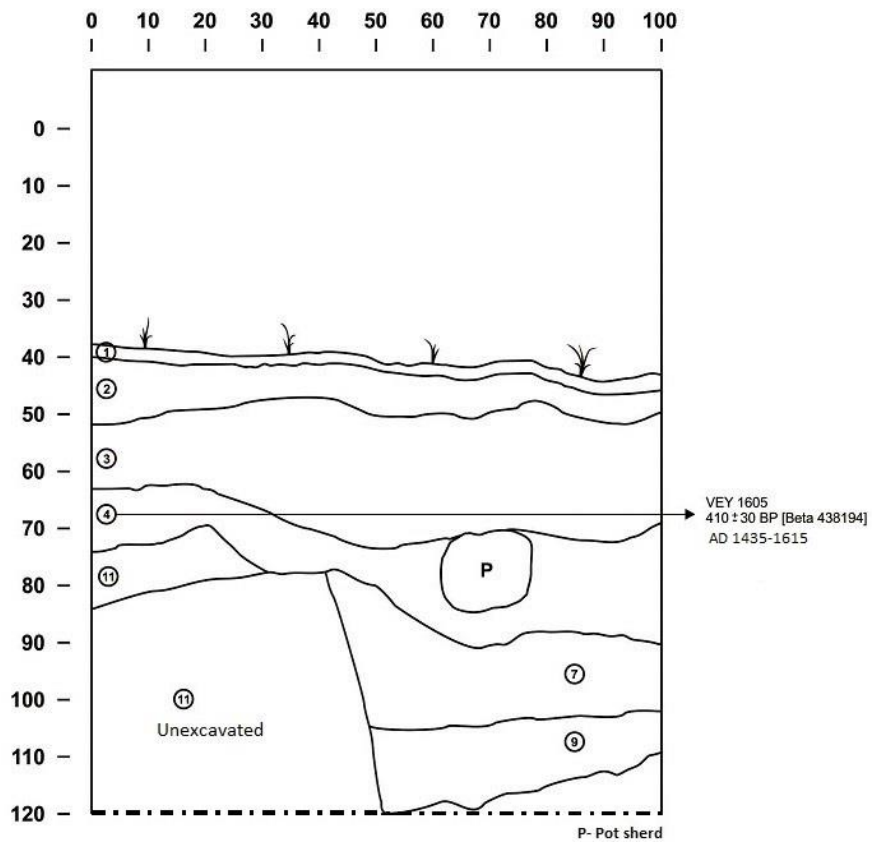


Fig 75: North facing section of VEY 1605 (Source: Drawn by Annalisa Christie, digitised by Abdul Samad)

#### 4.4.6.3 Interpretation

This was the most productive unit of all the five units on Veyvah island, and it yielded the greatest number of finds including earthenware pottery (including diagnostics in particular rim sherds), many shells and fish bones. The first three contexts occurred throughout the unit, yielding several finds including modern plastic (SF 1) and stone (SF 3) from Context 1, and a glass fragment (SF 5) from Context 2. The greatest number of finds came from context 3 which generated the largest pottery assemblage from the entire island. Shells and bone were especially dominant in the northeast and southwest corners with pits identified in both areas. The southwest pit (Context 4) cut the natural (Context 11) and contained a strongly cemented feature. Remarkable finds from this pit include 2 beads (SF 7 and 8) and a bracelet (SF 6) from the uppermost fill of this pit. These were the only beads recovered from any of the excavations conducted in the Maldives during the 2016 field season. This overlay of a coarse-grey deposit contained a lot of large diagnostic earthenware sherds, many shells and numerous large fish bones. The lowermost layers (Contexts 5-10) within the pit were very compacted and difficult to excavate. A wet brown organic deposit (Context 9) was only part excavated due to time constraints, and was sampled for further assessment. 100% of Contexts 5 and 7 were also sampled. For the relevant Harris matrix see Fig 76.

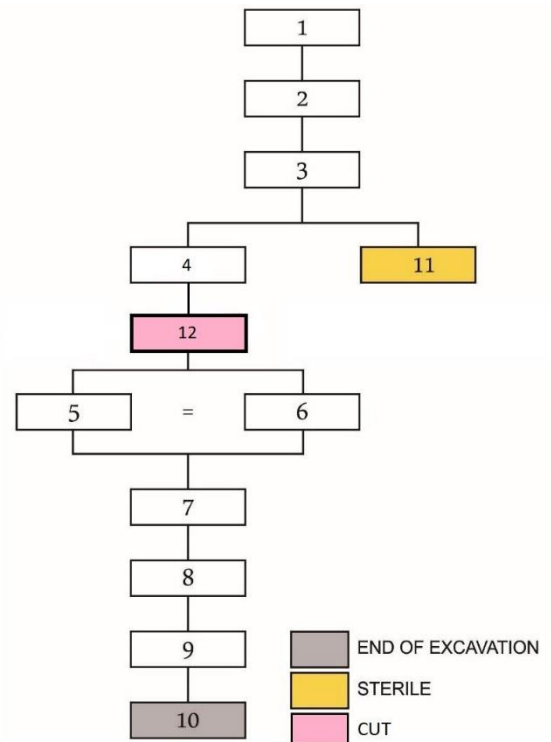


Fig 76: Harris Matrix for VEY 1605 (Designed by Annalisa Christie, digitised by Abdul Samad)

The only date from Veyvah comes from context 4 of unit 1605 which is dated to sometime between AD 1435-1615 (Beta 438194).

#### 4.4.7 Overall interpretation of sites excavated in M. Veyvah

Most of the units excavated in Veyvah were rather unproductive with only one unit (Unit 5) yielding rich finds. Veyvah did not have a known association with an elite settlement and it yielded a relatively different material culture. The presence of a comparative abundance of

marine fauna as well as earthenware pottery (with the most number of rims) and a lack of glazed ware suggests that Veyvah may have represented a more domestic, fishing settlement. However, the recovery there of 2 beads of distant origin – the only 2 beads discovered across the 3 islands sampled - suggests that Veyvah was connected to networks of exchange which included long-distance connections.

## **4.5 Results**

Having presented the 16 units investigated, this section will discuss and compare them.

### **4.5.1 Total volumes excavated**

Table 18 shows clearly that in terms of Utheemu, the unit with the highest volume excavated was UTH 1604 with a total of 2.79m<sup>3</sup> while the other units were considerably smaller. The units excavated in Male' had relatively similar volumes with the exception of N12 which had a volume of about 0.85m<sup>3</sup> and N5 which was interrupted early. The Veyvah units also share somewhat similar volumes except for VEY 1605 which was the largest.

Island	Unit	Unit measurements (LxW) (m)	Unit depth (m)	Total volume (m <sup>3</sup> )
Ha. Utheemu	1	0.75x0.75	0.92	0.5175
	2	1x1	0.66	0.66
	4	2.55x1	0.9	2.295
		0.45x0.6	0.9	0.243
		0.45x0.4	1.4	0.252
		Total volume for UTH 1604		
	5	2x1	1.17	2.34
<b>Total UTH</b>				<b>6.3075</b>
K. Male'	N9	0.50x0.50	0.8	0.2
	E4	0.50x0.50	0.8	0.2
	E7	0.50x0.50	0.83	0.2075
	N5	0.50x0.56	0.18	0.0504
	N12	0.50x1	1	0.5
		0.50x1	0.7	0.35
Total volume for N12				0.85
	E14	0.50x0.50	0.9	0.225
	N2	0.50x0.50	0.8	0.2
<b>Total MAL</b>				<b>1.9329</b>
M. Veyvah	1	1x1	0.42	0.42
	2	1x1	0.4	0.4
	3	1x1	0.36	0.36
	4	1x1	0.27	0.27
	5	1x1	0.85	0.85
<b>Total VEY</b>				<b>2.3</b>
<b>Total volume excavated for three sites</b>				<b>10.5404</b>

Table 18: Total volume excavated for all sites

#### 4.5.2 Chronology of sites

All three sites yielded various amounts of charcoal samples and 7 samples were sent for radiocarbon dating (Table 19).

Site/Sample no	Context	Material dated	Lab no	$\delta^{13}$ value	BP date	Calibrated date
UTH 1604, 19	102	Charcoal	Beta 438192	-26.8 o/oo	450 +/- 30 BP	Cal AD 1420 to 1465 (Cal BP 530 to 485)
UTH 1605, 76	215	Charcoal	Beta 438868	-28.4 o/oo	70 +/- 30 BP	Cal AD 1690 to 1730 (Cal BP 260 to 220)
						Cal AD 1810 to 1920 (Cal BP 140 to 30)
						Post AD 1950 (Post BP 0)
UTH 1605, 81	220	Charcoal	Beta 438869	-28.9 o/oo	150 +/- 30 BP	Cal AD 1665 to 1785 (Cal BP 285 to 165)
						Cal AD 1795 to 1890 (Cal BP 155 to 60)
						Cal AD 1905 to Post 1950 (Cal BP 45 to Post 0)
UTH 1605, 87	229	Charcoal	Beta 438870	-23.4 o/oo	820 +/- 30 BP	Cal AD 1165 to 1265 (Cal BP 785 to 685)
MAL N2, 37	4	Charcoal	Beta 438193	-25.1 o/oo	470 +/- 30 BP	Cal AD 1415 to 1450 (Cal BP 535 to 500)
MAL E14, 49	5	Charcoal	Beta 438195	-25.2 o/oo	830 +/- 30 BP	Cal AD 1160 to 1265 (Cal BP 790 to 685)
VEY 1605, 57	4	Charcoal	Beta 438194	-23.2 o/oo	410 +/- 30 BP	Cal AD 1435 to 1510 (Cal BP 515 to 440)
						Cal AD 1600 to 1615 (Cal BP 350 to 335)

Table 19: Radiocarbon dates for the assemblage calibrated by Beta Analytic, Inc. using the curve INTCAL13 (Talma and Vogel 2013; Reimer *et al* 2013)

As shown above, four of the dated samples come from Utheemu: 1 from unit 1604 and 3 from unit 1605. For unit 1604, samples came from Context 102, which was the fill of a linear cut (Context 104) and was dated to sometime between AD 1420 - 1465 (Beta 438192) predating the 16<sup>th</sup> century palace structure. This deposit lies right under the present surface. It is possible that the cut may have been made quite recently, then filled with rather old material taken from elsewhere on the site. What it does indicate is that there is material on site which is older than the palace.

For unit 1605, samples from contexts 215, 220 and 229 were dated. The oldest from the three samples came from Context 229 which was dated to sometime between AD 1165 - 1265 (438870) and this deposit overlies the fill of a grave. This also predates the palace structure and is shortly after the reported conversion of Maldives to Islam in AD 1153, suggesting that the grave (Context 240) underneath would be a very early Muslim burial. The other two dates which relate to a hearth and a pavement were younger, and could be any time between AD 1665 and now (Beta 438868 and 438869). Therefore, it can be suggested that an Islamic cemetery existed pre-dating the palace structure in this area and later on, upon the construction of the palace (presumably during the 16<sup>th</sup> century) the area where unit 1605 was located was used as a kitchen which is supported by the burnt layers of this unit with the hearth, ash and charcoal deposits. It is difficult to relate the dated context 102 of unit 1604 as this unit evidenced modern disturbance thus, it may be that the dated context could have been brought in from elsewhere despite the old material from this context.

Two samples were dated from Male'. The oldest of the two came from Context 5 of unit E14 which was dated to sometime between AD 1160 and 1265 (Beta 438195). The other date came from Context 4 of unit N2 which was dated to sometime between AD 1415 and 1450 (Beta 438193). Thus it can be said that the early phases of occupation in this park are dated to between AD 1160 and 1265, shortly after the reported conversion to Islam and the mid-layers in which most of the finds were abundant can be dated to sometime in the first half of the 15<sup>th</sup> century. This predates the construction of the palace ground as the palace is said to date to the 16<sup>th</sup> century according to written sources although this has not officially been dated.

The only date from Veyvah came from Context 4 of unit 1605 which was dated to sometime between AD 1435 and 1615 (Beta 438194). This deposit is a pit at the southwest corner of the unit and yielded abundant material including the two beads, suggesting a very active occupational phase. Thus, for this unit, the mid layers of occupation can be suggested to

date to sometime between the 15<sup>th</sup> and 17<sup>th</sup> centuries with a very disturbed more recent phase of occupation above this unit, attested by the modern finds from contexts 1 and 2.

Therefore, it can be said that in terms of the chronology of the sites excavated, the earliest sites among the three islands came from UTH 1605 and MAL E14 (dated to sometime between the mid-12<sup>th</sup> and 13<sup>th</sup> centuries) while the second oldest sites from MAL N2 and UTH 1604 (early-mid 15<sup>th</sup> century). Veyvah is also closely dated to this period sometime between the early 15<sup>th</sup> and early 17<sup>th</sup> centuries. The latest or most recent dates came from UTH 1605 dated to sometime between the mid-17<sup>th</sup> century to the present.

#### **4.5.3 Report on faunal assemblage**

The faunal remains from the excavation for the present research was analysed by Dr. Annalisa Christie. The following report is a summary of the results taken from Christie's analysis. For further details on individual units as well as individual faunal group details see Appendix 2.

##### Method

The faunal remains were divided into two groups; shells and bones which were further divided into various categories within each group. Shells were identified to species level whereas bones were divided into marine and terrestrial fauna. Evidence of human activity was recorded if present. These included any evidence of deliberate modification for shells and burning and butchery or scraping. The majority of the bones in the assemblage were fragmentary with only a few exceptions.

##### Results

Overall: A total of 4850 mollusc remains and 2841 fish and animal bones were recovered from the recent excavations and fairly evenly distributed across the three islands.

48% of the total shell assemblage consisted of cowrie shells and 76% of them were recovered from Male', where 74% of which came from a single context. The cowrie assemblages from Male' and Utheemu were dominated by *Monetaria moneta* while Veyvah featured a more even mix between *Monetaria moneta* and other cowrie species in combination. However, *Monetaria moneta* was still dominant overall.

The fish remains from the Maldivian assemblage were dominated by post cranial elements (vertebra and fin species). The absence of either cranial and post cranial remains from



Male' is interesting as it is abundant in Utheemu and Veyvah. In addition, a significant dominance of other shells, with the exception of the cowries were recovered from N12 occur in Male. The other shells from the shallow contexts comprise material from beach sand, however *Atactodea glabrata* become increasingly dominant in later contexts across the site. Terrestrial fauna was under-represented in all three islands, while the majority of these comprise of birds and commesural fauna like rodents and bats.

Ha. Utheemu: most of the remains were recovered from units 4 and 5 with the former recovering the largest assemblage from the island overall. This could possibly be due to the size of the excavation area for this unit (having the highest volume excavated from this island) however, notable differences were recorded for these two units. Unit 4 yielded a large number of cowries (particularly *Monetaria moneta*- 264) while Unit 5 only yielded 13. Moreover, Unit 5 contained a comparative abundance of fish cranial remains (n=114), particularly abundant in contexts 217, 220 and 224. This difference may suggest different discard patterns for fish remains. Indeed, since this unit is said to include the kitchen area, it is highly likely that this was where fish would have been processed thus, a greater amount of uneaten carcasses may have been discarded in that area.

A high proportion of other shells (not belonging to the cowrie species) comprised of *Atactodea glabrata* were recovered from Unit 5 especially dominant in Context 229 (n=87). Interviews conducted in the Maldives did note that this species was deliberately collected though the purpose is unclear and Christie (2018) suggests it is unlikely that they would have been eaten. A high number of other shell fragments were also found in this unit and are thought to have issued from beach sand.

Overall from this island, many non-cowrie shells (n=1026) were recovered compared to cowries (*moneta* 287, other cowries 52). Marine animals dominated compared to terrestrial fauna which amounted to only 138. Among the marine animals, fish post cranial remains were more abundant (n=638) than cranial remains (n=292).

K. Male': remains were distributed very fairly across the site with the exception of N12 which recovered a large number *moneta* cowries (n=1360) most of which came from Context 2 (n=1246). Male' also had a dominance of *Atactodea glabrata*, especially in deeper contexts. Moreover, a large proportion of other shells comprised of fragments of various species of shells within beach sand.

Overall, the Male' shell assemblage is similar to Utheemu where many non-cowrie shells (n=842) were present. Unlike Utheemu, terrestrial fauna (bird rather than ungulates) dominates over the marine fauna (mostly fish post cranials).

M. Veyvah: most of the remains came from Unit 5, particularly concentrated in Context 4. These consisted of a large number of fish remains, particularly vertebra and fin species. The material from this unit was generally well preserved and upon initial assessment of the fish remains, the presence of reef fish was noted. The assemblage from this island also comprised a higher diversity of cowrie species as opposed to the other two islands. Some of them have a preference for seagrass environments which dominate the surrounding shallow waters.

Overall, Veyvah is similar to the above two islands in terms of a dominance of other shells (n=668) over cowries. Fish remains are more abundant compared to terrestrial remains and in terms of fish remains, fish post cranial remains dominate.

#### Comparison of faunal assemblage across three islands

It is difficult to make definitive interpretations due to the differences in excavation context and scale. Cowrie shells were particularly dominant in the material from Male' and Utheemu Palace (units 4 and 5) and this could potentially be associated with evidence of higher wealth on those two islands. Terrestrial resources remain comparatively few in the Maldivian assemblage with most of them representing birds rather than ungulates. This agrees with the historical sources as well as the idea that Maldivian communities were largely reliant on the sea for their subsistence. This is particularly more evident in the remains from UTH 1604, UTH 1605 and VEY 1605 with the majority of the fish bone recovered from these areas. The comparative absence of such remains from Male' and other units in Veyvah highlights the importance of the location of excavations and the importance of the sampling strategy, ensuring that all deposits are sieved with an appropriately small mesh size.

#### **4.5.4 Comparison of units**

Units in Utheemu, were dispersed throughout the island, and no similarities were noted for any of the 4 units. UTH 1601 illustrated the disturbance caused by previous dredging, leaving only a few centimetres of the original occupational level intact. UTH 1602 which was on a slightly elevated mound was not so productive but was helpful in understanding the nature of stratigraphy on elevated ground. Although units UTH 1604 and UTH 1605 were placed within

the same building (a palace) they yielded very different stratigraphies and material. UTH 1604 featured several cuts and pits and disturbances due to the modern cable buried within this area. Moreover, UTH 1605 supported the idea that this area functioned by revealing the actual kitchen wall as well as some burnt kitchen floors and a possible hearth. What was surprising though for this unit, was the recovery of the burial underneath the kitchen. This certainly points to a change in the use of this area over time.

In Male', many units displayed similarities as would be expected due to the proximity of units with each other as well as the fact that historical sources suggest this whole area was part of one palace. All units had a rather compact surface deposit due to trampling and some included modern white beach sand within the surface deposit (E4, E14, N5, N9, N12). This white beach sand, with abundant coral and shell inclusions, appeared in many units within this park and it was reported that white beach sand would be deposited on the surface of this park during weddings. Some contained modern debris (N9, N2 and E7) while few yielded archaeological finds within this deposit (E7 and N5).

Units E4, N9 and E7 yielded very similar deposits. Context 3 of E4 was very similar to Context 2 of E7 and context 3 of N9. Furthermore, Context 4 of E4 was very similar to Context 3 of E7 and context 4 of N9. In addition, the presence of a frequent number of stones (some shaped) in many of the units within the park indicates the result of a possible wall collapse. In some units, the stones were not faced/ worked or plastered while in other units they were faced and/or plastered and sometimes painted as well. The sterile deposit of E4 was also very similar and equal to Context 5 of E7 and Context 6 of N9. This supports the acknowledged notion in written sources of the destruction of the palace structure in the vicinity as well as the stone/plaster remains bearing resemblance to those of the existing building *Usgekolhu* in the park.

In the case of Veyvah, most units did not generate productive results except 1605. Units 1601 and 1602 were very similar throughout with the same type of spongy and rooty topsoil followed by another layer of darker soil reaching to sterile at about the same depth of about 40 cm. The rest of the units displayed different characteristics. Unit 1603 had modern debris on the surface and was somewhat disturbed by an interference within the deposit below the surface. Sterile subsoil was reached somewhat around the same depth as units 1601 and 1602. Unit 1604 was also another unproductive unit reaching sterile around 0.27m. Unlike these four in Veyvah, unit 1605 was exceptional in terms of the stratigraphy as well as finds. The deposits were rather wet and moist and rich in faunal remains as well as pottery and shells. The comparative abundance of marine fauna along with earthenware pottery (with the most number of rims) and

a lack of glazed ware suggests that Veyvah may have represented a more domestic, fishing settlement. However, the recovery there of 2 beads of distant origin – the only 2 beads discovered across the 3 islands sampled - suggests that Veyvah was connected to networks of exchange which included long-distance connections.

#### **4.6 Conclusion**

This chapter described in detail the results of the excavation of the three islands. The excavation of a total of 16 test pits resulted in a good collection of archaeological material.

For Utheemu, although UTH 1601 and 1602 were not so productive, the two units within the palace recovered many finds including remarkable structural features and a burial. However, this is likely to be the result of the scale of excavation for these two units having the highest volume excavated from Utheemu. In terms of chronology, the dated context from UTH 1604 suggested a date of the 15<sup>th</sup> century and the dated contexts from UTH 1605 suggested dates ranging from the 12<sup>th</sup> century to the present. The faunal assemblage from Utheemu was also mostly from 1604 and 1605 with noticeable differences between these two units (such as the absence of cowries from 1605 but a comparative abundance of fish remains and *Atactodea glabrata* from this unit).

For Male', due to the presence of a lot of worked stone fragments and plaster in a lot of units, it is assumed that this site is associated with possible wall collapses (presumably from the palace destruction). Moreover, the recovery of a number of cowries from unit N12 indicate the importance of cowries in the Maldives although it was not a hoard, as they remain too few and too disparately distributed (Christie and Haour 2018). Once again, N12 was also the unit which yielded the greatest number of finds as well as the highest volume excavated from Male'. Two dates from E14 and N2 suggested dates between the 12<sup>th</sup> and 15<sup>th</sup> centuries. Most of the faunal remains were also recovered from N12 but for the rest of the units were fairly similar. *Atactodea glabrata* seemed to dominate in Male' as well.

Veyvah yielded fewer finds and was less productive compared to Male' and Utheemu (with the exception of VEY 1605) with a lot of root disturbance as well as no structural features. Unit 1605 was also the unit with the highest volume excavated from this island. Moreover, this unit recovered the only beads (2) from the Maldives for the present research, and the context which they were recovered (4) was dated to between the early 15<sup>th</sup> and 17<sup>th</sup> centuries. In terms of fauna, a comparatively similar number of faunal remains were recovered as the other two islands and once again, Unit 1605 yielded the most remains. Most of the faunal remains from

this unit included fish remains and were very well preserved compared to all three islands. Most of the faunal remains were also recovered from a single context (Context 4).

To sum up, each unit yielded at the very least some archaeological finds except VEY 1604, while some units yielded major finds such as abundant archaeological material as well as structural features, for example, hearths, pits, burnt floors, a burial, etc. Pottery was recovered on every island and included Chinese and coarseware, and the small finds recovered include metal objects (ferrous and cuprous), stones (some shaped, plastered and some possibly originating outside the Maldives), glass fragments including a number of broken bracelets as well as two beads. Many units yielded various amounts of charcoal fragments and the results of the dates indicate that the sites excavated from the Maldives date to sometime between 1160 - 1615 and to the present day. Faunal remains were also recovered from all islands including cowries and other shells, fish remains, terrestrial remains and unknown remains. There seems to be a significant absence of terrestrial fauna; mainly birds, and very few ungulates, were recovered and a dominance of fish remains with a higher proportion of post cranial remains. *Monetaria moneta* and *Atactodea glabrata* seem to dominate within the shell remains. Due to the differences in excavation context, scale and sampling strategy for the three sites, most of which were outside our control, it is difficult to make definitive comparisons or interpretations for the finds from this assemblage.

The next two chapters will present the pottery assemblage and the small finds excavated.

## Chapter 5: The pottery

### 5.1 Introduction

This chapter will analyse and describe the ceramic finds from the excavated sites described in Chapter 4. To date no detailed analyses of ceramic assemblages from archaeological sites in the Maldives have been conducted. Hence, this chapter aims to present a comprehensive pottery typology for the Maldives.

The importance of ceramics in archaeology is well-known for instance, in a study of Indian Ocean trade networks, Tripathi (2017: 3) describes it as one of the best ways to draw the outline of contacts between the people and routes followed by them. The study of ceramics is fundamental for the Maldivian archaeological record, considering that many other types of material culture were perishable. Thus ceramics being one of the very few traces left it is very important to study them. This case is especially interesting since the Maldives are exclusively coralline and do not contain clay sources suitable for pottery manufacture. Mikkelsen (1991) points out the issue of the lack of clay and says “because of the lack of clay on the islands, one has to look for parallels to the pottery in areas outside the Maldives, on Sri Lanka, India and other places.” So far no evidence exists to suggest that pottery was made locally from imported clay, thus it appears that all ceramics present at sites in the Maldives must have been imported to the islands from external sources (Carswell 1976; Mikkelsen 1991; 2000; Bopardikar 1992). Suggested origins include Western Asia (Persia), Europe, Far Eastern Asia (China, Thailand, Indonesia) and South Asia (India, Sri Lanka) (Carswell 1976, Mikkelsen 1991; Litster 2016). Hence, the study of ceramics can aid a better understanding of the trade routes and activities of the past. Pottery was highly valued in the Maldives and Ibn Battuta tells us how the inhabitants of the Maldives bought pottery from visiting boats and that a cooking pot was bartered for five or six chickens (Gibb 1929; Husain 1976: 45). Other aspects such as their usage and functions in the Maldives are also useful information that can be derived from such a study.

Moreover, despite the abundance of ceramics and their reported recovery in previous surveys and excavations in the Maldives, relatively few studies have been done and published on them (Carswell 1976; Mikkelsen 1991; 2000; Bopardikar 1992; Tripathi 1999; Litster 2016). One particular problem in the wider region is the lack of proper studies of common earthenware/coarseware pottery from the western Indian Ocean (especially India for example). Such pottery is said to date to the “Early medieval” settlements in India but problems surround its dating and classification, (see for example recent overviews by Singh 2011; Ali 2012; Hawkes 2014a; b).

According to Hawkes (2014a; b), the early medieval period in India is a rather poorly defined period whereby the current understanding of this period is viewed as very general and simply a “handmaiden” and considered to be of lesser interest than both earlier and later periods. Hawkes (2014b: 208) indeed refers to this period as one of the most “under-represented areas of archaeological research.”

More generally, coarsewares have not generated the same volume of research as imported wares such as Chinese/Islamic pottery. The consequences of this neglect are profound. For example, as pointed out by Schenk (2015: 146), coarsewares often represent vessels of personal belonging such as cooking vessels, and could provide profound information in chronology.

These studies are important and very relevant in the understanding of the pottery found in the Maldives as it is said that all pottery was imported to the Maldives from India (mostly South India) and Sri Lanka (Carswell 1976; Mikkelsen 1991; 2000; Bopardikar 1992; Tripathi 1999; Litster 2016). In addition, Chinese ceramics as well as other Southeast Asian and Persian/Islamic ceramics have also been reported as occurring in the Maldives (Carswell 1976; Litster 2016). The encounter of ceramics from various parts of the Maldives (including from underwater) (Collings 2010), as well as the variety of ceramics recovered from the present assemblage which will be mentioned in this chapter, attests to the existence of regional and overseas trade and shows ceramics played a significant role in maritime trade (Tripathi 2017: 4). Different types of ceramics were clearly imported to the Maldives. Pottery was not only for transporting water but also for a wide variety of other uses (Carswell 1976; Mikkelsen 1991; Litster 2016).

The aim of the ceramic analysis in this research is thus to understand interaction networks between the Maldives and other Indian Ocean communities as well as other regions that traded with the Maldives. In addition, this analysis is carried out to understand the extent of trade, timing and the transport networks between the Maldives and the global world.

The main aim of this chapter is to describe the ceramic assemblage recovered from the present doctoral research. Where possible, comparative examples will be provided from sites outside the Maldives. The first section of this chapter surveys the studies carried out on archaeological ceramics from the Maldives prior to the present work. The methodology used to study the present assemblage (n=4890 sherds) is then outlined. It will then discuss the study of coarsewares and glazed wares separately followed by the rim analysis which will enable us to recreate forms and possible functions, although it should be noted that most of the sherds from

the assemblage are very fragmentary and small for rim analysis. At the end, the assemblage from the three excavated sites and their relevant contexts will be compared to present concluding remarks about the distribution of pottery.

## **5.2 Previous work on ceramics in the Maldives**

This section will outline previous studies conducted on the ceramic finds. Five such studies exist (see Table 20 for a summary). The first assessment comes from the work of Carswell (1976) on ceramics from undated contexts in K. Male' which have been given to the Ashmolean Museum in Oxford and which were looked at and studied for this research by the author. His work is very thorough and represents the first to conduct an assessment on site/s and finds pertaining to the Islamic period. His observations on the ceramics come from surface collections in Male' including the surface collections from the cemetery clearance as well as two trial trenches of 2 x 1m excavated in the palace and the pottery he purchased, but none of these recovered much Islamic pottery. Carswell (1976) attributes certain sherds to specific Chinese types/periods. Moreover, he observes that one Chinese sherd matches a bowl excavated from Dhlo Dhlo in Southern Africa. This bowl was recovered along with local pottery and a Dutch flask which have been used to emphasise the continuity of Zimbabwe culture up until the 17<sup>th</sup> century (Carswell 1976: 154). His observations include some pottery sherds resembling material from a site south of Vankalai in Northwest Sri Lanka (see below) (Carswell 1976: 158). He also notes that the Maldives' nearest source of clay would be Sri Lanka. Carswell's study identifies various Chinese types to periods. The types mostly include Chinese Celadon and green ware (dated to the 13<sup>th</sup> century), followed by Chinese blue and white porcelain dated to the 16<sup>th</sup> century, East Asian green ware, South East Asian wares including blue and white, mixed earthenwares and stoneware. They include many bowls and dishes, small cups (including celadon stem-cups), serving vessels, cooking vessels and lids of round boxes. He also purchased Persian dishes from the locals (Carswell 1976: 160).

The earliest fragments from his surface collections include some from small bowls and dishes, the majority of hard grey ware with grey or greenish glazes, some with combed and/or incised decoration and one with carved petal panels, and he suggests these may well date to the late Sung period (AD 960-1279). Chekiang celadons are also represented here by dishes with plain or foliate rims and bowls of varying diameter usually with everted rims. Other celadon sherds were also recovered dating to the Ming period (AD 1368-1644). Other types of ceramics from his surface collection include Sawankhalok type (crackled glaze/brownish glaze and



carved decoration), the lid of a round box with moulded floral design resembling Ching pai, 'Marco Polo' ware, Annamese ware, buff pottery (with turquoise glaze, one of the rare instances of Islamic pottery), and a dish which he interprets as a late Hellenistic dish with rouletted patterns (Carswell 1976: 152). Moreover, blue underglazed sherds of bowls from the 14<sup>th</sup> century were also recovered and one of them is an everted rim of a bowl which he suggests resembles bowls found in Syria (Carswell 1976: 152). Most of the blue and white sherds are also said to be fragments of bowls and date to between the late 15<sup>th</sup>-16<sup>th</sup> century (Carswell 1976: 152).

Pottery recovered from the excavations in the Palace include a few pale grey ware sherds with dull glaze and one sherd, part of a yellowish bowl with warm glaze with a flattened rim and sloping sides which Carswell (1976: 158) suggests is probably Islamic. Moreover, here he recovered 7 earthenware sherds with ribbed forms, carinated sharply and overhanging rims (Carswell 1976: 158). He comments that this group of pottery from the excavations (both glazed and earthenware sherds) resemble pottery from south of Vankalai in north west Ceylon. To this he adds that "there seems to be a direct link between the date of the lowest level at Male' and the material from Vankalai" (Carswell 1976: 159). He also bought eight Persian pottery dishes (typical of Kirman ware) and one Chinese Swatow dish.

In summary, Carswell's assemblage is a good indication of the variety of pottery found in the Maldives. The most common type of pottery from his work is glazed ware mostly including serving vessels (bowls, cups, plates, etc.) of Chinese blue and white porcelain and greenware celadon and very few Persian ware dating to between the 12/13<sup>th</sup>- 18<sup>th</sup> centuries. It is based on this result of finding more Chinese pieces in the Maldives that he claims a one direction shipping route governed by the monsoon, i.e. the Maldives being on the westbound trade route for Chinese porcelain bound for Africa. However, although his excavations resulted in more Chinese and less Islamic and/or earthenware, it is suggested here that the reason for the limited number of earthenware sherds from his work is because it is likely that he selected glazed sherds in the context of the surface collections, since the assemblage reported in this thesis shows opposite results in terms of the number of earthenware and glazed ware.

The second study of the archaeological ceramics in the Maldives comes from the preliminary phasing of the ceramics by Mikkelsen from Thor Heyerdahl's excavation in the temple area at F. Nilandhoo (Mikkelsen 1991: 185-186, 192-193). This is also the first archaeological test excavation ever carried out in the Maldivian islands with a stratigraphically documented pottery and artefact sequence. Mikkelsen presents some comments on pottery from

the surface and upper levels of Nilandhoo which is said to be dated to the post Islamic period. According to Mikkelsen (1991: 185) pottery dominates among the finds however very little research has been done on the pottery from these areas, and little has been published. Thus his observations are suggestions on the possible origin of the pottery. He suggests some sherds have parallels on Sri Lanka and in Southern India (Prematilleke 1982: 192). But Indonesia has also been suggested as a possible origin for some of the sherds. He identifies some of the decorations as well glazed pottery and porcelain (Mikkelsen 1991: 194-197) and as will be evident below, these identifications are very similar to the assemblage being studied in this chapter. According to Mikkelsen (1991: 200), a thin walled brown pottery decorated with different lines, net, waffle decoration was used for a long period of time and is not useful for dating purposes. The most common decoration in his assemblage are incised lines (Mikkelsen 1991: 194 and 200). Chinese porcelain has been identified to belong to Longquan celadon dating to between the 10<sup>th</sup>- 14<sup>th</sup> centuries. He also comments on the half glazed pottery that occurs frequently on the surface of the islands in the Maldives. According to a renowned local historian Mr. Mohamed Lutfi, these are sherds belonging to large storage urns that were brought from the two ports of Cochin and Calicut on the Malabar Coast of SW India to the Maldivian Islands during the 15<sup>th</sup> and 16<sup>th</sup> centuries (Mikkelsen 1991: 200). They were used as containers for imported rice and later for storing other types of food (Mikkelsen 1991: 200). They have a dark red fabric, a large body and a thick everted rim and some are black glazed (Mikkelsen 1991: 200). Moreover, he states that glazed pottery from the layers dating to the Islamic period probably belongs to this late period of import from India (Mikkelsen 1991: 200). In addition, he assigns the incised line decorated pottery to India and Sri Lanka (Mikkelsen 1991: 201).

Around the same period, Archaeological Survey of India (ASI) also reported on the presence of similar earthenware and Chinese porcelain recovered during their investigations (Bopardikar 1992). They investigated the pre-Islamic remains in the islands of Thoddu and Landhoo and North Nilandhoo and carried out small scale excavations on the islands of Ariadu, Kudahuvadu and Kuramathi in the central Maldives. Pottery finds include red ware pottery, glazed ware and Chinese celadon (including a bowl). The main shapes include carinated bowls, jars, *handis* (a deep wide-mouthed cooking vessel) and lids (Bopardikar 1992: 175-177). Tripathi (1999) commenting on the work of ASI also points out that pottery would have come to the Maldives either from India or Sri Lanka.

The excavations at Kaashidhoo also contribute to the knowledge of the Maldivian ceramic assemblage. The Buddhist monastery site on this island was excavated during a 3-year

period from 1996-1998 covering an area of 1880m<sup>2</sup>. Mikkelsen (2000) provides a preliminary description of the ceramics from the excavated site of Kuruhinna Tharaagandu at K. Kaashidhoo. According to Litster (2016) who studied some of the ceramics from this site (18 sherds - see below for details of her work), the largest quantity of ceramics from any archaeological investigation was found from this site however, not much detailed study has been done on them apart from general observations. Mikkelsen mentions six sherds of earthenware pottery which were recovered from a feature dated to AD 500-620 (Mikkelsen 2000: 17-18). Pieces of pottery were also recovered from the grave filling of all the four graves found at the site. They have been dated to AD 885-1170 (Mikkelsen 2000: 19). The most common artefact here is also pottery. Most common is the coarse red pottery with thick rims, storage jars which probably came from India and Sri Lanka (Mikkelsen 2000: 19). The assemblage also includes finer pottery decorated with lines and 'brush' patterns, etc. which is said to have come from India (Rao 1994). The stone ware and Chinese sherds are mostly grey and light green bowls. The origin of many of these pieces dating from the 9<sup>th</sup> century onwards is southern China (Mikkelsen 2000: 19).

Finally, the most recent contribution to Maldivian ceramic analysis was carried out by Litster for her Phd thesis in 2016. She provides a detailed analysis of a total of 1669 sherds previously excavated during Thor Heyerdahl's expedition (Skjølsvold 1991) and Mikkelsen's (2000) excavations (see above and Chapter 3 for further details) as well a small group of surface finds by locals. These include 18 sherds from Mikkelsen's excavation in K. Kaashidhoo (Mikkelsen 2000); 1180 sherds from F. Nilandhoo (Skjølsvold 1991), 40 sherds from S. Gan and 423 sherds from Gn. Fuvahmulah (the latter three sites were excavated by Thor Heyerdahl's team). In addition, 4 sherds from GDh. Vaadhoo and 4 sherds from K. Male' were also studied which were collected previously as surface finds by local Maldivians and gifted to Litster. For her study of this ceramic assemblage, she uses the methodology of classifying sherds to 'ware families' and 'ware types' based on their attributes, which has been used by Kennet (2004) and Saunders (2013) in their study of the Western Indian Ocean ceramic assemblages.

In her thesis, she classifies the Maldivian assemblage to four ware families which are further broken down into five ware types: Longquan Celadon from the Far East, Paddle Impressed, Northern Black Polished and Indian Red Polished ware from South Asia, Sasanian Islamic from the Gulf and the Red Sea and an Unknown category (Litster 2016: 140-142). Her study shows that some of the far eastern wares date to between the 12<sup>th</sup>- 14<sup>th</sup> centuries, early-middle Qing to late Qing periods (17<sup>th</sup>- 20<sup>th</sup> centuries) and early Song period. She describes one

sherd as British dating to approximately 19<sup>th</sup>- 20<sup>th</sup> century and states that this highlights the “taphonomic issues present in the uppermost layers” (Litster 2016: 156). She suggests the presence of South Asian ceramic in all investigated sites during all occupation phases with cord and paddle impressed types dominating the decorative types while Chinese materials are said to be evident in more recent phases (Litster 2016: 161). Moreover, the functional categories for the earthenware in her assemblages are described as large storage vessels or *handi* and cooking vessels for almost all earthenware which dominates the South Asian ware type as well as sprinklers and lamps suggesting a decorative or ritual function. In terms of possible function for the Chinese wares she suggests food preparation (without heat), serving and transport (Litster 2016: 144).

Thus, although preliminary studies of ceramics from the Maldivian archaeological sites existed prior to the work presented here, none had concerned substantial assemblages from dated sequences.

Name of contributors	Year/s of research	Location of activities	Methodology	Key Observations
John Carswell	1974	K. Male'	Pottery analysis from undated contexts: surface collection from the streets of Male, Hadibi Mosque and its cemetery, trial trench excavations in Male' Sultan park. Purchased Persian dishes from the locals.	Most common types of pottery were glazed and Chinese thus, he claimed a one direction shipping route governed by monsoon, i.e. Maldives being on the westbound trade route for Chinese porcelain bound for Africa. Attributed certain sherds to specific Chinese types/periods - mostly celadon and greenware of the 13 <sup>th</sup> century, Blue and white porcelain of the 16 <sup>th</sup> century, East Asian greenware and Southeast Asian wares). Some sherds resembled material from Dhlo Dhlo in Southern Africa and Vankalai in Northwest Sri Lanka. Other ceramic types found include Sawankhalok type, Marco Polo ware, Annamese ware, buff pottery, possible late Hellehsitic dish and Syrian resembling bowl and Persian ware (12/13 <sup>th</sup> - 18 <sup>th</sup> century).
Egil Mikkelsen	1983 and 1984	F. Nilandhoo	Preliminary phasing of the ceramics from the surface and upper layers (said to date to post Islamic period) of the test excavations conducted on a Buddhist site.	Some sherds had parallels in Sri Lanka and in Southern India as well as possible Indonesian origins. Studied decoration types on earthenwares (which included a thin walled brown pottery with different line, net and waffle decorations). Most common decoration was incised lines. Also recovered Chinese celadon (10 <sup>th</sup> - 14 <sup>th</sup> centuries) and half glazed pottery (frequent on the surface). He suggests the half glazed sherds to belong to large storage urns brought from the Malabar coast during the 15 <sup>th</sup> and 16 <sup>th</sup> centuries.
Archaeological Survey of India	1987	N. Landhoo, AA. Thoddo, F. Nilandhoo, AA. Ariadu, Dh. Kudahuvadu, K. Kuramathi	Investigated ceramics from surveys and small scale excavations of pre-Islamic sites.	Pottery recovered include red ware and glazed ware (including Chinese celadon). Suggested pottery would have come from India or Sri Lanka.

Egil Mikkelsen	1996-1998	K. Kaashidhoo	Preliminary description of pottery from the excavation of a Buddhist monastery site.	Include earthenware sherds from a feature dated to AD 500-620 and grave fillings dated to AD 885-1170. Most common was coarse red pottery with thick rims and storage jars (possibly from India and Sri Lanka). Assemblage also had finer pottery with lines and brush patterns possibly from India. Glazed ware is dominated by celadon from the 9 <sup>th</sup> century.
Mirani Litster	2016	F. Nilandhoo, Gn. Fuvahmulak, K. Kaashidhoo	Analyse pottery previously excavated by Thor Heyerdahl and Egil Mikkelsen	Classified sherds to four ware families: Far Eastern Longquan celadon (dating to between 10 <sup>th</sup> - 20 <sup>th</sup> centuries); South Asian paddle impressed, northern black polished and Indian red polished; Sasanian Islamic from the Gulf and the Red Sea; unknown category. One 19 <sup>th</sup> - 20 <sup>th</sup> century British sherds was also recovered from the upper layer.

Table 20: Summary of work done on ceramics in the Maldives

### **5.3 Methodology**

The pottery assemblage to be discussed here consists of 4890 sherds (both earthen ware and glazed). All sherds with the exception of 136 (105 from Male' and 31 from Ha. Utheemu which were discarded after sampling) were taken back to England where they were washed and analysed at the SRU by the Author.

The analytical methodology employed in this thesis to develop the typology was borrowed from the attribute-based approach rather than the typological approach that has currently been employed in studies of Western Indian Ocean ceramics (see for example Kennet 2004; Saunders 2013; Litster 2016). Attributes here refer to “observable, repetitive, physical phenomena of pottery such as colour, minerals and assemblages of minerals, markings (such as fine lines, ridges), porosity and details of thickness, size, shape and decoration” (Rye 1981: 3, see also Rice 2005; 2015). These are the basic units of pottery analysis; attributes reveal techniques, which shed light on all aspects of pottery production and tradition such as manufacturing process, place of manufacture, changes over time and so on. The attribute-based approach has been used and developed for the archaeology of many areas of the world including West Africa (McIntosh 1995) where a database is created by recording all the formal and material attributes of each individual sherd which can then be used to carry out further quantitative analysis to determine the distribution of individual attributes or their co-occurrence (Nixon 2017: 125).

Thus, as far as the assemblage studied here is concerned, each sherd was recorded individually and attributes recorded independently. For the current assemblage six types of attributes were studied and will be discussed in detail below. They include sherd type (body, rim, base), fabric colour, inclusions, surface treatment, form and suggested function. However, form and suggested function were not available for each sherd. A description of individual sherds is provided in Appendix 3 for earthenware, and 4 for glazed ware.

Analysis and drawings were done by the author and photographs were taken by a Maldivian photographer Abdul Samad. In analysing the South Asian pottery, Prof. Anne Haour (SRU) and Dr. Ragupathy Ponnampalan were consulted as well as Dr. Ran Zhang (Durham University) for the Chinese pottery.

### 5.3.1 Sampling strategy

Due to the small number of glazed potsherds recovered (202 sherds), all were described in detail, regardless of size (see Appendix 4). However, all earthenware sherds were measured against a 50 Laari Maldivian coin (diameter 23.6mm) (Fig 77). Anything smaller was counted and discarded. The rest of the sherds were labelled with an individual number and set aside for full recording. At the outset of this sampling, 2758 sherds were discarded as smaller than 50 Laari and 2132 sherds were retained for analysis (Table 21).



Fig 77: Maldivian 50 Laari coin (Source: Shimla Jaufar 2018)

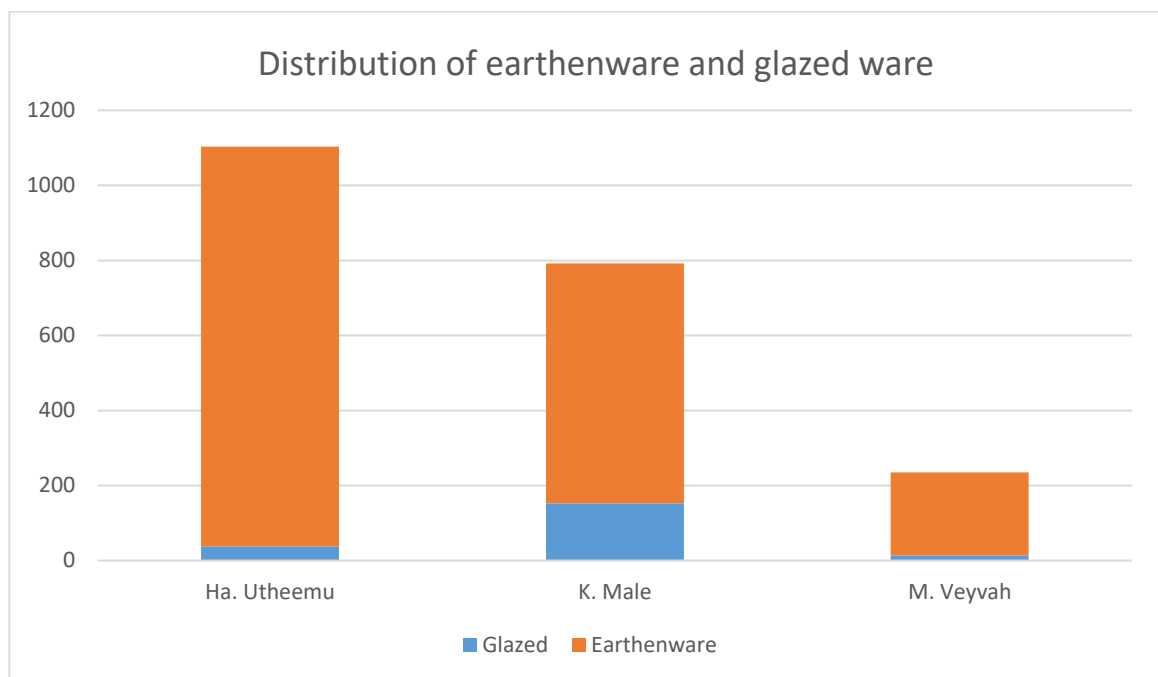


Fig 78: Distribution of earthenware and glazed ware across the sites

Site	Discarded	Retained
<b>Ha. Utheemu</b>	1438	1103
<b>K. Male'</b>	927	794
<b>M. Veyvah</b>	393	235
<b>Total</b>	2758	2132

Table 21: Number of discarded and retained sherds for each site



The retained assemblage was then further sorted. It was first split into different categories of surface treatment (earthenware and glazed), followed by the separation of rims and bases. After analysing the surface treatment for all retained sherds, the rims (which were now divided into glazed and unglazed) went through another discarding process (see Table 22 for sherd type distribution for each site). The discarding process was as follows; for earthenwares, any rims less than 5cm were simply recorded (as a rim with their surface treatment if any present) and not retained for further analysis with the exception of one sherd due to it being a spout (Fig 126). Where earthenware rims were larger than 5cm but too eroded for rim analysis, these were likewise discarded after recording them as larger but eroded. Thus only earthenware rims larger than 5cm with enough lip preservation was retained for rim analysis. For glazed wares, any rims less than 3cm rule were simply recorded (i.e., marked as a rim and their surface treatment) and not subjected to further analysis. Thus, only glazed rims larger than 3cm were retained for rim analysis. For both earthenware and glazed ware, bases were simply recorded with their surface treatment and no further analysis was carried out on them.

Thus, the current assemblage was divided into the following groups (adapted from Nixon 2017: 126):

- Undecorated earthenware sherds: attributes recorded include sherd type and fabric colour.
- Decorated earthenware sherds: attributes recorded include sherd type, fabric colour and analysis of decoration (surface treatment).
- Glazed sherds: attributes recorded include sherd type, fabric colour and analysis of glaze (surface treatment).
- Earthenware base sherds: no further analysis in this stage.
- Glazed bases base sherds: no further analysis in this stage.
- Earthenware rim sherds (having sufficient rim and/or handles or spouts): rim analysis conducted to create vessel form and diameter reconstruction.
- Glazed rim sherds (having sufficient rim and/or handles or spouts): rim analysis conducted to create vessel form and diameter reconstruction.

## 5.4 Attributes

For a description of individual sherds see Appendix 3 for earthenware sherds and Appendix 4 for glazed ware sherds.

### 5.4.1 Sherd Type

The majority of the sherds from the assemblage were body sherds. Out of 2132 sherds, a total of 1862 sherds were body sherds (87%) while 261 sherds were rims (12%) and only 8 were base sherds (0.4%) (see Table 22). In addition, the assemblage included a half of a vessel with both rim and the base preserved which was counted as a rim in the analysis.

	Ha. Utheemu		K. Male'		M. Veyvah		Total
	Earthenware	Glazed	Earthenware	Glazed	Earthenware	Glazed	
<b>Body</b>	1002	24	546	102	180	8	1862
<b>Rim</b>	65	10	95	46	41	4	261
<b>Base</b>	0	1	0	5	1	1	8
<b>Half vessel with rim and base</b>	0	1	0	0	0	0	1
<b>Total</b>	1067	36	641	153	222	13	2132

Table 22: Sherd type distribution for earthenware and glazed ware for each site

### 5.4.2 Fabric colour

This term refers to the colour of the clay rather than to any surface coatings. According to Rye (1981: 119), describing colour alone is “culturally and technologically meaningless as pottery from the same tradition, the same potter, the same firing and even the same vessel can vary considerably.” However, when correlated with other attributes (such as shape, decoration, materials, forming and firing etc.) it can be useful. The significance of examining such physical characteristics of fabric is that it can aid in the understanding of a variety of information with regards to the technology of the manufacturing process, the physical characteristics of the fired product and its provenance (Orton *et al* 1993: 132-138). Orton *et al* (1993: 138) state that the fabric colour can vary depending on the firing or post-depositional conditions rather than differences in original materials however, they also acknowledge that the fabric colour produced by certain workshops is “often quite precise and regular and provides a valuable means of distinguishing one producer from another.” Sometimes, colour also differs from the exterior and interior due to the firing process. For this study, general observations of colour are provided. Where the colour differed between exterior and interior, this was noted for each individual sherd (see Appendices 3 and 4). In most cases interior and exterior were the same. In general, the

colours observed in the assemblage are: black, shades of brown and grey, pink, orange, red, reddish brown, white, light pale (eggshell).

### 5.4.3 Inclusions

The term inclusions in archaeological literature refers to non clay additives that occur naturally in clay and/or added in the preparation of the clay (Rice 2005: 72). The purpose of non-plastic additives is that “many secondary clays become hard and strong after firing to relatively low temperatures, but are too plastic for forming vessels. Such clays also tend to crack during drying or firing” (Rye 1981: 18). Their workability can be improved and their susceptibility to cracking decreased by non-plastic additives such as rock fragments, minerals (quartz and calcite, micas), pieces of organic matter (seed, plant stems, root fragments), shell fragments or other particles distinct from the finer clay matrix (Rye 1981: 18; Rice 2005: 72-79). Tempering materials may also include man-made material such as grog, that is crushed pottery sherds. These can provide various advantages over natural types of non-plastic additives as they are a source of temper readily available at the production site thus eliminating the need for transport (Rye 1981: 23).

When describing inclusions in clay, one needs to be cautious of the usage of words. Often inclusions are also referred to as temper as well. Note that inclusions can originate from non-human activities like transport of eroded materials in rivers, and co-deposition of clay and non-clay minerals. The use of temper refers to the potter’s action of intentional addition of non-plastic additives in the clay. However, it can be rather difficult to determine whether the mineral inclusions are natural or artificial in their origin since all naturally occurring clay contains grains of minerals like quartz, feldspar, micas and many others especially when the source of the clay is unknown. Therefore, since it is uncertain to determine whether they are natural or artificial, unless there is a clear evidence of human behaviour (tempering), non-plastic additives should be labelled as inclusions rather than temper. They can be classified as mineral inclusions or organic inclusions (Rye 1981: 21; Rice 2005: 406-413). However, other kinds of inclusions, such as grog, can easily be identified as artificial (Rye 1981: 20; Rice 2005: 409-410). In addition to inclusions, voids or pores are also common in ancient pottery especially low-fired unglazed wares (Rye 1981: 20). All ceramics contain voids, their size and shape are influenced by the size and shape of particles in the clay body and

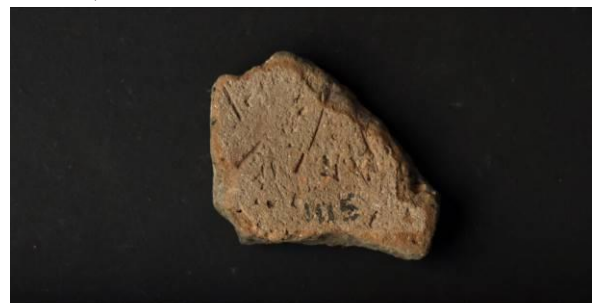


Fig 79: Sherd 1115 with straw marks (Source: Abdul Samad)

their arrangements and maybe characterised as either open or closed (Rice 2015). Rice (2015: 316) defines open pores as those that are open to the “exterior surface from inside the wall of the vessel and they may be formed from the packing of individual grains in the body, due to the escape of water or gases during firing, and from the cracks that develop during drying and firing, with concomitant shrinkage or expansion.” On the other hand, the closed or sealed voids “may occur naturally in the body of the vessel without any exterior connections, or they may develop during heating as open pores become sealed through shrinkage and vitrification” (Rice 2015: 316).

In terms of the current assemblage, inclusions were only briefly described and general observations are provided here. All earthenware non-glazed sherds contained inclusions. They include various mineral additives (Quartz, mica, calcite) and grog. The frequency and the size of the inclusions was highly variable. Many sherds featured quartz and grog inclusions while some of the glazed ware sherds showed little or no inclusions. One sherd also contained vegetal inclusions as straw marks are visible on the surface (sherd 1115, Fig 79). Voids are also very common in this assemblage and their sizes vary as well.

#### **5.4.4 Surface treatment**

These are classified as secondary forming techniques that are “non-essential operations in pottery” technology since they do not affect the serviceability of the product (Rye 1981: 2). However, this subject is a little problematic and there exists much debate around the subject of the relationship between various surface treatment styles and functions. “They are capable of much wider variation than essential steps therefore provide the most easily observed evidence of differences” (Rye 1981: 2). Archaeologists have been widely using them for classification and comparison (Rye 1981: 2; Rice 2005; 2015).

These operations primarily involve material/s acquired by the potter, prepared and mixed if necessary, and applied to the vessel (Rye 1981: 40; Rice 2005: 144-151). These treatments are different from the unintended effects of firing, such as colours produced by oxidation or reduction, “firing clouds”, and deposition of carbon (Rye 1981: 40). They are also distinct from modification caused by materials incorporated in the body, such as efflorescence of salt (Rye 1981: 40).

For the sections on surface modifications and coatings below, a thorough description of what each category is or their appearance (and their respective subcategories) will be presented, followed by their production technique (how they were made). Figures will be provided for each

category and where possible, comparable examples from other sites will be presented along with any additional information available on them (including dates). Note that for the following analysis, earthenware and glazed ware will be considered separately.

### 5.5 Analysis for earthenware

This section will consider surface modification and coatings for earthenware pottery from this assemblage. Out of the 1930 earthenware sherds from the assemblage, 51% of the sherds did not exhibit any evidence of surface modification while 49% of the sherds evidenced one or multiple forms of surface modification (Tables 23 and 24) (see Appendix 3 for individual decoration details).

Site	No. of undecorated sherds	% of undecorated sherds	No. of decorated sherds	% of decorated sherds
<b>UTH16</b>	516	26.7	551	28.5
<b>MAL16</b>	308	16	333	17.3
<b>VEY16</b>	164	8.5	58	3
<b>Total</b>	<b>988</b>	<b>51.2</b>	<b>942</b>	<b>48.8</b>

Table 23: Distribution of undecorated and decorated sherds across each site

#### 5.5.1 Surface modifications

Below is a description of the various types of intentional surface modifications noted in the assemblage. A summary of the modifications for the whole assemblage is presented in Table 24 above. Many sherds evidenced more than one type of surface modification. Thus, in Table 24 total numbers for each decoration type relate to instances of this decoration, and as such these totals exceed the total number of sherds. For further details, see Appendix 3.

Decoration	Ha. Utheemu	K. Male'	M. Veyvah	Total
Burnished	2	8	1	11
Impression				
Waffle	21	8	6	35
Linear Paddled	189	66	1	256
Carved Paddled (Crisp)	1	0	2	3
Ordered Impressed	1	0	0	1
Impressed Surface	0	1	0	1
Incised				
Parallel Diagonal Incisions	0	1	0	1
Incision	11	29	7	47
Multiple Parallel Incisions	51	37	8	96
Multiple Incisions	0	3	0	3
S3-D	0	1	0	1
Channeling				
Channel	5	6	6	17
Applique				
PA-2	0	1	0	1
Raised Band/s	36	50	22	108
Cable	4	0	0	4
Indistinct	202	104	10	316
Painted	1	2	0	3
Slipped				
Red Slipped	51	81	1	133
Carinated	38	2	5	45
Total	613	400	69	1082

Table 24: Summary of types of surface modification for earthenware sherds

### a. Burnished

Burnishing of vessels is a method which involves giving a polished surface to a vessel by rubbing or smoothing it using a tool against leather-hard clay to modify the texture and light reflecting qualities of the surface (Rye 1981: 90; Rice 2005: 138-140, 150-151). Because the burnished lines have “a consistent luster, the overall effect is a combination of luster and matter or a non-uniform luster” (Rye 1981: 90).

Burnishing is carried out as a surface finish action before firing and the result of the burnish marks depends on the size of inclusions in the clay body (Rice 2005: 150). For this assemblage, simply the presence of burnish was noted for all earthenware sherds.

Only 11 sherds appear to have been burnished on their surface (Table 24). They are usually dark coloured (dark brown/black) and appear to have fine inclusions and are very smooth and have a polished, shiny surface. Six of these do not have any further modifications while five have other surface modifications. They include two sherds with raised bands, two with linear paddle and one with an indistinct decoration (see Appendix 3).

### **b. Impression**

Impression is a displacement technique involving displacing leather hard clay by applying pressure (Rye 1981: 92; Rice 2005: 144-145). Impressions are made by pressing a tool to leather-hard clay, leaving a negative of it. A large variety of tools can be used, including unmodified objects such as fingernails, shells, bamboo stems and hollow canes (Rye 1981: 92; Rice 2005: 144-145). Other objects include tools “made for impressing, such as seals and cord-wrapped sticks, which produce effects often labelled “stamping” (Rye 1981: 92; see also Rice 2005). Markings left by carved or cord-wrapped paddles, used in beater-anvil forming (also known as carved paddle beating), also fall into this category (Rye 1981: 92; Rice 2005). Such paddles are small, flat wooden planks with a handle that are used to shape leather-hard pottery against a polished anvil resting on the vessel’s interior surface before firing (Selvakumar 2011: 200). Pottery made with this technique often leaves recurring repetition on the decorations (Rye 1981: 92). Some of the decorations on the assemblage studied appear to result from beating with an incised/carved paddle on the exterior (Selvakumar 2011: 200). Five different decoration types were recognised, apparently stemming from designs carved on the surface of the paddle. Note that all five of these decoration types were defined by Prof. Anne Haour along with the author based on the characteristics of the decoration. The five paddle impressed decorations recorded in this assemblage are;

- Waffle impressions W: have a set of square/rectangular impressions where the paddle is carved with a checkerboard design leaving checkerboard also called ‘waffle’ pattern on the surface of the vessel (Fig 80).



Fig 80: Waffle impressions (Source: Abdul Samad)

A total of 35 sherds feature this type of impression (Table 24). Of these, 32 sherds evidenced only waffle decoration. The other three combined this motif with red slip, raised band decoration and linear paddled decoration (see Appendix 3).

- Linear paddled LP: Linear paddled pattern features a series of linear irregular lines running roughly parallel to each other going in different directions and often crossing each other (Fig 81).



Fig 81: Linear paddled sherds (Source: Abdul Samad)

A total of 256 sherds feature this type of impression (Table 24). Of these, 230 are simply linear paddled, while 26 sherds evidence combinations with other types of decorations (see Appendix 3). They include burnishing, waffle decoration, multiple parallel incisions, raised bands, red slipped and indistinct decorations. However, among these, the most common combinations with linear paddled decoration occurs along with red slipped (9 sherds), indistinct (7 sherds) and carinations (6 sherds).

- Carved paddled CP: this is a set of crisp impressions executed in a rather haphazard manner, with some degree of linear arrangement (Fig 82abc).



Fig 82abc: Carved paddled sherds, a- sherd 227, b- 2019, c- 231 (Source: Abdul Samad)



Only three such sherds are present in the assemblage (Table 24) and this decoration is not combined with any other type of surface modification (see Appendix 3).

- Ordered impressions OI: these are crisp and ordered sets of impressions.



Fig 83: Ordered impressed sherd, no-1694 (Source: Abdul Samad)

Only one sherd of this type exists in the assemblage and it does not include any other type of modification (Table 24). It features rows of triangular impressions around rows of vertical lines (resembling coconut palm leaves) (sherd 1694) (Fig 83).

- Impressed surface IS: these are sherds with impressions made on their surface that do not fit to any of the above four categories. This decoration may not result from the use of a carved paddle.



Fig 84: Sherd with impressed surface, sherd 666 (Source: Abdul Samad)

Only one sherd of this type exists and its decoration is not combined with any other (Table 24, Fig 84).

As can be seen from Table 24, impressed pottery is the most abundant type of decoration in the current assemblage and motifs resulting from the use of carved paddles are the most common among these. They have been encountered by previous researchers in the Maldives as well (Mikkelsen 1991; Litster 2016).

According to various archaeological literature from the region of South Asia (Begley 1996; 2004; Selvakumar 2011: 200-206; Rougeulle 2015), paddle impressed pottery occurs frequently in the archaeological record. Despite the general lack of research on earthenware pottery, paddled and carved paddle impressed pottery has in fact received a fair degree of attention. Several theories revolve around the origin and labelling of this type of pottery. While some scholars propose that the technique could be of South Eastern origin (South China), others argue a possible Indian source (Selvakumar 2011: 201). According to Selvakumar (2011: 199), carved paddle impressed pottery is the only ceramic group from India that suggests Southeast Asian impact, mainly occurring on the coastal sites of South India. He argues that this type of pottery is common in Southeast Asia at a time (pre-Iron age, before 1500 BC) when it was absent in South India, and thus, Southeast Asia is its likely place of origin (Selvakumar 2011: 207).

Moreover, carved paddle impressed pottery is present at various sites on the east and west coasts of India, including at the port of Arikamedu in Pondicherry, Kudikkadu, Alagankulam and Karur in Tamil Nadu, at Pattanam in Kerala, Chandraketugarh in West Bengal, Sisupalgarh in Orissa in North India and western India in early historic levels between the 5<sup>th</sup> and 3<sup>rd</sup> centuries BC (Selvakumar 2011: 202-204). The site of Pattanam in Kerala first brought to light the presence of pottery with carved paddle impressions in the Late Iron Age or in the beginning of Early Historic Period (Selvakumar 2011: 202-204). Thus Selvakumar (2011: 201) argues that the use of carved paddle beating was introduced from Southeast Asia (likely in the Late Iron age dating to the later centuries of the 1<sup>st</sup> millennium BC) which was then developed in southern India along with the development of a local industry as most of the impressed potteries of the early historic period were locally made. Carved paddle impressed pottery occurs at a few sites in the western Indian Ocean region as well, such as, Sri Lanka and here too they are considered by some to be of Southeast Asian origin while others differ with them and call for detailed investigations, in the words of Begley (1975: 685), “far more research related to distribution and dating is necessary” (see also Selvakumar 2011: 205). Use of carved paddle impressed pottery has also been reported in Pakistan, Egypt, Yemen and West Africa (Selvakumar 2011: 206). Moreover, it is stated that the use of carved paddle exists among some of the contemporary potters in various parts of India (Selvakumar 2011: 204).

As pointed out by Selvakumar (2011: 201), paddle impressed pottery has unfortunately been inconsistently recorded and casually labelled by excavators (mat impressed, basket impressed, incised, stamped).

A survey of the literature indeed shows that ceramics similar to those uncovered in the present assemblage of the Maldives have been recovered from excavations at Arikamedu (Figs 85-87) and from the medieval trading centre of Sharma on the Hadramawt coast in Yemen (Fig 88). For examples of linear paddled see Begley 1996: 222-223; 2004: 147-148 (Figs 85-86). For examples of impressed surfaces see Begley 1996: 218, 221 and 222; 2004: 147-148; (Figs 85-86). For examples of waffle decoration see Begley 1996: 216, 221; 2004: 148-150; Rougeulle 2015: 202 (Figs 87-88).

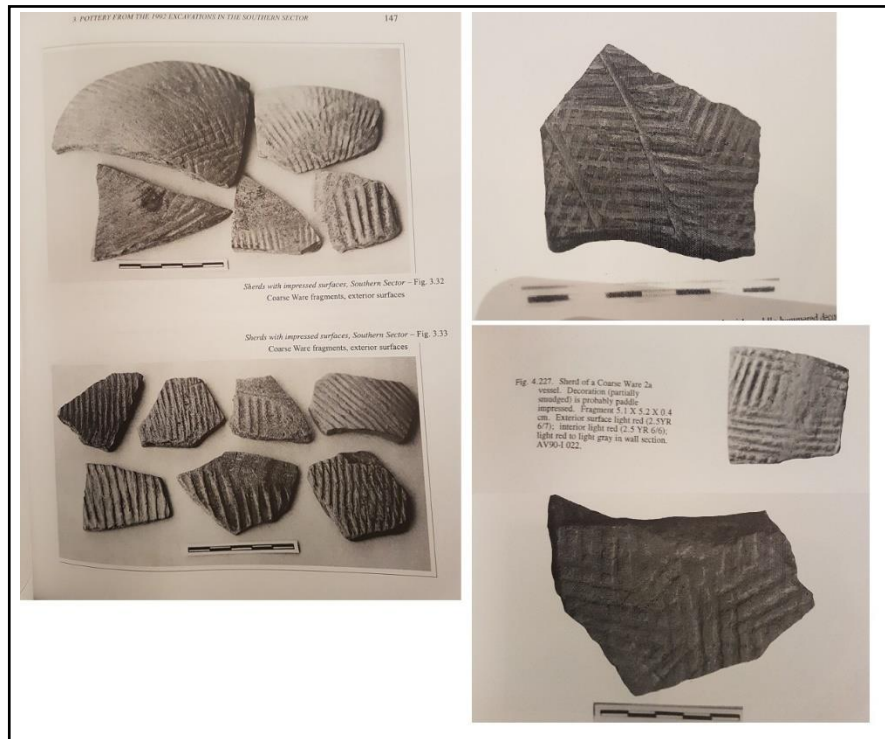


Fig 85: Impressed surfaces and linear paddled sherds from Arikamedu (Source: Adapted from Begley 1996: Figs 4.219, 4.227 and 4.229; 2004: Figs 3.32-3.33).



Fig 86: Impressed surfaces and linear paddled sherds from Arikamedu (Source: Adapted from Begley 1996: Figs 4.233-4.234; 2004: Fig 3.34).

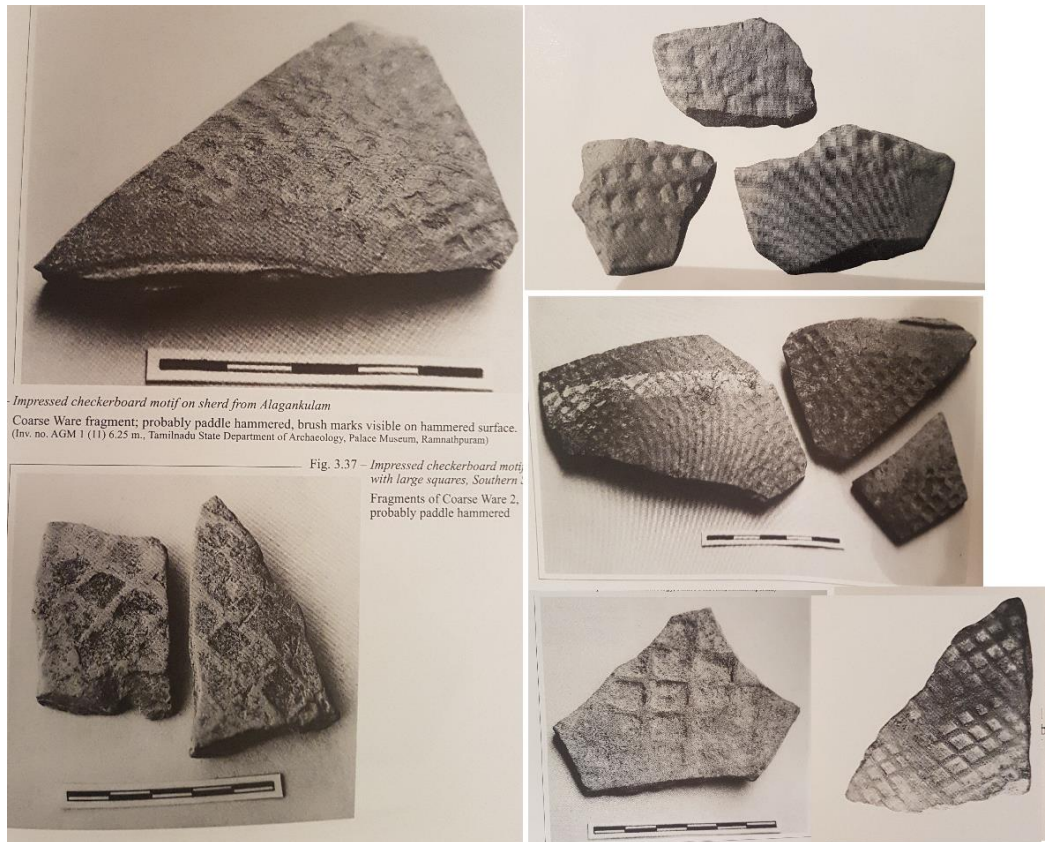


Fig 87: Waffle impressions from Arikamedu (Source: Adapted from Begley 1996: Figs 4.214 and 4.228; 2004: Figs 3.35-3.37 and 3.39)

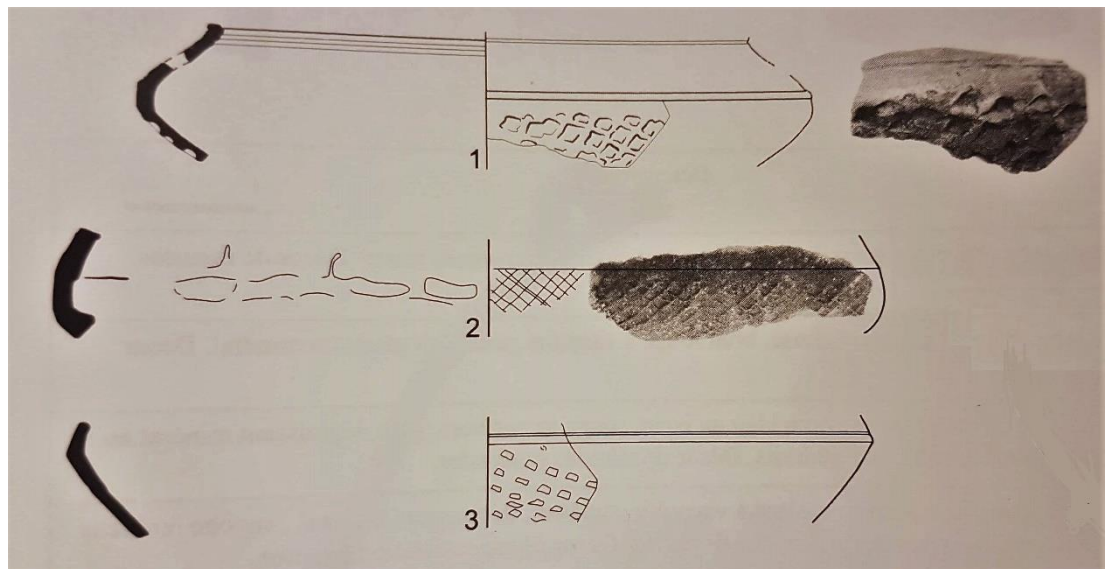


Fig 88: Waffle impressions from Yemen (Source: Adopted from Rougeulle 2015: 202, Fig 170)

### **c. Incised and stabbed decoration**

This is a technique where a series of effects can be produced by various cutting operations (Rice 2005: 145-147). A single narrow ended tool is applied to the surface with enough pressure to cut the clay. Variations can occur in the size and shape of the tip of the tool, which can be pointed, square, etc., and the depth or width of lines made by the same tool may be even or irregular. Incisions made on leather hard clay create raised margins (Rye 1981: 90). These incisions are usually very narrow and appear as a V cut in the cross section.

Five different incised decorations are noted in this assemblage (Table 24). They are:

- Parallel Diagonal Incisions PDI: Line of parallel, diagonal incisions - only one sherd, with a rather grey, fine clay, features this type of decoration (Fig 89).
- One incised line I: 47 sherds in this assemblage feature one incised line on their surfaces with some on the lips. While 32 incised sherds do not have further modifications 15 sherds feature various other decorations along with the incisions. The most common co-occurring modifications are red slipped (14 sherds) and raised bands (7 sherds) (see Table 24, Appendix 3).
- Multiple Parallel incisions MPI: often very uniform and parallel to each other. 96 sherds feature multiple parallel incisions in this assemblage out of which 67 sherds do not have further modifications while 99 feature other modifications. The most common modifications that occur with MPI include red slipped (11) and raised bands (12 sherds) and there are some examples with MPI on the rims (Figs 90a-c) (see Appendix 3).
- Multiple Incisions MI: these are multiple incised lines applied in a criss-cross pattern on the interior of the sherd. Three sherds belonging to this type have been recorded (Fig 91).
- S3-D: Impressions of flat-sectional tool, making a rectangular indent arranged diagonally in a line (Fig 92). Only one sherd (an eroded rim) exists featuring this decoration. This sherd has several other decorations on it as well (see Appendix 3).





Fig 89: Parallel diagonal incised sherd, sherd 248 (Source: Abdul Samad)



Fig 90a: Multiple parallel incised sherds, b: MPI with Red slipped and c: MPI on rims (Source: Abdul Samad)



Fig 91: Multiple incised sherds, sherds 692 and 799 (left to right (Source: Abdul Samad)



Fig 92: Flat-sectional diagonal impressed sherd, sherd 548 (Source: Abdul Samad)



Fig 93: Channeled sherds with raised bands at the top and bottom (Source: Abdul Samad)

#### **d- Channels**

This is also a displacement technique where a channel is made on the surface of the vessel (Rice 2005: 146). It is likely that the channel mark could be made with a finger or a tool that can produce a similar effect. When a channel is produced, the margins are raised due to the displacement of clay thus producing a very wide U shaped depression on the cross section. However, in some cases (as is the case with several sherds from this assemblage), the margins are further raised by the addition of clay strips (see Raised bands) on either side of them (Fig 93).

This assemblage included 17 sherds (Table 24). However, 13 of them are made in between two parallel raised bands, 6 of them are red slipped and 2 sherds are carinated (Fig 93, Appendix 3).

#### **e. Applique**

This is classified as a joining technique whereby plastic clay is attached to the surface of a vessel by pressure (Rye 1981: 93; Rice 2005: 148). Common shapes are coils and spheres. Handles, spouts and other functional parts are also bonded, for aesthetical as well as functional reasons (Rye 1981: 93). Applied decoration can be produced by a wide range of sub-techniques, but all require that the vessel be leather hard and the piece applied have a plastic consistency (Rye 1981: 93; Rice 2005: 148).

For this assemblage, three different types of applique decorations have been identified (Table 24). They include:

- PA-2: this is a series of flattened nubbin shaped pieces of clay are added to the surface. Only one example occurs in this assemblage and the sherd only shows two of the nubbins on the surface which is also red slipped with an incision (Fig 94).



Fig 94: Sherd with flattened nubbins, sherd 379  
(Source: Abdul Samad)

- Raised Band/s: this is a linear strip of clay added to the surface of the vessel. Some sherds in this assemblage have multiple parallel raised bands and the size of the added clay strip varies (Figs 95ab). As mentioned above a common occurrence in this assemblage is where a channel exists between two parallel raised bands (Fig 93).



Fig 95a: Sherds with raised bands on body sherds, b: Raised bands on a rim (Source: Abdul Samad)

108 are noted to have raised bands applied on the sherd (Table 24). This number includes 47 sherds with various other decorations occurring together and 61 sherds with simply raised bands on them. Among the various decorations occurring together, most of the sherds have multiple parallel incisions (18 sherds), channels (13 sherds), red slipped (13 sherds) and carinated (4 sherds) (see Appendix 3).



- Cable: this is where clay strips are added to the exterior surface of the vessel and small finger mark impressions are made on them. Here, the band of cable or the finger mark impression is made on a strip of clay which is bonded to the surface. This is not a common decoration type (see Appendix 3).



Fig 96: Cable impressions (Source: Abdul Samad)

Only four sherds feature cable applications (Table 24). Three of them feature a single row of application while one sherd features two rows of applications with a raised band on top of them (Fig 96). Very similar examples have been recovered from the excavations at Arikamedu (Fig 97) (Begley 1996: 210; 2004: 141).

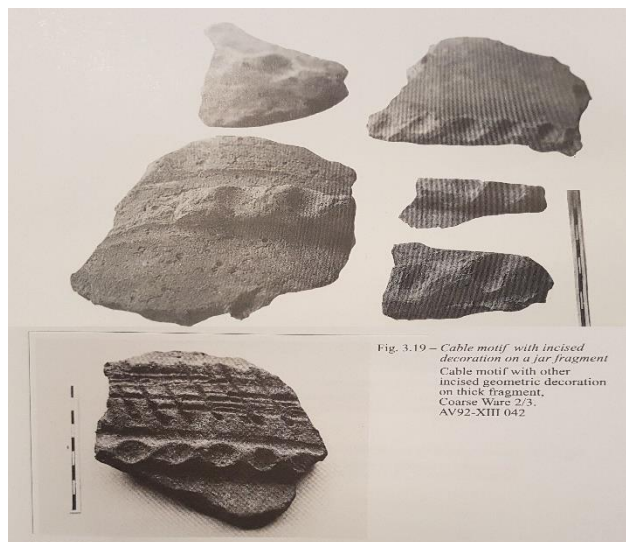


Fig. 3.19 – Cable motif with incised decoration on a jar fragment  
Cable motif with other incised geometric decoration on thick fragment, Coarse Ware 2/3, AV92-XIII 042

Fig 97: Cable impressions from Arikamedu (Source: Adapted from Begley 1996; 2004)

## **f. Indistinct**

For various reasons (such as lack of decoration visible, poor preservation, etc.) 316 sherds were classed as featuring indistinct decorations (see Appendix 3). Many of these sherds feature other decoration types, mostly red slip (10 sherds), linear paddled (7 sherds), carinated (5 sherds) and multiple parallel incisions (4 sherds).

### **5.5.2 Surface coating**

This section will describe the types of intentional surface coating that have been applied to the surface of the vessels by the potters in this assemblage. Note that only a very few sherds in this assemblage are coated (see Appendix 3).

#### **a- Painted**



Fig 98: Painted rim sherd, sherd 587 (Source: Abdul Samad)

Paint is referred to as a material added before or after firing for the purpose of decorating the surface of a vessel (Rye 1981: 40; Rice 2005: 148). “Slips, pigments, and a variety of other substances can be used. This term describes the potter’s action rather than a particular kind of material” (Rye 1981: 40; see also Rice 2005).

Only three sherds are painted in this assemblage. They include brown and black paint (see Appendix 3, Fig 98). Two of the sherds are painted on the interior while on the exterior is red slip.

#### **b- Slipped**

A common category of surface coating in this assemblage includes red slipped earthenware pottery. A slip is defined as a red liquid clay solution, where clay is dissolved in water and mixed

with red ochre (Rice 2005: 149-151; Nixon 2017: 126). This solution is then applied to the surface of the vessel either during the preparation of the clay body or after it has been formed giving it a red-reddish brown smooth surface (Rye 1981: 41; Nixon 2017: 126). According to Rye (1981: 39; see also Rice 2005), although this red clay solution contains clay minerals, no useful purpose is served by setting an arbitrary limit on the amount of clay added. The fluidity of the slip can be readily changed by adding or removing water. Moreover, slips used for decorative purposes are commonly a different colour to the body (Rye 1981: 41; Rice 2005: 149-150). A slip coating can be most readily identified by a fresh cross section of the sherd.

The three primary techniques for applying slip include (Rye 1981: 41; Rice 2005: 150-151);

1. Dipping: Immersing a vessel in a container filled with slip suspension, which produces a more uniform and even coating than other methods.
2. Pouring: accomplished by putting the slip in a container and emptying it over or into the vessel, this allows less control over coverage than dipping and is used particularly for vessels that are too large to be dipped or that are to be coated only on the interior.
3. Wiping: wiping the surface with a sponge, cloth, or ball of grass or similar plant material soaked in the slumps.

In this assemblage 133 sherds were noted as featuring red slip (Table 24). The red slipped sherds are rather dark red in colour and all slipped sherds have smooth surfaces (Fig 99).



Fig 99: Red slipped sherds (Source: Abdul Samad)

Most of the sherds in this assemblage feature only an external slip while a very few sherds are slipped in and out and even fewer sherds feature only an internal slip (see Appendix 3). This could be the result of damage and poor preservation. However, for those that are in a good enough condition to comment, it is suggested that the slip could have been wiped in the case of external slipping or poured for sherds that are slipped only on the interior. 56 red slipped sherds feature other decorations on them. The most common include incisions (14 sherds), raised

bands (13 sherds), multiple parallel incisions (11), indistinct (10 sherds), linear paddled (9 sherds) and channeled (6 sherds).

## **5.6 Analysis for glazed ware**

For the following section, a similar analysis will be done on the glazed sherds found from this assemblage. This group includes stoneware and porcelain that have been coated by different coloured glazes. Some definitions should be presented here before describing the types of glazed ceramics in this assemblage.

Stoneware is a vitreous or semi-vitreous ceramic made from stoneware clay that has been fired at relatively high temperature (between 1050 - 1200 degrees) (Zhang 2016: 11). These ceramics are similar in colour and texture to earthenware but are harder (Medley 1976: 14; Zhang 2016: 11). The clay and temper fuses completely to form an impermeable body. They are normally coated with an alkaline glaze high in feldspars giving the name feldspathic glaze (Medley 1976: 14). They are rarely left unglazed but the glaze may not fully cover the object and according to Medley (1976: 14), “the reason for glazing appears to be aesthetic.” Stonewares have the longest and most complex history which began in the 15<sup>th</sup> century BC and ended during the Sung Dynasty (AD 960-1279) after the arrival of porcelain (Vainker 1991: 9).

Porcelain on the other hand is defined as ceramics made of “a mixture of Kaolin and white china stone, a refined non-feldspathic material derived from granite. The colour of the body is pure white or very pale grey” (Medley 1976: 97, see also Zhang 2016). The body is covered with a transparent lime-alkali glaze and sometimes decorated with underglaze cobalt and is fired at a temperature of around 1,350 degrees Celsius (Kennet 2004: 67; Zhang 2016). This is a well-established type of Chinese ceramic which is said to have first been exploited in the 10<sup>th</sup> century AD in the south of China where Kaolin clay is “not only plentiful, but also of exceptional purity having a very low iron content” (Medley 1976: 100; see also Vainker 1991: 9; Zhang 2016). According to Vainker (1991: 9), although porcelain products were made in increasing numbers throughout 11<sup>th</sup>- 13<sup>th</sup> centuries, the material did not receive much appreciation within China, other than as an export commodity, until the 14<sup>th</sup> century. Vainker (1991: 9) further states that much was written on the subject during the Ming (AD 1368-1644) and Qing dynasties (AD 1636-1912) which was the result of porcelain being collected by emperors, men of learning and the well-off people. Moreover, the Sung dynasty saw the establishment of ceramics as a major commodity, hence, porcelain has always been an important

Chinese export (Vainker 1991: 10; Kennet 2004; Zhang 2016). The well-known and well-studied blue and white porcelain has been called “the glory of Ming” (The Arts Council of Great Britain and The Oriental Ceramic Society 1958: 6) and was abundantly exported worldwide (especially admired as a luxury commodity in the middle east and the Gulf) as well as Europe and other parts of the world from the Sung period onwards which continued through to the succeeding dynasties; Yuan (AD 1271-1368) and Ming (The Arts Council of Great Britain. and The Oriental Ceramic Society 1958; Vainker 1991: 134; Eskenazi 1994; Kennet 2004; Meicun and Zhang 2015; Zhang 2016).

Glazes are glasses in the sense that their physical structures are similar. It is a coating of glass applied to the surface of a pottery vessel (Rice 2005: 151). When fired at higher temperatures, the glaze material applied to a vessel melts and fuses to the surface (Rye 1981: 44; Rice 2005: 151). However, during cooling the glaze hardens and becomes stable (Rye 1981: 44). The melting temperature of common glazes ranges between about 900 degrees and 1450 degrees (Rye 1981: 44). Glazes have both aesthetic and functional roles. They provide a wide variety of colours and a range of reflectance and textures aesthetically, while functionally they “render vessels impervious to liquids, resistant to acids and alkalis” and are easier to clean (Rye 1981: 44). Chinese glazed ceramics were traded in the Gulf and the Western Indian Ocean from the 8<sup>th</sup> or 9<sup>th</sup> centuries until the 19<sup>th</sup> century and represent a well-researched subject (Medley 1976; Vainker 1991; Kennet 2004: 60; Zhang 2016).

As mentioned above (see Fig 78 and Table 22), only 202 (9.5%) of the assemblage featured glazed coatings and all were studied. These have been grouped into 13 different types. Some of the analysis for this assemblage was made by Ran Zhang. See Table 25 below for a summary of the glazed types and Appendix 4 for details of individual sherds.

Group/Class	No. of sherds	Place of manufacture	Rough Dating	Further comments
<b>Porcelain:</b>				
Chinese blue and white (CBW)	35	Jingdezhen	Yuan, Mid-Late Ming	Decoration: Floral/leafy/geometric lines/dots, also include low quality sherds from the Late Ming period. (Note: sherd 423 has been dated to the 14 <sup>th</sup> c. and sherd 23 has been dated between 15 <sup>th</sup> - 16 <sup>th</sup> c.).
Stamped	1	Jingdezhen	19 <sup>th</sup> century	Stamped pattern of yellow, green and brown floral print on a partially preserved bowl.
Chinese white porcelain (CWP)	19	Jingdezhen	Middle-Late Ming	White glazed in and out, no prints.
Enamel	1	China	Middle-Late Ming	Green line and brown floral print.
Qingbai	3	South China	14 <sup>th</sup> century	White glazed very similar to white porcelain, no prints.
<b>Celadon:</b>				
Longquan Celadon (LQC)	45	Longquan	Yuan, Early-Middle Ming, 18 <sup>th</sup> -19 <sup>th</sup> century	Most are from Yuan Period and few from Early-Middle Ming. (Note: sherd 376 has been dated to the 14 <sup>th</sup> c. and sherd 671 has been dated between 18 <sup>th</sup> - 19 <sup>th</sup> c.).
<b>Celadon</b>				
SE Asian Longquan Celadon (SEA LQC)	26	Thailand?		Very similar to Chinese Longquan Celadon but greyish and somewhat loose body with thin, semitransparent or transparent glaze.
SE Asian Celadon? (SEA C)	5			Unsure about this group- has a reddish brown loose body and white glazed.
<b>Others:</b>				
Transport Jars	45	Guangdong	Ming	Shades of brown/yellow glaze on the exterior, reddish and greyish body and non glazed on the inside, some has black lines painted on the exterior.
Half glazed Jars (Martaban?)	1	South Asian?		Thick and big compared to average sherds in this assemblage, only partly glazed on the exterior.
European	2	England?	19 <sup>th</sup> - 20 <sup>th</sup> century	Red, yellow and blue floral and geometric print.
<b>Unidentified SE Asia</b>				
Turq Green	3	Southeast Asia?	16 <sup>th</sup> century?	Red/Orange body and turquoise green glazed.
Unknown	16	Southeast Asia?		Some sherds have a whitish glaze, some could be green celadon but too small/fragmentary/glaze worn off to determine the decoration.

Table 25: Glazed types noted in the assemblage

### 5.6.1 Porcelain

A total of 59 sherds have been classified as belonging to this group. They include four different types: Chinese blue and white (Figs 100-103), stamped (Fig 104), Chinese white (Fig 105), enamel (Fig 106) and Qingbai porcelain (Fig 107) (Zhang 2016; 2017; Meicun and Zhang 2018: 4-6). See Table 25 for a summary and Appendix 4 for details of individual sherds.



Fig 100: Chinese blue and white dating to Yuan period (sherd 423) (Source: Abdul Samad)

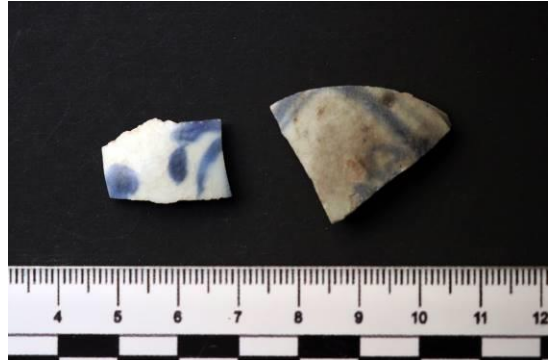


Fig 101: Chinese blue and white dating to middle Ming period (sherds 897 and 898 from left to right) (Source: Abdul Samad)

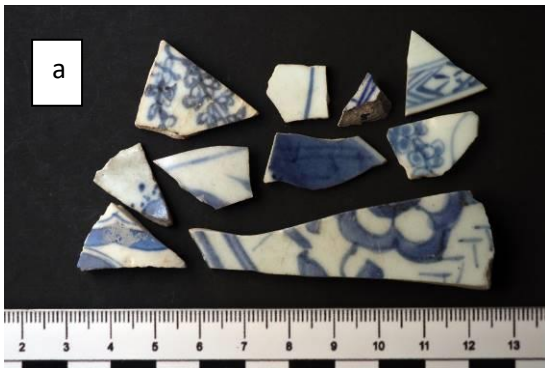


Fig 102a: Chinese blue and white dating to late Ming period, b: late Ming low quality (Source: Abdul Samad)

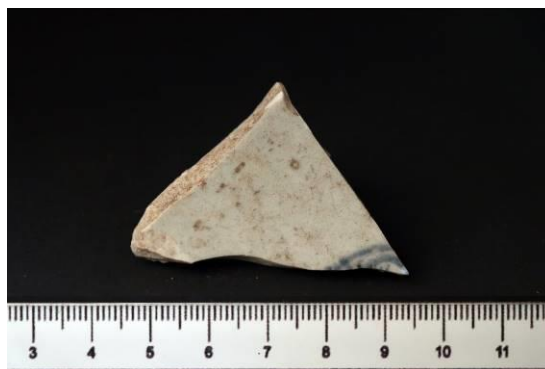


Fig 103- Chinese blue and white of late Ming dated between 15<sup>th</sup>- 16<sup>th</sup> century, base sherd 23 (Source: Abdul Samad)



Fig 104- Stamped porcelain dated to 19<sup>th</sup> century, sherd 2037, also half vessel (Source: Abdul Samad)





Fig 105: White Porcelain (Source: Abdul Samad)



Fig 106: Enamel Porcelain, sherd no 431 (Source: Abdul Samad)



Fig 107: Chinese Qingbai (Source: Abdul Samad)

The most common motifs include foliate and floral decorations, geometric dots and lines. They originate from Jingdezhen in China. The blue and white decorations have been divided into two periods: 1 sherd from Yuan (Fig 100) and the rest to Mid-Late Ming period (mid 15<sup>th</sup> c. to 1644) (Figs 101 and 102a) (Zhang 2017). Moreover, some of the sherds from the late Ming belong to a lower quality group (Fig 102b). A base sherd was identified as dating to the 15<sup>th</sup>- 16<sup>th</sup> centuries (Fig 103). In addition, half of a vessel was also recovered having a stamped print dating to the 19<sup>th</sup> century (Fig 104). The white and Qingbai sherds are entirely white with no patterns on them and look very similar to each other (Figs 105 and 107) and the only enamel sherd has been dated to mid-late Ming as well (Fig 106).

As mentioned above, Chinese blue and white sherds have been found in Male' dating to similar periods (Carswell 1976). It is important to highlight here the abundance of Ming dynasty blue and white porcelain from the assemblage which is further supported by the presence of complete Chinese blue and white vessels of the same period housed in the National Museum of the Maldives (Fig 108).





Fig 108: Chinese blue and white of the Ming period in the National Museum of the Maldives (Source: Ismail Ashraf)

### 5.6.2 Celadon

Three types of celadon occur in this assemblage from two different places of manufacture (Table 25) (see Appendix 4 for individual details). The first one is the Longquan celadon from the Longquan region in South China which has a good quality hard and dense white - light grey stoneware body covered in a thick milky green glaze (Gompertz 1958: 50-60; 1968: 61-68). Some variation in fabric and glaze colour occurs as well (Medley 1976: 146-152). 45 sherds have been noted as belonging to this group making it, alongside transport jars, the most common single type. This is a well-established type of ceramic that was widely made during the latter part of the Sung period (AD 960-1279) through the Yuan (AD 1271-1368) and on into the Ming (AD 1368-1644) (Gompertz 1958: 61-65; 1968) and widely exported to the Western Indian Ocean, the Near East and the Mediterranean (Medley 1976: 146-152; Kennet 2004; Meicun and Zhang 2015; Zhang 2016). Sherds from this assemblage have been grouped into two periods: Yuan (Fig 109abc) and early-middle Ming period (Fig 110). One sherd (base) among this group has also been dated between the 18<sup>th</sup>- 19<sup>th</sup> centuries (Fig 111).



Fig 109a: Longquan celadon dating to Yuan period, b: LQC rim sherds dating to Yuan, c: small rim (sherd no 376) dating to the 14<sup>th</sup> century also a possible lid or a shallow dish (Source: Abdul Samad)

One sherd (sherd 376) (Fig 109c) which has been dated to the 14<sup>th</sup> century is rather noteworthy as this is a very small rim sherd but very shallow, with an external but not an internal glaze. It is suggested here that this might be a pot lid or a very shallow dish.

Similarly, to Chinese porcelain, Longquan celadon has also been recovered from previous excavations in the Maldives (see above) and was dominant at some sites (Carswell 1976; Mikkelsen 1991; 2000; Bopardikar 1992; Litster 2016).



Fig 110: Longquan celadon dating to early-middle Ming (Source: Abdul Samad)



Fig 111: Longquan celadon base sherd dating to 18<sup>th</sup>- 19<sup>th</sup> century (Source: Abdul Samad)

The second other type of celadon in this assemblage is thought to have come from Southeast Asia (perhaps Thailand) (Table 25). These sherds look very similar to Chinese Longquan (Zhang 2017) however, they have a poorer quality of grey loose body covered in a thin, semi-transparent or transparent glaze (Fig 112). 26 sherds have been noted to be from this group. Not much is known about it.



Fig 112: Southeast Asian Longquan celadon sherds (Source: Abdul Samad)



Fig 113: Southeast Asian celadon sherds (Source: Abdul Samad)

The last group within the celadon is also thought to have come from Southeast Asia. A total of 5 sherds have been classified as being possibly Southeast Asian celadon but it is unsure as to where and when it may have come from (Table 25, see also Appendix 4) (Fig 113). These tend to have a rather reddish/orange loose body covered in a nontransparent white glaze.

### 5.6.3 South Chinese transport jars:

A total of 45 sherds (all body sherds) have been classified as transport jars from Guangdong, South China (Zhang 2016; 2017). These are light grey stoneware body covered in a dark glaze (dark brownish/yellowish) but only on the exterior (Fig 114) with very few exceptions. Some variation in fabric and glaze colour occur (see Appendix 4). This is also another group with the most number of glazed sherds in this assemblage along with Chinese Longquan sherds (Table 25).



Fig 114: Sherds of South Chinese transport jars (Source: Abdul Samad)

#### 5.6.4 Half glazed jars

Three sherds from the same vessel (sherd 22) belong to this category (Fig 115). They have a pinkish/orangish stoneware body covered in a brownish glaze on the exterior. However, the glaze is only partly applied on the exterior with marks of glaze dripping down. The interior is greyish and non-glazed. These sherds are thicker (1.2cm) and bigger in size than the average sherds in this assemblage, and are finely made (see Appendix 4).

One base sherd (sherd 178, Fig 116) has very similar characteristics to the half glazed group in terms its fabric texture. It has not been included in this group as it does not feature any glaze. However, it is very likely to belong to the half glazed group. It should be recalled that according to previous examples of similar half glazed jars found in the Maldives, this type of vessel tends not to be glazed at the base (Figs 117-118). Thus, although this base sherd has been classified as a non-glazed sherd it is very likely to be the base of a half glazed vessel.



Fig 115: Half-glazed sherd, possible south Asian urns, sherd 22 (Source: Abdul Samad)



Fig 116: sherd 178- non-glazed base sherd possibly half-glazed (Source: Abdul Samad)

Similar sherds have been reported to have been found as surface finds on many islands in the Maldives and some vessels of this type are still in use (mostly in tourist resorts for decoration); some examples are also exhibited in the Maldivian National Museums (Fig 117) as well as in the cultural museum in Loama Maamigili Resort (Fig 118). They were used as containers for imported rice and later began to be used for storing other types of food (Mikkelsen 1991: 200). They were also used to store water by partly digging them beneath the soil (Mikkelsen 1991: 200) and the use of such jars for water storage was also described by Ibn Battuta (Husain 1991: 43).





Fig 117: Half-glazed urns at the National Museum of the Maldives (Source: Ismail Ashraf)



Fig 118ab: Half glazed jars at the Heritage Museum at R. Maamigili resort (Source: Anne Haour)

### 5.6.5 European

Two sherds have been identified as originating from Europe (Zhang 2017). They are two rim sherds one with blue and white floral decoration and the other is a smaller sherd with red and yellow foliate/floral decoration (Fig 119).



Fig 119: European sherds, left to right 1840 and 252 (Source: Abdul Samad)

It has been suggested here, based on the print and the colour of print made on the glaze, that these sherds belong to the Victorian period (19<sup>th</sup>- 20<sup>th</sup> century) based on Zhang (2017) as well as similar pottery recovered by License (2015: Figs 11, 56-59) in Britain. The Victorian era pottery has been characterised as having a hard white fabric with various colours of prints made on them. Litster (2016) also reported a similar sherd from the assemblage from the Nilandhoo site which she states to be British (see above).

### 5.6.6 Unidentified

Nineteen sherds were noted as being possibly manufactured in Southeast Asia but it is not possible to provide further details due to a lack of comparative data (see Table 25 and Appendix 4 for details). One category among this group includes three sherds with a red/orangish body covered in a nontransparent turquoise green glaze (Fig 120). For the remaining 16 sherds in this group, a definitive comment cannot be made on them due to the lack of comparable data. One of the sherds has a red body with a green glaze (sherd 32) (Fig 121). Another one has a very hard body is grey in colour and has very even and parallel, wavy like, raised bands on the exterior surface, resembling a shell (Fig 122). The rest of them are either too indistinct, too small or too eroded (Figs 123-124).



Fig 120: Turquoise green sherds (Source: Abdul Samad)



Fig 121: Green glazed sherd with red body, sherd 32 (Source: Abdul Samad)



Fig 122: Sherd 980 with wavy raised bands  
(Source: Abdul Samad)



Fig 123: Eroded and small sherds (Source:  
Abdul Samad)



Fig 124: Eroded and small sherds (Source: Abdul Samad)

To summarise, glazed sherds from this assemblage appear to date mostly from the Yuan (AD 1260-1368) being the earliest in this assemblage (suggestively the 14<sup>th</sup> century) through to the end of Ming period (AD 1368-1644) while some sherds also date to the 18<sup>th</sup>- 19<sup>th</sup> centuries with the latest sherd suggested here to date to the 19<sup>th</sup>- 20<sup>th</sup> century. Celadon, Chinese blue and white porcelain and sherds from transport jars tend to be the most common types of glazed ware recovered.

### 5.7 Form/function

Some comment on form is possible in the case of some body sherds with carinations. Carination is an abrupt break in the vessel wall. It often results from a manufacturing process whereby two separate vessel portions are joined together, resulting in a sharp angle in the cross section of the vessel where the two parts were joined.

The assemblage included 45 carinated sherds (Fig 125). These include sixteen sherds featuring other types of decorations mostly occurring with linear paddled (6 sherds), indistinct (5 sherds) and raised bands (4 sherds) (see Appendix 3).



Fig 125: Carinated sherds (Source: Abdul Samad)

In order to comment on the form of the rim sherds, the following attributes of the rim and lip were recorded:

- Rim angle: this tells the angle of closure of the main body of the pot, i.e., the degree of how closed (or tightly closed), open (or widely open) or straight the main body is.
- Rim Diameter: the external diameter of the rim to determine the diameter of the vessel by measuring it on a rim diameter chart (Rice 2005: 223). Note that for smaller sherds and sherds with eroded rims, it is difficult to measure the original external rim diameter of the vessel. This is the reason for the further sampling of the rims for both earthenware and glazed sherds.
- Rim direction: this recording is determined from a “perpendicular central axis running down the center of the original pot, which is combined with the placing of a horizontal surface on the lip which enables finer calibration of the rim angle in relation to the central axis” (Shepard 1963: 256). They include direct, everted, inverted, out curved and incurved.
- Rim profile: this describes the relationship between the inner and outer walls of the rim as they proceed to the lip (Litster 2016: 148). They include simple, thickened (rim profile thickens towards the lip due to the addition of clay at the rim but no inflection) and everted (addition of inflected/bent strip of clay).
- Lip profile: this describes the shape/form of the lip (the part of the vessel at the very extremity). They include plain or rounded, pointed or flat.

Note that as mentioned above, for this analysis, only glazed rims larger than 3cm and earthenware rims larger than 5cm were selected. One exception was made for a rim of a spouted vessel (Fig 126ab), which was retained for analysis due to it being the only one of its kind from



the assemblage. Moreover, earthenware rims larger than 5cm which were too eroded for analysis were also recorded without further analysis. After the selected rims were recorded, they were grouped into different types and one or two representatives from each type drawn.

The analysis of rims was carried out separately for earthenware and glazed ware and this is described in the following section.

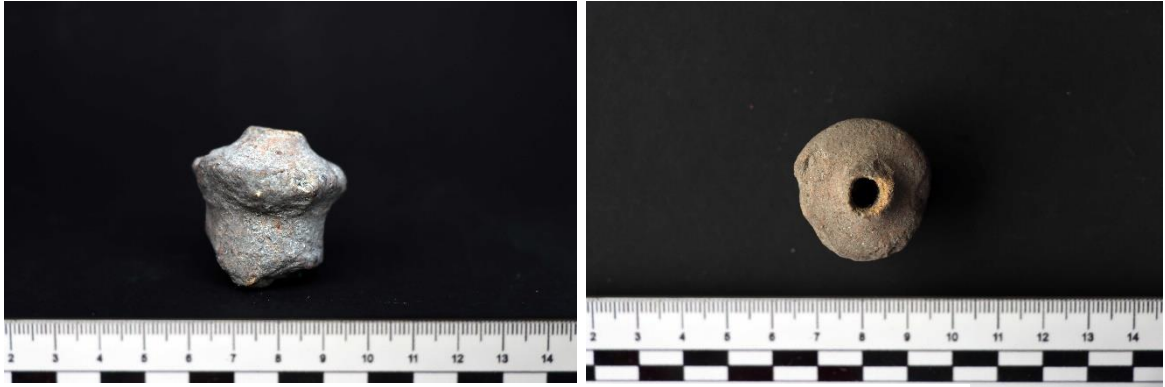


Fig 126ab: Profile and top view of spout, sherd 2134 (Source: Abdul Samad)

## 5.7.1 Rim Analysis

### 5.7.1.1 Earthenwares

Unit	No. of rims <5cm	No. of rims >5cm	No. of rims >5cm but eroded	No. of rims analysed
UTH 1601	10	1	0	1
UTH 1602	3	3	1	2
UTH 1604	33	6	0	6
UTH 1605	3	6	0	6
<b>Total</b>	<b>49</b>	<b>16</b>	<b>1</b>	<b>15</b>
MAL E14	22	0	0	1
MAL E7	6	1	0	1
MAL E4	10	1	0	1
MAL N2	10	3	2	1
MAL N9	8	5	0	5
MAL N5	3	0	0	0
MAL N12	24	2	0	2
<b>Total</b>	<b>83</b>	<b>12</b>	<b>2</b>	<b>11</b>
VEY 1601	1	0	0	0
VEY 1602	0	0	0	0
VEY 1603	1	0	0	0
VEY 1604	0	0	0	0
VEY 1605	24	15	4	11
<b>Total</b>	<b>26</b>	<b>15</b>	<b>4</b>	<b>11</b>

Table 26: Earthenware rims discarded and analysed from each unit

Out of the 201 earthenware rim sherds recovered from the excavations (Table 26), 157 sherds were too small for typological analysis and were simply recorded as rims without further detail, leaving 44 sherds (43 sherds larger than 5cm and a spout smaller than 5cm) for further analysis (Table 26). However, out of the 43 larger sherds, 7 of them were set aside as they were too eroded. Therefore, in the final count a total of 37 rims were available for typological study.

The majority of these sherds had a closed angle and their diameters ranged between 12cm and 50cm with the exception of the spout with 3cm (Table 27). Sixteen rim types were noted, and these are illustrated and discussed below in Table 27.

Sherd No	Site/Context	Rim Type	Angle	Diameter (cm)
182	VEY 1605/3	1	Closed	44
200	VEY 1605/3	1	Closed	38
204	VEY 1605/3	2	Closed	38
260	MAL E7/3	2	Closed	20
1530	UTH 1604/111 N. EXT	2	Closed	13
201	VEY 1605/ 3	3	Closed	33
1996	UTH 1605/ 217	3	Closed	21
183	VEY 1605/3	3	Closed	33
207	VEY 1605/3	3	Closed	33
55	VEY 1605/1	4	Closed	31
203	VEY 1605/3	4	Closed	44
860	MAL N12/4	4	Closed	32
1036	UTH 1601/SURFACE	4	Closed	48
105	VEY 1605/ SECTION CLEAN	4	Closed	33
861	MAL N12/4	5	Closed	23
647	MAL N9/4	6	Closed	29
1593	UTH 1604/ 118 N. EXT	6	Closed	31
1179	UTH 1602/1	6	Closed	30
208	VEY 1605/3	6	Closed	27
91	VEY 1605/7	7	Closed	24
664	MAL N9/5	7	Closed	22
2131	UTH 1605/ SECTION COLLAPSE	7	Closed	23
1195	UTH 1602/TOP LAYER	8	Closed	20
1954	UTH 1605/ 214	8	Closed	26
649	MAL N9/4	9	Closed	31
650	MAL N9/4	9	Closed	31
1506	UTH 1604/111N	10	Closed	12
1592	UTH 1604/ 118N	10	Closed	15
2081	UTH 1605/ 233	10	Closed	19
1454	UTH1604/111	11	Closed	26
1266	UTH1604/102	11	Closed	33
2070	UTH 1605/227	12	Closed	19
648	MAL N9/4	12	Closed	22
2071	UTH 1605/ 227	13	Closed	50
562	MAL N2/4	14	Wide Open	12
346	MAL E4/5	15	Wide Open	21
2134	MAL E14/5	16	Straight	3

Table 27: Analysis of earthenware rims

**a- Rim types**

Out of the 37 rims analysed, 33 have been illustrated (Figs 127-142). All rims have been drawn to scale.

**Type 1** (n=2) Everted rims with a bulky rounded lip and thickening towards the lip (Fig 127ab).

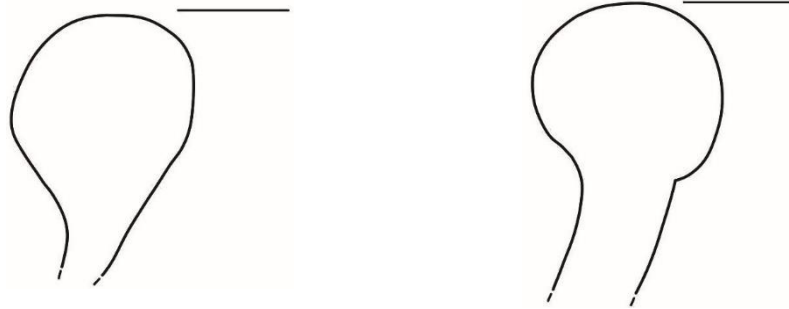


Fig 127a: Sherd 182, b: sherd 200 (Source: Shiura Jaufar and Abdul Samad)

**Type 2** (n=3) Everted rims, similar to type 1 but not as bulbous. They are rather round or oval and they thicken towards the lip (Fig 128abc).

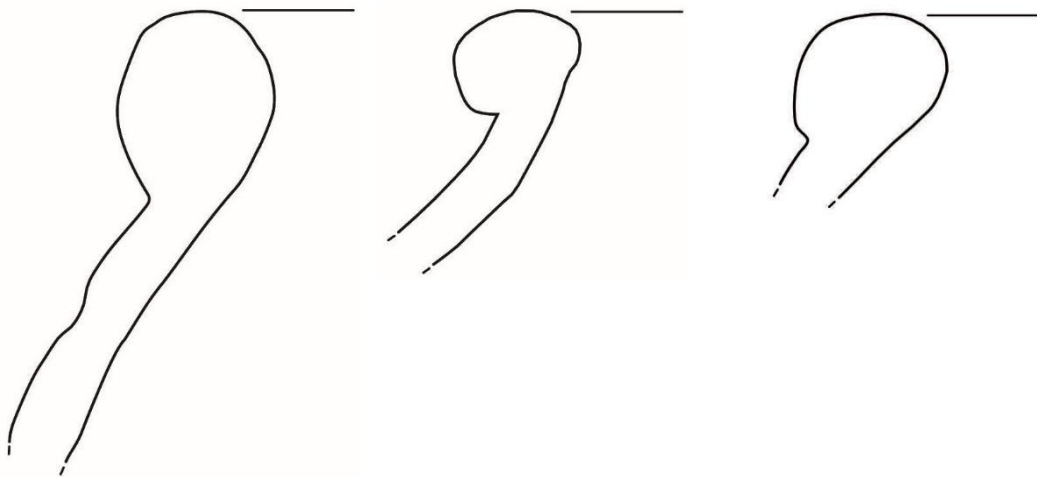


Fig 128a: Sherd 204, b: sherd 1530, c: sherd 260 (Source: Shiura Jaufar and Abdul Samad)

**Type 3** (n=4) Everted rims similar to types 1 and 2 with a thinner and less rounded everted end; rather oval and pointy with thickening towards the lips (Fig 129abc).

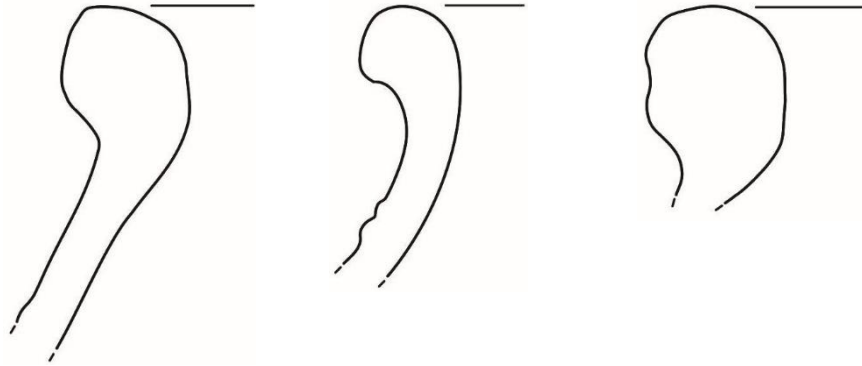


Fig 129a: Sherd 201, b: sherd 1996, c: sherd 183 (Source: Shiura Jaufar and Abdul Samad)

**Type 4** (n=5) Everted rims with a somewhat flat lip and an uneven, irregular shape thickening towards the lip, and with the rim curved downwards on the exterior (Fig 130abcde).

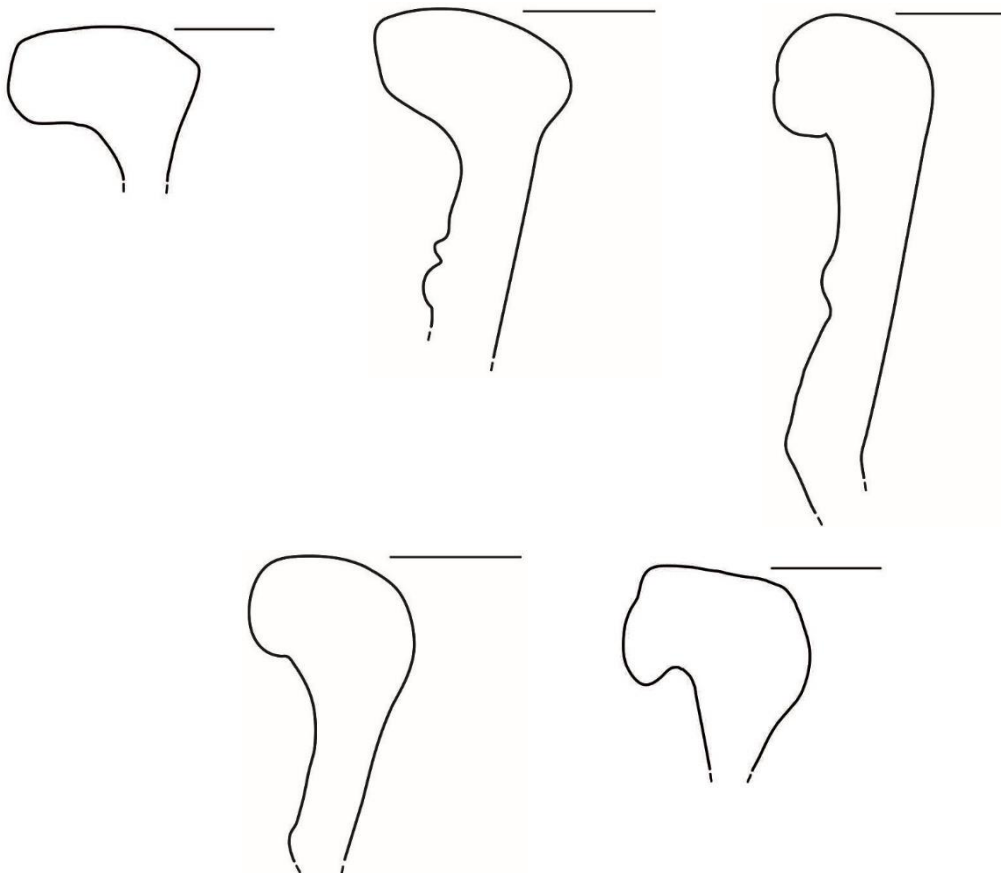


Fig 130a: Sherd 203, b: sherd 1036, c: sherd 860, d: sherd 105, e: sherd 55 (Source: Shiura Jaufar and Abdul Samad)

**Type 5** (n=1) Everted rim with a rounded rim profile, pointing outwards and thickened at the rim (Fig 131).

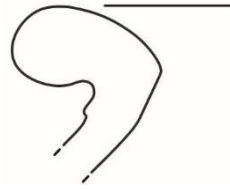


Fig 131: Sherd 861 (Source: Shiura Jaufar and Abdul Samad)

**Type 6** (n=4) Everted rims, very similar to type 5 but more oval in rim profile and somewhat flat at the lip profile (Fig 132abc).

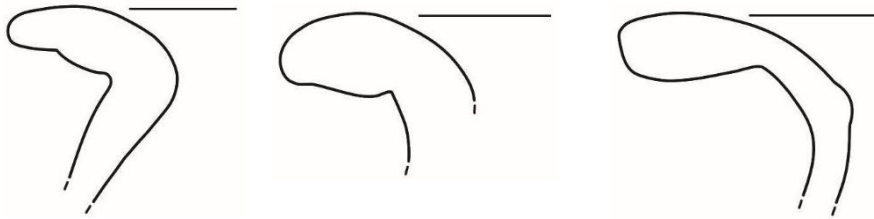


Fig 132a: Sherd 208, b: sherd 647, c: sherd 1593 (Source: Shiura Jaufar and Abdul Samad)

**Type 7** (n=3) Everted rims where the rim direction is pointing in an upward direction and an almost rectangular shaped lip profile with slight thickening towards the lip (Fig 133ab).

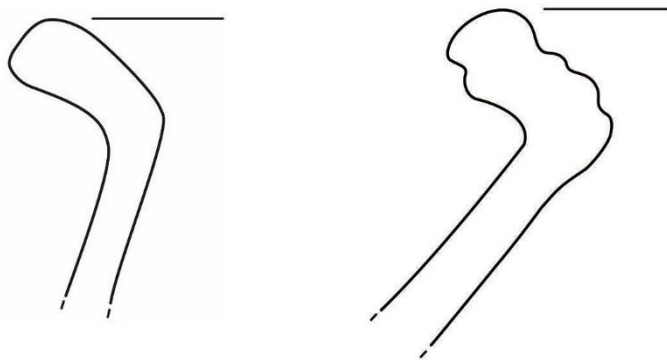


Fig 133a: Sherd 2131, b: sherd 91 (Source: Shiura Jaufar and Abdul Samad)

**Type 8** (n=2) Everted rims with a similar lip profile as type 7, upward pointing rectangular rims with a long collar going in towards the vessel and then flaring out below the neck. Slight thickening of rim profile towards the lip and widening at the rim tip (Fig 134ab).

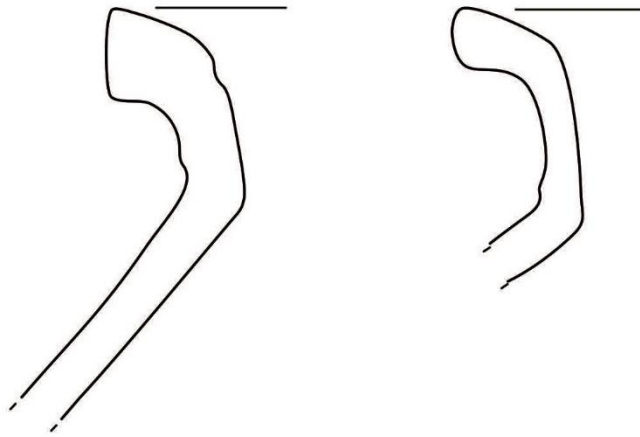


Fig 134a: Sherd 1954, b: sherd 1195 (Source: Shiura Jaufar and Abdul Samad)

**Type 9** (n=1) Everted rim with a rectangular rim profile pointing downwards, with multiple parallel incisions and a profile thickening at the lip. Here, the balance point of the rim is at the interior edge of the lip, unlike in other types where this point is at the upper top of the lip (Fig 135).

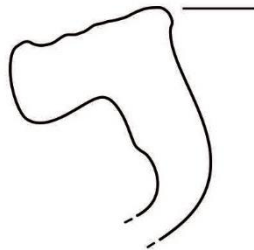


Fig 135: Sherd 649 (Source: Shiura Jaufar and Abdul Samad)

**Type 10** (n=3) Everted rims, rather rectangular and pointed but somewhat flat on the lip profile. These also thicken towards the lip (Fig 136abc).

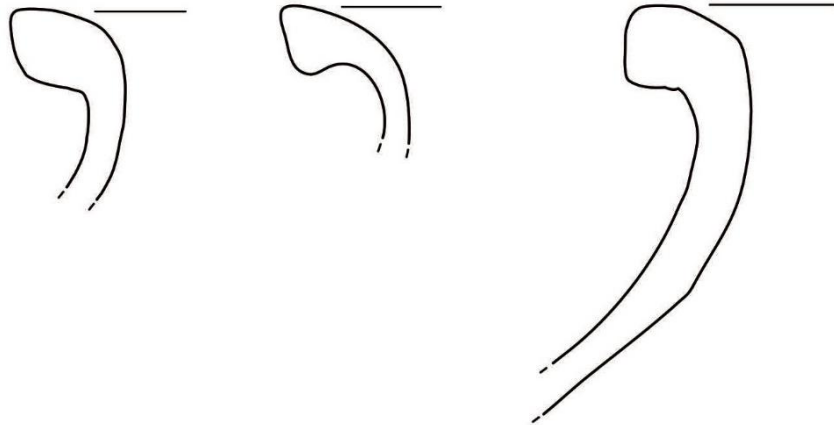


Fig 136a: Sherd 1592, b: sherd 1506, c: sherd 2081 (Source: Shiura Jaufar and Abdul Samad)

**Type 11** (n=2) Everted rims with a very short lip profile pointing downwards and a long neck slanted inwards and then opening outwards. Rim profile thickens at the lips (Fig 137ab).

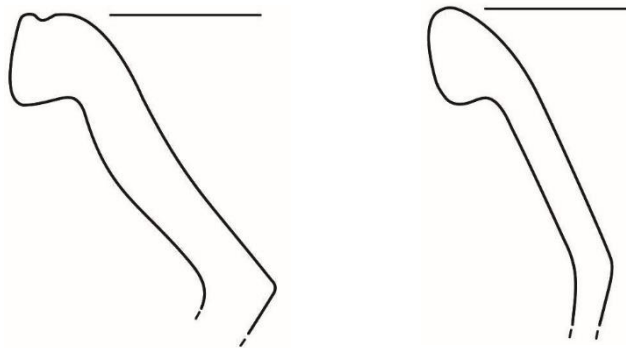


Fig 137a: Sherd 1266, b: sherd 1454 (Source: Shiura Jaufar and Abdul Samad)



**Type 12** (n=2) Everted pointed lip profile pointing upwards and widening at the upper end, otherwise very even from the rim profile to the lip (Fig 138ab).

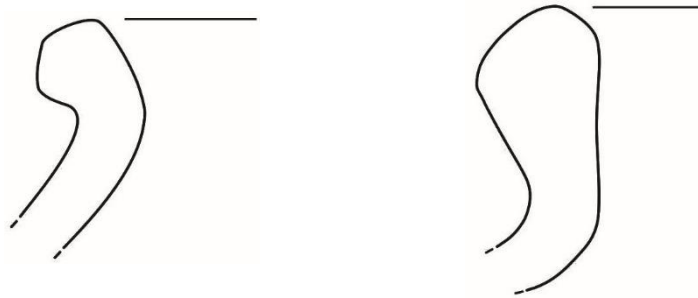
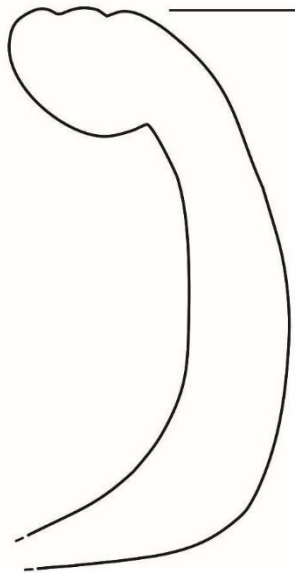


Fig 138a: Sherd 2070, b: sherd 648 (Source: Shiura Jaufar and Abdul Samad)

**Type 13** (n=1) Everted, very thick rim with a flat and oval lip curving downwards and with incisions on the lip. This type has a rather long neck curving outwards (Fig 139).



Type 139: Sherd 2071 (Source: Shiura Jaufar and Abdul Samad)

**Type 14** (n=1) Everted rim, but lip profile pointing up and curving inwards and widening at the top edge. This has a very shallow body with no neck. It may be a pot lid or a very shallow dish. This is a very wide open vessel (Fig 140ab).

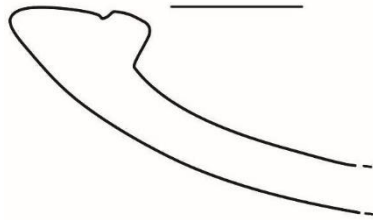


Fig 140ab: Sherd 562 (Source: Shiura Jaufar and Abdul Samad)

**Type 15** (n=1) Similar to type 14 in that it is very shallow and has no neck, an everted rim with a lip profile curving outwards and going inwards and widening at the edge. The similarity between this and the above is that they are very shallow with no neck. It may be a very wide open shallow dish (Fig 141).

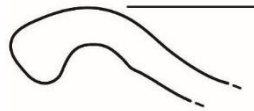


Fig 141: Sherd 346 (Source: Shiura Jaufar and Abdul Samad)

**Type 16** (n=1) Rim of a spouted vessel (Fig 142ab) (see also Fig 126ab).

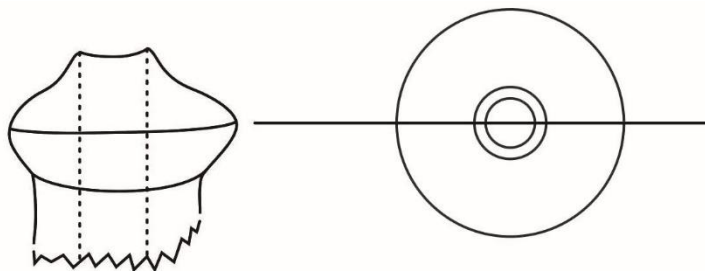


Fig 142ab: Sherd 2134 (Source: Shiura Jaufar and Abdul Samad)

### **b- Form**

To comment on the form of the rims recorded and illustrated above is challenging due to the small size of the assemblage and the fact that associated body sherds rarely survived. However, based on the attributes recorded above, it is suggested here that most of the rims from this assemblage (Types 1-13) issued from everted vessels with a closed mouth and widening towards the bottom of the vessel. Some tend to have a long collar and the diameter of vessels ranged between 12cm and 50cm. To what shape or how the vessel develops below the rim is difficult to assess. However, based on previous studies on similar rim types from the Maldives (Mikkelsen 1991: Lister 2016), it is suggested here that the current assemblage also takes the form of *handi* or large storage/cooking vessels. This is further attested by the oral history of the discovery of complete or whole vessels by locals from the islands with similar rim forms as well as some examples from the National Museum of the Maldives.

However, two sherds (types 14 and 15) (Figs 140-141) are different from the above form type as they are wide open, they could be a shallow dish or a pot lid.

The presence of the spout is interesting as this is the only one in this assemblage (Figs 126 and 142). It is difficult to comment on the form of the spout other than to suggest that it would perhaps have a wide body with a neck below the rim but to what extent cannot be said.

### **c- Suggested Function**

Similar to form, it is rather difficult to comment on the function of the vessels in this assemblage due to the poor preservation of the specimens as well as a lack of residue or wear traces on them. Therefore, suggestions on possible functions are made here based on form as well as previous work on this subject on similar rims from the Maldives and oral historical records. There are almost no written sources on pottery usage in the Maldives.

In common with what other researchers have found in the Maldives (Mikkelsen 1991: Lister 2016), it is suggested here that most of the earthenware pottery was used for storage and cooking purposes. The limited evidence of sooting or blackness on the exterior surface of the vessel can be taken as an indication of the role of cooking for some vessels. Moreover, the presence of the spout is indicative of a serving/pouring function. The two shallow rims (Figs 140 and 141) could be a part of a lid placed on another pot or they could be a very shallow dish which is rather unlikely, but would also indicate a serving function.

### 5.7.1.2 Glazed wares

Unit	No. of rims <3cm	No. of rims >3cm	No. of rims analysed
UTH 1601	0	1	1
UTH 1602	0	0	0
UTH 1604	5	3	3
UTH 1605	0	2	2
<b>Total</b>	<b>5</b>	<b>6</b>	<b>6</b>
MAL E14	3	0	0
MAL E7	5	0	0
MAL E4	1	0	0
MAL N2	2	0	0
MAL N9	1	2	2
MAL N5	1	0	0
MAL N12	24	7	7
<b>Total</b>	<b>37</b>	<b>9</b>	<b>9</b>
VEY 1601	0	0	0
VEY 1602	0	0	0
VEY 1603	1	0	0
VEY 1604	0	0	0
VEY 1605	1	2	2
<b>Total</b>	<b>2</b>	<b>2</b>	<b>2</b>

Table 28: Glazed rims discarded and analysed for each unit

Out of the 61 glazed rim sherds recovered from the excavations, 44 sherds smaller than 3cm were simply recorded as rims with no further detail, while 17 sherds (larger than 3cm) were retained for further analysis (Table 28).

Sherd Id	Site/Context	Rim Type No	Angle	Diameter (cm)	Remarks
1455	UTH 1604/111	1	4	14	SEA Celadon?
1206	UTH 1604/N. Ext 100	2	5	24	CBW, Late Ming.
1370	UTH 1604/107	2	4	22	Unidentified
2037	UTH 1605/222	2	4	14	Stamped, 19 <sup>th</sup> c.
645	MAL 16 N9/4	2	5	16	Qingbai, 14 <sup>th</sup> c.
989	MAL 16 N12/3	2	5	17	Unidentified
992	MAL 16 N12/3	2	5	17	LQC, Yuan
646	MAL 16 N9/4	3	5	21	LQC, Yuan
994	MAL 16 N12/3	4	4	14	LQC, Yuan
92	VEY 1605/7	5	4	13	Refits with 103, SEA LQC
103	VEY 1605/9	5	4	13	Refits with 92, SEA LQC
1008	MAL 16 N12/3	6	4	19	SEA LQC
1126	UTH 1601/20-30 cm	7	4	18	SEA Celadon?
1840	UTH 1605/ 204	7	5	24	European, 19 <sup>th</sup> -20 <sup>th</sup> c.
990	MAL 16 N12/3	7	4	26	SEA LQC
1003	MAL 16 N12/3	7	4	17	Qingbai, 14 <sup>th</sup> c.
896	MAL 16 N12/4	7	4	16	LQC, Yuan

Table 29: Analysis of glazed rims

All of the 17 rims analysed had an open angle; a few were wide open. Diameters range between 13cm and 26cm (Table 29). A typology of seven rim types was devised; illustrated and discussed below.

#### a- Rim types

Out of the 17 rims analysed (Table 29), 9 have been illustrated below and 7 different types defined (Figs 143-149).

**Type 1** (n=1) Everted rim, with a narrow oval and flat lip profile curving outwards and a near-parallel, rim profile with a slight thinning of the rim towards the lip (Fig 143).

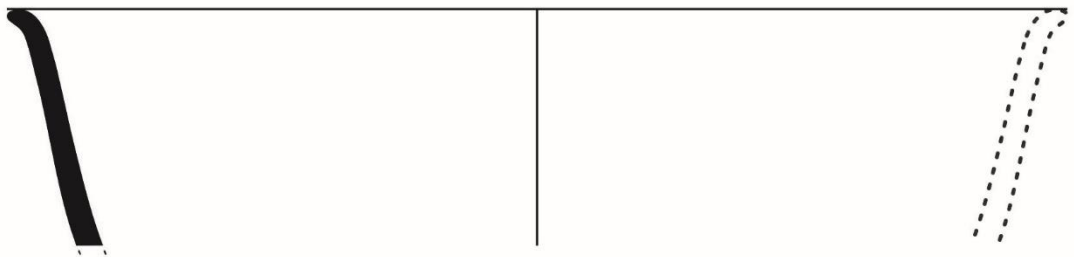


Fig 143: Sherd 1455 (Source: Shiura Jaufar and Abdul Samad)

**Type 2** (n=6) Simple rim with an oval lip profile, tapering at the extremity. Rim profile becomes thinner towards the lip and widens towards the body (Fig 144ab). For sherd 2037 see also Fig 104).

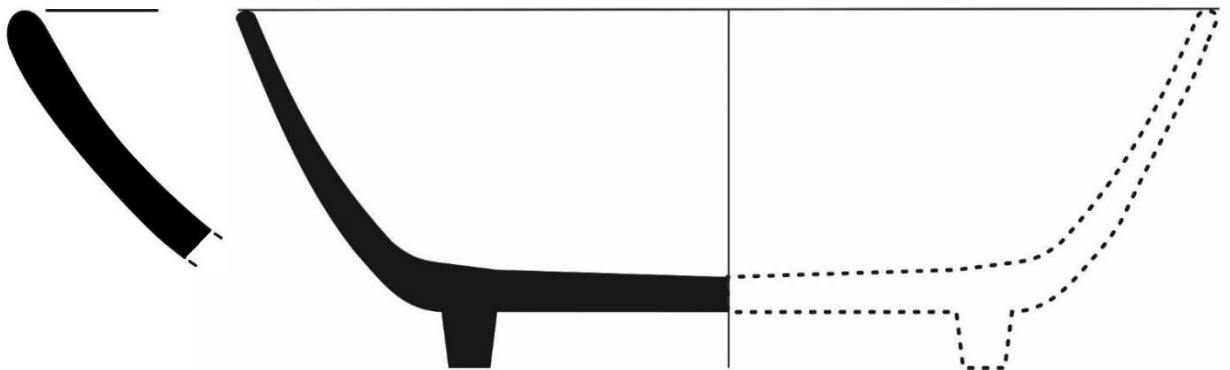


Fig 144a: Sherd 1370, b: sherd 2037 (Source: Shiura Jaufar and Abdul Samad)

**Type 3** (n=1) Everted rim, flat horizontal lip profile while lip profile is curved and rounded. The rim tapers at the lip (Fig 145).



Fig 145: Sherd 646 (Source: Shiura Jaufar and Abdul Samad)

**Type 4** (n=1) Simple rim, with an oval lip profile curving slightly inwards. The rim tapers towards the lip (Fig 146).

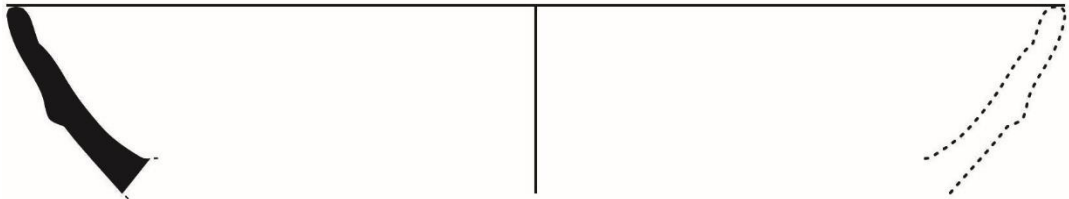


Fig 146: Sherd 994 (Source: Shiura Jaufar and Abdul Samad)

**Type 5** (n=2) Thickened rim, with an oval lip rather bulbous, widening at the top of the lip and curving slightly inwards. The rim profile thickens towards the lip (Fig 147).

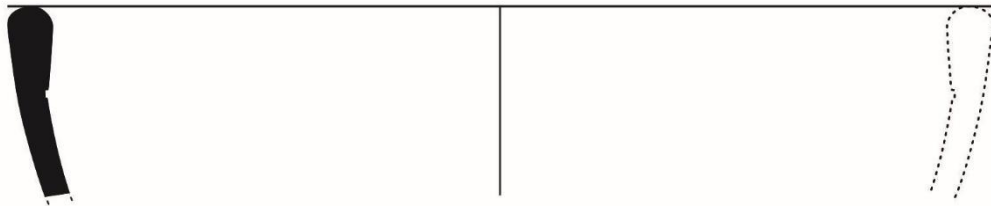


Fig 147: Sherd 103 (Source: Shiura Jaufar and Abdul Samad)

**Type 6** (n=1) Thickened rim, with a rather pointed lip profile narrowing at the top of the lip. The rim profile thickens towards the lip (Fig 148).

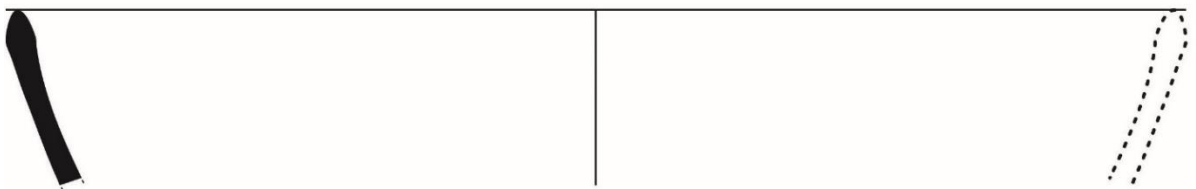


Fig 148: Sherd 1008 (Source: Shiura Jaufar and Abdul Samad)

**Type 7** (n=5) Thickened rim, with a plain or rounded lip profile, curving slightly outwards. The rim profile slightly thickens towards the lip (Fig 149ab).

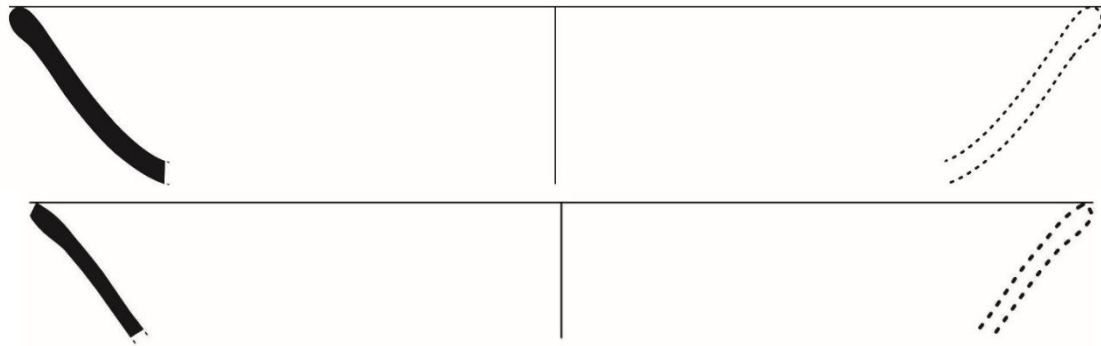


Fig 149: Sherd 1840, b: sherd 645 (Source: Shiura Jaufar and Abdul Samad)

### **b- Form**

As was the case with the earthenware, little body survives attached to most of the glazed rims, with the exception of one specimen which belongs to half of a vessel (Figs 104 and 144b). Most of the rims are simple, there being only two everted rim sherds (Types 1 and 3). All the rims are open mouthed (some wide open). The total diameter of the vessel ranges between 13cm and 26cm and there is less variation compared to earthenware rims. Overall shape or the depth of the vessel is difficult to assess. However, based on the attributes recorded above as well as previous studies carried out on similar rim types from the Maldives (Carswell 1976; Mikkelsen 1991; Lister 2016), it is suggested here that most of the rims from this assemblage display the form of shallow dishes and bowls. These are further attested by the discovery of complete or whole vessels by locals from the islands with similar rim forms as well as some examples from the National Museum of the Maldives (Fig 108).

One rim sherd (number 376) stands out from the rest of the glazed rims but has not been illustrated here as it is a very small and shallow sherd (Fig 109c) and could perhaps be a pot lid or a shallow dish.

### **c- Suggested Function**

For the glazed sherds in this assemblage, it is suggested here that they represent vessels with a serving function as they have been suggested to take the form of bowls and dishes/ plates above. Note that in common with earthenware, the analysis of the possible functions of this assemblage were aided by previous work done on this subject in the Maldives (Carswell 1976; Litster 2016).

## 5.8 Results

### 5.8.1 Comparison of total number of sherds (including earthenware and glazed sherds) and sherd types

The first part of this section will compare the total number of pottery sherds (including glazed and earthenware and sherd types) recovered from all sites. First an intra-site comparison will be made by considering individual trenches. The results will then be combined to make a comparison between the three sites to characterise their ceramic assemblages.

Site	Earthenware	Glazed	Total
UTH1601	139	5	144
UTH1602	31	0	31
UTH1604	644	23	667
UTH1605	253	8	261
<b>Total UTH</b>	<b>1067</b>	<b>36</b>	<b>1103</b>
MAL 16, N2	56	4	60
MAL 16, N9	86	8	94
MAL 16, E4	84	8	92
MAL 16, E7	43	14	57
MAL 16, N5	27	2	29
MAL 16, E14	97	30	127
MAL 16, N12	248	87	335
<b>Total MAL</b>	<b>641</b>	<b>153</b>	<b>794</b>
VEY 1601	21	1	22
VEY 1603	9	4	13
VEY 1605	192	8	200
<b>TOTAL VEY</b>	<b>222</b>	<b>13</b>	<b>235</b>
<b>TOTAL</b>	<b>1930</b>	<b>202</b>	<b>2132</b>

Table 30: Summary of total number of sherds showing glazed and earthenware sherds for each trench.

As seen above in Table 30, the most abundant pottery occurred at Utheemu with a total of 1103 sherds (36 glazed sherds, 1067 earthenware). Pottery was recovered from all four trenches excavated on this island (see Fig 150) with trench UTH 1604 yielding the greatest number and UTH 1602 the least. A notable feature is the comparative similarity in the proportion of earthenware and glazed ware recovered within this island whatever the total assemblage size. With the exception of UTH 1602 with 100% earthenware (n=31), the rest of the three units yielded a similar proportion of 96-97% of earthenware sherds and 3-3.4% of glazed sherds. Overall only 3% of the total assemblage from Utheemu consisted of glazed sherds. Thus, as will



be evident below, in terms of the above percentage, Utheemu yielded the least number of glazed sherds (3%) and the most number of earthenware (97%) from the total assemblage from the island.

For all trenches, pottery remains were concentrated mostly within the mid layers while very few sherds were recovered from the surface/top layers. That Utheemu excavations yielded the most abundant pottery is no doubt a factor of the greater volume excavated on this island (6.3m<sup>3</sup>) compared to the other two sites (Male': 1.9m<sup>3</sup> and Veyvah: 2.3m<sup>3</sup>), and the excavated volume of UTH 1604 was also higher than the other three units on this island.

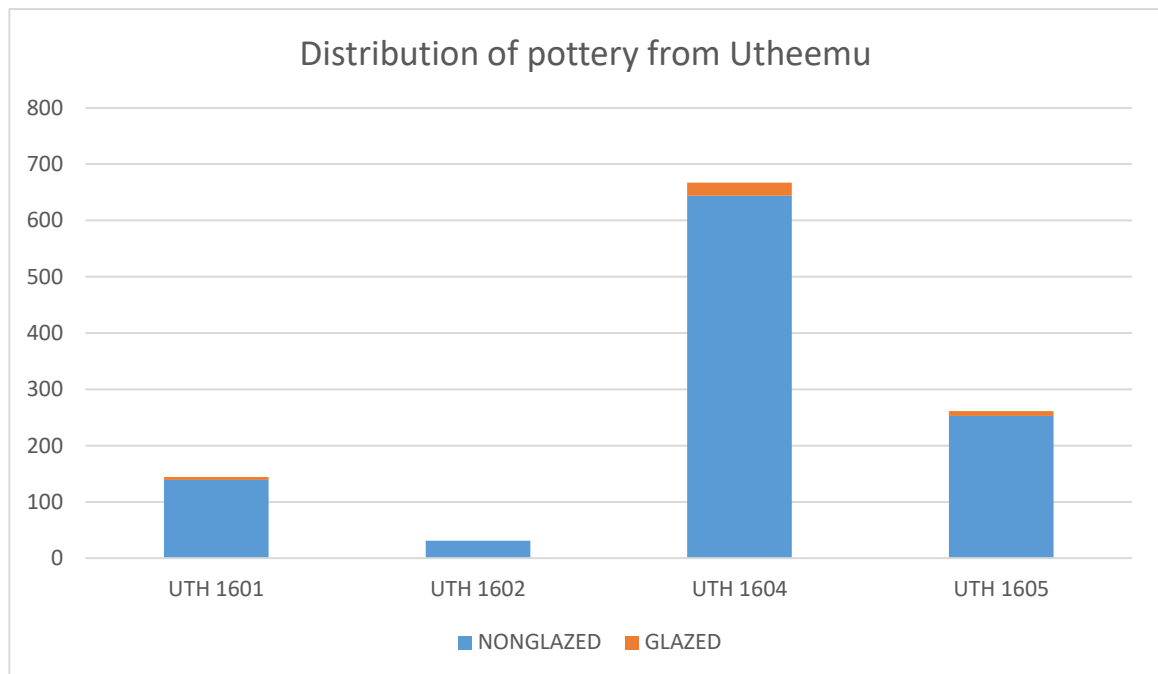


Fig 150: Distribution of Pottery from Utheemu

Even though the greatest number of pottery was recovered from Utheemu, the highest number of glazed sherds were recovered from the trenches excavated in Male' (Table 30). From a total of 794 sherds, 19% (n=153) of the total assemblage was constituted glazed sherds. All units from Male' generated pottery remains but, unlike Utheemu, all yielded glazed sherds among these.

The highest number of the ceramic finds from Male' (roughly 42%, n=335) were recovered from trench N12; this unit also featured the highest number of glazed sherds; over half of the glazed sherds recovered from Male' were issued from Unit N12 (57%), as well as one of the highest proportion of glazed sherds (26%) of any of the sites excavated. The least ceramic material was found in trench N5 with 29 sherds out of which only 2 were glazed. Pottery remains from the rest of the five trenches vary as shown in Table 30 and Fig 151. Trenches E7

and E14 yielded comparable proportions of glazed sherds (24% of the total assemblage from each unit) as N12. For all trenches on this island, pottery remains were concentrated almost entirely within the mid layers (contexts 2-5) with the exception of three sherds from the highest layer (Context 1) from trench E7 and 21 sherds from the layer right above the sterile (Context 6) from trench E14.

In terms of volumes excavated on this island, all units except N12 were excavated to similar volumes apart from unit N5 which was stopped prior to completion (see Chapter 4, Table 18). N12 was extended thus it has the highest excavated volume from this island. The total volume excavated exceeds Veyvah but does not exceed Utheemu.

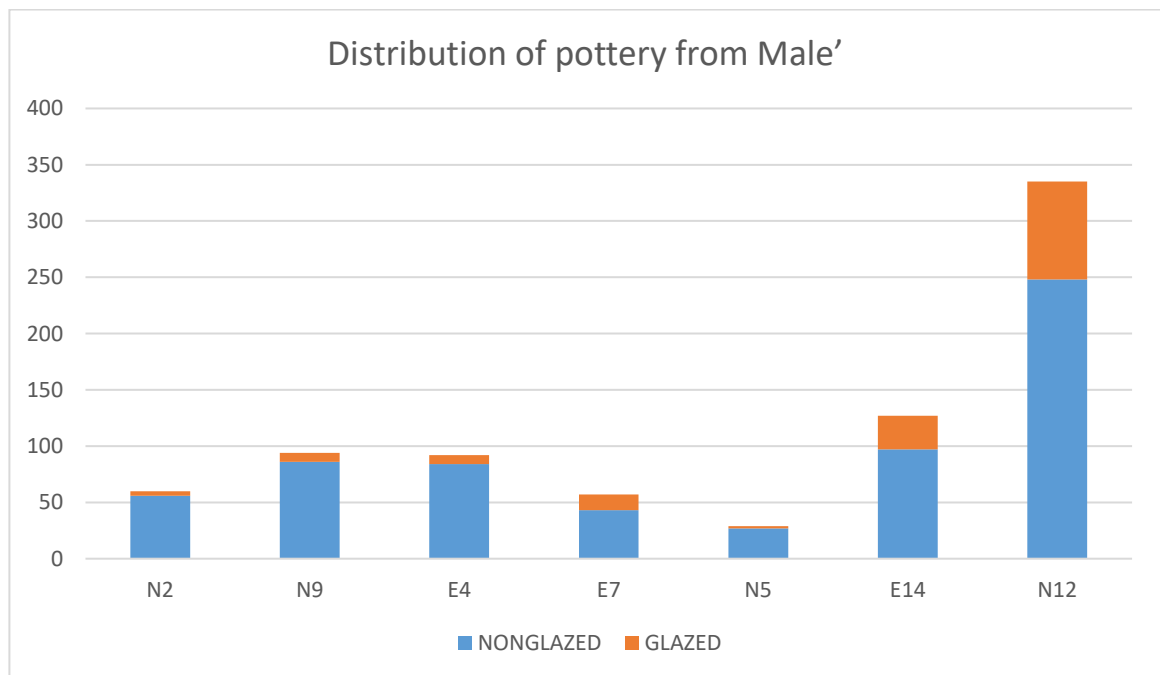


Fig 151: Distribution of pottery from Male'

The least pottery (including glazed pottery) was recovered from Veyvah. Only 3 of the 5 trenches excavated on this island. A total of 235 sherds (including 13 glazed) were recovered (see Table 30). The greatest number was recovered from VEY 1605 with a total of 200 sherds (including 8 glazed sherds) (Fig 152). Veyvah is also the second site from among the three islands to yield the highest proportion of glazed sherds within the island (6%).

From the three trenches that yielded pottery from this island, the fewest were recovered from VEY 1603 with a total of 13 sherds (including 4 glazed sherds). Similar to the case of the two sites discussed above, most of the pottery from the trenches on this island was also concentrated within the mid layers, but contrary to the other two sites (Utheemu and Male'), the

three trenches included comparatively more pottery remains on the surface/top layers. Commenting on the excavated volumes, it should be noted that two of these trenches (Units 1 and 3) were excavated to a depth of about 0.36-0.42m and Unit 05 from Veyvah was excavated deeper (0.85m) than the other units from this island.

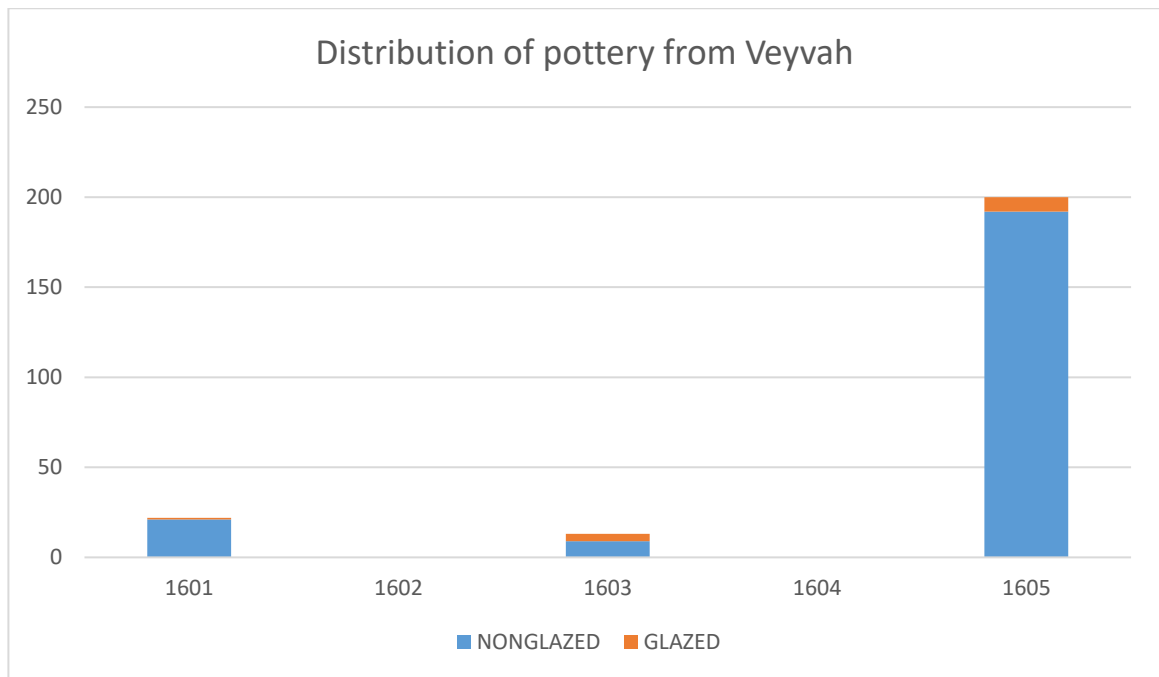


Fig 152: Distribution of pottery from Veyvah

In terms of sherd types, as seen from Table 22, most of the pottery from the assemblage consists of body sherds (87%, n=1862 sherds). The greatest number of body sherds were recovered from Utheemu while the least were recovered from Veyvah (Fig 153).

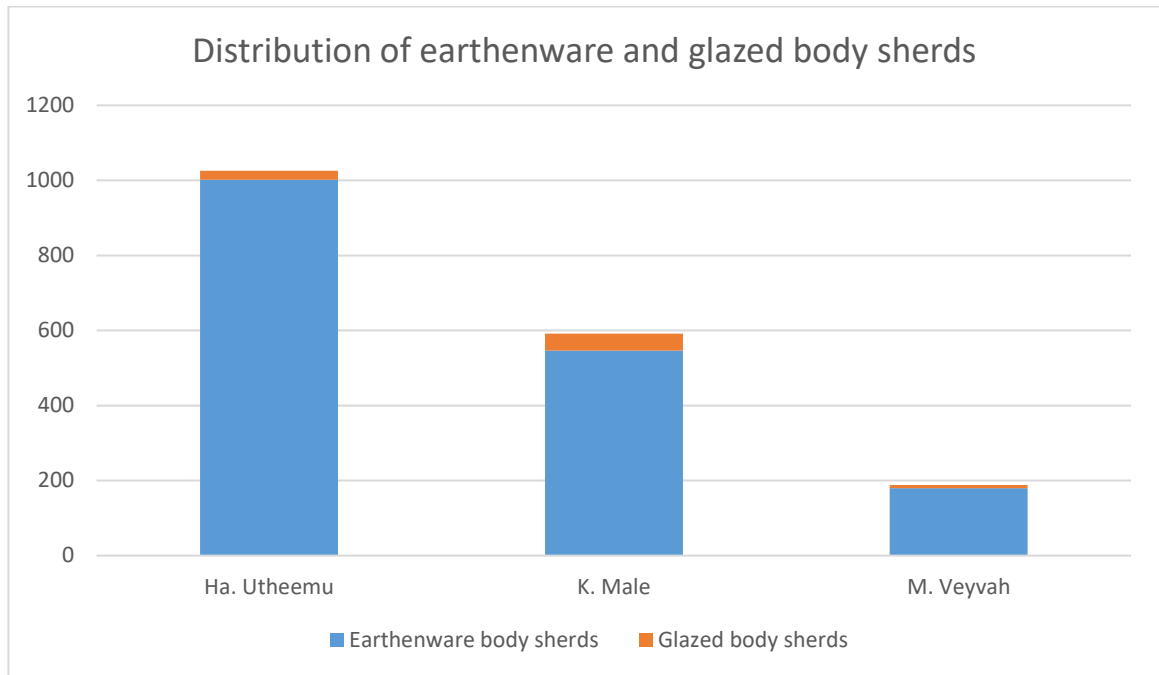


Fig 153: Distribution of earthenware and glazed body sherds for all three sites

From the 261 rim sherds (including 61 glazed) generated from the assemblage, most were recovered from Male' (141 rim sherds, 46 of which glazed) (see Table 22). All seven trenches from Male' yielded rim sherds, ranging from 4 to 57 sherds (see Fig 154). The highest number were excavated from unit N12 with a total of 57 sherds (including 31 glazed). This trench also revealed the highest number of rims excavated from a single context within this island with 19 rim sherds from Context 3. An interesting observation made here is that all these 19 rim sherds from context 3 in unit N12 are glazed and no earthenware rims were found from this context. The various rims recorded are of different types and thus do not all issue from a single vessel (see Appendix 4). In terms of earthenware rims, the greatest number of earthenware rims were recovered from contexts 2 (extension) and 3 (10 sherds from each context). Other contexts from this unit also yielded a higher number of rims compared to this site. They include 15 rims (3 glazed) from context 4, 11 rims (1 glazed) from context 2 (extension) and 10 rims (7 glazed) from section clean. This indicates intensive pottery usage within this site at this period.

In terms of the proportion of rims within the total number of sherds from each unit, Unit N2 evidenced the highest at 25% (15 rims out of 60 sherds) whereas for N12 it was 17% (57 rims out of 335 sherds). Unit N9 yielded a similar ratio of rims as N12 (16 rims out of 94 sherds). Other units with a higher proportion than N12 include Unit E7, 21% (12 rims out of 57 sherds), and E14, 20% (25 rims out of 127 sherds). Noteworthy is the recovery of 13 rim sherds (from

25) from Context 4 in Unit E14 as well as the presence of the spouted vessel from context 5. Unit N9 also recovered 8 rims (from 16) from Context 5. Thus, it is notable that, for Male', rim sherds were mostly concentrated within the mid-lower layers and no rims were recovered from Context 1 from any unit. Based on the two dates generated for Male' (Context 4 of N2 and Context 5 of E14), the spouted vessel can be suggested to date to sometime between AD 1160-1265 and that the concentration of rims within the mid layers suggests that these can be dated as rather early finds, some even predating the construction of the palace, based on the second date from Context 4 of N2 dating to AD 1415-1450.

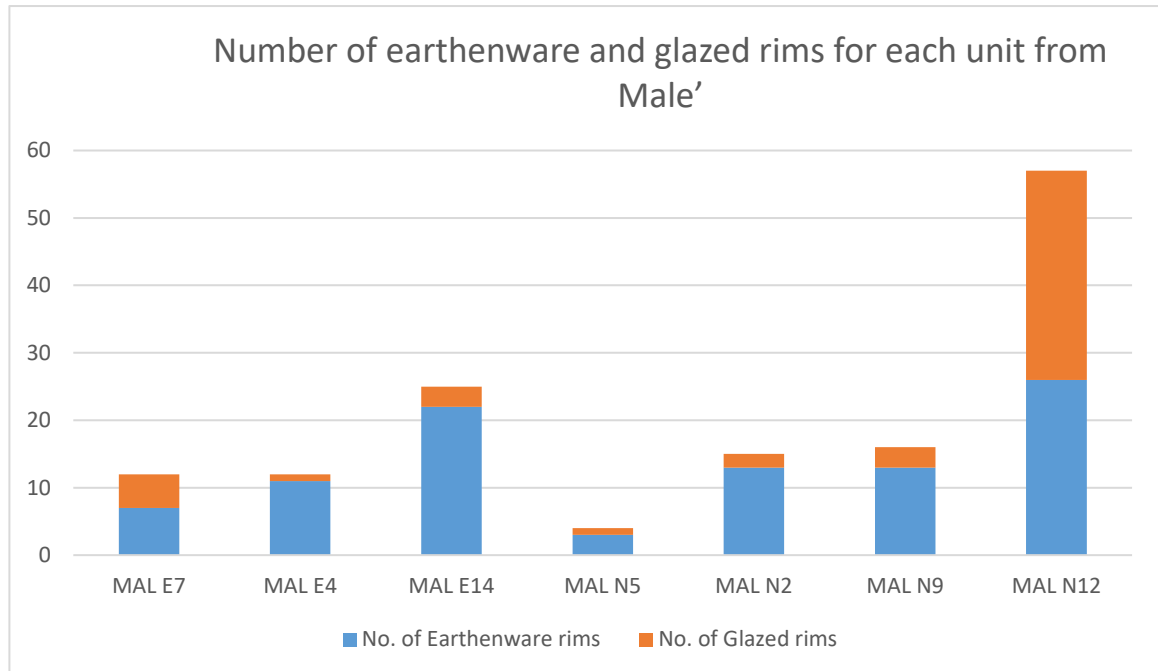


Fig 154: Rim occurrence for Male'

The second site with the greatest number of rims from the assemblage comes from Utheemu (76 rim sherds including 11 glazed sherds, Table 22). All four trenches from Utheemu yielded various amounts of rim sherds ranging from 6 to 47 sherds (Fig 155). The highest number of rims were excavated from Unit 4 with a total of 47 sherds (including the highest number of glazed rims from this island). This is also the unit with the most number of rim sherds from the whole assemblage after Unit N12 of Utheemu. Moreover, along with Unit 5 from Veyvah (see below), the highest number of earthenware rim sherds from the whole of the Maldives were also recovered from this unit (39 earthenware rim sherds for both this unit and Veyvah Unit 5). This trench also revealed the highest number of earthenware rims excavated from a single context within this island with 12 rim sherds (2 glazed) from Context 122. Context 102 from this unit

also yielded relatively large numbers of rims compared to this site involving 7 earthenware rim sherds. Units 1 and 5 generated a similar number of rims of 12 (1 glazed) and 11 (2 glazed) respectively.

The unit yielding the least number of rims is Unit 2 with a total of 6 earthenware rim sherds and no glazed rims. Few rims were recovered from the surface/ Context 1 for units 1, 2 and 4. Similar to the other sites, the majority of the rims were concentrated within the middle layers.

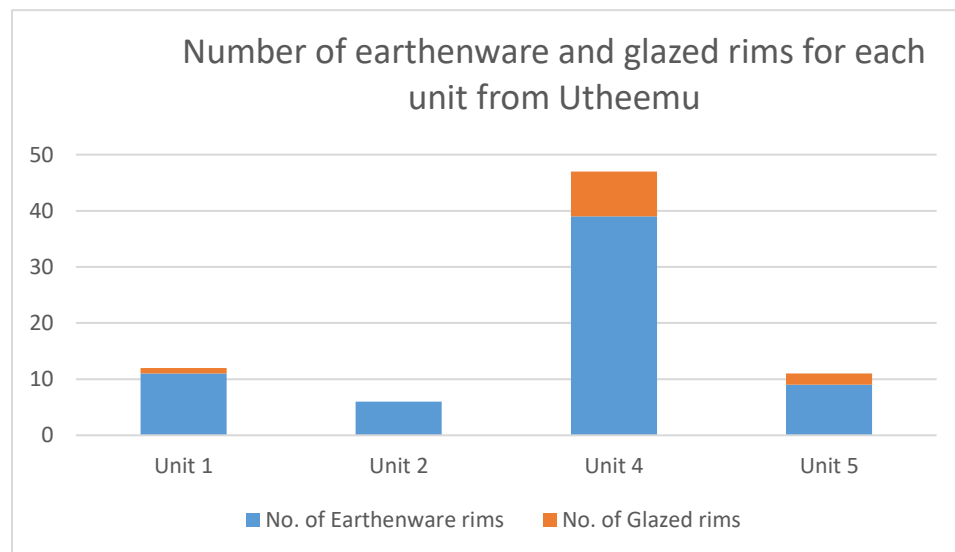


Fig 155: Rim occurrence for Utheemu

The site with the least number of rims from the assemblage comes from Veyvah (45 rim sherds including 4 glazed sherds, Table 22). From the five trenches from this island, only three trenches generated rim sherds (Units 1, 3 and 5, Fig 156). The majority of the rims from this site were excavated from VEY 1605 with a total of 42 sherds (3 glazed). This trench therefore generated the highest number of rim sherds from the whole of the Maldives after Units N12 and UTH 1604.

Two remarkable features are noted for this trench. Along with Unit 4 in Utheemu (see above), this unit generated the highest number of earthenware rim sherds (39 rim sherds from each unit) from the whole assemblage. The most remarkable feature of this trench though is that its Context 3 yielded the highest number of rim sherds from a single context from this island as well as the whole assemblage which includes 32 rim sherds (1 glazed). The other two units (1 and 3) recovered 1 earthenware rim and 2 rim sherds (including 1 glazed) respectively (Fig 156). The majority of rims were concentrated within the middle layers.

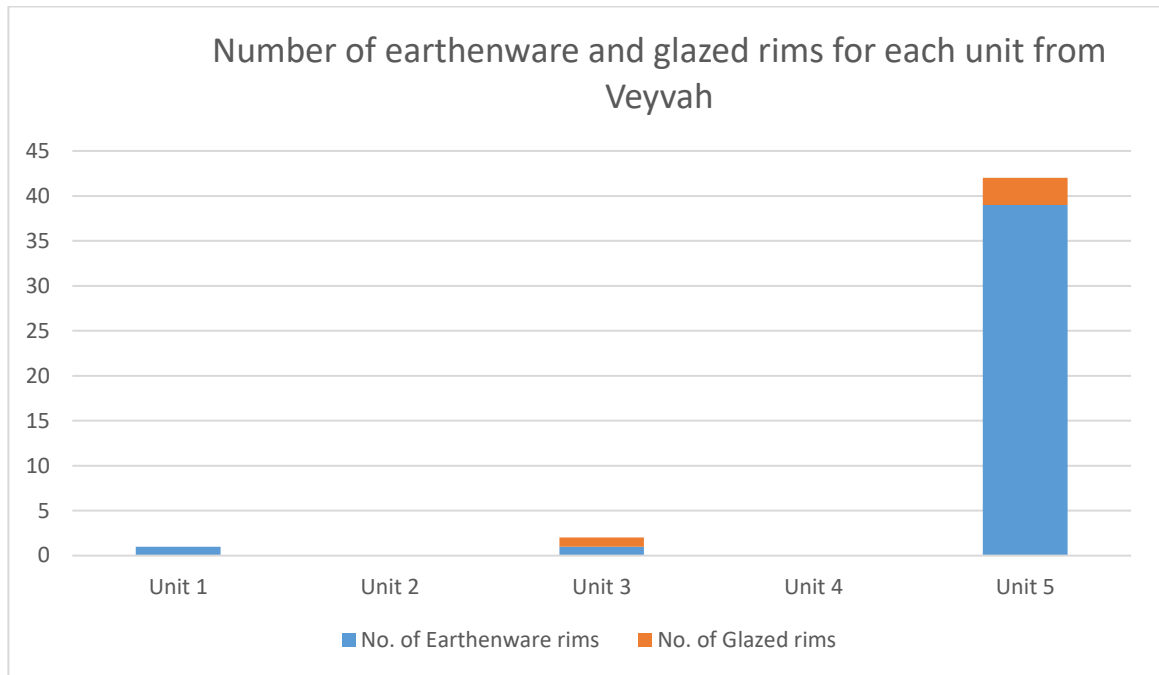


Fig 156: Rim occurrence for Veyvah

With regard to base sherds, only 8 base sherds were recovered in total (Table 23). Note that out of these 8 base sherds only 1 sherd (sherd 178, Fig 117) is listed as earthenware and the rest are glazed. It was recovered from Unit 5 at Veyvah from Context 3. It is most likely to represent the non-glazed base of a half glazed vessel (see above). Another glazed base sherd was recovered from Unit 3 (Context 1) from Veyvah. The most number of base sherds were found from Male' with a total of 5 glazed sherds (Figs 110a and 112). These include two sherds from the third context from unit N12 from Male' and 3 more sherds, one each from units E7 (Context 2), E14 (Context 4) and N9 (Context 5). From the site of Utheemu, only one base sherd was recovered, from UTH 1605 (Context 211).

### 5.8.2 Comparison of surface treatments for earthenware sherds

The next section in this chapter will compare the various types of surface modifications on the earthenwares recovered from all sites. First a comparison will be made for individual modification types to identify the most common and least common types present in this assemblage. Afterwards, these modifications will be used to compare the three sites to identify characteristics in the pottery assemblage for the three sites.

For modifications made on unglazed sherds, it has been shown in Table 24 that 9 different types of modifications were identified. Among these, the most common include various occurrences of impressions (n=296 sherds), incisions (n=148 sherds), slipping (n=133 sherds), appliques (n=113 sherds) and carinations (n=45 sherds). Unfortunately, due to poor preservation, a large number of sherds are noted to have indistinct decorations on them (n=316 sherds: 202 from Utheemu, 104 from Male' and 10 from Veyvah).

As far as impressed modifications are concerned, the most common decoration in this assemblage are sherds featuring linear paddled decoration. These amount to a total of 256 from all three sites indicating the huge dominance of this decoration within the Maldivian assemblage. The site with the greatest number of linear paddled decoration was from Utheemu with a total of 189 sherds. This is the largest decoration type among all three sites and all decoration types. For linear paddled sherds, Male' generated 66 sherds and Veyvah yielded only one sherd from this type. In this assemblage, linear paddled sherds often occur along with carinated and red slipped sherds as well as other indistinct decorations. The second most common type for this group was waffle sherds which add up to 35 sherds in total. Here also Utheemu yielded the greatest (21 sherds) while Male' yielded 8 sherds and Veyvah recovered 6 sherds. As seen above, waffle sherds mostly tend to be on their own without sharing any other decoration with a few exceptions. The other three types noted in this group which are carved paddled (CP), ordered impressed (OI) and impressed surface (IS) (see Table 24) consist of very few sherds. They include 1 sherd from Male' and 2 sherds from Veyvah for carved paddled, 1 sherd from Utheemu for ordered impressed and 1 sherd from Male' for impressed surface.

The next group with the second most common type of modification are incisions. Here, a total of 148 sherds are noted. From the five different types of incised decorations described in Table 24, the most common type from this group appears to be the multiple parallel incised sherds, totaling 96 sherds altogether. The highest number of multiple parallel incised sherds were recovered from Utheemu with a total of 51 sherds while Male' generated 37 sherds and Veyvah generated 8 sherds. This type of decoration tends to occur frequently with red slipped and raised band decorations. The second most common type in this group was the single incision type, totaling 47 sherds from all three sites. The site with the highest single incised lines was from Male' with a total of 29 incised sherds, while Utheemu had 11 sherds and Veyvah had 7 sherds. Sherds with incisions sometimes had various other decorations along with them mostly red slipped and raised bands. The rest of the three types noted in this group (multiple parallel diagonal incisions, multiple incisions and flat diagonal incisions referred to as S3-D) consist of



very few sherds. They all came from Male' and amount to 1 sherd for parallel diagonal incisions (PDI), 3 sherds for multiple incisions and 1 sherd for flat diagonal incisions.

Slipped pottery is the third most common type of surface modification. A total of 133 red slipped sherds were recovered from all three sites. The site with the most number of red slipped pottery was Male' with 81 sherds in total. Utheemu yielded 51 red slipped sherds while Veyvah recovered only one red slipped sherd. Red slipped sherds sometimes occur along with several other decorations including raised bands, incisions, multiple parallel incisions, linear paddled, channeled and other indistinct decoration.

Appliqued decoration is also relatively a common group in this assemblage. A total of 113 sherds have been noted. Out of the three different types described in this group, sherds with raised band/s were the most common type among this group. A total of 108 sherds had raised band/s applied on the clay and Male' featured the greatest number of these sherds (50 sherds). Utheemu yielded 36 sherds of this type and Veyvah- 22. Also note that out of the 8 different types of modification groups noted for Veyvah (Table 24), the greatest number of sherds for a single type of modification from this island also featured raised bands (22 sherds). Sherds having raised band/s also sometimes occur along with other decorations most commonly red slipped, multiple parallel incisions and channels (where a channel is made between two parallel raised bands) (see above). The rest of the 2 types noted under this group (Flattened Nubbins PA-2 and Cable) feature very few sherds from this assemblage. They include one sherd from Male' for Flattened Nubbins and four sherds from Utheemu for Cable.

Carinated vessels are also common. Thirty-eight carinated sherds were recovered from Utheemu while five were recovered from Veyvah and just 2 from Male'. Carinated sherds also occur sometimes with other decorations most commonly raised band, linear paddled and indistinct decorations.

Another decoration dominant in this assemblage is channeled decoration. A total of 17 channeled sherds were recovered from this assemblage where an equal number of sherds (6 sherds) were recovered from each site of Veyvah and Male' and 5 sherds from Utheemu. As mentioned above it is a very common occurrence for channeled sherds in this assemblage to be accompanied by raised bands on either side of the channel and some sherds tend to be red slipped too.

The least common type of surface modifications in this assemblage consists of burnished and painted sherds. In terms of burnished sherds, only 11 sherds have been noted where 8 of them came from Male', 2 from Utheemu and one from Veyvah. For painted sherds, only 3 of

them were noted for this assemblage. These consist of dark brown and black painted sherds. Two brown painted sherds were recovered from Male' while a dark brown/black painted sherd was noted to be present from Utheemu.

To summarise, linear paddled decorations are the most common type of decoration found in the Maldivian assemblage followed by red slipped, raised band/s, multiple parallel incisions, incisions, carinated, waffle and channeled. The other types of decorations mentioned above occur very rarely, involving only between 1 and 4 sherds.

For the site of Utheemu, the most common decorations include linear paddled, multiple parallel incisions, red slipped, carinated, raised band/s and waffle respectively. Few channeled sherds and burnished sherds occur as well. Decorations unique to this site include carved paddle, ordered impressed, painted, and cable decorated sherds (the latter were only recovered on this island). This makes Utheemu significant and highlights the difference in pottery modification compared to the other two islands. It may indicate a functional difference, and/or the origin of the pots or even a status difference. However, further research on these types of decorations are required in order to provide a more definite and better insight about their presence on this island.

For Male', the most common decorations include red slipped, linear paddled, raised band/s, multiple parallel incisions, incisions, and waffle. The most number of burnished and channeled sherds are also from this site. Decorations unique to this site include painted, impressed surface, multiple parallel diagonal incisions, multiple incisions, impressed flat section S3-D and flattened nubbins. These decorations only occur in Male' with the exception of painted sherds as one painted sherd was yielded from Utheemu. Carinated sherds occur relatively less on this island with the least number from the whole assemblage. As mentioned above, these differences in modifications are rather significant and require further research. Considering that these unique decorations mostly appear in Utheemu and Male' may suggest an elite feature but it is only a suggestion here.

There are very limited decorations within the assemblage at Veyvah. The most common decoration however, includes raised band/s. Veyvah also generated the most number of channeled sherds along with Male'. Veyvah also includes sherds with a carved paddle also found in Utheemu and a burnished sherd. The site also has fewer numbers of multiple parallel incisions, incisions, waffle and carinated sherds. Other lesser decorations for this site include linear paddled and red slipped which occur comparatively higher in other sites.

### 5.8.3 Comparison of surface treatments for glazed ware sherds

As can be seen from Table 25, glazed sherds can be categorised into 13 different types. Among these, the most common include Chinese Longquan (45), transport jars (45), Chinese blue and white porcelain (35), South East Asian Longquan celadon (26) and Chinese white porcelain (19). Among the less common types are Southeast Asian celadon (5), Qingbai (3), European (2), one stamped sherd, one enamel sherd, one half glazed sherd and three unidentified turquoise green sherds. Unfortunately, due to poor preservation 16 sherds (12 from Male', 2 from Utheemu and 2 from Veyvah) are noted to have unknown decoration on them.

In terms of Longquan celadon which is the most frequently occurring type in this assemblage along with transport jars, most were recovered from Male' with 43 sherds. Within this site, unit N12 recovered the most number of Longquan sherds with a total of 28 from which 15 came from Context 3. Four other units from this site yielded Longquan sherds including E7 (5), N9 (5), E14 (3) and E4 (2). For Utheemu only 2 Longquan sherds were recovered from Unit 04. None was recovered from Veyvah.

For the other type with the most number of glazed sherds which is transport jars, most were recovered again from Male' with 39 sherds. Once again unit N12 yielded the greatest number of sherds with a total of 27 from which 14 came from Context 3. Four other units from this site recovered this type of sherd including E14 (6), E4 (3), E7 (2) and one sherd from N2. For Utheemu only 5 sherds were recovered from units 1601 (1), 1604 (4) and one sherd from 1605. None were recovered from Veyvah.

As far as Chinese blue and white porcelain are concerned, all units yielded such sherds. The site with the highest number of sherds is Male' with 21 from which 10 came from unit E14 (including 7 from context 4). Five other units recovered blue and white sherds which includes N12 (4), E7 (3), N2 (2) and one each from N5 and N9. Utheemu yielded 12 blue and white sherds from UTH 1604 (7), 1605 (4) and one from 1601. From Veyvah only three sherds were recovered from 1603 (2) and one from 1605.

The next most common group is the Southeast Asian Longquan group. The greatest number were recovered from Male' with 18 sherds with 11 coming from N12 (including 5 from the section clean and 4 from Context 3). Three other units from this site yielded Southeast Asian Longquan, including E14 (4), E7 (2) and one from N9. Veyvah recovered 6 sherds all from Unit 1605 while only 2 were recovered from Utheemu from Unit 1604.

Chinese white porcelain is another common type and the site with the most number of white porcelain is Male' with 15 sherds. Unit N12 recovered the most number of sherds from

this site with 8 from which 5 came from Context 3. Four other units from this site yielded white porcelain including E14 (3), E4 (2) and one from units E7 and N2. Utheemu yielded 3 sherds, 2 from Unit 1601 and one from 1605. Veyvah yielded only one from unit 1603.

For the less common sherds, the occurrence of them for the three sites is as follows (Table 31):

Type	Site	Unit	No. of sherds
South East Asian Celadon	UTH 16	1	1
	UTH 16	4	4
Total			5
Qingbai	MAL 16	N9	1
		N12	2
Total			3
Unknown- Turquoise green	UTH 16	4	3
Total			3
European	MAL 16	E7	1
	UTH 16	5	1
Total			2
Half Glazed	VEY 16	1	1
Total			1
Enamel	MAL 16	E14	1
Total			1
Stamped	UTH 16	5	1
Total			1

Table 31: Distribution of less common glazed types across the sites

To summarise, Chinese Longquan celadon and transport jars dominate within the glazed sherds found in the Maldivian assemblage followed by Chinese blue and white porcelain, South East Asian Longquan celadon and Chinese white porcelain. The other glaze types mentioned above occur very rarely involving between 5 to 1 items.

Considering that there were not many glazed sherds from Utheemu, the dominant glaze ware within this assemblage was Chinese blue and white. Fewer sherds belonging to the following types were recovered including transport jars, Chinese white porcelain and equal amounts of Longquan and South East Asian Longquan celadon. Unique types only occurring for this island include South East Asian celadon, unidentified turquoise green, stamped porcelain. Of the two European sherds from this assemblage, one also appears from this island.

For the Male' site with the most number of glazed sherds, this site has the highest number of sherds for each of the most common 5 types discussed above. An interesting pattern appears within this site. For almost all glaze types that appear within this island, the majority of them were recovered from Unit N12 (except E14 with the most number of Chinese blue and white)

and many of them from Context 3. The most common type of glazed ware from Male' includes Longquan celadon, followed by transport jars, Chinese blue and white, South East Asian Longquan, and Chinese white porcelain. One European sherd was also recovered from Male' and unique to Male' is the recovery of 2 Qingbai sherds.

For Veyvah, the most number of glazed sherds are from the South East Asian Longquan type and exceeds the number recovered from Utheemu. Fewer finds were recovered from Chinese blue and white and Chinese white porcelain. Unique to Veyvah is the recovery of the half-glazed base.

## **5.9 Conclusion**

In conclusion, this chapter describes the pottery from the Maldivian assemblage. As evident above, different islands yielded a variety of types of pottery, the majority being earthenware (90.5%). Most of the pottery consisted of body sherds (87.3%) with fewer rims (12.3%) and even fewer bases (0.4%). Even though the highest number of potsherds were recovered from Utheemu (51.7%) (as well as being the island with the highest volume excavated: 6.3m<sup>3</sup>), the highest number of glazed ware was found on Male' (7.2%), and the majority of them from Context 3 of N12 (53% of total glazed assemblage from N12) (also the highest volume excavated from Male': 0.83m<sup>3</sup>). This indicates intensive pottery usage within this site at this period. Veyvah yielded the least pottery (11%), however, many rim fragments were recovered from this island (19.2% of total assemblage from Veyvah).

It is suggested here that factors such as the depth of excavations, the location and the nature of the sites influenced the differences in assemblage composition within units as well as within islands. For instance, on all three islands, the highest number of pottery were recovered from the units with the highest volume excavated (such as UTH 1604, MAL N12 and VEY 1605). Furthermore, as suggested in Chapter 4, some units in Utheemu represent elements of elite settlements (UTH 1604 and 1605 within the palace) dated to sometime between AD 1165-present. Similarly, the sites excavated in Male share the same elite nature as they are also within a palace structure dated to sometime between AD 1160-1450. Therefore, the presence of a higher proportion of pottery (compared to other units from Utheemu: UTH 1601 and 1602 and all units from Veyvah) from these units could perhaps be due to this difference in the status of inhabitants. In addition, the abundance of earthenware from Utheemu and the results of the rim analysis for earthenware suggests storage/cooking activities taking place in Utheemu. Moreover, the presence of more glazed ware from Male' could be due to a wealth difference,

i.e., Male representing a wealthier settlement compared to Utheemu and Veyvah. The abundance of pottery from Unit N12 in Male' suggests this area to be of importance with intense occupation- especially the presence of abundant glazed rim sherds (of plates and bowls) indicating the use of glazed vessels for serving functions. Furthermore, the recovery of the spout from this unit also supports a serving/pouring function as mentioned above. In the case of Veyvah, as suggested in Chapter 4, most of the units were unproductive (likely to be inactive or less used in the past or they could have been heavily used but did not lead to a great number of finds). Only Unit 1605 recovered productive results dating to sometime between AD 1435-1615. VEY 1605 is thought to represent a non-elite, domestic, fishing settlement and possibly less wealthy (in comparison with Utheemu and Male') especially due to the comparative absence of glazed ware. The abundant rims from this unit suggest intense occupation here, possibly involving cooking/storage functions as well.

A variety of surface modifications were noted for both earthenware and glazed ware and it was noticed that linear paddled sherds majorly dominated the earthenware (21.7% of total decorated earthenware from all three sites) while Longquan celadon and transport jars dominated the glazed type (22.3% of total glazed assemblage from all three sites).

As mentioned above, it is difficult to comment on vessel functions for the present assemblage due to poor preservation. However, based on previous research (Mikkelsen 1991; Litster 2016), examples from the Maldives National Museum, as well as the rim analysis conducted for this research, it is suggested here that the earthenware vessels are likely to take the form of *handi* or large storage/cooking vessels. They represent functions of cooking and storage and one example of serving/pouring in Male. Most of the earthenware rims from this assemblage are everted, with a closed mouth and widening towards the bottom with the diameter of the vessels ranging between 12cm and 50cm. A lot of variation occurs within the earthenware rims in this assemblage (see above). Therefore, it can be suggested that the settlements studied for this assemblage involved activities of cooking and storage/serving through earthenware vessels and this is especially evident in the abundant recovery of earthenware rims from UTH 1604 and VEY 1605. For the glazed ware in this assemblage, most rims are simple, open mouthed and with rim diameter ranging between 13cm and 26cm and less variation compared with earthenware rims. Thus, most of the glazed rims display the form of shallow dishes/bowls and this is further attested by previous studies (Carswell 1976; Mikkelsen 1991; Litster 2016) as well as examples from the Maldives National Museum. Therefore, it can be suggested that the settlements studied for this assemblage involved activities of serving with glazed vessels

and this is especially evident in the abundant recovery of glazed rims from MAL N12. However, it is acknowledged here that further research is required to get a better insight in the discussion of vessel functions in the Maldives.

Having described the pottery remains for this assemblage, the focus will now be shifted to non-pottery materials. Thus, the next chapter will describe in detail the other material culture recovered.

## **Chapter 6: Non-ceramic material culture including glass and ceramics not related to pottery**

### **6.1 Introduction**

In former times, different forms of poetry were one of the means of whereby Maldivians communicated with each other and they often described the lifestyles practiced in the Maldives at that time (Riyan 2011; Maloney 2013). This poetry, along with other oral traditions and historical sources (Luthufee 1995: 71-76; Riyan 2011; Maloney 2013), as well as the standing remains and artefacts, bear evidence that the ancient Maldivians carried out various kinds of work and despite the limited local resources (as discussed in Chapter 2), they were skilled craftsmen mastering various arts and crafts. Some of these skills included metalworking, boatbuilding, lacquer work, coral carpentry, woodwork, coir rope making, and weaving (Shafeeg 1991; 1998; Riyan 2011). However, the challenge here is that these diverse activities have left very little trace in the archaeological record. Most of the materials used in these activities were not durable over long periods, leaving little or no trace, therefore making it a major challenge to comprehend the nature and extent of the past Maldivian lifestyles through archaeology.

Some materials do, however, survive; among them glass, metal and stone. Therefore, it is crucial to examine these limited remains in the archaeological record. As shown in the previous chapter, the majority of the archaeological material consists of pottery. This chapter presents the non-ceramic finds, providing an opportunity to examine how these items were used by the local Maldivians in the past.

Moreover, it is evident that due to the scarcity of local resources, the Maldives had to rely heavily on imported goods thus, these trade connections formed a crucial part of the operation of this poorly studied island nation. These non-ceramic finds can help in answering questions such as the nature of imports, where different resources were imported from and their usage and functions.

Excavations in the Maldives as part of the present doctoral research resulted in the recovery of a variety of artefact categories, however as mentioned above in very small quantities. They include six categories; personal ornaments (beads, bracelets), utilitarian glass fragments, metal fragments, stone fragments, plastic and a few unidentified ceramic finds. Metal and stone fragments are the richest categories of artefact represented in the excavations.



Thus, this chapter will focus on describing what was recovered from all sites in the above mentioned artefact categories. All artefacts are presented below by type, identifying what they are, what they are made of, as well as key measurements (including length, width, depth, and/or weight). Moreover, where necessary an aesthetic description of the finds is also presented such as their colour, feature attributes (decoration and pattern) and in the case of glass objects level of transparency. This chapter will also reflect on similar artefact categories recovered from the Maldives during other archaeological explorations to support the identification and usage of the finds. These finds will also be compared with the ethnographic collections from the Maldives held in the British Museum. To conclude, a summary of all finds will be presented and finds from the three sites will be compared to provide a general observation and show their distribution across the three sites. For further details of individual finds see Appendix 5a-c.

## **6.2 Personal ornaments**

Personal ornaments including beads and bracelets were recovered from K. Male' and M. Veyvah and none from Ha. Utheemu.

### **6.2.1 Beads**

Only two beads were recovered from the excavations (Fig 157, Table 32). They both came from M. Veyvah. They were two single glass beads of faded teal and reddish in colour respectively, both recovered from Context 4 within trench 1605 which was the deepest trench excavated on this island (0.85 m), situated near an old road and very disturbed. This context has been dated to sometime between AD 1435-1615 (Beta 438194).

The beads were analysed by Laure Dussubieux at the Field Museum of Natural History in Chicago, USA, with a Thermo ICAP Q Inductively Coupled Plasma - Mass Spectrometer (ICP-MS) connected to a New Wave UP213 laser for direct introduction of solid samples. The results of the analysis suggest different origins for the two beads, with SF 8 having a possible Chinese origin and SF 7 having a possible central Asian provenance. Both beads have composition similar to other beads dating from a narrow time period: 14<sup>th</sup> and 13<sup>th</sup> century. For a detailed report of the analysis see Appendix 6.

Small finds number	Island site	Context	Length (cm)	Width (cm)	Depth diameter (cm)	Weight (g)	Additional description
7	VEY16-05	4	0.8	0.6	0.8	<0.1	Glass bead of faded teal colour. Possibly central Asian provenance, 13 <sup>th</sup> - 14 <sup>th</sup> century.
8	VEY16-05	4	0.5	0.2	0.5	<0.1	Glass bead, reddish in colour. Possibly Chinese, 13 <sup>th</sup> - 14 <sup>th</sup> century.

Table 32: Beads from M. Veyvah (Source: Adopted from McArthur and Van Der Westhuizen 2016)

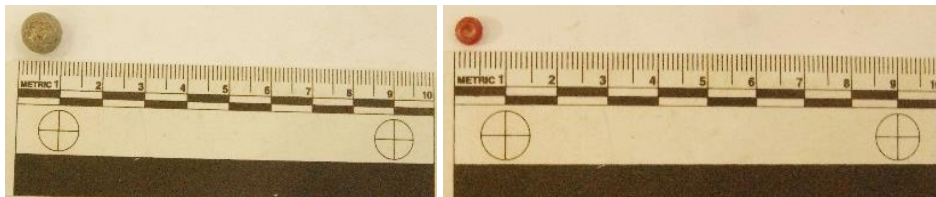


Fig 157: Beads from Veyvah (right to left: SF 7 and 8) (Source: McArthur and Van Der Westhuizen 2016)

Beads made from various materials including coral stone, glass, clay, carnelian and quartz have been recovered from early Buddhist religious contexts from various parts of the Maldives including K. Kaashidhoo Monastery, F. Nilandhoo, Gn. Fuvahmulak and GDh. Vaadhoo (Skjølsvold 1991; Mikkelsen 2000; Litster 2016: 198-203). In relation to the present assemblage, glass beads have also been recovered from Kaashidhoo and Nilandhoo. They include 2 greenish blue opaque beads from Kaashidhoo (Fig 158a) and 1 yellowish white mosaic bead from Nilandhoo (Skjølsvold 1991: 198-199; Lister 2016: 201-203) (Fig 158b). However, no further analysis other than their attributes being recorded has been done on them and the mosaic bead from Nilandhoo is reported to have been misplaced.

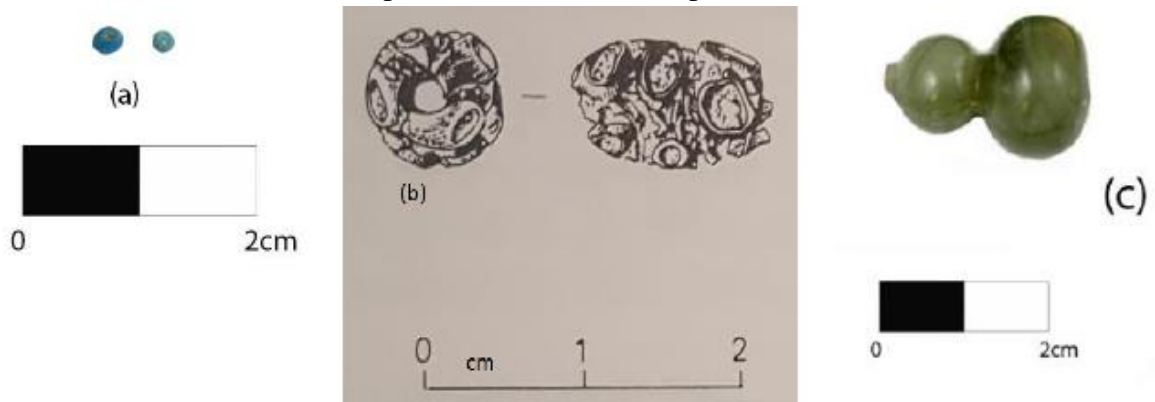


Fig 158a: Glass beads from GDh Vaadhoo (Source: Litster 2016: 199), b: Glass mosaic bead from F. Nilandhoo (Source: Skjølsvold 1991: 199), c: Lead glass gourd shaped artefact (Source: Mirani Litster 2016: 200)

Some beads from Vadhoo have undergone pXRF, preliminary LA-ICP-MS and use wear analysis (Litster 2016: 203). According to Litster (2016: 203) a connection to Chinese bead manufacturing has been established by the PXRf analysis conducted on a gourd shaped artefact, classified as a small ornament which was included in her bead assemblage (Fig 158c). This analysis was conducted to identify the raw material based on geochemical element analysis. Initially, this artefact was identified as chalcedony however, due to the high quantities of lead present in the sample, it has been suggested to be a lead glass item and a likely Chinese manufacture (Litster 2016: 203). Moreover, Litster (2016: 203) further states that the gourd shape of this item is often found in Chinese archaeological contexts, further supporting a Chinese manufacture. Furthermore, use wear analysis conducted on two beads from Vaadhoo indicates that they were used as necklaces, with polish evident on them (Litster 2016: 203).

Moreover, according to Mikkelsen (2000: 9) the recovery of beads associated to a Buddhist context has been suggested as objects which have come from sacrifices and religious ceremonies. In addition, beads of semi-precious stones (agate, carnelian and coral) were also mentioned by the Archaeological Survey of India during their expedition in the Maldives (see Chapter 5). These finds were reported together with several other finds in a relic chamber of stone at a Buddhist complex of Kuramathi Island in Kaafu atoll (Bopardikar 1992: 175; Tripathi 1999: 834). Unfortunately, no further details about these are provided apart from mentioning that they are in storage in the National Museum in Male’.

The collection at the British Museum also holds some beads of coral and shell (Figs 159ab). However, no further study has been done on these items.



Fig 159a: Coral bead (Source: British Museum As1981,20.192, AN1359684001)



Fig 159b: Coral beads made with mother of pearl (Source: British Museum As1981,20.270.a-e, AN1360563001)

### 6.2.2 Bracelets

Twelve long, curved glass fragments were recovered from the excavations (Fig 160). Eleven came from K. Male' and one from M. Veyvah. Most are dark in colour (black/dark blue/blue) while one is white and one is both dark blue and white. They appear to be fragments of bracelets. While most of the bracelets are opaque a few of them are transparent and some have grooves made around them as well as additional glass rings attached to the edges (Table 33). Most were found at K. Male' and unit N12 provided the majority from this site. All the fragments were recovered between the middle and lowest contexts (2-4), just before reaching sterile between 0.7 m and 1 m. A brief observation was made by Simpson (2018) on the bracelets and he suspects that they fall within a 13<sup>th</sup>- 15<sup>th</sup> century date range.

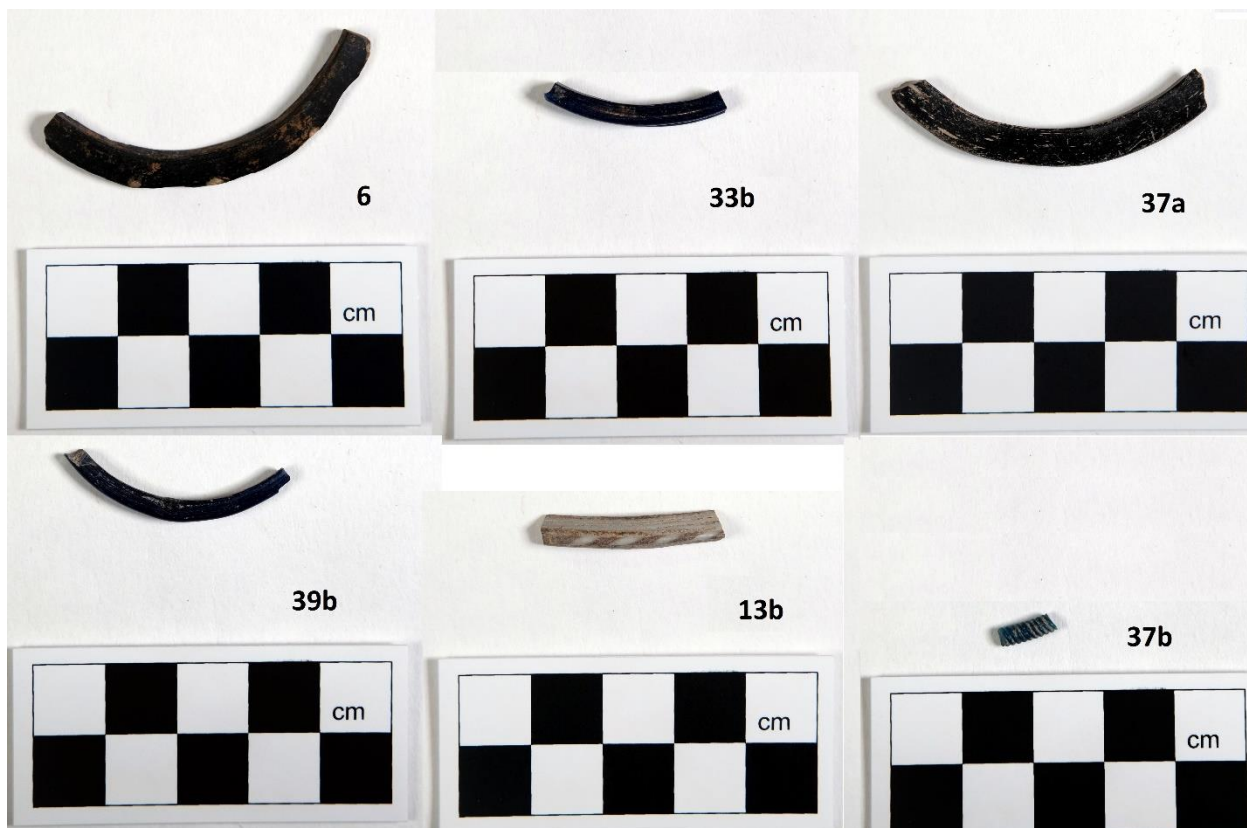


Fig 160: Bracelets from Veyvah (SF 6) and Male' N12 (SF 33b, 37ab and 39b), N9 (SF 13b) (Source: Giulia Nazzaro 2018)

Small finds number	Island site	Unit	Context	Length (cm)	Width (cm)	Depth/diameter (cm)	Weight (g)	Additional description
20	MAL 16-01	N12	2	4.5	1		<0.1	White curved glass bracelet.
13b	MAL 16-01	N9	4	2.4	0.4			Glass, white bracelet with brown stripes.
30abc	MAL 16-01	N12	3	a)2.5 b)2.5 c)1.5	a)0.02b)0.2 c)0.3		<0.1	Glass bracelets, (blue, black and blue/white).
33b	MAL 16-01	N12	3	2.4	0.4		<0.1	Glass, translucent blue.
37ab	MAL 16-01	N12	3	a)4.3 b)0.9	a)0.5 b)0.3		a)<0.1 b)<0.1	Glass, two pieces of bracelets, largest piece black colour smallest piece blue/green colour.
39b	MAL 16-01	N12	4	3.2	0.2	0.2	<0.1	Glass, curved dark blue.
45	MAL 16-01	E4	5	5		0.3	<0.1	Glass, curved piece of black.
50	MAL 16-01	E7	3	4.2		0.3	<0.1	Curved piece of black glass.
6	VEY16-05	5	4	4.3	0.5	0.3	<0.1	Single piece of black curved glass.

Table 33: Bracelets from the assemblage (Source: Adopted from McArthur and Van Der Westhuizen 2016)

Although glass bracelets have not been reported from previous archaeological explorations, bracelets made of other materials, including metal, plastic, coconut shell, shark bone, coral, mother of pearl and tortoise shells are present in the Maldivian collection at the British Museum (Figs 161-162). Moreover, metal bracelets have also been recovered from Buddhist religious contexts. Half fragments of bronze bracelets found from K. Kaashidhoo and Gn. Fuvahmulak Buddhist sites (Fig 163) have been compared to the bracelets in the British Museum collection (Fig 164) by Litster (2016: 205-206). According to Litster (2016: 205), the bracelets at the British Museum are described as ‘female bracelets’ (The British Museum 2017). Moreover, oral traditions and archival sources including images (Fig 165) support the use of bracelets made of various materials as women’s jewelry worn around their arms (Gray and Bell 1887: 163; Bell 1921: Plate XV111 fig 32; Husain 1991: 137). For instance, Ibn Battuta states that the jewelry of the Maldivian women consists of Bracelets which are worn from the elbow up to the wrists (Husain 1976: 51). He also states that most of them are made of silver while only the women folk of the king could wear gold. Commenting on Ibn Battuta’s report on bracelets, Husain (1991: 137) further states that this is an Indian influence and suggests India as a source of these bracelets. It is suggested here that Buddhist sites are earlier, and the British Museum collection is later than the material discussed here, thus, this could be a factor explaining why the materials differ.



Fig 161a: Bracelet made from mother of pearl, coral, shark bone, plastic (Source: British Museum As1981,20.264, AN1360577001)



Fig 161b: Bracelet made from mother of pearl, coral, shark bone, tortoise shell (Source: British Museum As1981,20.263, AN1360558001)





Fig 162a: Bracelet made from coconut shell (Source: British Museum As1981,20.261, AN1360632001)

Fig 162b: Bracelet made from metal (Source: British Museum As1981,20.258.b, AN1360629001)



Fig 163: Bronze bracelets recovered from Buddhist sites (Source: Litster 2016: 206)

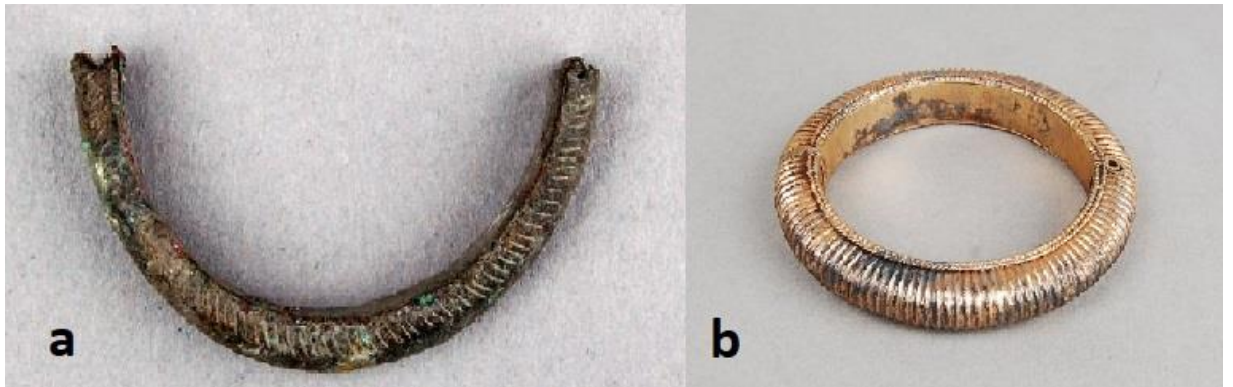


Fig 164a: Broken metal bracelet described as a female bracelet (Source: British Museum As1981,20.266, AN1360559001)

Fig 164b: Yellow coloured metal bracelet, hinged and jaws fastened with a screw, described as a female bracelet (Source: British Museum As1939,02.15.a, AN1367178001)



Fig 165: Young Maldivian woman wearing traditional 19<sup>th</sup> century dress with metal bracelets  
(Source: Rosset 1886)

### 6.3 Glass

Thirty broken fragments of glass were recovered from the excavations (Table 34). Twenty-two of them were from K. Male', 7 from Ha. Utheemu and 1 was from M. Veyvah. The majority of the fragments were very friable, irregular in shape, transparent and not very thick, with the exception of very few fragments that are opaque. They include a variety of colours mostly light green, light/dark blue and clear or colourless.

Most of the fragments were rather thin and small and probably represent body pieces; only a few of them can be labelled as diagnostic pieces (Table 34). The diagnostic pieces include a rim (SF 33a from Male') (Fig 166), 2 necks (SF 24ab from Utheemu), a probable base (SF 65 from Male') (Fig 167) and the best preserved find (SF 51 from Male') (Fig 168) which is a closed lidded mouth piece. These suggest that the fragments in this assemblage could be broken parts of bottles. Another remarkable glass fragment from the assemblage is SF 11a-d from Male' displaying signs of vitrification (Fig 169).





Fig 166: Glass rim, SF 33a from Male'  
(Source: Giulia Nazzaro 2018)



Fig 167: Glass base, SF 65 from Male'  
(Source: McArthur and Van Der Westhuizen 2016)



Fig 168: Close lidded mouth piece, SF 51 from Male' (Source: McArthur and Van Der Westhuizen 2016)



Fig 169: Vitrified glass fragments, SF 11a-d from Male' (Source: McArthur and Van Der Westhuizen 2016)

Small finds no	Island site	Unit	Context	Length (cm)	Width (cm)	Depth/diameter (cm)	Weight (g)	Additional description
9	UTH 16-04		102/N. Ext	1.8	0.2		<0.1	Single piece of glass, light green transparent, small and thin, irregular shape.
11abc	UTH 16-04		120		<0.1		<0.1	Three small pieces of very fragmented glass. Light green, very thin and transparent, very friable already broken in to many pieces, irregular shaped.
24ab	UTH 16-05		214	a) 3.7 b) 2.8	a) 0.2 b) 0.2		<0.1	Two pieces of curved glass, thick, not as transparent, greenish brownish, irregular in shape, neck?
36	UTH 1601		20-30 cm	3.3	3.1	0.4	<0.1	Rectangular shaped colourless glass fragment, transparent with brownish scratch marks.
3	MAL 16-01	N2	3	2.1	2	0.16	<0.1	Dark blue colour, rectangular in shape. Not transparent. Has a small oval shaped black raised smudge on the exterior.
6	MAL 16-01	N2	5	2.2	1.2	0.1	<0.1	Translucid piece of glass, transparent, colourless, kind of squarish but irregular shape.
11abcd	MAL 1601	N5	2				<0.1	Four pieces of small glass fragments, orange in colour.
13a	MAL 16-01	N9	4	2.3	0.9			Transparent, colourless piece of glass, irregular in shape.
19	MAL 16-01	N12	2	2	1		<0.1	Transparent piece of clear glass, rectangular shape, little thicker than most glass fragments.
28	MAL 16-01	N12	1 to 3	3.5	1.5	0.2	<0.1	Translucent piece of glass, not as transparent as the above ones, very light greenish, rectangular but more irregular.
29	MAL 16-01	N12	3	1.9		1.5 (D)x 2.3 (D) x 2.1 (D)	<0.1	Translucid piece of glass, very light green, irregular in shape.
31ab	MAL 16-01	N12	3	a)0.7 b) 2.5	a)0.4 b) 1.3		<0.1	a) Translucid yellowish green, thicker, irregular in shape b) Very small and dark blue, rectangular shaped and not transparent, similar to SF 3 from the same site, also has a tiny hole on the interior.
32	MAL 16-01	N12	3	0.7	0.4		<0.1	Translucent very dark blue piece of glass (almost blackish), irregular in shape.
33a	MAL 16-01	N12	3	2.7	1		<0.1	A translucid green piece of glass, a rim piece, the rim has a reddish very thin line on the lip top, triangular in shape.
39ac	MAL 16-01	N12	4	a)1.6 c)3.2	a)1.5 c)1.2	a)0.3 c)0.1	<0.1	a) Transparent, clear glass, irregular shaped c) Light blue; irregular and transparent.

43	MAL 16-01	E4	5	2.2 x 2 x 1.9			<0.1	Single piece of glass, triangular shaped (very fragile), clear glass and transparent, has some yellowish raised circular smudge on the interior.
48	MAL 16-01	E7	2	1.5	1		<0.1	Single piece of orange transparent glass, irregular in shape.
51	MAL 16-01	E7	3	3		2.5	13	Single piece of glass bottle, with relief details, dark blue, non transparent, lid included, diagnostic, 4 circular relief added on the exterior around the lip each circle has tiny circular dots added within them, closed vessel, with a raised ring in the middle.
65	MAL 16-01	E14	6	2.1	1.6	0.2	<0.1	Piece of dark blue translucent glass, has ring marks inside, a base? Thicker than usual ones, kind of like rectangular shaped but two sides straight the other two sides not straight very irregular.
69	MAL 1601	E4	5	2.5	1.7	0.4	<0.1	Clear transparent irregular shaped glass piece.
70	MAL 1605	E14	5	2	1	0.3	<0.1	Very light green/yellowish curved piece of glass, very rough texture.
5	VEY 16-05		2	1.4	0.9		<0.1	Single piece of light blue glass, transparent, very small, triangular but more irregular.

Table 34: Glass fragments from the assemblage (Source: Adopted from McArthur and Van Der Westhuizen 2016)

Most of the glass fragments were recovered in unit N12 in K. Male'. A few pieces recovered from the uppermost layers could be modern, however most of the glass fragments were recovered from lower archaeological layers.



Fig 170: Glass bottles recovered from the Utheemu football field (Source: Boduthakurufaanu Memorial Center 2015)

Glass fragments are a common artefact category recovered from archaeological layers in the Maldives. For instance, a set of glass bottles were recovered by the locals of Ha. Utheemu, at the same site as the first unit on this island was placed (football field) (Fig 170) (Ahmed 2017; Maldives Times 2017).

In addition, modern and ancient glass fragments have also been recovered from both the more recent and earlier layers of the Buddhist site of F. Nilandhoo and have been suggested to be fragments of perfume bottles (Skjølsvold 1991; Litster 2016: 207). Similar to the current assemblage, the majority of the glass fragments recovered from Nilandhoo are also from the body of the vessel while only a few (2 fragments) are from the

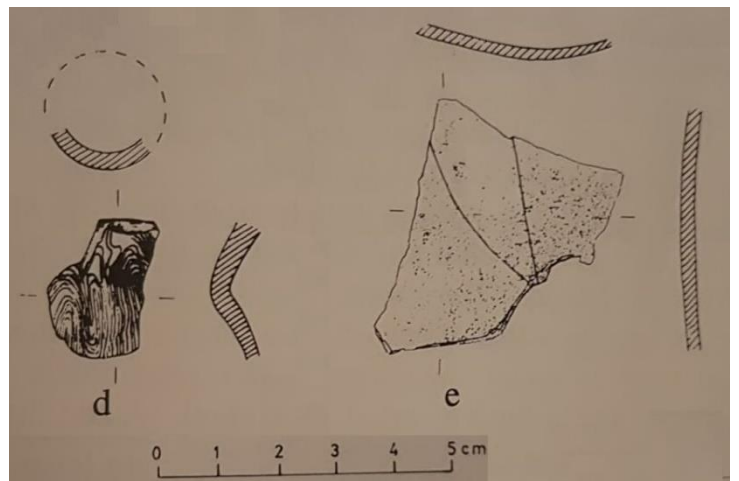


Fig 171: Glass fragments recovered from F. Nilandhoo; left: part of a small brown glass bottle, right: blue green glass fragment (Source: Skjølsvold 1991: 199)

neck (Litster 2016: 207). According to Litster (2016: 207), glass fragments from the more recent layers consisted in olive and brown fragments, with the exception of one light greenish blue sherd, while the earliest layers yielded different coloured glass to those found in layers post-dating the introduction to Islam. These include light greenish-blue sherds and two brown sherds decorated with a 'wavy pattern' which Skjølsvold (1991: 201) speculated to be parts of a perfume bottle. Moreover, the Nilandhoo assemblage showed no patination and most of them being closer to 'transparent' with no opaque fragments (Fig 171). In his description of the Maldivian people, Ibn Battuta also describes the wide use of different kinds of perfume and oil (Husain 1991: 41-42).

## 6.4 Metal

More than 200 metal fragments were recovered from the excavations (Table 35). Most of them were from Ha. Utheemu (150+) while only one was recovered from M. Veyvah and 45 from K. Male'. They are mainly small fragments, with the majority being iron as well as some copper fragments. Most are very corroded and some are very fragmented, especially those recovered from Ha. Utheemu. Many of the fragmented scraps were recovered from Unit 05 on that island. There are only a few diagnostic pieces, including about four bolts (SF 1, 8 and 22a from Male' and 6a-d from Utheemu), about nine nails (SF 1, 10ab and 34 from Utheemu and 9, 22b, 27b, 46 and 47 from Male') (Fig 172) and a tube shaped fragment (SF 38a, Fig 173). Some of these metal finds are very likely to be modern material, especially in the case of those recovered from the upper layers.

One metal fragment is noteworthy here. It is an octagonal shaped metal piece (SF 4 from Male') (Fig 174). Further cleaning and analysis was carried out on this piece given the possibility of it being a coin due to its unusual shape. Professional conservation and restoration work was carried out for this object by the Norfolk Museums Service. The surface of the object was cleaned and stabilized then underwent an X-radiography assessment in order to further assess condition and to detect whether markings or decoration were present. No markings or decoration were visible on the X-radiograph but it did confirm the poor condition of the object. Loose corrosion product was then cleaned away with industrial methylated spirit on cotton wool swabs, soft brushes and bamboo skewers. Investigative cleaning did not show any markings or decoration but did confirm the presence of hardened and encrusted corrosion on the surface. No further removal work was carried out on this encrusted material as it could potentially have damaged the fragile object and would serve little purpose. It has been suggested that this object has a high tin or lead content alloy. The condition of the object, as well as its irregular shape, suggests that it is not modern. The radiocarbon date that was generated from the deposit below (Context 4 of N2) the context in which this object was recovered (Context 3) gave a date of sometime between AD 1415-1450 (Beta 438193).

In terms of where metal finds were more concentrated, most of the metal fragments were recovered from unit N12 in K. Male' and Unit 05 in Ha. Utheemu. It is suggested here that some of the metal fragments recovered from both Ha. Utheemu and K. Male' could be the ruins of the structure/s on or around the trenches. Hence, metal remains used in the construction of the Sultan's Palace are very likely to be what was recovered from the units from K. Male', following the destruction of the Palace. Moreover, the presence of a large number of fragmentary scraps

from the upper levels of Unit 05 in Ha. Utheemu is suggested to be the result of the metal signboard placed near the unit according to the locals and thus, to be more recent in age.



Fig 172: Diagnostic metal fragments-Metal bolt SF 8, nail SF 47 from Male' and nail SF 34 from Utheemu (Source: Giulia Nazzaro 2018)



Fig 173: Metal tube, SF 38a from Male' (Source: McArthur and Van Der Westhuizen 2016)



Fig 174: Octagonal metal, SF 4 from Male' (Source: Norfolk Museums Service 2018)

Small finds no	Island site	Unit	Context	Material	Length (cm)	Width (cm)	Depth/diameter (cm)	Weight (g)	Additional description
1	UTH16-01	-	Section Clean	Iron	15.5	0.5	0.5	32	Single piece of curved metal object Recovered during section clean. Long piece of possibly a modern nail.
5	UTH16-04	-	103	Iron	3.5	-	-	6	Single piece of metal.
6a-d	UTH16-04	-	117	Copper	a) 1.4; b) 0.9; c) 0.4; d) 1	<0.1	-	<0.1	4 pieces of broken metal. Possibly a bolt.
7	UTH16-04	-	118	Copper	4.5	0.2	-	49	Single piece of rounded metal.
8a-c	UTH16-04	-	102/N. Extension	Iron	a) 1.2; b) 0.9; c) 0.9	<0.1	-	<0.1	Three small pieces of metal.
10ab	UTH16-04	-	118/N. Extension	Iron	a) 4.5; b) 3.9	a) 0.9; b) 0.8	-	a) 8; b) 4	Two pieces of metal, Possibly nails.
13a-d	UTH16-04	-	122	Iron	a) 3.7; b) 2.3; c) 1.2; d) 1	a) 0.3; b) ; c) ; d) <0.1	-	a) 13; b) ; c) ; d) <0.1	Four broken pieces of metal. Biggest one (a) is curved and the rest are very small.
15a-h	UTH16-05	-	202	Iron	a) 2.8; b) 1.6; c) 1.6; d) 1.4; e) 1.2; f) 1; g) 0.8; h) 0.8	a) 0.2; b) ; c) ; d) ; e) ; f) ; g) & h) <0.1	-	a) 5; b) ; c) ; d) ; e) ; f) ; g) & h) <0.1	Eight broken pieces of metal.
16	UTH16-05	-	203	Iron	a) 2.4; the rest are < 0.6	a) 0.2; the rest are < 0.1	-	5	Several broken pieces of metal. Biggest piece (a) is measured. Possibly 10+ pieces.
18	UTH16-05	-	204	Iron	a) 5.6; b) 4.1; c) 2.7; d) 2.6; e) 2.5; f) 2.1; Rest < 2	< 0.2	-	57	Several broken pieces of metal. Possibly 15+ pieces.
19ab	UTH16-05	-	206	Iron	a) 6.7; b) 4.5; the rest < 2.1	Broken pieces < 0.3	-	a) 30; b) 16; the rest < 0.1	Several pieces of broken metal. Possibly 20+ pieces.
20	UTH16-05	-	212	Iron	a) 2.4; b) 2.5; 2.3; c) 1.8; d) 2; e) 1.9; the rest < 2	< 0.1	-	30	Several broken pieces of metal. Smaller ones are between 0.5 and 2

22	UTH16-05	-	214	Copper	2.7	0.1	-	<0.1	cm in length. <0.1 in width. Possibly 50+ pieces.
23	UTH16-05	-	214	Copper	1.5	-	-	<0.1	Single piece of metal.
26a-e	UTH16-05	-	216	Iron	a) 2.2; b) 2; c) 2.3; d) 1.5; e) 1.8	-	-	5	Five broken pieces of metal.
29a-f	UTH16-05	-	218	Iron	a) 3.2; b) 1.3	<0.1	-	<0.1	Six broken pieces of metal.
30a-c	UTH16-05	-	221	Iron	a) 2.1; b) 1.4; c) 1.3	a) & b) = 0.1; c) 0.2	-	<0.1	Three broken pieces of metal.
32a-h	UTH16-05	-	224	Copper	a) 1.3; b) 1.2; c) 0.9; d) 1.2; e) 1.5; f) 0.9; g) 0.7; h) 0.4	<0.1	-	<0.1	Eight pieces of broken metal.
33a-h	UTH16-05	-	Section collapse/W.side	Iron	< 1.5	<0.2	-	<0.1	Eight pieces of broken metal.
34	UTH16-05	-	Section collapse/W.side	Copper	5.7	-	0.7	6	Single metal nail.
38a-c	UTH16-04	-	122	Iron	a) 1.6; b) 1.7; c) 1.2	a) 1.2; b) 1.2; c) 0.8	a) 0.4; b) 0.4; c) 0.2	<0.1	Three pieces of metal. Irregular in shape and corroded.
1	MAL16-01	N2	1	Iron	1.5	-	1.5	<0.1	Circular in shape, central hole, polished on one side. Black rubber attached on the other side, modern.
4	MAL16-01	N2	3	Copper	2	2	0.1	<0.1	Octagonal shape metal piece.
8	MAL16-01	N5	1	Copper	3	2	-	2	Irregularly shape metal piece, central hole. Possibly a bolt.
9	MAL16-01	N5	2	Copper	2	-	-	<0.1	Sharpened end, possibly a nail.
12	MAL16-01	N9	3	Copper	3.5	-	1	10	Curved piece of metal.
14ab	MAL16-01	N9	5	Copper	a) 1.5; b) 1	a) 1 ; b) 0.5	-	<0.1	Both pieces are irregularly shaped.



15	MAL16-01	N12	2	Iron	3.2	0.7	-	11	Piece of metal.
16	MAL16-01	N12	2	Copper	1.2	-	-	<0.1	-
17a-c	MAL16-01	N12	2	Iron	-	-	-	<0.1	Piece of metal broken into three pieces.
18	MAL16-01	N12	2	Iron	3	2	-	<0.1	-
22ab	MAL16-01	N12	1 to 3	Iron	a) 2.8; b) 4	a) 1.8; b) 2.8	-	27	Two pieces of metal a) Oval in shape; b) sharp end. Possibly a nail and a bolt.
23a-d	MAL16-01	N12	3	Copper	-	-	-	9	Four pieces of metal .
24	MAL16-01	N12	3	Copper	1.2	0.8	-	<0.1	Small piece of metal.
25	MAL16-01	N12	3	Iron	3	0.1	-	<0.1	Possibly a nail.
26	MAL16-01	N12	3	Iron	2.5	-	-	4	-
27ab	MAL16-01	N12	3	Iron	a) 3; b) 3	-	-	17	Two pieces of metal. One possibly a nail.
38a-d	MAL16-01	N12	4	Copper	a)6; b)3.5; c)3.2; d) 2.7	b) 2; c)2.1; d) 1.1	a)1.6	a)18; b)13; c)7; d) <0.1	Four pieces of metal, a) Metal tube (longest piece).
41	MAL16-01	E4	3	Copper	2.4	1.8	-	<0.1	Irregularly shaped piece of metal.
42	MAL16-01	E4	4	Copper	2.4	1.8	-	<0.1	Single sheet of metal.
44ab	MAL16-01	E4	5	Iron	a)4.3; b)2	a)3.2; b)1.3	-	a) 9; b) <0.1	Two broken sheets of metal.
46	MAL16-01	E7	2	Iron	LS 4 ; SS 3	-	-	7	Single piece of metal, with a curvature at one of its ends. (LS = long side; SS= short side). Possibly a nail.

47	MAL16-01	E7	2	Copper	6	WoB 1.1; WoT 2.2	-	85	Single metal nail, WoB = Width of Bottom side; WoT = Width of Top side.
49	MAL16-01	E7	2	Iron	4.5	2.2	-	9	Single piece of metal.
52	MAL16-01	E7	3	Iron	3	1.7	-	4	Single piece of metal.
58	MAL16-01	E14	3	Copper	1.2	1	-	<0.1	Single piece of metal.
59	MAL16-01	E14	3	Copper	1.2	0.9	-	<0.1	Single piece of metal.
61	MAL16-01	E14	4	Copper	1.9	1.1	-	<0.1	Single piece of metal.
62	MAL16-01	E14	4	Iron	3	-	0.9 (Dobs)	7	Single piece, Dobs = Diameter of biggest side.
63	MAL16-01	E14	5	Iron	1.8	1.4	-	<0.1	Square piece of metal.
68	MAL16-01	E7	4	Iron	2.5	-	0.5	0.3	Irregular shaped metal piece.
71	MAL16-01	E4	3	Iron	7	2.5	0.8	10	Broken piece of metal sheet, rectangular in shape.
72	MAL16-01	N9	5	Iron	2.3	1.3	0.5	<0.1	Broken piece of metal sheet, rectangular in shape.
73	MAL16-01	E14	6	Iron	3.6	1.7	0.6	0.2	Irregular shaped metal fragment.
9	VEY16-05	-	4	Iron	3.1	0.3	0.3	<0.1	Single piece of metal, nail.

Table 35: Metal fragments from the assemblage (Source: Adopted from McArthur and Van Der Westhuizen 2016)

## 6.5 Stone

Around sixty pieces of stone were recovered from the excavations (Table 36). Most of them were from K. Male' while the least number was recovered from M. Veyvah. They include mostly broken pieces of plaster (some painted) as well as sandstone with plaster (Fig 175), a few broken pieces of coral stone (some shaped) (Fig 176) and two stones with a likely origin outside the Maldives (SF 14a and b from Utheemu) including a white, somewhat smoothed piece (SF 14a) (Fig 177). These two stones (SF 14ab) were included within the small finds as they are not local.



Fig 175: Stones with black and blue painted plaster from Male', a: SF 5, b: SF 36a (Source: Shiura Jaufar)



Fig 176: Shaped coral stone from Veyvah, SF 1 (Source: Shiura Jaufar)



Fig 177: Possible foreign stones from Utheemu, a: SF 14a, b: SF 14b (Source: Giulia Nazzaro 2018)

Before proceeding to the details of the stones recovered, it is important to highlight some important facts about construction techniques in the Maldives. Up until the introduction of masonry in the late 18<sup>th</sup> century, coral stone and timber were the only long lasting materials available for construction (Husain 1991; 41, 43-44; Ahmad and Jameel 2012). Thus, coral stone became the primary material for monumental buildings and coral carpentry existed from as early

as the Buddhist period in the Maldives. According to Ahmad and Jameel (2012: 11), “live reef coral boulders or porite corals are removed from the sea bed, cut to stone blocks while they are soft and air dried before it gets used for construction.” Three types of coral stone carpentry have been identified via the ancient mosque construction in the Maldives. They include *Veliga* or coral sandstone, *Hiriga* or coral stone and *Thelhigaa* or coral rubble with lime masonry.

Most of the stone fragments were found from unit N12 in K. Male’. The fragments from Ha. Utheemu only occurred at trenches 1604 and 1605 and contained the most variety of stones within the mid layers including coral stone, sandstone, plaster as well as foreign stones (Figs 177ab). It is suggested here that finds 14a and b (Fig 177a) are foreign since they do not occur naturally in the Maldives. In addition, the stones recovered from trench 1605 could be associated with the sandstone wall that was recovered from the excavation of this unit. As shown in the table below, the majority of stones were recovered from K. Male’ and were mostly lime plastered stones. It is suggested here that the presence of these stones, along with the blue painted plaster, are highly likely to result from the demolition of the palace. Moreover, the construction visible on the only standing building of the palace *Usgekolhu* also gives support to this suggestion showing similar plastered construction on its walls. It is suggested here that the two coral stone pieces found from the upper layers of M. Veyvah are not in situ and belong to demolished coral stone structures near the trenches (see Chapter 4 for details).

Small finds no	Island site	Unit	Context	Material	Length (cm)	Width (cm)	Depth/diameter (cm)	Weight (g)	Additional description
12ab	UTH16-04	-	120	Lime Plaster	a) 2.1; b) 2.2	a) 0.3; b) 0.3	a) 5; b) <0.1	-	Two pieces of lime plaster.
14ab	UTH16-04	-	122	Marble?	a) 4.7; b) 2	a) 0.9	-	a) 46; b) 13	Two stones, larger one is irregularly shaped possibly white marble. Smaller piece round.
21a-d	UTH16-05	-	212	Lime Plaster	a) 3.4; b) 3; c) 2.7; d) 2	a) 0.5; b) 0.4; c) 0.2; d) 0.2	-	a) 8; b) 5; c) <0.1; d) 4	Four pieces of lime plaster.
25a-c	UTH16-05	-	215	Sandstone	a) 6.5; b) 6; c) 3.7	a) 1.3; b) 1.3; c) 0.8	-	a) 92; b) 34; c) 17	Three pieces. One piece has some metal fragments inside.
27a-d	UTH16-05	-	217	Coral stone	a) 7.5; b) 2.2; c) 1.8; d) 1.7	-	-	a) 68; b) 6; c) <0.1; d) <0.1	
2	MAL16-01	N2	2	Lime Plaster				196	Twenty plus pieces of lime plastered stones, Lime Mortar.
5	MAL16-01	N2	4	Plastered sandstone				295	Irregularly shaped piece of painted plaster, black painted at one side.
7a-c	MAL16-01	N2	5	Lime Plaster				121	Three pieces of plaster, worked and shaped.
21	MAL16-01	N12	2	Coral stone	4	-	2.9 (height)	32	Irregularly shaped.
34	MAL16-01	N12	1 to 3	Lime Plaster	2.2	2	-	<0.1	Single piece of white plaster
35	MAL16-01	N12	3	Lime Plaster	5.2	4	-	23	Single piece of plaster.
36a-d	MAL16-01	N12	3	Lime Plaster	a) 15 b) 2.5 c) 2; d) 6.8	a) 7.5 b) 1 c) 2; d) 5.6	-	a) 126 d) 57	a) Big piece plaster and two small ones painted blue, d) white piece of plaster.
40	MAL16-01	N12	4	Lime Plaster	4.5	2.5	-	15	Blue painted plaster, broken piece.
53a-c	MAL16-01	E7	3	Lime Plaster	a) 3.9; b) 1.8; c) 1	a) 2.9; b) 1.3; c) 0.7	-	a) 8; b) <0.1; c) <0.1	Plaster, three pieces: with brown paint
54	MAL16-01	E7	3	Lime Plaster	2.9	1.8	-	4	Blue painted lime plaster.
56	MAL16-01	E14	3	Lime Plaster	5.5	2.9	-	10	Single broken piece, with white single curving line on its bottom side.
57ab	MAL16-01	E14	3	Stone, Lime Plaster	b) 3.6	b) 2.8	-	b) 11	a) broken circular piece of stone b) Single piece of plaster.

60	MAL16-01	E14	3	Lime Plaster	0.8	0.5	-	<0.1	Single piece of possibly plaster, painted blue.
66	MAL16-01	N12	3	Coral stone	-	-	-	-	Irregular shaped coral stone.
1	VEY16-03	-	1	Coral stone	5	-	-	32	Single piece of irregularly shape worked stone.
3	VEY16-05	-	1	Coral stone	3.5	1.5	-	9	Single piece of shaped stone.

Table 36: Stone and plaster fragments from the assemblage (Source: Adopted from McArthur and Van Der Westhuizen 2016)

## 6.6 Plastic

One plastic fragment was recovered from the upper layer of unit 05 from M. Veyvah. It is clearly a modern find, possibly a curved rim piece of a vessel or a jar (see Table 37, Fig 178).



Fig 178: Plastic from M. Veyvah, SF 4 (Source: McArthur and Van Der Westhuizen 2016)

Small finds number	Island site	Context	Length (cm)	Weight (g)	Additional description
4	VEY-1605	1	6	<0.1	Single piece of transparent plastic with rims on one side, maybe part of a vessel.

Table 37: Plastic from M. Veyvah (Source: Adopted from McArthur and Van Der Westhuizen 2016)

## 6.7 Ceramic finds

Beyond the pottery objects discussed in Chapter 5, a number of other ceramics were recovered and are discussed here.

### 6.7.1 Clay roof tile

All the roof tile pieces from the excavations in the Maldives were recovered from Unit 05 in Ha. Utheemu (Table 38, Fig 179).

Some of the smaller fragments look very similar to broken pottery. However, based on the appearance of clay, texture and the shaping of the fragments as well as by comparing these with the larger roof tile fragments, they can be confidently classified as roof tiles instead. These smaller fragments are of a similar shape to the more obvious larger roof tile fragments and the clay appears to be much more recent and fragments are thicker compared to the thickness of the pottery recovered from this assemblage.

It is said that after the English establishment of tile production in India, thatch was replaced by roof tiles in the Maldives and used for sheltering from the early 19<sup>th</sup> to the early 20<sup>th</sup>

centuries (Ahmad and Jameel 2012: 5). It is suggested that they were used on mosques and buildings belonging to elites and wealthy families (Zameer 2017). Likewise, the buildings in Utheemu palace where Unit 05 was located, also has roof tile sheltering and they were used for sheltering from the mid-20<sup>th</sup> century. It is suggested that the roof tile fragments in this unit are likely to be modern due to the presence of one fragment (SF 39) from a dated context (220) which was dated to sometime between AD 1665- present (Beta 438869). Moreover, apart from the two fragments from the upper level (SF 17ab from Context 203), the rest of the fragments belong to contexts which are either on the same level (Context 217) or one layer below 220 (Context 224).

Small finds no	Island site	Context	Length (cm)	Width (cm)	Weight (g)	Additional description
17ab	UTH-1605	203	a)5.3b)3.5	b)0.8	a)20 b)5	Two broken pieces of modern roof tile, irregularly shaped.
28a-i	UTH-1605	217	a) 6.1; b) 4; c) 5.5; d) 2.5; e) 2; f) 2; g) 1.9; h) 3.; i) 4	b) 0.9; c) 1; d) 0.8; f) & g) 0.3	a) 25; b) 8; c) 11; d) 11; e), f), g) <0.1; h) 12; i) 6	Nine plus pieces of roof tiles.
31	UTH-1605	224	5		7	Irregular shaped.
39	UTH-1605	220	2.8	2.8	0.2	L shaped roof tile, looks like a base of a pottery.

Table 38: Roof tiles from Utheemu (Source: Adopted from McArthur and Van Der Westhuizen 2016)

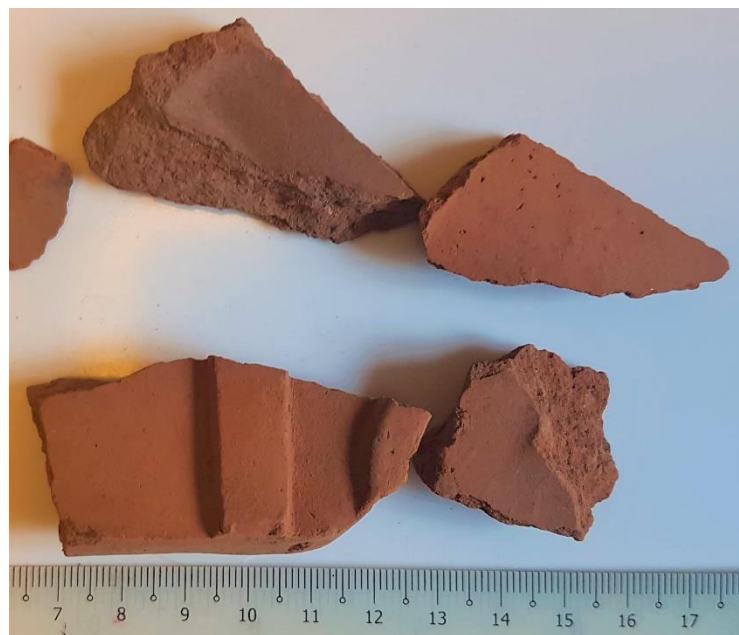


Fig 179: Roof tile fragments from Utheemu (Source: Shiura Jaufar)



### 6.7.2 Modern clay tile

A modern floor tile (SF 37) with a white smoothed glazed exterior was recovered from the football field (UTH 1601) from Ha. Utheemu (Table 39) (Fig 180). This was recovered at a depth of 50-60 cm (Context 2). This occurrence of a modern find in this layer provides additional support to local information that the field had been dug for development and the original occupation level removed and replaced by dredged sand from the lagoon.

Small finds number	Island site	Context	Length (cm)	Width (cm)	Depth (cm)	Additional description
37	UTH 16-01	2 (50-60 cm)	6.7	3.2	0.8	Triangular shaped floor tile fragment, white on one side.

Table 39: Floor tile from Utheemu (Source: Adopted from McArthur and Van Der Westhuizen 2016)

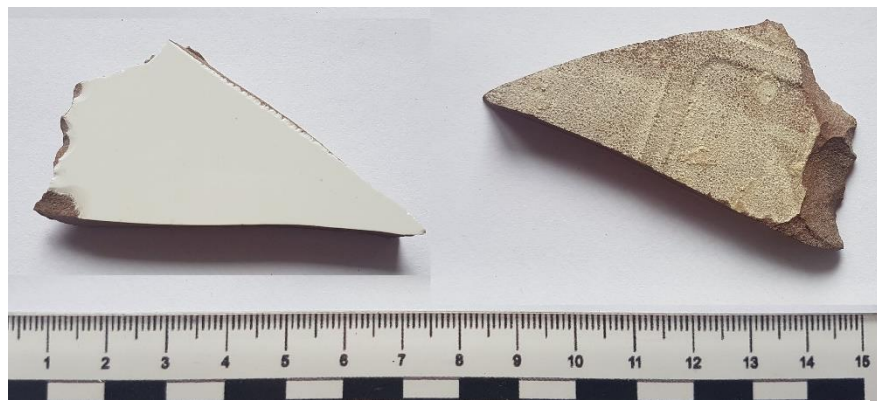


Fig 180: Floor tile showing front and back from Ha. Utheemu, SF 37 (Source: Shiura Jaufar)

### 6.7.3 Unidentified terracotta fragment

An unidentified burnt clay object was recovered from Unit N12 of K. Male'. It is cubic in shape, brownish and has a circular depression in the center of one side. At this point, it is difficult to identify what this is without further analysis (Table 40, Fig 181).

Small finds number	Island site	Unit	Context	Length (cm)	Width (cm)	Depth/diameter (cm)	Additional description
67	MAL 16-01	N12	2 Ext	2.3	1.6	1	Cubic terracotta piece with a circular depression at the center of one side and flat on other sides.

Table 40: Terracotta fragment from Male' (Source: Adopted from McArthur and Van Der Westhuizen 2016)



Fig 181: Terracotta fragment, SF 67 from Male' (Source: Giulia Nazzaro 2018)

### 6.8 Discussion

As discussed above, different units presented a variety of results which varied from site to site (Fig 182). It is quite difficult to make definitive interpretations due to the differences in excavation contexts. Furthermore, it should be taken in to consideration that the absence of certain finds (especially the smallest finds) may be due to excavation techniques. For instance, as was explained in Chapter 4, many contexts in its entirety from VEY 1605 were wet sieved, including the context (4) which recovered the two beads. Sieving methods differed for each site as well due to problems in shipping materials.

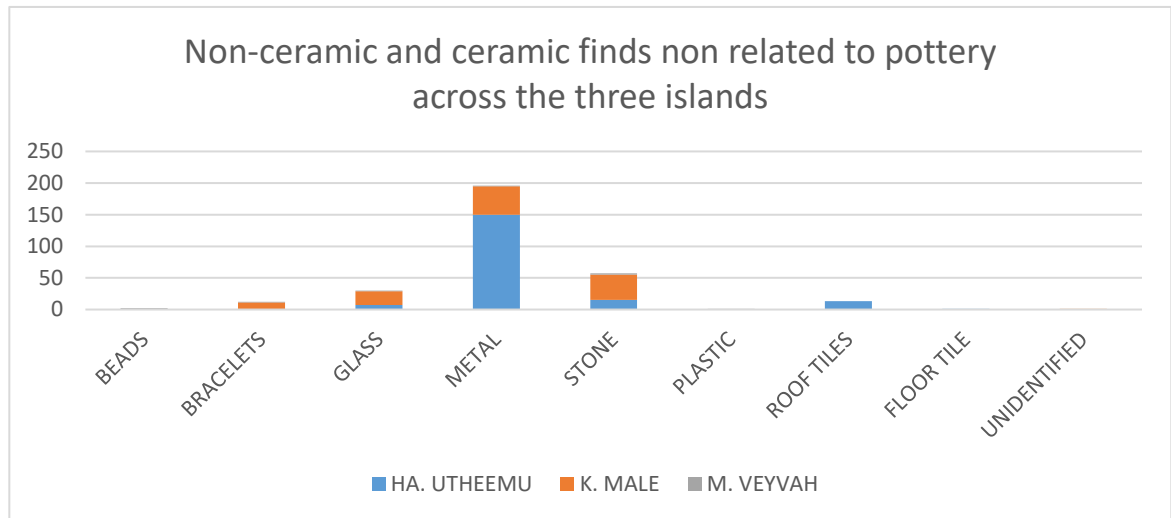


Fig 182: Frequency of non-ceramic finds categories from sites

In summary, personal ornaments were a rare find. Beads, which have been dated between 13<sup>th</sup> and 14<sup>th</sup> century possibly originating from China and central Asia, were only recovered from Unit 5 in M. Veyvah while glass bracelets were found at K. Male' and M. Veyvah (from Unit 5), with the greatest number of bracelets coming from unit N12 in K. Male'. Glass, metal and stone fragments were recovered from all sites but in different frequencies. The highest number of glass fragments were recovered from K. Male', with Unit N12 providing the most, while fewer fragments were recovered from Ha. Utheemu from Units 4 and 5 and the smallest number of glass fragments were found from M. Veyvah from Unit 5. With regards to metal, while Ha. Utheemu yielded the highest number of fragments with Unit 5 having the highest metal fragments within the units at this site, fewer were recovered from K. Male' (mostly from Unit N12) and only one from M. Veyvah from Unit 5. Moreover, the most number of stones came from K. Male' (mostly from N12), with fewest from Ha. Utheemu and the least from M. Veyvah from units 3 and 5. Modern plastic was only recovered from the surface of Unit 5 in M. Veyvah. Concerning non pottery related ceramic finds, roof tiles were only recovered from Unit 5 in Ha. Utheemu, while an unidentified terracotta cubic object was recovered from Unit N12 in K. Male'.

When comparing finds with the dates obtained, in the case of Utheemu, most finds were generated from Units 4 and 5. Some finds (a piece of glass SF 9 and 3 metal pieces SF 8a-c) were recovered from the dated context of 102 (AD 1420-1465) from Unit 1604. For the three dates from UTH 1605, as discussed above, 2 of them (contexts 215 and 220) cannot be used as they date sometime between 1665- present. For the other date from Context 229 (AD 1165-1265), surprisingly there are no finds from this context or any of the contexts below this deposit hence it is difficult to comment on the dating of finds from this trench. The presence of the roof tiles from this trench suggests a recent event.

For Male', even though most of the finds were recovered from N12 from the mid-layers including a variety of finds (from glass, bracelets, metal, stones and the terracotta fragment), some finds were also recovered from dated units. For instance, Context 4 of Unit N2 (dated to AD 1415-1450) yielded a piece of black painted plaster (SF 5) and a few finds were recovered from the contexts below such as three a pieces of shaped plaster (SF 7a-c) and a piece of glass (SF 6) suggesting older dates for them as this deposit is the earliest layer in this unit before reaching sterile. Moreover, the octagonal metal piece (SF 4) along with a piece of glass (SF 3) were recovered from the layer above the dated context. For the other dated context (5) from E14 (dated to AD 1160-1265), only a piece of metal (SF 63) was recovered. However, the context

below yielded a possible glass base (SF 65), again suggesting an old date as this deposit is the oldest before reaching sterile. For the bracelet fragments, their suspected date range of 13<sup>th</sup>- 15<sup>th</sup> century adds additional chronological information, especially for Unit N12 which yielded the largest bracelet fragments from the total assemblage. As mentioned above, bracelets from N12 were yielded from 3 contexts (2-4) suggesting a similar date range as the dated contexts above.

As evident above, most finds from Veyvah was recovered from Unit 5, mainly from Context 4 which was dated to sometime between AD 1435-1615 and in which 2 beads (SF 7-8), one bracelet (SF 6) and one metal nail (SF 9) were recovered. The analysis of the beads also confirms this date as they have been dated to the 13<sup>th</sup> and 14<sup>th</sup> century, as well as the suspected date range for the bracelets. The rest of the limited finds, which included a piece of glass (SF 5), a shaped coral stone (SF 3) and one plastic fragment (SF 4), were recovered from more recent layers (Contexts 1-2).

## 6.9 Conclusion

In conclusion, as shown above in Fig 183, the most frequently encountered category of finds is metal, with stone and glass following respectively. Personal ornaments such as bracelets and beads were not found in high numbers. Ceramic material not related to pottery, such as roof tiles, was also a category recovered and occurred at about the same frequency as bracelets.

Moreover, as evident from Fig 183, the greatest number of finds were recovered from Ha. Utheemu. Most of the finds from this island were recovered from Units 4 and 5 and only one find from Unit 1. All units excavated in K. Male' yielded finds however, the majority of them came from Unit N12. It is suggested here that this is a product of the volume excavated as the three units mentioned above (UTH 1604, 1605 and MAL N12) are the units with the highest volume excavated for the whole assemblage (see chapter 4, table 18). The smallest number of finds were recovered from M. Veyvah and as evident from the tables above, all finds came from Unit 5 with the exception of two stones from Unit 3. Similar to units UTH 1604,

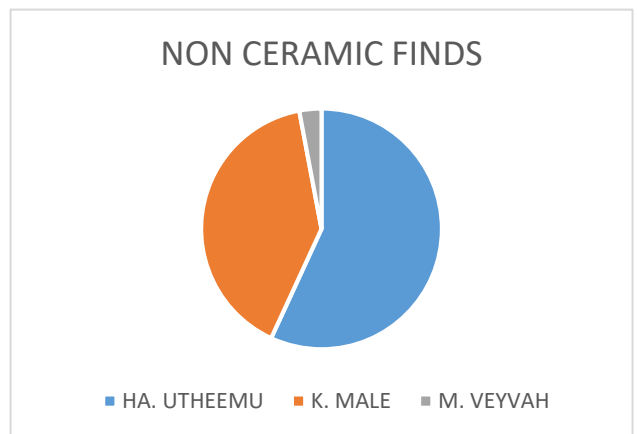


Fig 183: Distribution of total number of non-ceramic finds from the sites

1605 and MAL N12 being the units with the highest excavated from their respective sites, VEY 1605 is also the unit with the highest volume excavated from Veyvah.

## **Chapter 7: Discussion and concluding remarks**

### **7.1 Introduction**

At the close of this doctoral research, this chapter is divided into four sections. I first present a summary of results from the archaeological investigations. I then move the focus to the wider picture, i.e. what the results of the excavation as well as historical sources tell us about the nature of the Maldives in the wider Indian Ocean trade network system. Having discussed the research questions introduced in Chapter 1, I then present a concluding remark on the whole project and to finish off, I highlight the importance of continuing further research on Maldivian archaeology, suggesting ways forward with possible fields of research that can improve understanding of Maldivian archaeology.

### **7.2 Interpretation and summary of sites excavated**

#### **7.2.1 Utheemu**

Four units were excavated on this island. The first was placed in the football field, the second on a mound behind the palace, the third next to the north entrance of the palace and the fourth within the suspected kitchen within the women's quarter inside the palace. All yielded archaeological material. While the two units within the palace yielded productive results, the other two were less informative, although the unit in the football field exposed an interesting case study of a disturbed stratigraphy.

The choice to place a test pit in the football field was made because this was an area in which interesting chance finds had been reported by the local community. However, archaeological investigation revealed very extensive disturbance. The excavation confirmed local reports of the football field being excavated recently and the original archaeological level removed and spread on the surface while it was replaced with dredged sand from the lagoon. Most of the finds came from the uppermost level, Context 1, but a few were recovered from the in situ layer Context 3. The pottery from this unit mainly included earthenware sherds and most of them featured linear paddled impressions. A unique decoration of 2 sherds with cable impressions also appear in this unit. The glazed imports were identified as being of the mid to late Ming period (AD 1500-1644). The shell and bone remains mostly included shells, fish and terrestrial bones. Other finds from this unit include a single piece of glass, a modern nail and a floor tile. Based on the material culture as well as previous reports of finds (cowrie hoards,

pottery and glass objects), it is suggested here that this site represents an area of importance with an active occupation in the past and perhaps represents domestic habitation.

Unit 2, placed just outside the palace, was shallow but yielded a range of pottery and faunal materials. No dates were run on this unit, but the pottery is consistent with a medieval Islamic date. No glazed imports or other finds were recovered from this unit and the relatively rich faunal remains consisted of shells and fish bone. This unit is likely to represent an inactive area or less used in the past or it could have been heavily used (for example as a road), but did not lead to a great number of finds. The comparative lack of finds from this unit as well as the simple, plain stratigraphy may also be due to the unit being located closer to the sea.

Unit 4 was the most productive test pit placed on this island, and it was also one of the most extensive, measuring 3 x 1m and excavated to a volume of 2.79m<sup>3</sup>. This was a complex unit with several stratigraphic features. It yielded a large assemblage of pottery including a corpus of earthenware dominated by linear paddled and incised decorations and glazed imports of the Yuan to late Ming period (AD 1279-1644). The largest amount of pottery was recovered from the lower contexts, suggesting a rather dense occupation, with the exception of the materials from Context 102 which are likely to have been brought into the site from outside. The trench was located in order to identify a possible cowrie hoard mentioned by local informants. No such hoard was recovered, although a good number of cowries were found as well as abundant fish remains. In terms of small finds, we can mention 4 pieces of glass, 18 metal fragments (most of which from a single context, Context 122), 2 possible foreign stones and 2 pieces of lime plaster from Context 120. Context 102 was dated to sometime between AD 1420-1465, pre-dating the palace (16<sup>th</sup> century). Based on these finds as well as previous reports of cowrie hoards within the palace, it is suggested here that this unit represents an important area of intense occupation in association with an elite nature.

Finally, Unit 5, also located within the palace, and within the suspected kitchen area, was also productive. This unit measured 2 x 1m and was excavated to a volume of 2.34m<sup>3</sup>. This was also very complex, revealing an unexpected sandstone wall (209) running across the unit and a seemingly Islamic burial at a depth of about 1m. A charcoal sample from just above the grave fill was dated to between AD 1165 and 1265. Other remarkable features include in situ features such as 2 burnt floors (215 and 219) and a possible hearth (220). The presence of modern roof tiles from the upper levels and two recent (post AD 1665) dates from one of the burnt floors and the hearth suggest activities postdating the burial by several centuries.

Most of the pottery was dominated by linear paddled and incised decorations. Contexts 220 (a hearth dated between AD 1665-present), 217 which occurs together on the same level with the hearth along with Context 224 lying few centimetres underneath, yielded the greatest number of faunal remains including shell and fish bone fragments, thus, confirming the use of the kitchen. A high number of metal fragments were also recovered from Contexts 206 and 212 within the quadrangular structure next to wall 201, suggesting a later occupation period; in fact, these deposits occur just a few centimetres below the surface. Imported pottery (though relatively less in this unit) dates to the mid to late Ming period (AD 1500-1644) and a 19<sup>th</sup> century stamped vessel and a 19<sup>th</sup>- 20<sup>th</sup> century European sherd was also identified. Small finds from this unit include glass, fragments of stone and a broken piece of plaster.

This unit seemed to have a connection with members of the elite at first glance, being located within the palace but consists of a pre-elite occupation (cemetery) in the earlier phases (presumably prior to the existence of the palace) due to the presence of a burial at a deeper level in this unit. Furthermore, the presence of a comparative abundance of fauna and ash deposits (from the mid layers) in this unit supported the suggested function of the area being used as a kitchen.

### **7.2.2 Male'**

Seven units were excavated in the Sultan's Park, a green space within a major urbanised context. N12 recovered the most substantial results while the other six recovered similar results. All units measured 0.50 x 0.50m with the exception of N12 which was extended to 1 x 1m. Most units had a rather straightforward, linear stratigraphy, with the exception of Unit N2, which was sloping. Moreover, many of the units featured a compact surface level, caused by the deposition of clean white beach sand, supposedly in the context of recent weddings. The 7 units were close together and on the grounds of a former palace, thus it is not unexpected that the results recovered are quite similar.

The 6 units, measuring 0.50 x 0.50m, were all excavated to a similar depth, except for N5 which was interrupted at an early stage. As mentioned above, units were similar in their stratigraphy, and this was true too of the finds. All units yielded modern finds on the upper levels and few archaeological material from the surface deposits and were very disturbed due to the presence of roots, poorly sorted pebbles, coral and stone inclusions. Most of the finds were concentrated within the middle layers for all units. A range of pottery and imported ware was yielded from all 6 units and the pottery was dominated by mostly red slipped, linear paddled,



raised bands and incisions. Imported pottery dates between the Yuan and late Ming period (AD 1279-1644). Other finds for the 6 units mostly include fragments of plaster, glass, metal, worked stones, shell remains and bones.

Some units yielded finds which stand out;

- Unit E14 yielded a hearth (Context 5) dated to AD 1160-1265, a fragment of a spouted vessel, the base of a glass vessel, bird bones and the only enamel sherd from the Maldives.
- Unit E4 yielded 2 ungulate bones and a fragment of a bracelet.
- Unit E7 yielded the lid of a glass bottle and a 19<sup>th</sup>- 20<sup>th</sup> century European pot sherd.
- Context 4 of Unit N2 was dated to AD 1415-1450 and yielded an octagonal copper piece from Context 3.

The presence of stones and plaster within all the units in the park, likely the result of a wall collapse, is consistent with historical traditions suggested the now-destroyed palace was located here. The excavations at Male' yielded comparatively few fish bones compared to Utheemu and Veyvah.

As well as the 6 units discussed above, a larger unit, N12, was investigated. This began as a small test pit but was extended due to the recovery of many cowries (*Monetaria moneta*) from Context 2, and at conclusion of the work a total of 0.85m<sup>3</sup> has been excavated. In common with other units at the site, N12 also had a straightforward stratigraphy but it displayed a richer material culture compared to the other units. As with the other 6 units, the upper deposits yielded few archaeological materials, and some modern finds. However, from Context 2 onwards, the frequency of archaeological material increased with depth, with Contexts 3 and 4 being the richest. Finds include pottery of a similar type to that of the other 6 units, dominated by red slipped, linear paddled, incised and raised band decorations and imported pottery dating, once again, to the Yuan to late Ming periods (AD 1279-1644). Other finds include several fragments of glass and broken bracelets (dated between 13<sup>th</sup> and 15<sup>th</sup> century) which are most abundant in this unit, as well as metal, stone and plaster fragments. A burnt cubic terracotta clay fragment, 1246 cowries (from Context 2), two 14<sup>th</sup> century Qingbai sherds (Context 3), and ungulates and bird bones (Contexts 3 and 4) are among the notable finds. Moreover, Context 4 yielded 19 imported rim sherds, the highest number of such sherds from a single context. Overall N12 evidences a greater number of imported goods compared to other sites. It is suggested here that N12 represents an area with a more active and intense occupation compared to the other 6 units. The comparative lack of marine fauna (as well as the presence of the only terrestrial fauna from

the three islands excavated), abundance of cowries, glass and bracelet fragments, and a comparative abundance of glazed pottery (including the most number of rim sherds) from this unit represents a unique and different elite material culture from that of Utheemu. These finds could perhaps suggest a wealthier elite representation compared to Utheemu, due to the presence of a variety of glass items (bracelet and bottle fragments), terrestrial fauna (only present in Male') and a comparative abundance of glazed ware.

### **7.2.3 Veyvah**

Only one of the five 1 x 1m units excavated on this island yielded substantial results. Most had a rather simple, shallow and linear stratigraphy, with the exception of Units 3 and 5. Some yielded little or no archaeological material, which had not been the case on the other two islands studied.

Unit 1 consisted of 3 contexts and was excavated to a depth of about 0.42m. The upper layer consisted of a very thick network of coconut palm roots making the layer rather spongy and soft. This was followed by two deposits of a similar nature but with fewer roots. Finds mostly concentrated in Context 2. This unit yielded mainly undiagnostic, undecorated pottery and one half glazed possible martaban sherd. A small faunal assemblage was also recovered.

Units 2 and 4 were shallow units with no archaeological finds.

Unit 3 was also a very shallow (0.36m), disturbed and poor in finds. Its key feature is that it yielded some diagnostic pottery material in the form of 4 imported glazed sherds dated to the mid to late Ming period (AD 1500-1644). This shows that imported material was reaching Veyvah. The fact that this unit yielded a different kind of material culture could be due to its location, being on the west of the island outside the woodland on an artificial track. This site was slightly disturbed and the presence of the worked stone from the surface could perhaps indicate material brought from surrounding area.

The most productive unit, and that with the highest volume excavated for this island (0.85 m<sup>3</sup>), was Unit 5. It featured a complex stratigraphy and several radiometric dates were run. Eleven contexts were identified including a pit (Context 4) containing a strongly cemented feature. Charcoal samples from Context 4 were dated to sometime between AD 1435 and 1615. Pottery from this unit was abundant but the assemblage contained fewer imported pottery than the units excavated elsewhere. For instance, Context 3 yielded 30 earthenware rims- a significantly high amount of rims in a single context from the whole of the Maldives. The decorations present a contrast with the units discussed above. Most of the decorations in this

unit include raised bands and incisions with a comparative abundance of sherds with channels, waffle and carinations. Imported pottery are mostly Southeast Asian Longquan celadon and 1 late Ming sherd. Various species of cowries and a rich assemblage of fish remains occurred in this unit and most of them from Contexts 3 and 4. Other remarkable finds from this unit include the only 2 beads from the Maldives suggested to have originated from China and Central Asia dating between 13<sup>th</sup> and 14<sup>th</sup> century from Context 4, a broken bracelet, a metal nail, and a glass fragment. As Veyvah did not have a known association with an elite settlement, it is suggested here that the different deposits and the rich material culture (especially marine fauna and earthenware rims) represent a non-elite, domestic, fishing settlement. The relative lack of glazed ware could perhaps support the notion of non-elite nature; however, the recovery of two beads of distant origin suggests that Veyvah was connected to networks of exchange which included long-distance connections.

### **7.3 Relating the findings to the research questions**

Having presented a summary of key features from the sites investigated, this section will now refer back to the research questions 1-3 presented in Chapter 1 and present the outcomes for these questions.

#### **1a- What kind of material culture can be recovered from the medieval sites in the Maldives?**

As will be evident from the discussion, the material culture of the medieval sites excavated in the Maldives yielded three groups of finds; ceramics (including both earthenware and glazed sherds), fauna (including shell and bone) and other finds (personal ornaments, glass, metal, stone (including plaster), modern plastic, tiles, and terracotta fragments).

The ceramic and other finds provide clear evidence of the presence of foreign influence within these two categories. As mentioned above, the Maldivian archipelago does not contain naturally occurring clay and as far as is known had no local pottery industry. Pottery dominates in the assemblage among the two categories being discussed with a total of 4888 pot sherds from the three islands investigated (Fig 184). A majority of the non-ceramic finds are also considered to be foreign, with the exception of coral, sandstone and plaster fragments, since sand, coral stone, and lime material occur naturally in the Maldives. Finds such as beads, bracelets, glass, metal, and some stone suggest origins outside the Maldives. The ceramic finds

not related to pottery including roof tiles and the terracotta fragments have all been classified as foreign products not originating in the Maldives.

The faunal assemblage suggests a very locally-based economy. This is marked by the small number of bones recovered which can be allocated to the ungulate category. The majority of faunal remains consists of shell, fish bones, terrestrial and reptile bones which can all be considered to be found in the Maldives.

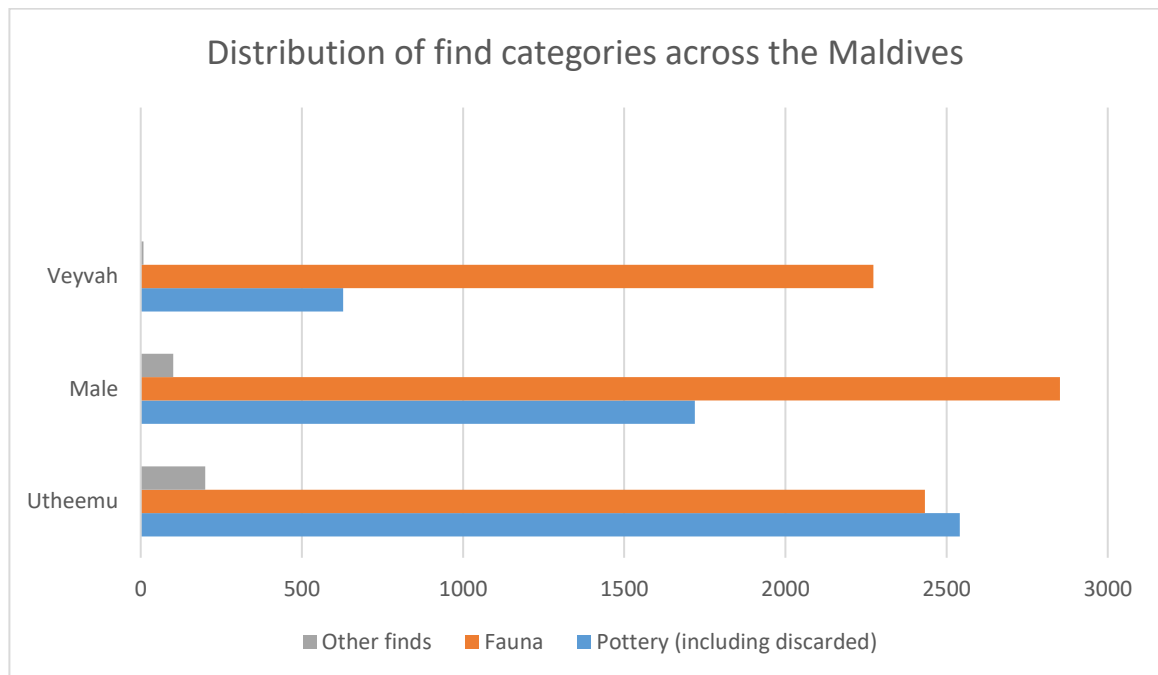


Fig 184: Distribution of find categories across the Maldives

### 1b- What does this tell us about the trade networks of the Maldives?

As indicated above in Chapter 5, many earthenware pottery fragments lack substantial information as to their origin due to lack of research such as XRF analysis. However, connections with India and Sri Lanka are suggested on typological terms. Chinese and other Southeast Asian connections are evidenced by the glazed pottery. Detailed analysis is required to understand the origin of other finds but the presence of roof tiles also point to a south Asian trade connection as well. Moreover, the beads also suggest Chinese as well as Central Asian connections. What is certain is that various influences from South Asia (mainly India and Sri Lanka), Southeast Asia (mainly China and possibly Thailand) and Europe (mainly Britain) exist in the material culture recovered from this research.

**1c- What can be inferred about the history and lifestyle of the Maldivian communities during the medieval period through this material culture?**

The importance of trade to the Maldives is quite evident. The abundance of pottery indicates the importance and widespread usage; the shape of the rims suggests functions of storage and perhaps cooking. Moreover, the presence of the spout is suggested as indicative of a serving/pouring function. Two shallow rims may be evidence of a lid or a shallow dish. The glazed pottery may have been used for serving based on the rim analysis which suggests most vessels were bowls or dishes/plates.

The occurrence of personal ornaments such as beads and bracelets suggest adornment, as do perhaps some of the glass fragments likely to be parts of perfume bottles. Pyrard (Gray and Bell 1887: 163) notes the presence of jewelry or bracelets on women's arms. Glass fragments from previous work in the Maldives (Mikkelsen 1991; 2000; Litster 2016) have also been suggested to be fragments of perfume bottles.

The presence of metal and various kinds of stones (some with lime plaster) and roof tiles also provides insight into types of construction techniques used in the Maldives during medieval times. The use of coral and sandstone in construction is a common practice that was carried out up until the 18<sup>th</sup> century. All three groups of stone reported in studies of Maldivian architecture (*veliga*, *hiriga* and *thelhiga*) (Ahmad and Jameel 2012) were recovered from the assemblage, the majority of them coming from Sultans' park in Male and Utheemu Palace. Both sites feature structures of sand and coral stone with lime masonry of the 16<sup>th</sup> century till present. The majority of fragments were recovered from Sultans' park and are likely wall collapse. Moreover, the presence of metal (especially nails and bolts) and roof tile fragments support the idea that they were used in construction, although it is clear that many of the metal fragments, could be modern.

One of the most important and useful categories to understanding past Maldivian lifestyles is through the faunal assemblage. The abundance of mollusc remains, especially *Monetaria moneta*, confirms the historical evidence that they were widely exploited in the Maldives. The large number of cowries recovered especially from MAL N12 (n=1360) and the palace (n=277), and their recovery in moderate numbers from other units in the Maldives, strongly suggests the importance of cowries and possibly higher wealth - especially since they were recovered from the palace structures. This is certainly considered a cowrie cache and possibly purposefully buried. Cowrie caches are a very common feature which have been

reported many times by local informants as well as having been identified in archaeological research, the latter in the context of Buddhist sites (Mikkelsen 2000).

The abundance of fish remains gives an indication of the subsistence base of the early Maldivians. As mentioned above, majority of the bone assemblage consisted of fish remains (77% of the bone remains) and there is very little evidence of the exploitation of terrestrial resources across the three islands, with the majority of non-fish fauna representing birds rather than ungulates. This supports the idea that the Maldivian communities were largely reliant on the sea for their subsistence. Among the fish remains, post cranial elements dominated, consisting particularly of vertebra and fin spines. This can perhaps be explained by fish processing techniques in the Maldives. In present times, the head of the fish is often removed and discarded (often into the sea) and this is also suggested by ethnographic records (Romero-Frías 1999: 30). The presence of bird bones also suggests the consumption of birds; as indeed chickens were kept in the Maldives, and are still on some islands today (Luthufee 1995: 62). On the other hand, land mammals were considered a delicacy consumed mostly by the wealthy or on rare occasions (Hussain 1991: 172; Luthufee 1995: 62). The absence of ungulates from the assemblage supports this hypothesis and the notion that chicken and mammals were consumed by the wealthy is further supported by the fact that they occur mainly from Male' (n=5 ungulates, n=20 bird bones) and Utheemu Palace (n=6 bird bones from the palace and 2 bird bones from Unit 1) and are completely absent elsewhere.

Therefore, the material culture from the three sites strongly suggests a maritime association during the medieval period. The fact that the Maldives had to depend on many trade items which had to be carried out by the sea as well as the strong dependence on marine fauna for their subsistence base clearly indicates the strong connection that the Maldivians had with the water around them and how important the sea and the marine ecosystem was for the Maldivians. This is further evident by the use of marine resources for construction such as coral and sandstone as well as cowrie shells. Thus, the sea was one of the most crucial or essential aspects of their daily lives and they were a very strong maritime culture.

However, as is well known, the nature of the archaeological record leads to an over-representation of certain categories of finds over others. Most notably, ceramics survive well whereas organic material culture tends not to. This is a significant point in discussing what might have made up the 'cultural package' of the medieval Islamic period of the Maldives. Pottery was certainly used widely, as the quantities of ceramics recovered, and their ubiquity, show. However, items such as textiles, woodwork, basketry, or coir ropes are also known, thanks to

the historical record, to have played a major role in Maldivian material culture; some of these items, such as coir, also constituted valued export commodities in a similar way to cowries. In fact, the production and use of these items are more often mentioned in written sources than is pottery, indicating the importance of these material culture categories for the Maldives and their economy. In addition to portable material culture, organic materials, such as wood or coconut fronds, were widely used in important practices such as house or boat-building. Again it is known through historical and ethnographic sources that these activities were widely carried out, but they remain largely invisible in the archaeological record uncovered by this research. These issues are not unique to the Maldives, of course; they are shared by the archaeological record of many other parts of the world. However, it is beneficial to remind ourselves at this point that archaeological data can only give a partial picture of the medieval Maldives; I refer the reader to Chapter 2 for an account of the historical sources. Perhaps it is likely that the durability of pottery from this assemblage may be distorting the picture (or over-representing) to some extent, of what was in play in the lives of the people during the medieval Islamic period in the Maldives.

**2a- What kind of pottery can be recovered from the Maldives pertaining to the Islamic period settlements? What is the balance between the different types of wares?**

The majority of sherds recovered from archaeological excavations were earthenware sherds (Fig 78) with a variety of fabric colours but mostly ranging from shades of brown to reddish brown. A general observation was made on the visible inclusions in the clay and all earthenware non glazed sherds contained inclusion including various mineral additives (quartz, mica, calcite) and grog (which can be identified as artificial temper material). The frequency and the size of the inclusions were highly variable. Many sherds featured quartz and grog inclusions but only one sherd contained vegetal inclusions thus, a clear dominance of gritty sherds. Voids were also very common in this assemblage and their sizes vary as well.

The earthenware assemblage mostly included body sherds (n=1728) and 10% of the assemblage were rims (n=201) and only 1 base (Table 22). Forty-nine percent of the total earthenware assemblage (n=942) was decorated (Table 23). Due to poor preservation, surface treatment was impossible to define on 316 of these sherds (Table 24, Appendix 3). Most of the earthenware sherds feature different kinds of impressions (n=296), incisions/stabbed (n=148) and appliques (n=113) while many are also coated with a red slip (n=133) (Table 24). Within the impressed category, a majority of the sherds evidence linear paddled decoration (n=256), and some waffle decorated sherds (n=35) (Table 24). A minor group of sherds also consist of

impressed surface (n=1), carved paddle impressions of various kinds (n=3) and ordered impressions (n=1) (Table 24). As far as the incised/stabbed group is concerned, most of the sherds consist of one or multiple incisions (n=146), many of them having multiple parallel incisions (n=96) (Table 24). A minor group of sherds in this category also include one sherd with parallel diagonal incision as well as one sherd with a stabbed diagonal incision. Within the applique category, most of the sherds have raised bands on them (n=108) and some minor sherds consist of cable (n=4) and flattened nubbin applications (n=1) (Table 24). Sherds with channels (n=17), mostly occurring alongside raised bands running parallel on top and bottom of the channel (n=13), also occur (Table 24). Other minor categories include carinated (n=45) and burnished (n=11) sherds (Table 24). There are very few painted sherds in the Maldivian assemblage (n=3). Many of the above mentioned decorations occur singly by but decorative combinations are also evidenced. Most of these sherds are red slipped and occur along side with raised bands among other decorations.

As noted in Chapter 5, some of the decorations within the Maldivian assemblage such as the carved paddle decoration as well as cable impressions have been the subject of some research from various scholars studying South Asian pottery. Paddle impressed decorations occur frequently in South Asia as well as at the trading center of Sharma in the Hadramawt of Yemen and the linear paddle and waffle impressions seen in the Maldives assemblage can be attributed to this technique. Meanwhile, impressed surface and cable motifs are also reported, for example from the excavations at Arikamedu. Paddle impressed pottery is known from ethnographic sources to have been made in Southern India. This perhaps indicate trade connections with India.

In terms of the minor group of glazed sherds in this assemblage (Fig 78), fabric colour ranges between white and gray and most do not have any inclusions. As is the case with the earthenware sherds, these are very fragmentary and small. Most of the glazed sherds are body sherds (n=134) while 60 are rim sherds, and a comparatively high number of bases (n=7) and half a vessel, with its rim and base, were recovered (Table 22). A minor portion of the glazed assemblage has been classified as unidentified (n=19) due to lack of poor preservation or lack of comparable examples (Table 25). The remainder of glazed sherds were divided in to three types: porcelain, celadon and others. Most of the sherds belong to the celadon category, which has been further divided into Longquan (n=45), Southeast Asian Longquan (n=26) and Southeast Asian celadon (n=5) (Table 25). Even though the period of manufacture is not clear in the case of the Southeast Asian celadon, most of the Longquan wares have been dated to the



Yuan period (AD 1271-1368), with few examples from early-middle Ming (AD 1425-1505) with one sherd dated to the 14<sup>th</sup> century and another sherd dated between 18- 19<sup>th</sup> century. The second most abundant group is porcelain, amounting to 59 sherds (Table 25). Five sub groups have been identified, including the largest groups, Chinese blue and white (n=35) and Chinese white porcelain (n=19). Three sherds are identified as 14<sup>th</sup> century Qingbai sherds, one is a 19<sup>th</sup> century stamped sherd and 1 is a mid-late Ming period (AD 1424-1644) enamel porcelain sherd. The blue and white as well as white porcelain sherds were manufactured during the Yuan and mid-late Ming periods with one sherd dated to the 14<sup>th</sup> century and another sherd dated between 15- 16<sup>th</sup> century. These, along with celadon ware, were also recovered in previous excavation and surveys in the Maldives (Carswell (1976), Mikkelsen (1991; 2000), Bopardikar (1992) and Litster (2016)).

Another abundant group is the Ming period transport jars which occurred at the same frequency as Longquan celadon (n=45) (Table 25). Not much is known about this group. Two European sherds were also found dated between 19-20<sup>th</sup> century as well as a half glazed (possibly martaban ware) sherd. It is suggested here that half glazed vessels, which has a rather thick body, were widely imported to the Maldives as storage urns from the Malabar coast of South India between 15<sup>th</sup>- 16<sup>th</sup> centuries, and they are widely abundant on the surface of many islands and are still used in some resorts. There are good examples of these jars in the museums in the Maldives.

## **2b- What does the pottery tell us about trade connections during the medieval period?**

The pottery recovered from this assemblage seems to point to clear trade connections between the Maldives and South Asia - mostly India. As mentioned before, there are similar examples of earthenware pottery from the assemblage that have been recovered from sites such as Arikamedu and the Malabar Coast, giving additional support to the commonly suggested hypothesis by previous scholars that pottery from India were imported to the Maldives. The rim analysis of the earthenware sherds also provides additional support as most of the rim forms have been classified to be taking the form of '*handis*' or large storage/cooking vessels. Moreover, the influence from Far eastern Asia (Chinese, Thailand) is very clear. European wares are quite rare, and are later than most of the rest of the assemblage. Their presence in the Maldivian assemblage highlights the connections, direct or indirect, within these regions. What is surprising though, is the absence of Islamic pottery in this assemblage. Trade connections are known to have been established with Arabs and Persians, especially after the conversion when

Maldives was frequently visited and traded with by the Arabs and Persians who dominated the trade in the Indian Ocean trade at that time. Moreover, Persian pottery has been encountered in previous works in the Maldives. Carswell (1976) bought some Persian dishes from Male during his visit. Similarly, excavations at R. Kinolhas in 2017 by the present team also recovered Persian ware of 14<sup>th</sup>- 16<sup>th</sup> century although they were few in number (Haour *et al* 2017). Therefore, it is suggested here that a plausible reason for the absence of Islamic pottery in this assemblage may be due to the location of the sites. It may be that Islamic pottery were not imported to these islands.

**2c- What can be derived about the lives of the communities using this imported pottery and the influences on these communities from this trade and to what extent does the study of pottery contribute to our understanding of the sociocultural and socioeconomic aspects of the communities of the Maldives??**

It is rather difficult to comment on the possible functions of the pottery assemblage due to two reasons: the poor preservation of sherds, resulting in a lack of diagnostics (the majority of sherds being body sherds, medium sized rims and very few bases) and lack of use wear and residue on the surfaces of the sherds. However, what can be said about the functions of the pottery from the Maldives suggests the use of cooking/storage for earthenware as well as a pouring function due to the recovery of the one instance of a spout. In terms of the glazed sherds, they mostly take the form of dishes and bowl suggesting functions of serving. However, for the glazed wares, the notion of them being an elite good is supported in this research especially due to the high proportion of glazed sherds in Male' (followed by the two units in Utheemu Palace), with Unit N12 yielding 19 glazed rims from Context 3.

**2d- According to Carswell (1976) and later Forbes (1981), the Maldives were a stopping point for westward-bound ships more than eastward. Does the pottery recovered support Carswell (1976)'s hypothesis of the Maldives being a transit point for Chinese ceramics going westbound in the Indian Ocean trade?**

This research agrees with Carswell's hypothesis of Maldives being a transit point for westbound ships. The complete absence of Islamic pottery from the present assemblage confirms his claim that there were fewer Islamic than Chinese sherds among the glazed imports. However, I suggest that the limited number of earthenware sherds evidenced from his work is likely due to the fact

that he selected glazed sherds in the context of his surface collections. This research in fact generated the opposite results with only about 10% of the total assemblage being glazed sherds (with about 70% Chinese pottery within the glazed assemblage). It is not known why Carswell neglected earthenware sherds and it may be that he considered them to have been traded by another, more regional network, different from the long-distance connection. This neglect of regional wares is problematic and requires further analysis.

### **3a- How does the archaeology differ in each island and what are the similarities within each site?**

Due to the difference in excavation context and scale as well as sampling strategies it is rather difficult to make definitive comparisons between the three islands.

This said, the faunal assemblage suggests some differences between the three islands. For instance, the faunal assemblage from Male' has a comparative absence of bone remains (8.6%, n=246 of the total faunal assemblage from Male', n=2852), making Male' the site with the least number of fish remains from the three sites excavated. However, it is also acknowledged here that the volume excavated at Male' was the lowest of the three sites (1.9 m<sup>3</sup>). Remarkable to Male' is the presence of the only ungulates recovered during this research (n=5), as discussed above. Within the dominant mollusc remains (91.4%, n=2606 of the total faunal assemblage from Male'), most of it is comprised of *Monetaria moneta* (62%, n=1635) which was the result of the cowrie cache from N12 and most of it came from a single context. Utheemu, which has the highest volume excavated from the three sites (6.3 m<sup>3</sup>) has relatively equal proportions of mollusc (56%, n=1365 from the total faunal assemblage from Utheemu, n=2433) and bone remains (49.4%, n=1201). Unlike Male', the mollusc remains from Utheemu comprises a dominance of 'other shells' (75%, n=1026) and cowries only account for 25% (n=339) of which 287 are *Monetaria moneta*. In terms of bone remains, unlike Male', 77.4% (n=930) of the total bone assemblage from Utheemu are comprised of fish remains, with very little terrestrial remains (11.5%, n=138) and no ungulates.

This is also similar to Veyvah which had an excavated total volume of 2.31 m<sup>3</sup>. However, unlike Male' and Utheemu, the majority of the fauna from Veyvah is comprised of bone remains (61%, n=1394 from the total faunal assemblage from Veyvah, n=2273). Similar to Utheemu, most of the bones consist of fish remains (86%, n=1202), making Veyvah the richest in fish remains among the three sites. Among the mollusc remains, most of them comprise of 'other shells' (76%, n=668), as is similar to Utheemu. However, unlike Utheemu and Male', *Monetaria*

*moneta* occur less (11%, n=95). Veyvah comprised a higher diversity of cowrie species and some of these species have a preference for seagrass environments which dominate the surrounding waters of the island.

In terms of pottery, some variations can be seen. Utheemu and Male' resemble each other more than they do Veyvah. All three sites had a dominance of earthenware pottery over glazed pottery and a dominance of body sherds over rims and bases, with the latter being the lowest sherd type. However, Veyvah featured a higher proportion of earthenware rims (18%, n=41 earthenware rims) and Male' had a significant number of glazed rims (30%, n=46) as well as a spouted vessel fragment.

Moreover, as mentioned above and in Table 41 below, Male' evidenced a larger proportion of glazed sherds among the three sites. Most of the glazed groups in Male' and Utheemu are similar while a very limited group of glazed sherds were recovered from Veyvah with the only possible martaban sherd from the assemblage, possibly suggesting storage functions. Male' and Utheemu consisted of diverse groups of glazed sherds but there are differences within these two islands. Male' yielded a sizeable assemblage of Longquan celadon and transport jars (Yuan-Ming) while Utheemu mostly featured Chinese blue and white sherds. As seen from Table 41, both Male and Utheemu yielded unique sherds from the assemblage.

	Total number of sherds occurring for each type		
	Utheemu	Male	Veyvah
<b>Total number of glazed sherds</b>	<b>36</b>	<b>153</b>	<b>13</b>
<b>Chinese blue and white</b>	11	21	3
<b>Chinese white porcelain</b>	3	15	1
<b>Stamped</b>	1	0	0
<b>Enamel</b>	0	1	0
<b>Qingbai</b>	0	3	0
<b>Longquan Celadon</b>	2	43	0
<b>Southeast Asian Longquan Celadon</b>	2	18	6
<b>Southeast Asian Celadon</b>	5	0	0
<b>Unidentified Southeast Asian ware</b>	4	0	0
<b>Transport Jars</b>	6	39	0
<b>Martaban</b>	0	0	1
<b>European</b>	1	1	0
<b>Unidentified</b>	1	12	2

Table 41: Distribution of glazed types across the sites

In terms of earthenware sherds, only 26% (n=58) of sherds consisted of decorations in Veyvah while for Utheemu and Male', 52% of the sherds from each island are decorated. In terms of differences in surface decorations between the islands, a variety of decorations were evident in all three assemblages which includes 13 types from Male', 12 from Utheemu and 8 from Veyvah. As can be seen from Table 42 below, every island consisted of some number of similar and unique decorations.

	Total number of occurrences of decorations		
	Male'	Utheemu	Veyvah
<b>Total number of decorated sherds</b>	<b>333</b>	<b>551</b>	<b>58</b>
<b>Red Slipped</b>	81	51	1
<b>Linear Paddled</b>	66	189	1
<b>Raised band</b>	50	36	22
<b>Incisions</b>	69	60	15
<b>Carinated</b>	2	38	5
<b>Burnished</b>	8	2	1
<b>Waffle</b>	8	21	6
<b>Painted</b>	2	1	0
<b>Channel</b>	5	5	0
<b>Cable</b>	0	4	0
<b>Carved paddle</b>	0	1	2
<b>Ordered impression</b>	0	1	0
<b>Impressed surface</b>	1	0	0
<b>Parallel Diagonal Incisions PDI</b>	1	0	0
<b>Flattened Nubbins PA-2</b>	1	0	0
<b>Stabbed Impression S3-D</b>	1	0	0

Table 42: Distribution of surface modification types for earthenwares across the sites

Turning now to other finds, we see that Veyvah had the least number of other finds but included a variety of categories including stone, plastic, glass (including 2 beads and bracelet fragments) and metal. The recovery at Veyvah of the only beads from the Maldives is rather significant. This could be the result of the difference in the sampling strategies used in different islands as the one of the beads were recovered from wet sieving which was not undertaken at other sites.

There are significant differences between Male' and Utheemu, especially in terms of the absence of bracelet fragments from Utheemu and an abundance of them in Male' (n=11) and one from Veyvah. Male' had the richest among other finds including several bracelets as mentioned above, as well as 22 glass fragments. Unique to Male' is the recovery of the

unidentified terracotta fragment. Utheemu evidenced the greatest number of metal fragments and unique to Utheemu is the recovery of roof tiles. Both Male' and Utheemu however recovered several stone fragments including plaster as well as metal and these finds have been associated with the presence of the palace structures.

Therefore, it can be said that in terms of the nature of the material culture, only minor variations exist within sites. The nature of finds is similar and the difference lies mainly in their quantity. Male' stands out as wealthier compared to the other two sites due to the abundance of glazed sherds, while the absence of fish bones and relative abundance of terrestrial remains, may suggest a wealthier diet. Moreover, it could be also suggested that the dominance of cowries in Male' and Utheemu Palace be associated with evidence of higher wealth of those two areas. What is noticeable however, is the lack of finds from the two trenches in Ha. Utheemu (Units 1 and 2) as well as the four trenches in Veyvah (Units 1-4). This highlights the importance of the location of excavations as well and of the sampling strategies used. The difference noted may indicate differences between the islands or it could also be due to the fact that contexts from Male and Utheemu share a high residential status as opposed to Veyvah.

#### **7.4 The Maldives in the global picture**

This section aims to answer the question of where the Maldives sits within the wider Indian Ocean trade network. What are the characteristics that shaped the Maldives in this wide and complex trade network which involved complex interactions with multiple participants?

##### **a- How does the evidence recovered in the Maldives support or contradict some of the models which have been proposed for the development of interregional trade, for instance, the World Systems Theory?**

In Chapter 1, the World Systems Theory was assessed as a possible model that could be used to understand the Maldivian network and interaction system. This is a widely used model which has been deployed in the Indian Ocean region. Based on the material culture from this assemblage and historical sources, I argue that the WST does not apply to the Maldives for several reasons. The WST neglects any discussion concerning the complex internal dynamics, politics and the potential and agency of the Maldives. Yet, as will be suggested below, these internal factors were very important aspects and key to the understanding of what shaped interactions. Additionally, the Maldives does not adequately fit in any of the three geographical

areas proposed by the WST – core, peripheries, and semi periphery. Furthermore, the key focus of the WST being centered around the ‘core’ and their creation and the complete dominance/control over ‘periphery’ cannot be demonstrated for the Maldives. The material culture and historical sources do not provide any evidence to indicate the Maldives being under complete control of any party nor does the Maldives control any party. What the material culture of this assemblage demonstrate is that there existed long-distance trade connections with probably various participants involving prestige goods (such as the glazed ware pottery and possibly glass finds? and possibly land animals for consumption) as well as goods important for the day-to-day lives of the Maldivians which were not available locally.

The abundance of foreign products in the material culture (including all ceramics and most other artefacts with the exception of some stone and plaster, which occur naturally in the Maldives) demonstrates the importance of long-distance trade with various participants. Thus, the assumption of the WST where long-distant exchanges are believed to be the means through which all other aspects of political economy in the ‘periphery’ are structured can be held true to some extent for the Maldives due to the heavy reliance of imported items. However, the local production, exchange as well as local agency and development of internal dynamics also played a crucial role in structuring the Maldives’ economy. To some extent, I argue that the proposition of Chase-Dunn and Hall (1993: 856) which states that long distance exchange should also involve “prestige goods exchange, regularized warfare, political symbolism and political protection as forms of regularized contact rather than limiting it to bulk trade” is applicable here. As will be demonstrated, for some exchanges the interactions between the Maldives and participants involved some aspects of Chase-Dunn and Halls statement.

Beaujard (2005: 432) discusses the importance of looking at the internal politics and dynamics within individual parties stating that “between periods of prosperity (for the elites, at least) there came periods of decline and disorder in the system whose causes were usually multiple: internal contradictions within states and societies, state policies that discourage production and commerce, political struggles for the control of wealth and state apparatus.” As presented above, the Maldives had various shifting and dynamic cross-cultural interactions with different parties through time. Thus, to understand the different factors that shaped these interactions and their nature, each party will need to be studied separately. I have argued above that no single model can be used to examine these interactions.

As highlighted in Chapter 1, the issue of trust would have been a key factor in shaping interactions, especially when participants had different ethnicities, religious and/or cultural

beliefs. Various factors could be demonstrated from the Maldives as means by which trust was established, such as the regulation of state control or political authority, the creation of trade diasporas, shared knowledge of geographical origin, ethnicity and ideology (religion). In the section below, I will thus demonstrate examples from the material culture and historical sources to explain the factors discussed above in order to understand how the Maldives operated in the Indian Ocean world.

**b- What does the material culture as well as known historical sources tell us about the nature of trade the Maldives was involved in?**

Firstly, the importance of long-distance trade and exchange has been well demonstrated through the material culture recovered archaeologically in the Maldives. There can be no doubt about the importance of maintaining relationships as the Maldives were heavily reliant on imported goods.

However, historical sources as well as the faunal assemblage demonstrate the autonomous role of the Maldives and their potential and agency during this long durée of interactions. For instance, the faunal remains suggest the Maldives had an active role in deciding what local aspects were to be influenced and/or changed and what aspects were to be kept. The Maldives being a maritime culture, they have always remained close with the sea and history shows that fishing and marine fauna have been the major subsistence base (Husain 1991). The abundance of fish remains and the comparative lack of terrestrial fauna from the present excavations indicate that few changes were brought to the subsistence base of the Maldivians despite the many participants who would have traded with or lived in the Maldives and had different types of subsistence. Ibn Battuta's description of the diet of the Maldivians is informative here: he says that goats are rare and valuable for the Maldivians who import them from the Malabar Coast (Husain 1991: 72). Ibn Battuta also claims that the Maldives had good relationships as well as trade connections with East Africans and mentions that goods such as perfume, goats, sheep and salted fish were imported from Mogadishu (Husain 1991: 125). It should be noted here that, no obvious connection with East Africa was identified through the archaeologically recovered remains and it is acknowledged that identifying such links is a topic that requires further research.

Historical sources as well as the standing remains of the Maldives also provide additional evidence for the level of agency within Maldivian society and the lack of foreign influence on certain cultural and identity aspects. After converting to Islam, the country remained Muslim,



despite reported pressure by the Portuguese to convert to Christianity (De Silva 2009; Mohamed 2014b). The standing remains of ancient mosques are evidence of this and it is even said that the brief Portuguese occupation caused a revival to the religion and cultural identity of the Maldivians as can be seen from the construction of several ancient mosques in various islands of the Maldives afterwards (see Appendix 1; National Centre for Linguistic and Historical Research 2004; Ahmad and Jameel 2012; Riyan 2012;).

Furthermore, the importance of cowries in the Maldives has been demonstrated through the abundance of cowrie shells recovered especially from Male' and Utheemu Palace, strongly supporting the notion of cowries and wealth. It can be said that one of the means through which Maldives had an autonomous role in the exchanges is through the royal monopoly of cowries. Historical sources (Hogendorn and Johnson 1986; Mohamed 2014a; b) mentions the economic boost and profit as well as the political autonomy that the Maldives enjoyed due to the trade of these shells especially when the demand for the cowries increased. Mohamed (2014b) also states that many islands in the Maldives were inhabited due to this trade. This state control was further established by only allowing the capital Male' as the center for trade to take place. Furthermore, these cowries were mostly bartered for rice and Mohamed (2014b) states that rice was one of the most important trade item for the Maldives thus, priority was given to exchanges that returned rice as an import material. Moreover, the Maldives also had the power to ask for a profitable price and managed to bargain for rice. An interesting comment by Mohamed (2014b) describes the level of agency of the Maldives. She describes an event during which the Maldives refused to sell cowries to a German ship in 1894 as it had the potential of jeopardizing the Maldives' trade of cowries for rice with Bengal.

Therefore, this shows that the Maldives was not a passive partner and clearly shows the level of control they had in this network and the extent of power and control over whom to trade with, what aspects were to be influenced or controlled, and to what extent. However, this was not always the case and presented below are several models to explain the factors that shaped interactions with the many groups through time.

### **Arabs and Persians:**

It is suggested here that there seems to be a good relationship between this group and the Maldives and that the issue of trust was established through a common religious belief. Moreover, the exchange between this group was not limited to goods but religious knowledge and other cultural (both tangible and intangible) practices were exchanged too. After the

conversion to Islam from Buddhism, the Maldives became a well-known destination for Arabs and Persians. Their influence on the Maldivian religion, culture as well as politics and economy are both tangible and intangible. Despite the lack of Arab and Persian influence in the material culture of the present assemblage, there are other tangible features such as the mosques mentioned above as well as several aspects within the intangible heritage (influence on religious customs, language and culture) and the many historical sources detailing the close relationships with the Arabs and the Persians. For instance, Arab and Persian influence can be seen in the Maldivian language. Moreover, the former practiced *Mālikī madhhab* (one of the four Islamic schools of Jurisprudence) was replaced to *Shāfi'ī* by the teachings of a Jamal al-Din who is said to have studied at the *Shāfi'ī* centers in Yemen and Hadramawt (Forbes 1981). Persian influences can also be seen in some cultural aspects (such as music and dance forms) as well as the numismatic influence they had of the use of *lāri* (folded up lengths of silver used as coins). Trust was established through a common shared religion - Islam. For instance, Ibn Battuta, being a Muslim, gained the trust of the Maldivians and was welcomed, intermarried and formed a close relationship with the sultan eventually becoming a judge and treated as royalty in the Maldives. On some occasions he was treated with equal respect as the Sultan. In addition, Persian influence in the administration of the country is evident as several Persians are known to have been judges in the Maldives too and many royal Maldivians gained their religious education in Arab schools. However, what is noteworthy is that despite the shared religious belief, none was able to exercise full control over the Maldives. Ibn Battuta describes how he tried to establish certain religious customs in the Maldives but failed, resulting in his high status and trust to be broken which led him to move from the Maldives. However, generally in Maldivian history, Muslim merchants and partners are usually viewed in a positive tone and not treated as hostile. This is very likely due to the shared beliefs in religion. The Arabs also were skilled in seafaring in the Indian Ocean which must have been another factor that shaped this interaction i.e. knowledge of geography which is one of the factors discussed by Seeland (2013) for trust establishment similar to religion. Mohamed (2014b: 17) also states that many of the Maldivian merchants were Arab-speaking, thus many of the transactions that took place between the two parties were conducted in Arabic which would have been an added advantage and another stronger bond of trust.

It is not entirely evident whether there existed direct connections or through third party exchange transactions between the Maldives and the Arabs/Persians. There may have been some direct exchanges taking place between the Maldives and the Arabs/Persians but this is not very

obvious in the written sources. There are some indications in written sources suggesting possible direct connections but is not entirely certain. For instance, Mohamed's (2014b: 17) comment about Maldivian merchants speaking Arabic and thus transactions taking place between the two parties in Arabic could indicate possible direct exchange connections but it may as well be that Arabs/Persians were present at third party ships (for instance from India or Sri Lanka). It is written that when Ibn Battuta travelled to the Maldives he arrived in an Indian ship from Calicut in Kerala (Husain 1976). Thus, what can be said for certain is that exchange connections between the two groups were most likely conducted via third parties in a chain of exchange transactions involving the Maldives as a crucial link in global networks. South Asia is evident in written sources to be a prominent third party to conduct direct exchanges with the Maldives (see below).

### **Chinese:**

The Maldives seem to have had a relationship of purely the exchange of goods (mostly prestige) with the Chinese. The material culture for the present assemblage provides evidence of the trade connections that the Maldives had with the Chinese. It is not certain if there were Chinese ships directly trading with the Maldives but some local and Chinese historical sources suggest that the Maldives was visited more than once during the Cheng Ho Expedition during the 15<sup>th</sup> century as well as Maldivians visiting the Chinese emperor during the 7<sup>th</sup> century with 'tributes' during the Tang dynasty (7- 10<sup>th</sup> centuries). It is also likely that exchange connections between the two groups were also conducted via third parties. Some sources indicate that exchanges existed between China and the Maldives during the late 6<sup>th</sup> century (Mohamed 2014b). Chinese ceramics, an elite good, were an important and valuable commodity in this exchange for the Maldivians and historical sources suggest that ceramic bowls, plates and cups were imported to the Maldives in exchange for local produce. Most of the Chinese ceramics have been dated from the Yuan and Ming periods suggesting an increase of trade with the Chinese. Mohamed (2014b: 21) states that there existed an increase in trade exchanges between the two parties during the 15<sup>th</sup> century. Therefore, from the material culture and historical sources, it can be true to say that the nature of the connection between China and Maldives were mostly trade and exchange of produce- Chinese ceramics to the Maldives and local products such as cowrie shells, dried fish, ambergris, textiles, etc., for the Chinese. There do not seem to have been any further relationship between the two parties and certainly no dominance and/or control from any party over any aspect of the relationship. The account of paying tribute has

been described as a means of establishing trust i.e. to accept the ruling emperor of China but not more than that. Therefore, it is suggested that ‘tribute’ here refers to voluntary, diplomatic gifts in order to maintain good relationship between the two parties and their trade.

### **South Asia:**

This is the group that has impacted the Maldives the most and the material culture as well as other aspects of the culture (including the language and other cultural aspects) strongly supports the influence of South Asia - mainly India on the Maldives.

The material culture is strongly dominated by South Asian products and this highlights the intensity of the trade connections between the Maldives and South Asian parties, mostly Indian. Furthermore, historical sources refer to ships from this group visiting the Maldives to conduct direct exchanges and also acting as a third party for exchange of other foreign goods (such as Arab/Persian and European) (Hogendorn and Johnson 1986; Mohamed 2014a; b). Stein’s distant model can somewhat be applied here as the South Asian groups seem to have been the most influential and dominant group that the Maldives had direct connections with (Hogendorn and Johnson 1986). It is also evident that South Asian merchant groups (or trade agents) were placed in the Maldives as a means of maintaining trust and to ensure trade continued. However, there are some groups that seem to have controlled the trade of the Maldives as well as exercised sovereignty.

### The Malabar Coast and the Gujaratis

Merchant groups from the Malabar coast (historically known as Cannanore, or Kanuur - a city in Kerala) are said to have taken over the complete control of the Maldivian trade by the most powerful merchant of Cannanore during the start of the 16<sup>th</sup> century. A merchant from Cannanore, Muhammad Ali (also known as Mammali Marakkar) acquired monopoly privileges in both the import and export trade of the Maldives and formed an agreement with the Maldives sultan (Hogendorn and Johnson 1986: 32). The Maldives was required to pay a fixed-price payment consisting of cowries, coir, dried fish and textiles in return for rice, salt and earthenware (Hogendorn and Johnson 1986: 32). Moreover, trade agents in the name of “Lord of the Maldivian islands” were placed (in charge of the stockpiles) by this merchant in various islands and they seem to have exercised temporary sovereignty over many atolls in return for loans to the sultan (Hogendorn and Johnson 1986: 32). It is written that independent and secret trade centers were

established by this group in the southern region of the Maldives. These secret trading centers were established to escape the Portuguese dominance in the Indian Ocean at that time. As a result, the inhabitants of the south profited greatly through this trade as they did not have to share profit with the Portuguese. It was during this time that there was an increase in merchants of Cambay from Gujarat to the Maldives and it is said that they sold part of their goods including gold, spices, rice and textile in exchange for local produce. It is said that they fought and defeated the Portuguese trade center in Male' at that time and so at the end of the 16<sup>th</sup> century, Cannanore and Gujarati merchants had complete control over the Maldivian trade. However, no other forms of authority are seen to have been reported to have existed between the Maldives and these two parties.

#### Other South Asian participants

It is written by Mohamed (2014b) that trading agents were placed in Male' by Asian merchants to carry out their trade as is also evident above. During the 19<sup>th</sup> century, after the end of cowrie trade, the Maldives also traded with Calicut and Sri Lanka and Mohamed (2014b) provides details of the types of boats used by the Maldivians to visit the above-mentioned regions. This trade seems to have continued and flourished where eventually Galle in Sri Lanka became a very important trading port for the Maldivians. It is said that during the 19<sup>th</sup> century the trade connections that the Maldives previously had with South India and Bengal shifted to Sri Lanka.

#### **Europeans:**

Despite the lack of European presence within the present assemblage, the historical sources attest to the strong influence Europeans had on the Maldives. The Portuguese seems to have been the most influential party who controlled not only the trade but the ruling system as well. It is thought that they were interested in the cowries and coir for boat building in the Maldives. Initially, the Maldives sought military protection against foreign invaders from the Portuguese and this period is described of much internal chaos and battle for kingship within the Maldives (De Silva 2009; Mohamed 2014b: 23). The Portuguese took advantage of this internal weakness and began a 15-year-old control over the Maldives from AD 1558 to 1573. This period in the Maldivian history is described as one of the darkest periods with much chaos, killing of Maldivians, robbing their trade and forcing the Maldivians to give up their religion. "They enforced a restrictive commercial policy that permitted trade only with Portuguese India and states under Portuguese influence" (Hogendorn and Johnson 1986: 32). This is the only period

in the Maldivian history where it seems to have lost such control of the country in terms of both economic and political control by force. The Portuguese attempted to re-occupy the Maldives after the defeat in 1573 however, a treaty was signed where the Maldives were under compulsion to pay a fixed annual tribute in order to avoid further attempts of Portuguese occupation.

The next influential European party was the Dutch merchants who seem to have had only a trade connection with the Maldives. Furthermore, it seems to be that there were both direct and third party exchanges between the two groups. For instance, Hogendorn and Johnson (1986: 37, 39) mention a Dutch ship visiting the Maldives to investigate trade possibilities as well as the Dutch sending their own ships to the islands to try to tap the Maldives market directly but with little success. In addition, Hogendorn and Johnson (1986: 39-40) also mention Maldivian ships carrying local goods and cargo calling at Dutch controlled cities such as Ceylon, Goa, Galle where exchanges between the two parties took place. It is written that the sultan of the Maldives was well aware of the control of Galle in Sri Lanka by the Dutch. Accordingly, to protect the Maldives from such control, the Sultan maintained a friendly and peaceful relationship with the Dutch by sending tribute to the Dutch in Sri Lanka (Mohamed 2014b). The Maldives also benefitted from military assistance from the Dutch against Portuguese attacks (Hogendorn and Johnson 1986). Unlike the Portuguese period, the internal affairs of the Maldives were rather stable during the Dutch trade period, and economically a very profitable period. A remarkable feature of this period (17<sup>th</sup> century) is the change in the nature of state control. Mohamed (2014b) states the state did not get involved in any aspect of the trade and people were free to trade anything they wanted without any state rules or regulations. This probably played a crucial role in the nature of the trade connections with the Dutch with whom the Maldivians were trading predominantly with while paying tribute. It seems that this relationship was a smooth and friendly connection which involved the exchange of necessary trade goods as well as the Maldives paying tribute (possibly a voluntary diplomatic gift exchange) to secure the Maldives from Dutch control and for their military protection. Written sources (Bell 1883; 1925; Hogendorn and Johnson 1986: 39-40) do mention instances of Dutch efforts to monopolise the cowrie trade in the Maldives in the latter part of the 17<sup>th</sup> century. According to Bell (Hogendorn and Johnson 1986: 40), it was only a “fair success” in establishing a monopoly however, later in 1925, Bell “confined himself to saying that they attempted to establish a monopoly.” No further influences or connections are evident to have existed between the two. Many other merchants from various parts of the world are also noted to have had trade relations with the Maldives during this time but the Dutch are claimed to have

had the monopoly of the cowrie trade with the Maldives. The Dutch wanted certain goods from the Maldives and the Maldives were in need of military assistance and protection from invaders and this is the nature of the relationship between these two parties.

The final European party before becoming an independent country were the British. It is said that the British colonization of Bengal in 1757 caused a rather big economic loss to the Maldives which resulted in internal political instability once again. The British also had a similar type of relationship as the Dutch with both direct and third party exchanges being conducted with the Maldives (Ceylon (Sri Lanka) and Balasore (Kerala)). The presence of several British ships wrecked in Maldivian waters attests to some level of direct exchanges taking place between the two parties (Hogendorn and Johnson 1986: 41; Collings 2010). Maldivian boats carrying cowries bound for Bengal are claimed to have called at Ceylon and Balasore in Orissa (south of Bengal) where they were purchased by English trading companies which had established factories in the city (Hogendorn and Johnson 1986: 42). The Balasore stream is also claimed to have been the major point of English purchase. Furthermore, like the Dutch, some British groups also seem to have attempted non-diplomatic relations, “and they even resorted to purchase by force” (Hogendorn and Johnson 1986: 41). Maldives sought the protectorate from the British to defend itself from invaders in 1887. In return the “Maldives was to recognize British suzerainty and disclaim the right to make a treaty with any other state and in return the British was to protect the Maldives from all foreign enemies and to abstain from all interference in internal administration” (Maloney 2013: 126). This was also a period of much internal conflict and chaos as well as fiscal troubles. This agreement lasted until 1965 where Maldives regained its independence. Similar to the Dutch, the British also continued trade connections with the Maldives and in return for the military assistance, Maldives exchanged local products that the British needed. However, the period during which Maldives was under British Protectorate has been described as unstable and chaotic within the internal politics with several changes brought to the governing system (Mohamed 2014b). In Hogendorn and Johnson’s (1986: 42) words, “whatever the success of trade at the Maldives, whether Dutch, English or French, it is clear enough that the islanders themselves preferred the Europeans to stay out of their waters.”

To summarise, the trade of cowries played a vital role in the economics of the Maldives and in the shaping of the interactions that the Maldives had with other parties. The Maldives gave great importance to forming and maintaining ties with foreign merchants in order to safeguard the country from foreign invaders as well as to maintain the country’s economy. This

also involved payments of tributes- mostly non-compulsive, friendly, diplomatic exchange of local produce and one instance of compulsion with the Portuguese. Maldives faced periods of economic boom and depression and established relations with foreigners according to the needs of the local situation. While direct exchanges took place with some partners, many of the transactions were conducted via third parties (mainly South Asian) in a chain of exchange transactions that involved the Maldives as a crucial link in global networks. It is true that the Maldives were heavily reliant on foreign goods and foreign partnerships but as can be seen above, they had a rather active role in choosing the partners to trade with or with whom to establish connections. Factors such as state-controlled trade, ethnicity, religion and knowledge of geography served as important ways to establish trust like those established with the Muslim merchants and South Asian participants. Moreover, relationships were established based on what was required (a negotiating relationship) with certain groups - like the connections with the Dutch and the British in exchange for military assistance. Some connections were established purely for the trade goods such as Bengal for rice and the Chinese for ceramics for the elites. The neighbouring South Asians were an important party with direct links and sometimes acting as a third party for the Maldives which resulted in not only goods (such as pottery and other finds) but several cultural practices being exchanged. However, no party was allowed to take control of any aspect of the Maldivian politics or trade and any attempts to do so were treated with hostility and fought off either by themselves or by forming alliances with other foreign parties. Internal dynamics also played a key role in what shaped these interactions as often times, internal conflict caused the Maldives to lose control of its trade and politics which resulted in having to get aid from foreign parties. This highlights the role of the Maldives in this network as being completely independent and not at all a passive role.

## **7.5 Conclusion**

The lack of proper documentation of the country's history has meant that the bits and pieces from the different sources give just a glimpse of the history of the islands. It is evident that further research is needed to document the history and heritage before it disappears (Riyan 2011: 5; Jaufar 2017a).

Medieval Maldivian history has only been recorded on few sources, most of them being rather recent- 19<sup>th</sup> century onwards. These have been repeated by subsequent writers on Maldivian history and were in need of updating. This project has worked towards this aim through research highlighting the importance of studying the medieval Maldives through



archaeology. By conducting archaeological test pits in three regions of the Maldives including Male', by providing a detailed analysis of the most abundant archaeological finds, pottery from the Maldives along with other finds, as well as by dating sites from the medieval period of the Maldives, it has brought forth an extensive amount of information concerning the importance of the Maldives in Indian Ocean history, a well-known fact that had never been properly researched archaeologically. Combined with historical records, this archaeological work has provided added insight into early Maldivian life and its people, detailed study of the import goods as well as an analysis of the Maldives as an active agent in forming alliances with partners within the Indian Ocean world. Attempts can be made at situating the Maldives in the wider Indian Ocean network within the changing dynamics of the Indian Ocean trade. As evidenced above, four major groups of influence are visible in the Maldivian history; Arabs/Persians, Chinese, South Asian and European. Evidence from the research detailed in this thesis revealed occupations dating to between the 12<sup>th</sup> and 17<sup>th</sup> centuries.

In the early part of this sequence, China and Persia were very prominent and large cores, with other minor areas, including Egypt and parts of India (Fig 3) (Beaujard 2005). Calicut was a major city, and lay within the main maritime route throughout the time period discussed in the present research. Given its relative proximity to the Maldives it must have played an important role; it should be recalled that most of the earthenwares recovered archaeologically at Veyvah, Male' and Utheemu are probably Indian in origin. It is also significant that some of the earliest accounts we have of the Maldives were written by Arab visitors to India, such as al-Masudi in the 10<sup>th</sup> century.

From the 10<sup>th</sup> to 14<sup>th</sup> centuries, Sung, and then Yuan, empires flourished in China, the Chola empire followed by the Delhi Sultanate controlled parts of India, Abbasid and then Ilkhanid empires were in power in Persia, and centres of power in Egypt, not least under the Fatimids, seemed to have expanded (Beaujard 2005). According to Beaujard (2005: 432), during the period of the Delhi Sultanate (in the 13<sup>th</sup> and 14<sup>th</sup> centuries) the state had difficulty in controlling both the oriental and occidental maritime shorelines of the peninsula.

Parts of this period were marked by insecurity or discontinuity. We can cite the raids by the Chola empire against Sriwijaya in the 11<sup>th</sup> century, the Yuan expedition against Java and Champa in the 13<sup>th</sup> century and the campaigns of Egypt into Yemen in the 12<sup>th</sup> century. The 14<sup>th</sup> century was marked by recessions in areas of the Indian Ocean world, due to the outbreaks of the plague in China, Egypt and western Asia and economic problems in the Ilkhanid empire, the southwest part of the Mongol empire (Beaujard 2005). India and Southeast Asia are thought to

have seen little sudden changes and, for example, small merchant sultanates seem to have flourished from the 13<sup>th</sup> century in India. In fact, India seemed to have become more prominent with a greater number of towns involved in trade networks. Calicut, along with Honavar, both on the west coast of India, are said to have become small merchant sultanates in the 14<sup>th</sup> and 15<sup>th</sup> centuries. The importance of this coastline of India in the political and economic activities of the Maldives is well known through historical sources.

Noticeable shifts occur in the Indian Ocean world from the 15<sup>th</sup> century onwards. China still remains a large trading centre but Persia and Egypt appear to lose many areas while the Ottoman Empire becomes prominent (Fig 5). Polities in India are more dispersed during this period. From the 15<sup>th</sup> to the 16<sup>th</sup> century, ruling empires include the Ming Dynasty in China, the Sultanates of Gujarat, Bengal, Deccan, the Vijayanagara empire in India, and the Ottoman and Egyptian states. The abundance of Ming pottery (both from this assemblage as well as from previous work carried out on the Maldives) perhaps can be hypothesised as a result of the above mentioned emergence of Ming empire in China, as well as the links with Gujarat which are well acknowledged in many written sources as well as some material culture (Hogendorn and Johnson 1986; Kalus and Guillot 2005; Mohamed 2014b). In China, one noticeable event is the Ming decision to withdraw from the trading system in 1433. The 15<sup>th</sup> century marks the beginning of European involvement in the Indian Ocean and the joining of that ocean with the Atlantic and Mediterranean in the 16<sup>th</sup> century. Some of the close trade connections of the Maldives with South Asia became mediated by Europeans. The material culture recovered in the excavations reported in this thesis do not reflect a great deal of European influence – just two sherds – and this is likely due to the time period which the archaeological evidence covers. With the emergence of the Atlantic slave trade and its growth in the 16<sup>th</sup> and 17<sup>th</sup> centuries, demand for Maldivian cowrie shells increased (Hogendorn and Johnson 1986); observations by the present author have confirmed that European ceramics can be very abundant on sites thought to be of this date (such as Himithi in Faafu atoll).

From the recorded history through till today, the Maldives have predominantly been a strong maritime culture, an autonomous nation, and quite an influential nation especially due to the royal monopoly of the cowrie trade. It went through periods of economic boom during this trade. However, the decline of the trade of cowries did not completely make the Maldives lose its control as it found other ways to flourish through other means. Trade, however, played a key role for the Maldivian society but it also made the best use of the limited resources found in the country. These local products were used rather efficiently to uphold and maintain diplomatic

ties with foreigners who traded and exchanged connections with the Maldives. Foreigners were welcome and treated well, to a limited extent and any act of force or control over any aspect of the nation were unwelcomed and strongly rejected. What is significant is that despite the many foreign influences over the *longue durée*, certain aspects such as the belief system (Islam) and its maritime lifestyle went through little or no changes. The Maldives, either directly or through third parties, was a crucial link in a chain of exchange networks within the global networks.

## **7.6 Ways forward**

This research and the vast information gained through this research was generated from three islands in the Maldives by conducting 16 test pits. Having established the potential of the richness of information that can be generated from a few test pits, it would not be wrong to say that the several hundreds of islands in the Maldives have the potential of producing even richer knowledge if proper research is done on them. On almost every island in the Maldives, there exist several archaeological sites that have never been studied or researched. This research has proved that a similar approach, but wider excavations and wider research on islands would be very useful and helpful that have the potential of revealing even more information about Maldivian history.

The pottery research could be enhanced by looking at other areas where similar types of pottery maybe found such as in museums or other archaeological sites in India and Sri Lanka to better understand where some of the currently unknown pottery were coming from. Clay analysis would be a very helpful approach to understand the ceramics found in the Maldives. There is much to be learnt from the pottery as well as small finds by obtaining comparatives from other regions. This could also perhaps provide insight in to the question of possible links with East Africa.

Another important and rather popular area that would be very useful is to conduct investigations on the historical archaeology of the Maldives. As has been highlighted above, the arrival of Europeans during the 16<sup>th</sup> century up to the period when Maldives became independent (20<sup>th</sup> century) is rather well documented in the Maldivian history but it is clear that there is a lack of archaeological research on this topic. By conducting archaeological research on this period, it has the potential to reveal much insight into this period of much chaos and a dominance of foreign control over the Maldives.

Moreover, it would be an interesting area of study to look at the countries that the Maldives traded with to find out if any of the goods exported from the Maldives can be visible

in the archaeology outside, such as Maldivian cowries. It is not to be ignored that most of what was exported from the Maldives are not durable goods so the likelihood of finding Maldivian products are very limited. Another field completely untouched is the underwater archaeology of the Maldives. I believe that a similar approach to the underwater archaeology will reveal much information about the trade activities conducted with the Maldives. There are several notices of ships from various parts of the world carrying various trade goods being wrecked in the Maldivian water. While some of the locations of these ships are well known, most of the locations have not been found. It is very likely that these may be preserved enough to conduct similar research which will add valuable insight in to the Indian Ocean network system.

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**Appendix 1: Historic timeline of the Maldives (Jameel and Ahmad 2012: 6-9)**

<b>DATE</b>	<b>EVENT</b>
1400 BCE and earlier	Maldives was populated as far back as this period and some form of trade existed between Maldives and Indus valley civilization.
500 BCE	One of the ships of Prince Vijeya of Sinhapura was blown off course into Maldivian waters according to old Buddhist chronicles of Sri Lanka.
300 BCE	Buddhism probably arrived when Emperor Ashoka of India (238-265 BC) dispatched Buddhist scholars to spread the religion in the region.
100 BCE- AD 800	South Indian rulers sent warships on sorties against the Maldives according to ‘Sangam’ writings (Tamil poetry).
165 BCE- AD 1020	Buddhist monasteries reported to have existed as far back as this period. A cowrie shell deposit dated from the Buddhist site in Kaashidhoo has been dated to AD 165-345 (Mikkelsen 2000). Trading of cowrie shells existed during this period.
AD 362	A delegation from Maldives presented gifts to Roman Emperor Julius according to the chronicles of Ammianus Marcellinus.
AD 658 and 662	Delegations from Maldives presented gifts to Chinese Emperor Kao Tsung of the Tang Dynasty.
AD 800s – 1200s	Persian and Arab trade in the Indian Ocean likely increased and the Maldives were exposed to greater wealth and prospects. Contemporary sources hint at trade with Arabia, India and China, involving dried fish, coconuts, coir, cowries, ambergris and tortoise shells; but it can be difficult to



	identify the Maldives with certainty within these sources.
AD 985-1014	Trade increased links with the trading settlements of Malabar coasts. The Chola King Rajaraja had some control over Maldives and Sri Lanka.
AD 1117	According to legend <i>Koimala</i> , a Malabar of noble descent arrived in Maldives and was invited by the people of Male'' to become King. He fought the Cholas and unified the Maldives for the first time in recorded history
AD 1150	The geographer Al-Idrisi gave a description of the pre-Islamic culture of islands which may be the Maldives in his writings. He also writes about a powerful and wealthy queen and of an industrious, adroit and intelligent people. However, it has been suggested (Forbes 1981) that he is talking of the Laccadives.
AD 1153	Maldives embraced Islam at the hands of Maulana Abul – Barakaathul Barbaree. The first Muslim King was known as Dharumavanatha Rasgefaanu by his people.
AD 1153	The first ' <i>Hukuru Miskiiy</i> ' (Friday mosque) was built on the location of the present Friday mosque of Male', subsequently rebuilt in 1656.
AD 1195	The early records of the history of Maldives written in copperplates bearing royal grants ( <i>Loamafanu</i> ) started from this period.
AD 1343	Ibn Battuta visited the the Maldives and spent 18 months as <i>Gaazee</i> (Chief Judge of the country)
AD 1347	Rehendhi Khadheeja the first queen recorded in history reigned over Maldives. She ruled the country three times and her reign covered 29 years. Ibn Battuta again visited briefly during this period.

AD 1379 – 1381	Reign of Sultana Raadhafathi. According to tradition, during her reign two boys came from Chittagong (Bangladesh) and one grew up to become Sultan and built two mosques in Male’.
AD 1466 – 1558	This period saw increased influence of Arabs and Persians on the Maldives. Two Arabs and a son of a Persian concubine were among those who ruled the country. This period also saw deals and exerted influence by the Rajas of Connanore (district in Kerala, India) for annual tributes and armed expeditions from the Portuguese to control the trade.
AD 1552	After ruling over 2 years, Sultan Hassan went to Cochin and renounced Islam to become a Christian. Based in Cochin and with the help of Portuguese his efforts to convert more Maldivians failed.
AD 1558	After many armed expeditions by the Portuguese the martyrdom of Sultan Ali in the hands of the Portuguese made the Maldives the subject of a 15-year rule by the Portuguese.
AD 1573 – 1585	Liberation of the Maldives from the Portuguese after a long struggle lead by Bodu Thakurufaanu and his two brothers. S. Gazi Mohamed Thakurufaan (Bodu Thakurufaanu) reigned for 12 years. During this period justice and principles of Islam were strengthened.
AD 1585 – 1609	The struggle to control the Maldives continues. Sultan Ibrahim III, having ruled for 24 years 2 months, was martyred in a battle fought at sea with the Malabars. They took away his younger brother Kalhuthukkala (later Bodu Rasgefaanu) to Connanore.
AD 1648 – 1687	Reign of Ibrahim Iskandhar I. The last of the Portuguese failed attacks were during this period. During this time the Annual payment

	to Raja of Connanore was stopped and their armed expeditions increased.
AD 1657	Construction of ' <i>Male' Hukuru Miskiiy</i> '
AD 1668	<i>Male' Hukuru Miskiiy</i> gate was made as a place to teach Quran for children.
AD 1675	<i>Male' Hukuru Miskiiy</i> minaret was built.
AD 1692 – 1701	Reign of Sultan Mohammed Devvadhu, remembered as a very learned and religious man.
AD 1692 – 1701	Construction of several Friday mosques in different parts of Maldives
AD 1750 – 1757	After betrayal and a plot by the chief judge Shamsuddheen and his brother, Ali Raja of Connanore raided the Maldives, took away Sultan Muhammed Imadudeen and his nephew and torched the palace and many parts of Male'.
AD 1759 – 1767	The Malabars ruled for 3 months and 20 days. The Maldives were liberated by Dhon Bandaara, later known as Sultan Hassan Izzudhdheen, defeating the Malabars with the help of the French.
AD 1815	Construction of the last coral stone mosque in Male', Male' Eid mosque
AD 1815 – 1820	Many natural disasters such as an earthquake, storms and tornado and famine hit the country, reducing the people to poverty and forcing migration to islands nearby.
AD 1887	The Maldives became a British protectorate during the reign of Muhammed Mueenudhdheen II.
AD 1903	Sultan Shamsudhdheen Iskandhar ascended the throne for the second time. Many economic and infrastructural developments came during this period. However, it was also a politically volatile period.

AD 1932	The first Constitution was ratified by the king.
AD 1939 – 1945	During the Second World War, the Maldives faced difficult times with famine and loss of foreign trade.
AD 1953	The first republic was formed but it was short-lived after a coup removed the first president Mohamed Amin from office.
AD 1965	Maldives became independent from the status of a 'British Protectorate' on 26 July 1965.

## **Appendix 2: Report on the faunal assemblages from the Maldives 2016 excavations (Christie 2018)**

### **Introduction**

This report outlines the outcomes of analysis of the faunal remains from the excavations in the Maldives in 2016. This assessment covers material from the following trenches:

Veyvah:

- VEY16-01
- VEY16-02
- VEY16-03
- VEY16-04
- VEY16-05

Male’:

- MAL16-01 – Units E4, E7, E14, N2, N5, N9 and N12.

Utheemu:

- UTH16-01
- UTH16-02
- UTH16-04
- UTH16-05

As UTH16-03 was re-excavated in 2017 the faunal remains from this trench are excluded from this analysis.

### **Method**

The shells were identified to species level, where possible; the bones were divided into marine (fish cranial elements or post cranial elements (vertebra and fin spines), and terrestrial fauna (grouped by bird bone, mammal bone (cow, sheep or goat), reptile and unknown). These categories were considered comparatively within and between trenches and regions.

Any evidence of human activity was recorded. For shells, this included any evidence of deliberate modification (e.g. removal of the dorsum for cowries) and evidence for burning; for bones, this also included any evidence of butchery such as cut marks, chop marks or evidence of scraping. It should be noted that the majority of the bones within the assemblage were fragmentary and with a few exceptions, primarily from VEY16-05 and from UTH16-05 (where

a small number of the bones were burnt, very few showed evidence of anthropogenic modifications.

## Result

4850 mollusc remains, and 2841 fish and animal bones were recovered from the 2016 excavations. These were fairly evenly distributed between the three islands (Table 1).

48% (n=2314) of the total shell assemblages comprised cowrie shells. 76% (n=1764) were recovered in Male', and of these 74% (n=1316) were recovered from a single context (Context 2, N12) (Figure 1). In Male' and Utheemu, the cowrie assemblages were dominated by *Monetaria moneta* (Table 1). While the assemblage from Veyvah had a more even mix between *Monetaria moneta* and other cowrie species in combination (particularly *Helvola argella* and *Palmadusta asselus*), *Monetaria moneta* was still more dominant overall (Annex 1).

	Monetaria moneta	Other Cowries	Other Shell	Fish Cranial	Fish Post Cranial	Terrestrial Fauna	Unknown Bones	Total
Veyvah	95	116	668	265	937	95	97	<b>2273</b>
Male'	1635	129	842	23	32	116	75	<b>2852</b>
Utheemu	287	52	1026	292	638	138	133	<b>2433</b>

Table 1: Overall assemblages from each of the islands excavated

The fish remains from all three islands were dominated by post cranial elements (comprising vertebra and fin spines). There is an interesting absence of either cranial or post cranial fish remains in the assemblages from Male' which, with the exception of the cowrie cache in test pit N12 were dominated by 'Other Shell' (Figure 1, Annex 2). While in shallower contexts, these other shells comprise material from 'beach sand', *Atactodea glabrata* become increasingly dominant in later contexts across the site (Annex 2). Terrestrial fauna is underrepresented in all the assemblages, with the majority of these comprising bird bones and commensural fauna like rodents or bats.

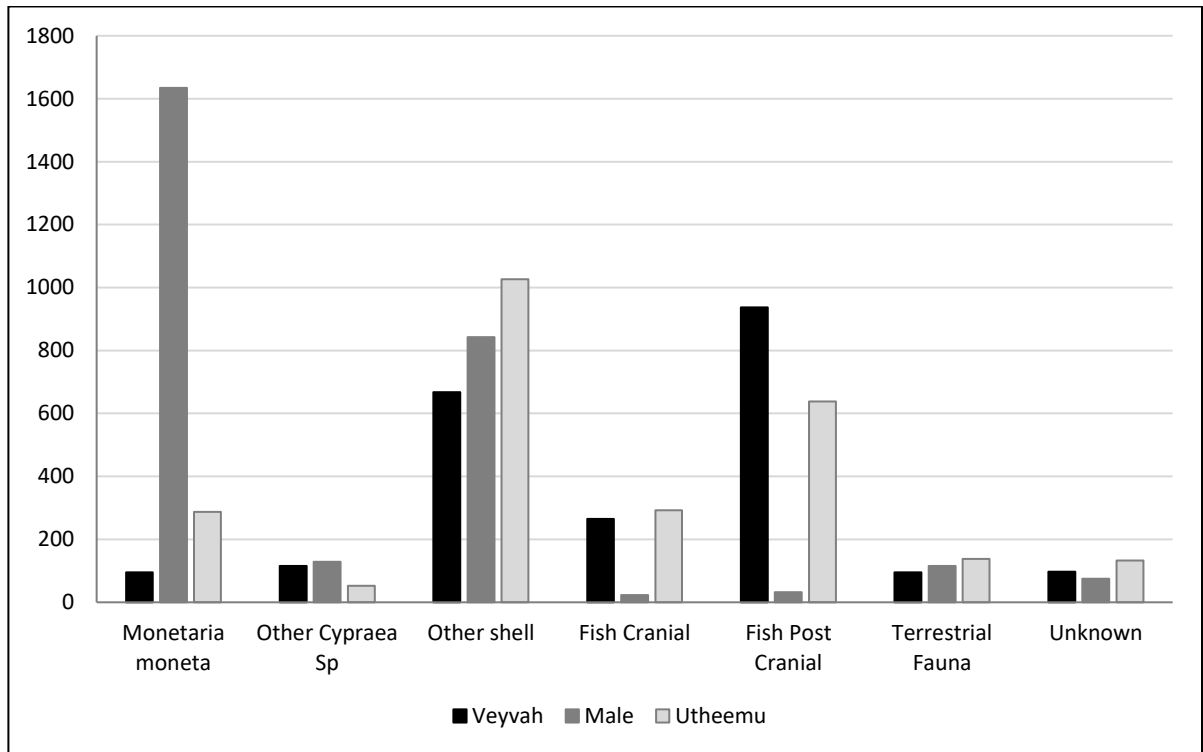


Figure 1: Proportions of different categories of fauna represented

### Veyvah

The majority of the remains from Veyvah issued from VEY15-05 (Figure 2, Table 2, Annex 1). These were dominated fish remains, particularly vertebra and fin spines. The material from this trench was generally well preserved and initial assessment of the remains points to the presence of reef fish (including parrot fish) in the assemblage. Most of the remains from this trench were recovered from Context 4 (Annex 1), which is thought to have been part of the fill for a pit. As noted above, the assemblages from Veyvah also comprised a higher diversity of cowrie species than those from the other islands. Some of these species have a preference for seagrass environments which dominate the surrounding shallow waters.

	<i>Monetaria moneta</i>	Other Cowries	Other Shell	Fish Cranial	Fish Post Cranial	Terrestrial Fauna	Unknown Bones	Total
VEY16-01	5	8	90	8	6	2	2	<b>119</b>
VEY16-02	0	0	45	0	0	0	0	<b>45</b>
VEY16-03	24	5	102	12	28	2	2	<b>173</b>
VEY16-04	9	14	196	1	5	0	2	<b>225</b>
VEY16-05	57	89	235	244	898	91	91	<b>1614</b>

Table 2: Composition of Veyvah assemblages

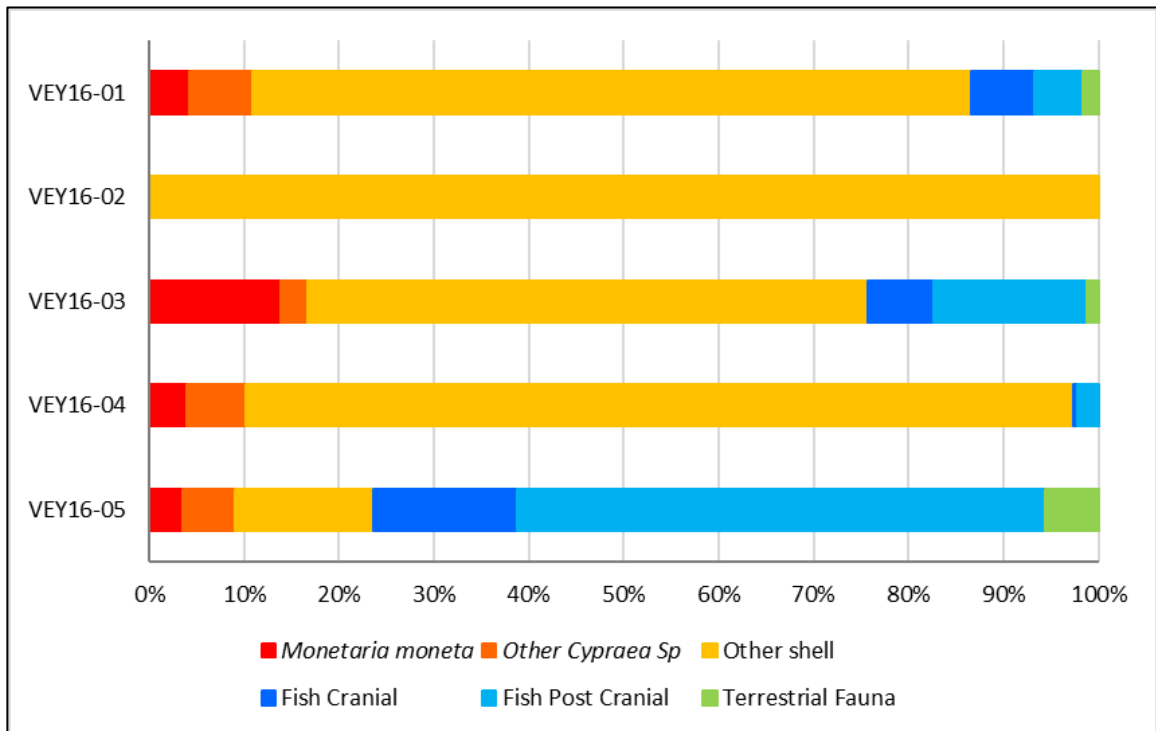


Figure 2: Composition of the Veyvah assemblages

### Male'

With the exception of the material from Unit N12 which contained a cowrie cache in Context 2 - accounting for the very high dominance of cowries in the assemblage from that unit overall (Figure 4), the assemblages from Male' were fairly consistent across the site (Figure 3, Table 3, Annex 2). Although a high proportion of the 'Other Shell' comprises fragments of various species of shell within beach sand, the assemblages from Male' also have a high dominance of *Atactodea glabrata*, particularly in deeper contexts (Annex 2). This species was noted in interviews as having been deliberately collected, though the purpose of collecting these shells is unclear. It is unlikely that these would have been eaten.



	Monetaria moneta	Other Cowries	Other Shell	Fish Cranial	Fish Post Cranial	Terrestrial Fauna	Unknown Bones	Total
MAL16-01 UNIT E4	46	10	92	2	3	6	4	163
MAL16-01 UNIT E7	50	4	86	2	2	5	5	154
MAL16-01 UNIT E14	40	5	71	8	5	32	15	176
MAL16-01 UNIT N2	32	10	59	3	0	10	7	121
MAL16-01 UNIT N5	52	8	30	0	5	12	12	119
MAL16-01 UNIT N9	55	7	92	1	8	11	6	180
MAL16-01 UNIT N12	1360	85	412	7	9	40	26	1939

Table 3: Composition of Male' assemblages

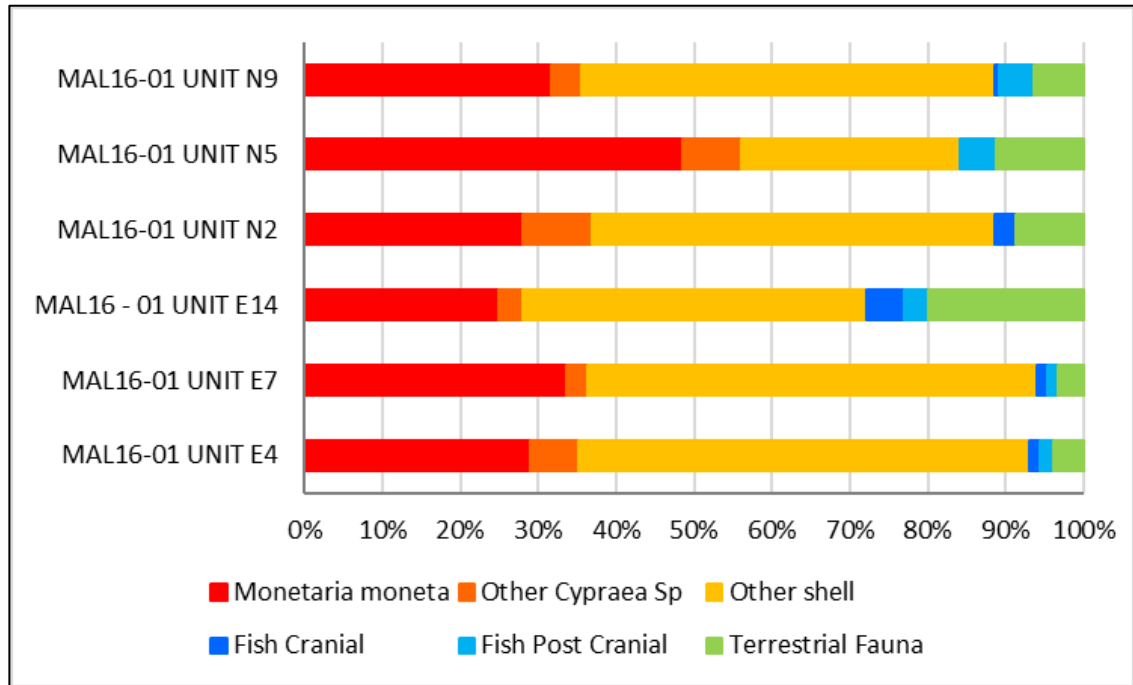


Figure 3: Composition of Male' assemblages (excluding N12)

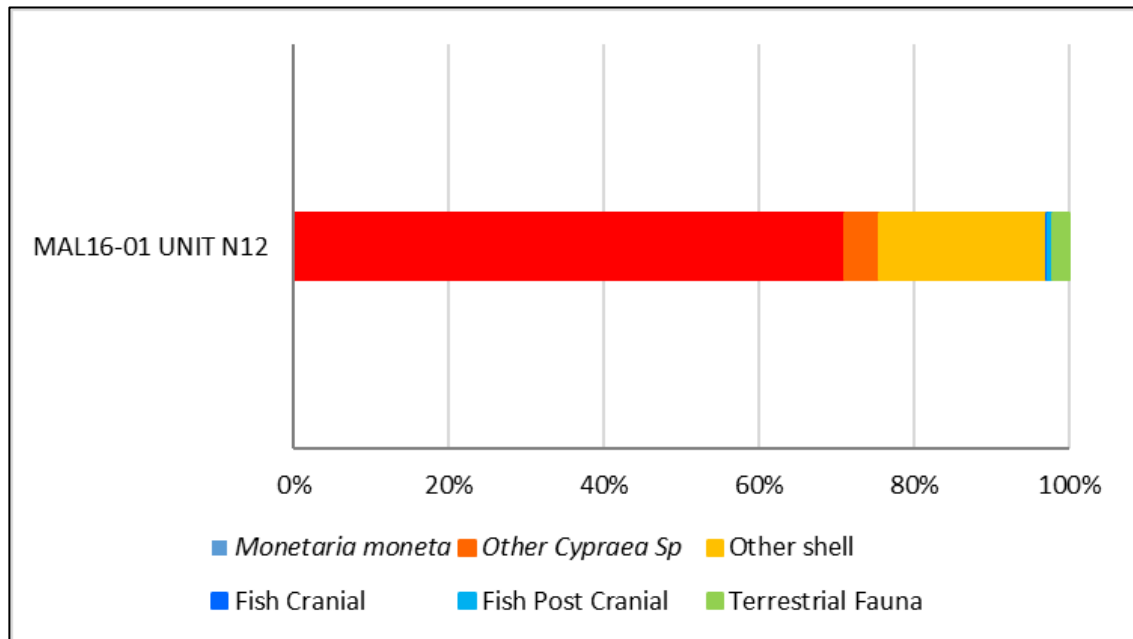


Figure 4: Composition of Male' Unit N12 showing dominance of *Monetaria moneta*

## Utheemu

The majority of the remains from Utheemu were recovered from UTH16-04 and UTH16-05 – with the former representing the largest assemblage from the island overall. This in itself is possibly to be expected given the size of the excavation area; however, there are some striking differences between the two excavation areas. In UTH15-05 there is a noticeable absence of cowrie shells in the deposits (while these were present they represent a very small proportion of the assemblage overall (just 3% of the deposits compared with 17% in UTH16-04). While we were unable to recover a cowrie hoard in the scale of similar deposits adjacent to other palace entrances, a large number of cowries, particularly *Monetaria moneta* (representing 15% of the assemblage overall).

Also noteworthy is the comparative abundance of fish cranial remains within this trench (20% of the total assemblage, and 60% of the fish remains; compared with 8% of the assemblage from UTH16-04 or 20% of the fish remains). These are particularly abundant in contexts 217, 220 and 224. This difference may suggest differential discard patterns for fish remains – or that being a kitchen area where fish would have been processed a greater proportion of the uneaten carcass may be discarded in that area.

Like Male', a high proportion of the 'Other Shells' in UTH16-05 comprised *Atactodea glabrata* which were particularly dominant in context 229 (n=87). This context also contained a high number of other shell fragments, interpreted as issuing from beach sand. *Atactodea*

*glabrata* were much less common in the deposits from UTH16-04 – representing just 4% (n=87) of the total assemblage of shell and bone compared with 33% (n=187) of the total assemblage from UTH16-05.

	Monetaria moneta	Other Cowries	Other Shell	Fish Cranial	Fish Post Cranial	Terrestrial Fauna	Unknown Bones	Total
UTH16-01	8	5	85	5	12	5	3	123
UTH16-02	2	1	31	23	58	14	14	143
UTH16-04	264	40	563	150	501	111	106	1735
UTH16-05	13	6	347	114	67	8	10	565

Table 4: Composition of Utheemu assemblages

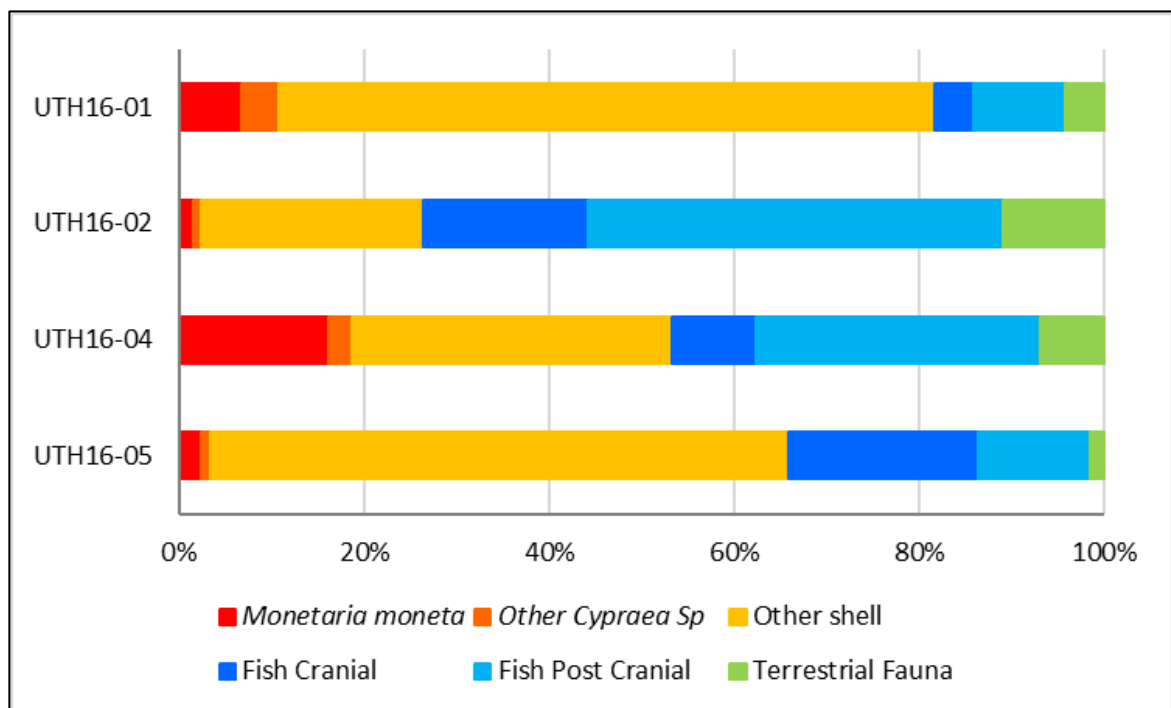


Figure 5: Composition of Utheemu assemblages

## Conclusion

Given the differences in excavation context and scale it is quite difficult to make definitive interpretations. Cowrie shells were particularly dominant in the material from Male' and from Utheemu Palace which could be associated with evidence of the higher wealth of those two areas. There is little evidence of the exploitation of terrestrial resources across the excavation areas. With the majority of these remains representing bird rather than ungulate (cow, sheep or goat) remains. This is consistent with the idea that Maldivian communities were largely reliant

on the sea for their subsistence. The evidence for this is particularly clear in the remains from UTH16-04, UTH16-05 and VEY16-05 with the majority of the fish bone recovered from these areas. The comparative absence of such remains from Male' and other units in Veyvah highlights the importance of both the location of excavations (selecting areas that are likely to have been associated with the discard of remains), and the importance of the sampling strategy – ensuring that all deposits are sieved with an appropriately small mesh size.

## ANNEX 1: VEYVAH

### VEY16-01

<b>Cowries/ Context</b>	<b>1</b>	<b>2</b>
<i>Cypraea moneta</i>		5
<i>Erosaria lamarckii</i>	1	
<i>Helvola argella</i>		1
<i>Cypraea Sp.</i>	1	5
<b>Other Shell</b>		
<i>Strombus gibberulus</i>		2
<i>Atactodea glabrata (L)</i>	1	29
<i>Atactodea glabrata (R)</i>	1	26
<i>Nerita Sp.</i>		1
<i>Tridacna Sp.</i>		1
Other Intact	1	2
Other Frag	5	21
<b>Fish</b>		
Fish Bone (Cranial)	3	5
Fish Bone (Vertebra)	2	2
Fish (Other Post Cranial)		2
<b>Terrestrial</b>		
Bird		
Ungulate		
<b>Other Bone</b>		
Unknown		2

### VEY16-02

<b>Other Shells/Context</b>	<b>2</b>
<i>Atactodea glabrata (L)</i>	19
<i>Atactodea glabrata (R)</i>	14
Other Intact	1
Other Frag	11
<b>Fish</b>	
Fish Bone (Cranial)	
Fish Bone (Vertebra)	
Fish (Other Post Cranial)	
<b>Terrestrial</b>	
Bird	
Ungulate	
<b>Other Bone</b>	
Unknown	

**VEY16-03**

<b>Cowries/ Context</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<i>Cypraea moneta</i>	12	3	8	1	
<i>Cypraea annulus</i>			1		
<i>Cypraea Sp</i>	4				
<b>Other Shell</b>					
<i>Atactodea glabrata (L)</i>	1	1			
<i>Atactodea glabrata (R)</i>	1	3	1		
Other Intact	2	3	1		
Other Frag	4	34	9	38	4
<b>Fish</b>					
Fish Bone (Cranial)	8	3	1		
Fish Bone (Vertebra)	12	6	8		
Fish (Other Post Cranial)	2				
<b>Terrestrial</b>					
Bird					
Ungulate					
<b>Other Bone</b>					
Unknown		2			

**VEY16 -04**

<b>Cowries/ Context</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<i>Cypraea moneta</i>	3			6
<i>Cypraea annulus</i>				5
<i>Palmadusta aselus</i>				1
<i>Helvola argella</i>				5
<i>Cypraea Sp.</i>	2			1
<b>Other Shells</b>				
<i>Atactodea glabrata (L)</i>	39	19		7
<i>Atactodea glabrata (R)</i>	28	21		5
<i>Conus Sp.</i>	1			1
<i>Tridacna Sp.</i>				1
Other Intact	21	6		
Other Frag	27	12		8
<b>Fish</b>				
Fish Bone (Cranial)	1			
Fish Bone (Vertebra)	3	2		
Fish (Other Post Cranial)				
<b>Terrestrial</b>				
Bird				
Ungulate				
<b>Other Bone</b>				
Unknown				

**VEY16-05**

<b>Cowries/ Context</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>Section</b>
<i>Cypraea moneta</i>	3	3	20	25	2						4
<i>Cypraea annulus</i>		1	2	4							
<i>Palmadusta aselus</i>			5	12			3				1
<i>Pustularia cicercula</i>				1							
<i>Helvola argella</i>	1		14	13							3
<i>Cypraea Sp.</i>	1		18	8			2				
<b>Other Shells</b>											
<i>Strombus gibberulus</i>			3								
<i>Atactodea glabrata (L)</i>	7	6	15	16			2				2
<i>Atactodea glabrata (R)</i>	4	9	15	20			2				1
<i>Conus Sp.</i>		1	3								
<i>Nerita Sp.</i>				1							
<i>Tridacna Sp.</i>			1								
Other Intact	1	6	9	11							2
Other Frag	2	15	19	53	1		4				4
<b>Fish</b>											
Fish Bone (Cranial)	1	1	18	208	1		9				6
Fish Bone (Vertebra)	5	3	54	676	1		46				23
Fish (Other Post Cranial)	1		2	76			11				
<b>Terrestrial</b>											
Bird											
Ungulate											
<b>Other Bone</b>											
Unknown			5	72			14				

**ANNEX 2: MALE'**

**MAL16-01 UNIT E7**

<b>Cowries/ Context</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<i>Cypraea moneta</i>		21	7	22
<i>Helvola argella</i>		1		
<i>Cypraea Sp.</i>		3		
<b>Other Shells</b>				
<i>Strombus gibberulus</i>				3
<i>Atactodea glabrata (L)</i>		4	8	32
<i>Atactodea glabrata (R)</i>		3	6	17
Other Frag		10		3
<b>Fish</b>				
Fish Bone (Cranial)			1	1
Fish Bone (Vertebra)				1
Fish (Other Post Cranial)		1		
<b>Terrestrial</b>				
Bird				
Ungulate				
<b>Other Bone</b>				
Unknown			1	4

**MAL16 - 01 UNIT E14**

<b>Cowries/ Context</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<i>Cypraea moneta</i>			11	14	12	3
<i>Cypraea Sp.</i>				3	1	1
<b>Other Shells</b>						
<i>Strombus gibberulus</i>					1	2
<i>Atactodea glabrata (L)</i>				3	3	5
<i>Atactodea glabrata (R)</i>			1	3	2	7
<i>Conus Sp.</i>				3		
<i>Nerita Sp.</i>				4		
Other Intact			3	2		2
Other Frag			9	14	2	5
<b>Fish</b>						
Fish Bone (Cranial)			1	2	2	3
Fish Bone (Vertebra)				1		2
Fish (Other Post Cranial)			1		1	
<b>Terrestrial</b>						
Bird			1	2	4	
Ungulate						
<b>Other Bone</b>						
Unknown			7	5	3	
Reptile				10		



### MAL16-01 UNIT E4

Cowries/ Context	1	2	3	4	5
<i>Cypraea moneta</i>			29	12	5
<i>Cypraea annulus</i>				1	
<i>Helvola argella</i>				1	
<i>Cypraea Sp.</i>			5	1	2
<b>Other Shells</b>					
<i>Strombus gibberulus</i>	2		1	1	1
<i>Atactodea glabrata (L)</i>			3	7	14
<i>Atactodea glabrata (R)</i>		1	1	11	29
<i>Conus Sp.</i>				1	
<i>Nerita Sp.</i>			1		
<i>Tridacna Sp.</i>				2	
Other Intact	6			1	3
Other Frag			3	4	
<b>Fish</b>					
Fish Bone (Cranial)				1	1
Fish Bone (Vertebra)				2	
Fish (Other Post Cranial)					1
<b>Terrestrial</b>					
Bird					
Ungulate			1		1
<b>Other Bone</b>					
Unknown			1	2	1

### MAL16-01 UNIT N12

Cowries/ Context	1	2	3	4	5	Mixed
<i>Cypraea moneta</i>	12	1246	64	8	3	27
<i>Cypraea annulus</i>		4	1			0
<i>Pustularia cicercula</i>		1				0
<i>Palmadusta aselus</i>		3				1
<i>Helvola argella</i>		3	1	1		0
<i>Cypraea Sp.</i>	2	59	6	3		0
<b>Other Shells</b>						
<i>Strombus gibberulus</i>	12	1	3	6		3
<i>Atactodea glabrata (L)</i>		19	18	26	1	9
<i>Atactodea glabrata (R)</i>		17	13	28		11
<i>Conus Sp.</i>	9	3				0
<i>Nerita Sp.</i>		2				0
<i>Tridacna Sp.</i>		1				0
Other Intact	26	18	4			1
Other Frag	102	46	24	5	2	2
<b>Fish</b>						
Fish Bone (Cranial)		4	1		1	1
Fish Bone (Vertebra)		5	3			0
Fish (Other Post Cranial)				1		0
<b>Terrestrial</b>						
Bird		3		5		2
Ungulate		3				0
<b>Other Bone</b>						
Unknown		11	13	1		2

### MAL16-01 UNIT N9

Cowries/ Context	1	2	3	4	5
<i>Cypraea moneta</i>			38	15	2
<i>Cypraea annulus</i>			1	1	
<i>Pustularia cicercula</i>					1
<i>Ipsa childreni</i>	1				
<i>Palmadusta aselus</i>	1		1		
<i>Euriosaria erosa</i>	1				
<b>Other Shells</b>					
<i>Strombus gibberulus</i>	1			3	1
<i>Atactodea glabrata (L)</i>			6	10	15
<i>Atactodea glabrata (R)</i>			4	11	15
Other Intact	6	1	6		
Other Frag			7	5	1
<b>Fish</b>					
Fish Bone (Cranial)			1		
Fish Bone (Vertebra)			7		1
Fish (Other Post Cranial)					
<b>Terrestrial</b>					
Bird				1	4
Ungulate					
<b>Other Bone</b>					
Unknown			1	5	

### MAL16-01 UNIT N5

Cowries/ Context	1	2			
<i>Cypraea moneta</i>	7	45			
<i>Cypraea annulus</i>		4			
<i>Cypraea Sp.</i>		4			
<b>Other Shells</b>					
<i>Strombus gibberulus</i>		1			
<i>Atactodea glabrata (L)</i>		3			
<i>Atactodea glabrata (R)</i>		6			
Other Intact	1	1			
Other Frag	2	16			
<b>Fish</b>					
Fish Bone (Cranial)					
Fish Bone (Vertebra)		4			
Fish (Other Post Cranial)		1			
<b>Terrestrial</b>					
Bird					
Ungulate					
<b>Other Bone</b>					
Unknown		12			

**MAL16-01 UNIT N2**

<b>Cowries/ Context</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<i>Cypraea moneta</i>	1	11	4	8	8
<i>Cypraea annulus</i>		2	1	1	
<i>Euriosaria erosa</i>		1			
<i>Erosaria lamarckii</i>			1		1
<i>Cypraea Sp.</i>		2	0	1	
<b>Other Shells</b>					
<i>Strombus gibberulus</i>	1		2	4	3
<i>Atactodea glabrata (L)</i>		4	6	5	6
<i>Atactodea glabrata (R)</i>		2	4	5	9
<i>Conus Sp.</i>		1			
Other Intact				4	
Other Frag		1		1	1
<b>Fish</b>					
Fish Bone (Cranial)			1		2
Fish Bone (Vertebra)					
Fish (Other Post Cranial)					
<b>Terrestrial</b>					
Bird			1		2
Ungulate					
<b>Other Bone</b>					
Unknown			2	4	1

**ANNEX 3: UTHEEMU**

**UTH16-01**

<b>Cowries/ Context</b>	<b>Surface</b>	<b>0 - 10cm</b>	<b>10 - 20cm</b>	<b>20 - 30cm</b>	<b>30 - 40cm</b>	<b>60 - 70cm</b>	<b>White layer</b>	<b>Upper Interface</b>	<b>Lower Interface</b>
<i>Cypraea moneta</i>		2	2			1	2	1	
<i>Pustularia cicercula</i>		1							
<i>Cypraea Sp.</i>					2		2		
<b>Other Shells</b>									
<i>Strombus gibberulus</i>		1					1		
<i>Atactodea glabrata (L)</i>		2		1	1				
<i>Atactodea glabrata (R)</i>		1	1	2	1	2			
<i>Conus Sp.</i>	1		2	2					
<i>Tridacna Sp.</i>		1	1		1				
Other Intact	1	1	2	2					
Other Frag	6	18	11	15	4	3			1
<b>Fish</b>									
Fish Bone (Cranial)				1		4			
Fish Bone (Vertebra)	2	2	1	3	1	3			
Fish fin spine/ trigger									
<b>Terrestrial</b>									
Bird			1					1	
Ungulate									
<b>Other Bone</b>									
Unknown			2			1			

**UTH16-02**

<b>Cowries/ Context</b>	<b>Top Layer</b>	<b>1</b>	<b>2</b>	<b>Mid Layer</b>
<i>Cypraea moneta</i>	2			
<i>Cypraea Sp.</i>	1			
<b>Other Shells</b>				
<i>Strombus gibberulus</i>	1			
<i>Atactodea glabrata (R)</i>		1		
Other Intact	3	1		
Other Frag	24	1		
<b>Fish</b>				
Fish Bone (Cranial)	16	6		1
Fish Bone (Vertebra)	32	13	1	3
Fish (Other Post Cranial)		8		1
<b>Terrestrial</b>				
Bird				
Ungulate				
<b>Other Bone</b>				
Unknown	10	4		

**UTH16-04**

Cowries/ Context	101	102	103	103N	106	107	108	109	110	111	111N	117	118	118N	119	100 N.Ext	102 N.Ext	103N.Ext	106 N.Ext	107 N.Ext	108 N.Ext	111 N.Ext	118 N.Ext	119	120	122	123	Section	Section	
<i>Cypraea moneta</i>	5	11	3	1	5		3		6	39	6	2	32	4		1	7	1	2		4	6	36	15	2	62	3		8	
<i>Cypraea annulus</i>										2			2		3											4				
<i>Cypraea caputserpentis</i>																										3				
<i>Ipsa childreni</i>									2																					
<i>Pustularia cicercula</i>																										2	1			
<i>Palmadusta aselus</i>															1															
<i>Helvola argella</i>		1																												
<i>Cypraea Sp.</i>		2	1		1				2				2						1			1	2	2	1	2	1		1	
<b>Other Shells</b>																														
<i>Strombus gibberulus</i>									1	1					2										3	1	3	6	2	
<i>Atactodea glabrata (L)</i>		4			2	1			1	3	1		1				3					1	8	1		4	1		3	
<i>Atactodea glabrata (R)</i>		2			2		2		3	2			1				2				1	1	4	1		8	1	2	3	
<i>Conus Sp.</i>		1		1					1	1					1									1		5				
<i>Nerita Sp.</i>											1			1			1									1	1		1	
<i>Tridacna Sp.</i>		1																								1	2			
Other Intact		1	1						5	3	1		8		1		2						7	4	1	4	2			
Other Frag	2	43	12		9	2	7	3	32	42	4		23	1	2		20	2	3	4	2	5	56	12	15	76	10	1	26	
<b>Fish</b>																														
Fish Bone (Cranial)		3	4		2		5	4	12	21	3	1	7		4		2		3	1	4		10	3	5	36	7	2	11	
Fish Bone (Vertebra)		12	4		6	3	5	1	44	47	4		25	8	6		6	1	13	9	20	6	51	13	23	97	27	4	26	
Fish (Other Post Cranial)		1					1	1	10	5	1	1	2						2		3	1	1	4		6			1	
<b>Terrestrial</b>																														
Bird											2																		1	1



Appendix 3: Description of individual earthen ware sherds

Sherd No	Site	Unit	Context	Colour	Decorated (D)/ Undecorated (UD)	Sherd Type	Size	Decoration	Further Comments
1	VEY 16	1	1	Reddish Brown	UD	Body	BT 50L		
2	VEY 16	1	1	Reddish Brown	UD	Body	BT 50L		
3	VEY 16	1	1	Reddish Brown	UD	Body	BT 50L		
4	VEY 16	1	1	Orange	UD	Body	BT 50L		
5	VEY 16	1	1	Reddish Brown	UD	Body	BT 50L		
6	VEY 16	1	1	Brown	UD	Body	BT 50L		
7	VEY 16	1	1	Greyish Brown/Whitish	UD	Body	BT 50L		
8	VEY 16	1	1	Greyish Brown/Whitish	UD	Body	BT 50L		
9	VEY 16	1	1	Greyish Brown/Whitish	UD	Body	BT 50L		
10	VEY 16	1	1	Greyish Brown/Whitish	UD	Body	BT 50L		
11	VEY 16	1	1	Greyish Brown/Whitish	UD	Body	BT 50L		
12	VEY 16	1	1	Greyish Brown/Whitish	UD	Body	BT 50L		
13	VEY 16	1	1	Greyish Brown/Whitish	UD	Body	BT 50L		
14	VEY 16	1	2	Greyish Brown/Whitish	UD	Body	BT 50L		
15	VEY 16	1	2	Brown	UD	Body	BT 50L		
16	VEY 16	1	2	Dark Brown	UD	Body	BT 50L		Black exterior
17	VEY 16	1	2	Reddish Brown	UD	Body	BT 50L		
18	VEY 16	1	2	Brown	UD	Body	BT 50L		Black exterior, two sherds, refit
19	VEY 16	1	2	Dark Brown	UD	Body	BT 50L		Black exterior
20	VEY 16	1	2	Reddish Brown	UD	Body	BT 50L		
21	VEY 16	1	2	Brown	UD	Rim	ST 05cm		Very coarse
24	VEY 16	3	1	Reddish Brown	UD	Body	BT 50L		
25	VEY 16	3	2	Reddish Brown	UD	Body	BT 50L		Black exterior
26	VEY 16	3	1	Light Orangish/Brown	UD	Body	BT 50L		Rather light creamy
27	VEY 16	3	2	Reddish Brown	UD	Body	BT 50L		
28	VEY 16	3	2	Reddish Brown	UD	Body	BT 50L		
29	VEY 16	3	2	Reddish Brown	UD	Body	BT 50L		
30	VEY 16	3	2	Reddish Brown	UD	Body	BT 50L		
31	VEY 16	3	2	Light Creamy	D	Rim	ST 05CM	Raised band	Colour similar to sherd 26- light yellowish/creamy
34	VEY 16	3	3	Reddish Brown	D	Body	BT 50L	Indistinct	
36	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		Two sherds, refit
37	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
38	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
39	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
40	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
41	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
42	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
43	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
44	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
45	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
46	VEY 16	5	1	Light Creamy/Pinkish	UD	Body	BT 50L		
47	VEY 16	5	1	Light Creamy/Pinkish	UD	Body	BT 50L		
48	VEY 16	5	1	Light Brown	UD	Body	BT 50L		

49	VEY 16	5	1	Light Brown	UD	Body	BT 50L		
50	VEY 16	5	1	Red	D	Body	BT 50L	Carinated, Raised Band	
51	VEY 16	5	1	Reddish Brown	D	Body	BT 50L	Raised Band	
52	VEY 16	5	1	Brown	D	Body	BT 50L	Indistinct	
53	VEY 16	5	1	Pinkish Orange	D	Body	BT 50L	Waffle	
54	VEY 16	5	1	Reddish Brown	UD	Body	BT 50L		
55	VEY 16	5	1	Reddish Brown	UD	Rim	BT 05cm		
57	VEY 16	5	2	White	D	Body	BT 50L	Linear Paddled	
58	VEY 16	5	2	Reddish Brown	UD	Body	BT 50L		
59	VEY 16	5	2	Reddish Brown	D	Body	BT 50L	Raised Band	
60	VEY 16	5	2	Red	UD	Body	BT 50L		
61	VEY 16	5	2	Red	UD	Body	BT 50L		
62	VEY 16	5	2	Red	UD	Body	BT 50L		
63	VEY 16	5	2	Light Grey/White	UD	Body	BT 50L		
64	VEY 16	5	2	Light Grey/White	UD	Body	BT 50L		
65	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
66	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
67	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
68	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
69	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
70	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
71	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
72	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
73	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
74	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
75	VEY 16	5	4	Reddish Brown	UD	Body	BT 50L		
76	VEY 16	5	4	Dark Brown	UD	Body	BT 50L		
77	VEY 16	5	4	Dark Brown	UD	Body	BT 50L		
79	VEY 16	5	4	Light Orangish	UD	Body	BT 50L		
80	VEY 16	5	4	Light Grey/White	UD	Body	BT 50L		
81	VEY 16	5	4	Reddish Brown	D	Rim	ST 05cm	Raised band	
84	VEY 16	5	4	Reddish Brown	D	Rim	ST 05cm	Two parallel raised bands and a chanel in between	Very small amount of lip present
85	VEY 16	5	4	Reddish Brown	UD	Rim	ST 05cm		Broken rim, very coarse and worn out
86	VEY 16	5	4	Reddish Brown	D	Body	BT 50L	Carinated, raised band	
87	VEY 16	5	4	Dark Brown	UD	Body	BT 50L		
88	VEY 16	5	4	Brown	D	Body	BT 50L	Two parallel raised bands and a chanel in between followed by further indistinct decoration	Black Interior
89	VEY 16	5	4	Dark Brown	D	Body	BT 50L	Raised band	Black exterior
90	VEY 16	5	4	Reddish Brown	D	Body	BT 50L	Carinated	
91	VEY 16	5	7	Light Orangish	D	Rim	BT 05cm	Multiple parallel incisions and a raised band on the lip	
94	VEY 16	5	7	Brown	D	Body	BT 50L	Indistinct	
95	VEY 16	5	7	Reddish Brown	UD	Body	BT 50L		
96	VEY 16	5	7	Dark Brown	UD	Body	BT 50L		
97	VEY 16	5	7	Dark Brown	UD	Body	BT 50L		
98	VEY 16	5	9	Dark Brown	UD	Rim	ST 05cm		Only lip present, too small for analysis
99	VEY 16	5	9	Reddish Brown	UD	Body	BT 50L		
100	VEY 16	5	9	Dark Brown	UD	Body	BT 50L		Two sherds, refit
101	VEY 16	5	9	Reddish Brown	UD	Rim	ST 05cm		Only lip present, too small for analysis
102	VEY 16	5	9	Dark Brown	UD	Body	BT 50L		



104	VEY 16	5	Section Clean	Light Orange	UD	Rim	ST 05cm		Very worn out
105	VEY 16	5	Section Clean	Reddish Brown	D	Rim	BT 05cm	Raised Band	
106	VEY 16	5	Section Clean	Dark Brown	UD	Body	BT 50L		
107	VEY 16	5	Section Clean	Reddish Brown	UD	Body	BT 50L		
108	VEY 16	5	Section Clean	Dark Brown	UD	Body	BT 50L		
109	VEY 16	5	Section Clean	Reddish Brown	UD	Body	BT 50L		
110	VEY 16	5	Section Clean	Reddish Brown	UD	Body	BT 50L		
111	VEY 16	5	Section Clean	Dark Brown	UD	Body	BT 50L		
112	VEY 16	5	Section Clean	Reddish Brown	UD	Body	BT 50L		
113	VEY 16	5	Section Clean	Brown	UD	Body	BT 50L		
114	VEY 16	5	Section Clean	Brown	UD	Body	BT 50L		
115	VEY 16	5	Section Clean	Brown	UD	Body	BT 50L		
116	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
117	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
118	VEY 16	5	3	Dark Brown	UD	Body	BT 50L		Very rough
119	VEY 16	5	3	Dark Brown	UD	Body	BT 50L		
120	VEY 16	5	3	Brown	UD	Body	BT 50L		Very friable
121	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		Black exterior
122	VEY 16	5	3	Grey	UD	Body	BT 50L		Several cracks and inclusions on the surface, hint of orange on the surface
123	VEY 16	5	3	Black	UD	Body	BT 50L		Several inclusions on the surface
124	VEY 16	5	3	Black	D	Body	BT 50L	Burnished	Smooth, comparatively thin about 3mm
125	VEY 16	5	3	Dark Brown	UD	Body	BT 50L		
126	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
127	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		Brown exterior
128	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
129	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
130	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
131	VEY 16	5	3	Reddish Orange	UD	Body	BT 50L		Very smooth surface, high fired with minimal inclusions, clay and texture very different
132	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		Several cracks and inclusions on the surface
133	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
134	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
135	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
136	VEY 16	5	3	Dark Brown	UD	Body	BT 50L		
137	VEY 16	5	3	Dark Brown	UD	Body	BT 50L		
138	VEY 16	5	3	Dark Brown	UD	Body	BT 50L		

184	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		
185	VEY 16	5	3	Reddish Brown	D	Rim	ST 05cm	Deep groove/ incision on the lip	Very worn out
186	VEY 16	5	3	Reddish Brown	D	Rim	ST 05cm	Raised band	
187	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		Very coarse and worn out
188	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		
189	VEY 16	5	3	Reddish Brown	D	Rim	ST 05cm	Raised band	Lip broken
190	VEY 16	5	3	Light Orange	UD	Rim	ST 05cm		Very coarse and a lot of inclusions visible
191	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		Only lip present, too small for analysis
192	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		
193	VEY 16	5	3	Brown	D	Rim	ST 05cm	Incision	
194	VEY 16	5	3	Orange	D	Rim	ST 05cm	Multiple Parallel Incisions	Very fine and smooth surface, 3 sherds, refit, thickness 2mm
195	VEY 16	5	3	Brown	UD	Rim	ST 05cm		Only lip present, too small for analysis
196	VEY 16	5	3	Brown	UD	Rim	ST 05cm		Only lip present, too small for analysis
197	VEY 16	5	3	Brown	D	Rim	ST 05cm	Multiple Parallel Incisions	Very fine and smooth surface, only lip present, too small for analysis
198	VEY 16	5	3	Reddish Brown	D	Rim	ST 05cm	Multiple Parallel Incisions	Very fine and smooth surface, only lip present, too small for analysis
199	VEY 16	5	3	Brown	D	Rim	ST 05cm	Multiple Parallel Incisions	Very fine and smooth surface, only lip present, too small for analysis
200	VEY 16	5	3	Dark Brown	D	Rim	BT 05cm	Incision on the lip	
201	VEY 16	5	3	Reddish Brown	D	Rim	BT 05cm	Two parallel raised bands	Two sherds, refitted
202	VEY 16	5	3	Reddish Brown	UD	Rim	BT 05cm		NOT SELECTED FOR RIM ANALYSIS AS LIP WORN OFF, DIFFICULT TO GET THE ANGLE
203	VEY 16	5	3	Reddish Brown	UD	Rim	BT 05cm		
204	VEY 16	5	3	Brown	D	Rim	BT 05cm	Multiple parallel incisions on the lip	
205	VEY 16	5	3	Reddish Brown	D	Rim	BT 05cm	Raised band	Too eroded on the lip for rim analysis
206	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Two parallel raised bands with a chanel in between	
207	VEY 16	5	3	Reddish Brown	D	Rim	BT 05cm	Incision on lip	Refits with sherd 183, Very worn out
208	VEY 16	5	3	Dark Brown	UD	Rim	BT 05cm		Very worn out
209	VEY 16	5	3	Light Orange	D	Rim	ST 05cm	Deep groove/ incision on the lip	
210	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Raised band	
211	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Two parallel raised bands with a chanel in between	
212	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Two parallel raised bands with a chanel in between	
213	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Red slipped, two parallel raised bands with a chanel in between	
214	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Incision	
215	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Raised band	
216	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
217	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Raised band	
218	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Carinated	
219	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
220	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Indistinct	
221	VEY 16	5	3	Dark Brown	D	Body	BT 50L	Indistinct	
222	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Carinated	
223	VEY 16	5	3	Dark Brown	D	Body	BT 50L	Indistinct	
224	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Indistinct	
225	VEY 16	5	3	Brown	D	Body	BT 50L	Waffle	
226	VEY 16	5	3	Orange	D	Body	BT 50L	Multiple parallel incisions	Very smooth surface

184	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		
185	VEY 16	5	3	Reddish Brown	D	Rim	ST 05cm	Deep groove/ incision on the lip	Very worn out
186	VEY 16	5	3	Reddish Brown	D	Rim	ST 05cm	Raised band	
187	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		Very coarse and worn out
188	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		
189	VEY 16	5	3	Reddish Brown	D	Rim	ST 05cm	Raised band	Lip broken
190	VEY 16	5	3	Light Orange	UD	Rim	ST 05cm		Very coarse and a lot of inclusions visible
191	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		Only lip present, too small for analysis
192	VEY 16	5	3	Reddish Brown	UD	Rim	ST 05cm		
193	VEY 16	5	3	Brown	D	Rim	ST 05cm	Incision	
194	VEY 16	5	3	Orange	D	Rim	ST 05cm	Multiple Parallel Incisions	Very fine and smooth surface, 3 sherds, refit, thickness 2mm
195	VEY 16	5	3	Brown	UD	Rim	ST 05cm		Only lip present, too small for analysis
196	VEY 16	5	3	Brown	UD	Rim	ST 05cm		Only lip present, too small for analysis
197	VEY 16	5	3	Brown	D	Rim	ST 05cm	Multiple Parallel Incisions	Very fine and smooth surface, only lip present, too small for analysis
198	VEY 16	5	3	Reddish Brown	D	Rim	ST 05cm	Multiple Parallel Incisions	Very fine and smooth surface, only lip present, too small for analysis
199	VEY 16	5	3	Brown	D	Rim	ST 05cm	Multiple Parallel Incisions	Very fine and smooth surface, only lip present, too small for analysis
200	VEY 16	5	3	Dark Brown	D	Rim	BT 05cm	Incision on the lip	
201	VEY 16	5	3	Reddish Brown	D	Rim	BT 05cm	Two parallel raised bands	Two sherds, refitted
202	VEY 16	5	3	Reddish Brown	UD	Rim	BT 05cm		NOT SELECTED FOR RIM ANALYSIS AS LIP WORN OFF, DIFFICULT TO GET THE ANGLE
203	VEY 16	5	3	Reddish Brown	UD	Rim	BT 05cm		
204	VEY 16	5	3	Brown	D	Rim	BT 05cm	Multiple parallel incisions on the lip	
205	VEY 16	5	3	Reddish Brown	D	Rim	BT 05cm	Raised band	Too eroded on the lip for rim analysis
206	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Two parallel raised bands with a chanel in between	
207	VEY 16	5	3	Reddish Brown	D	Rim	BT 05cm	Incision on lip	Refits with sherd 183, Very worn out
208	VEY 16	5	3	Dark Brown	UD	Rim	BT 05cm		Very worn out
209	VEY 16	5	3	Light Orange	D	Rim	ST 05cm	Deep groove/ incision on the lip	
210	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Raised band	
211	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Two parallel raised bands with a chanel in between	
212	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Two parallel raised bands with a chanel in between	
213	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Red slipped, two parallel raised bands with a chanel in between	
214	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Incision	
215	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Raised band	
216	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
217	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Raised band	
218	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Carinated	
219	VEY 16	5	3	Reddish Brown	UD	Body	BT 50L		
220	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Indistinct	
221	VEY 16	5	3	Dark Brown	D	Body	BT 50L	Indistinct	
222	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Carinated	
223	VEY 16	5	3	Dark Brown	D	Body	BT 50L	Indistinct	
224	VEY 16	5	3	Reddish Brown	D	Body	BT 50L	Indistinct	
225	VEY 16	5	3	Brown	D	Body	BT 50L	Waffle	
226	VEY 16	5	3	Orange	D	Body	BT 50L	Multiple parallel incisions	Very smooth surface

287	MAL 16	E7	4	BROWN	D	BODY	BT 50L	INDISTINCT	BLACK INTERIOR
288	MAL 16	E7	4	DARK BROWN	D	BODY	BT 50L	RAISED BAND	BLACK EXT BLACK
289	MAL 16	E7	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
290	MAL 16	E7	4	RED	UD	BODY	BT 50L		WORN OUT AND ERODED
291	MAL 16	E7	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT
292	MAL 16	E4	2	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
293	MAL 16	E4	3	CREAM	UD	BODY	BT 50L		FINE AND SMOOTH
294	MAL 16	E4	3	ORANGE	UD	BODY	BT 50L		FINE AND SMOOTH
295	MAL 16	E4	3	LIGHT BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
296	MAL 16	E4	3	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED, BLACK EXTERIOR
297	MAL 16	E4	3	BROWN	UD	BODY	BT 50L		BLACK INTERIOR
298	MAL 16	E4	3	REDDISH BROWN	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	ON THE INTERIOR
299	MAL 16	E4	3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
300	MAL 16	E4	3	DARK BROWN	D	RIM	ST 05CM	RAISED BAND	
301	MAL 16	E4	3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, MULTIPLE PARALLEL INCISIONS	
302	MAL 16	E4	3	RED	D	BODY	BT 50L	RAISED BAND	
303	MAL 16	E4	3	ORANGE	D	BODY	BT 50L	INDISTINCT	
304	MAL 16	E4	3	PEACH	D	BODY	BT 50L	INDISTINCT	
305	MAL 16	E4	3	GREY	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	
306	MAL 16	E4	3	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED, RED SLIPPED EXTERIOR	
307	MAL 16	E4	3	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED, INDISTINCT	
308	MAL 16	E4	3	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
309	MAL 16	E4	3	RED	D	BODY	BT 50L	INDISTINCT	
311	MAL 16	E4	4	BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
312	MAL 16	E4	4	DARK BROWN	UD	BODY	BT 50L		BLACK INTERIOR
313	MAL 16	E4	4	ORANGE	UD	BODY	BT 50L		FINE AND SMOOTH
314	MAL 16	E4	4	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ERODED
315	MAL 16	E4	4	DARK BROWN	UD	RIM	ST 05CM		BLACK EXTERIOR
316	MAL 16	E4	4	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED, RED SLIPPED EXTERIOR	
317	MAL 16	E4	4	GREY	UD	RIM	ST 05CM		WORN OUT AND ERODED
318	MAL 16	E4	4	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
319	MAL 16	E4	4	BLACK	D	BODY	BT 50L	RAISED BAND	
320	MAL 16	E4	4	BLACK	D	BODY	BT 50L	RAISED BAND	CREAMY INTERIOR, WHEEL TURNED MARKS ON THE INTERIOR, HIGH FIRED, VERY FINE AND SMOOTH
321	MAL 16	E4	4	BROWN	D	BODY	BT 50L	WAFFLE	
322	MAL 16	E4	4	RED	UD	RIM	ST 05CM		FINE
323	MAL 16	E4	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
324	MAL 16	E4	4	PEACH	D	BODY	BT 50L	INDISTINCT	
325	MAL 16	E4	4	RED	D	BODY	BT 50L	INDISTINCT	
326	MAL 16	E4	4	RED	D	BODY	BT 50L	INDISTINCT	
327	MAL 16	E4	4	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
328	MAL 16	E4	4	LIGHT BROWN	UD	RIM	ST 05CM		
329	MAL 16	E4	5	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
330	MAL 16	E4	5	GREY	D	BODY	BT 50L	INDISTINCT	
331	MAL 16	E4	5	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR
332	MAL 16	E4	5	BLACK	UD	BODY	BT 50L		FINE AND SMOOTH, 2MM THICKNESS
333	MAL 16	E4	5	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR

287	MAL 16	E7	4	BROWN	D	BODY	BT 50L	INDISTINCT	BLACK INTERIOR
288	MAL 16	E7	4	DARK BROWN	D	BODY	BT 50L	RAISED BAND	BLACK EXT BLACK
289	MAL 16	E7	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
290	MAL 16	E7	4	RED	UD	BODY	BT 50L		WORN OUT AND ERODED
291	MAL 16	E7	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT
292	MAL 16	E4	2	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
293	MAL 16	E4	3	CREAM	UD	BODY	BT 50L		FINE AND SMOOTH
294	MAL 16	E4	3	ORANGE	UD	BODY	BT 50L		FINE AND SMOOTH
295	MAL 16	E4	3	LIGHT BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
296	MAL 16	E4	3	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED, BLACK EXTERIOR
297	MAL 16	E4	3	BROWN	UD	BODY	BT 50L		BLACK INTERIOR
298	MAL 16	E4	3	REDDISH BROWN	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	ON THE INTERIOR
299	MAL 16	E4	3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
300	MAL 16	E4	3	DARK BROWN	D	RIM	ST 05CM	RAISED BAND	
301	MAL 16	E4	3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, MULTIPLE PARALLEL INCISIONS	
302	MAL 16	E4	3	RED	D	BODY	BT 50L	RAISED BAND	
303	MAL 16	E4	3	ORANGE	D	BODY	BT 50L	INDISTINCT	
304	MAL 16	E4	3	PEACH	D	BODY	BT 50L	INDISTINCT	
305	MAL 16	E4	3	GREY	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	
306	MAL 16	E4	3	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED, RED SLIPPED EXTERIOR	
307	MAL 16	E4	3	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED, INDISTINCT	
308	MAL 16	E4	3	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
309	MAL 16	E4	3	RED	D	BODY	BT 50L	INDISTINCT	
311	MAL 16	E4	4	BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
312	MAL 16	E4	4	DARK BROWN	UD	BODY	BT 50L		BLACK INTERIOR
313	MAL 16	E4	4	ORANGE	UD	BODY	BT 50L		FINE AND SMOOTH
314	MAL 16	E4	4	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ERODED
315	MAL 16	E4	4	DARK BROWN	UD	RIM	ST 05CM		BLACK EXTERIOR
316	MAL 16	E4	4	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED, RED SLIPPED EXTERIOR	
317	MAL 16	E4	4	GREY	UD	RIM	ST 05CM		WORN OUT AND ERODED
318	MAL 16	E4	4	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
319	MAL 16	E4	4	BLACK	D	BODY	BT 50L	RAISED BAND	
320	MAL 16	E4	4	BLACK	D	BODY	BT 50L	RAISED BAND	CREAMY INTERIOR, WHEEL TURNED MARKS ON THE INTERIOR, HIGH FIRED, VERY FINE AND SMOOTH
321	MAL 16	E4	4	BROWN	D	BODY	BT 50L	WAFFLE	
322	MAL 16	E4	4	RED	UD	RIM	ST 05CM		FINE
323	MAL 16	E4	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
324	MAL 16	E4	4	PEACH	D	BODY	BT 50L	INDISTINCT	
325	MAL 16	E4	4	RED	D	BODY	BT 50L	INDISTINCT	
326	MAL 16	E4	4	RED	D	BODY	BT 50L	INDISTINCT	
327	MAL 16	E4	4	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
328	MAL 16	E4	4	LIGHT BROWN	UD	RIM	ST 05CM		
329	MAL 16	E4	5	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
330	MAL 16	E4	5	GREY	D	BODY	BT 50L	INDISTINCT	
331	MAL 16	E4	5	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR
332	MAL 16	E4	5	BLACK	UD	BODY	BT 50L		FINE AND SMOOTH, 2MM THICKNESS
333	MAL 16	E4	5	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR

334	MAL 16	E4	5	BLACK	UD	BODY	BT 50L		ICM THICK, COARSE AND ROUGH
335	MAL 16	E4	5	BROWN	UD	Body	BT 50L		FINE
336	MAL 16	E4	5	BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
337	MAL 16	E4	5	REDDISH BROWN	UD	BODY	BT 50L		BLACK EXTERIOR AND INTERIOR, SECTION REDDISH BROWN
338	MAL 16	E4	5	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
339	MAL 16	E4	5	BROWN	UD	BODY	BT 50L		FINE AND SMOOTH, BLACKNESS IN & OUT
340	MAL 16	E4	5	REDDISH BROWN	UD	BODY	BT 50L		ICM THICK, WORN OUT AND ERODED
341	MAL 16	E4	5	RED	UD	BODY	BT 50L		FINE AND SMOOTH
342	MAL 16	E4	5	ORANGE	UD	BODY	BT 50L		FINE AND SMOOTH
343	MAL 16	E4	5	BROWN	UD	BODY	BT 50L		
344	MAL 16	E4	5	BLACK	UD	BODY	BT 50L		
345	MAL 16	E4	5	REDDISH ORANGE	UD	Body	BT 50L		VERY WORN OUT AND ERODED INCLUDING THE SIDES, WHITE AND GREY RESIDUE ALL OVER THE SHERD, RATHER HUGE COMPARED TO THE OTHERS (ABOUT 01CM), TWO SHERDS, REFIT, LOOKS ALMOST THE SAME AS SHERDS: 661 AND 662
346	MAL 16	E4	5	LIGHT BROWN	UD	RIM	BT 05CM		TWO SHERDS REFITTED
347	MAL 16	E4	5	RED	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
348	MAL 16	E4	5	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
349	MAL 16	E4	5	DARK BROWN	UD	BODY	BT 50L		BLACK INTERIOR
350	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
351	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
352	MAL 16	E4	5	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED, RED SLIPPED EXTERIOR	
353	MAL 16	E4	5	BLACK	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
355	MAL 16	E4	5	REDDISH BROWN	UD	RIM	ST 05CM		
357	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
358	MAL 16	E4	5	RED	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
359	MAL 16	E4	5	RED	D	BODY	BT 50L	LINEAR PADDLED	
360	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
361	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	INDISTINCT	BLACK EXTERIOR
362	MAL 16	E4	5	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
363	MAL 16	E4	5	RED	D	BODY	BT 50L	INDISTINCT	
364	MAL 16	E4	5	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
365	MAL 16	E4	5	BROWN	D	BODY	BT 50L	LINEAR PADDLED	BLACK EXTERIOR
366	MAL 16	E4	5	LIGHT BROWN	D	BODY	BT 50L	WAFFLE	
367	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	INDISTINCT	FINE AND SMOOTH
368	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
369	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, RAISED BAND, INCISION	
370	MAL 16	E4	5	DARK BROWN	UD	RIM	ST 05CM		BLACK LIP AND REDDISH BODY
371	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	RAISED BAND, MULTIPLE PARALLEL INCISIONS	BLACK EXTERIOR
372	MAL 16	E4	5	RED	D	BODY	BT 50L	INDISTINCT	
373	MAL 16	E4	5	BLACK	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	FINE AND SMOOTH
375	MAL 16	E4	5	DARK BROWN	D	BODY	BT 50L	INCISION	WIDE INCISION ABOUT 2MM
377	MAL 16	E4	5	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	

378	MAL 16	E4	5	REDDISH BROWN	D	RIM	ST 05CM	RED SLIPPED EXTERIOR, CHANNEL, TWO PARALLEL RAISED BANDS, CHANNEL, TWO PARALLEL RAISED BANDS	BROKEN RIM, LIP GONE
379	MAL 16	E4	5	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, FLATTENED NUBBINS (PA-2), INCISION	
380	MAL 16	E4	5	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
384	MAL 16	E14	3	GREY	UD	BODY	BT 50L		VERY ROUGH AND COARSE WITH SEVERAL INCLUSIONS VISIBLE, HIGH FIRED, DIFFERENT CLAY FROM THE ASSEMBLAGE
385	MAL 16	E14	3	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
386	MAL 16	E14	3	LIGHT BROWN	UD	BODY	BT 50L		
387	MAL 16	E14	3	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
388	MAL 16	E14	3	RED	D	BODY	BT 50L	RAISED BAND	
393	MAL 16	E14	4	DARK BROWN	D	BODY	BT 50L	BURNISHED	BLACK EXTERIOR
394	MAL 16	E14	4	DARK BROWN	UD	BODY	BT 50L		
395	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		
396	MAL 16	E14	4	BROWN	UD	BODY	BT 50L		
397	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
398	MAL 16	E14	4	BROWN	UD	BODY	BT 50L		BLACK INTERIOR
399	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
400	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR
401	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		SMOOTH
402	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
403	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
406	MAL 16	E14	4	DARK BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
407	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		LOTS OF INCLUSIONS VISIBLE
408	MAL 16	E14	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED IN AND OUT	
409	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		SMOOTH AND EVEN
410	MAL 16	E14	4	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
411	MAL 16	E14	4	DARK BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
412	MAL 16	E14	4	GREY	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS, UNDECORATED, MULTIPLE PARALLEL INCISIONS (TWO ROWS), UNDECORATED, MULTIPLE PARALLEL INCISIONS (TWO ROWS)	
414	MAL 16	E14	4	ORANGE	D	BODY	BT 50L	INDISTINCT	
416	MAL 16	E14	4	BROWN	D	RIM	ST 05CM	INCISION ON LIP	WORN OUT AND ERODED
418	MAL 16	E14	4	BLACK	D	RIM	ST 05CM	BURNISHED	
419	MAL 16	E14	4	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
420	MAL 16	E14	4	BROWN	UD	RIM	ST 05CM		WORN OUT AND ERODED
422	MAL 16	E14	4	BROWN	D	RIM	ST 05CM	INCISION ON LIP, RED SLIPPED EXTERIOR	
424	MAL 16	E14	4	BROWN	UD	RIM	ST 05CM		WORN OUT AND ERODED
425	MAL 16	E14	4	REDDISH BROWN	D	RIM	ST 05CM	RED SLIPPED EXTERIOR	
426	MAL 16	E14	4	RED	D	BODY	BT 50L	RED SLIPPED EXTERIOR, MULTIPLE PARALLEL INCISIONS	TWO SHERDS, REFIT
427	MAL 16	E14	4	BROWN	UD	RIM	ST 05CM		
434	MAL 16	E14	4	ORANGE	UD	RIM	ST 05CM		WORN OUT AND ERODED
443	MAL 16	E14	4	ORANGE	UD	RIM	ST 05CM		
445	MAL 16	E14	4	BROWN	D	BODY	BT 50L	INDISTINCT	
447	MAL 16	E14	4	BROWN	UD	RIM	ST 05CM		
448	MAL 16	E14	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
449	MAL 16	E14	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT

450	MAL 16	E14	4	ORANGE	D	BODY	BT 50L	INDISTINCT	
452	MAL 16	E14	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
454	MAL 16	E14	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
455	MAL 16	E14	5	DARK BROWN	D	BODY	BT 50L	BURNISHED	BLACK EXTERIOR
456	MAL 16	E14	5	REDDISH BROWN	UD	RIM	ST 05CM		SMOOTH
457	MAL 16	E14	5	REDDISH BROWN	UD	BODY	BT 50L		
458	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	WORN OUT AND ERODED
459	MAL 16	E14	5	DARK BROWN	UD	BODY	BT 50L		BLACK INTERIOR
460	MAL 16	E14	5	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
461	MAL 16	E14	5	REDDISH BROWN	UD	BODY	BT 50L		
462	MAL 16	E14	5	REDDISH BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
463	MAL 16	E14	5	REDDISH BROWN	UD	BODY	BT 50L		
464	MAL 16	E14	5	REDDISH BROWN	UD	BODY	BT 50L		
465	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
466	MAL 16	E14	5	BROWN	UD	BODY	BT 50L		
468	MAL 16	E14	5	BROWN	D	RIM	ST 05CM	INCISION ON LIP	
469	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
470	MAL 16	E14	5	RED	D	BODY	BT 50L	LINEAR PADDLED	
471	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
472	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
473	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
474	MAL 16	E14	5	REDDISH BROWN	UD	RIM	ST 05CM		
475	MAL 16	E14	5	BROWN	UD	RIM	ST 05CM		
476	MAL 16	E14	5	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	BLACK EXTERIOR
477	MAL 16	E14	5	REDDISH BROWN	UD	RIM	ST 05CM		
478	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
479	MAL 16	E14	5	YELLOW	D	BODY	BT 50L	LINEAR PADDLED	
480	MAL 16	E14	5	REDDISH BROWN	UD	BODY	BT 50L		
481	MAL 16	E14	5	LIGHT BROWN	D	BODY	BT 50L	CHANNEL, INCISION	
482	MAL 16	E14	5	BROWN	D	RIM	ST 05CM	RAISED BAND	BROKEN RIM, ONLY FEW INCHES OF RIM LEFT
483	MAL 16	E14	5	REDDISH BROWN	UD	BODY	BT 50L		
484	MAL 16	E14	5	REDDISH ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
485	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
486	MAL 16	E14	5	DARK BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
487	MAL 16	E14	5	YELLOWISH ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
488	MAL 16	E14	5	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
489	MAL 16	E14	6	DARK BROWN	UD	BODY	BT 50L		SMOOTH AND BLACKISH SHERD
490	MAL 16	E14	6	CREAM	UD	RIM	ST 05CM		ABOUT 8MM THICK
491	MAL 16	E14	6	REDDISH BROWN	UD	BODY	BT 50L		SMOOTH
492	MAL 16	E14	6	BLACK	UD	BODY	BT 50L		SMOOTH
493	MAL 16	E14	6	DARK BROWN	UD	BODY	BT 50L		ROUGH
494	MAL 16	E14	6	DARK BROWN	UD	BODY	BT 50L		ROUGH
495	MAL 16	E14	6	DARK BROWN	UD	BODY	BT 50L		ABOUT 1CM THICK
496	MAL 16	E14	6	LIGHT BROWN	UD	BODY	BT 50L		SMOOTH
497	MAL 16	E14	6	REDDISH BROWN	UD	RIM	ST 05CM		
498	MAL 16	E14	6	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	



499	MAL 16	E14	6	REDDISH BROWN	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS, RAISED BAND	LIP COMPLETELY GONE, MPI AND RAISED BAND ON THE INTERIOR
500	MAL 16	E14	6	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	BLACK EXTERIOR
501	MAL 16	E14	6	DARK BROWN	UD	RIM	ST 05CM		
502	MAL 16	E14	6	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INDISTINCT	
503	MAL 16	E14	6	BROWN	D	BODY	BT 50L	INDISTINCT	
504	MAL 16	E14	6	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
505	MAL 16	E14	6	RED	D	BODY	BT 50L	LINEAR PADDLED	
506	MAL 16	E14	6	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INDISTINCT	
507	MAL 16	E14	6	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
508	MAL 16	E14	6	RED	D	BODY	BT 50L	INDISTINCT	
509	MAL 16	E14	6	RED	D	BODY	BT 50L	LINEAR PADDLED	
510	MAL 16	N5	2	BROWN	UD	BODY	BT 50L		
511	MAL 16	N5	2	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR AND INTERIOR
512	MAL 16	N5	2	GREYISH BLACK	UD	BODY	BT 50L		SMOOTH AND HIGH FIRED
513	MAL 16	N5	2	ORANGE	UD	BODY	BT 50L		1CM THICK, WORN OUT AND ERODED
514	MAL 16	N5	2	DARK BROWN	UD	BODY	BT 50L		2MM THICK, BLACK EXTERIOR AND INTERIOR
515	MAL 16	N5	2	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
516	MAL 16	N5	2	ORANGE	UD	BODY	BT 50L		
517	MAL 16	N5	2	REDDISH BROWN	UD	BODY	BT 50L		1CM THICK, WORN OUT AND ERODED
518	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
519	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
520	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
521	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED IN AND OUT	
522	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
523	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INDISTINCT	
524	MAL 16	N5	2	CREAM	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	FINE AND SMOOTH, HIGH FIRED
525	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
526	MAL 16	N5	2	BROWN	D	RIM	ST 05CM	RED SLIPPED IN AND OUT	
527	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
529	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	VERY BLACKISH
530	MAL 16	N5	2	REDDISH BROWN	UD	RIM	ST 05CM		BROKEN RIM, LIP NOT EXISTING
531	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
532	MAL 16	N5	2	REDDISH BROWN	UD	BODY	BT 50L		
533	MAL 16	N5	2	DARK BROWN	UD	RIM	ST 05CM		BLACKISH SHERD
534	MAL 16	N5	2	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
535	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
536	MAL 16	N5	2	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	CRISS-CROSS PATTERN AND SLIGHTLY SLANTED
537	MAL 16	N5	2	REDDISH BROWN	UD	BODY	BT 50L		
539	MAL 16	N2	2	REDDISH BROWN	UD	BODY	BT 50L		WHITE RESIDUE ON INTERIOR
540	MAL 16	N2	2	ORANGE	UD	BODY	BT 50L		DARK BROWN/GREY INTERIOR
541	MAL 16	N2	2	CREAM	D	BODY	BT 50L	INDISTINCT	
542	MAL 16	N2	2	REDDISH ORANGE	D	RIM	ST 05CM	RAISED BAND ON INTERIOR	BROKEN RIM
543	MAL 16	N2	2	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
544	MAL 16	N2	2	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
545	MAL 16	N2	2	RED	D	BODY	BT 50L	THREE PARALLEL RAISED BANDS, CHANNEL, RAISED BAND, CHANNEL	

546	MAL 16	N2	3	ORANGE	UD	RIM	ST 05CM		
547	MAL 16	N2	3	REDDISH BROWN	UD	BODY	BT 50L		FINE AND SMOOTH
548	MAL 16	N2	3	BROWN	D	RIM	BT 05CM	RED SLIPPED, INCISION, STABBED IMPRESSION (S3-D), TWO PARALLEL RAISED BANDS, INCISION, CHANEL, RAISED BAND	ARRANGED DIAGONALLY IN A LINE, TOO ERODED LIP FOR RIM ANALYSIS
549	MAL 16	N2	3	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT, BURNISHED	BLACK EXTERIOR
550	MAL 16	N2	3	BROWN	UD	BODY	BT 50L		SMOOTH AND FINE
552	MAL 16	N2	4	REDDISH BROWN	UD	BODY	BT 50L		
553	MAL 16	N2	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
554	MAL 16	N2	4	RED	UD	BODY	BT 50L		
555	MAL 16	N2	4	BLACK	UD	BODY	BT 50L		
556	MAL 16	N2	4	REDDISH BROWN	UD	BODY	BT 50L		
557	MAL 16	N2	4	DARK BROWN	UD	BODY	BT 50L		
558	MAL 16	N2	4	BROWN	UD	BODY	BT 50L		
559	MAL 16	N2	4	DARK BROWN	UD	BODY	BT 50L		
560	MAL 16	N2	4	REDDISH BROWN	UD	BODY	BT 50L		
561	MAL 16	N2	4	REDDISH BROWN	D	RIM	BT 05CM	CARINATED	BROKEN RIM, LIP NOT EXISTING
562	MAL 16	N2	4	ORANGE	D	RIM	BT 05CM	INDISTINCT, RAISED BAND, RED SLIPPED	VERY SHALLOW DISH/ POT LID
563	MAL 16	N2	4	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
565	MAL 16	N2	4	BROWN	UD	RIM	ST 05CM		
566	MAL 16	N2	4	BLACK	D	RIM	ST 05CM	RAISED BANDS ON INTERIOR, MULTIPLE PARALLEL RAISED BANDS ON EXTERIOR	VERY BLACKISH SHERD
567	MAL 16	N2	4	CREAM	D	BODY	BT 50L	INDISTINCT	BLACK EXETRIOR
568	MAL 16	N2	4	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
569	MAL 16	N2	4	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	CRISS-CROSS PATTERN AND SLIGHTLY SLANTED
570	MAL 16	N2	5	DARK BROWN	UD	BODY	BT 50L		
571	MAL 16	N2	5	DARK BROWN	UD	BODY	BT 50L		3MM THICK
572	MAL 16	N2	5	REDDISH BROWN	UD	BODY	BT 50L		2MM THICK, WORN OUT AND ERODED
573	MAL 16	N2	5	BROWN	UD	BODY	BT 50L		
574	MAL 16	N2	5	BROWN	UD	BODY	BT 50L		
575	MAL 16	N2	5	REDDISH ORANGE	UD	BODY	BT 50L		VERY WHITE SHERD
576	MAL 16	N2	5	REDDISH BROWN	UD	BODY	BT 50L		2.5MM THICK
577	MAL 16	N2	5	CREAM	UD	BODY	BT 50L		
578	MAL 16	N2	5	REDDISH BROWN	UD	BODY	BT 50L		
579	MAL 16	N2	5	REDDISH BROWN	UD	BODY	BT 50L		
580	MAL 16	N2	5	BLACK	UD	BODY	BT 50L		WORN OUT AND ERODED
581	MAL 16	N2	5	ORANGE	UD	RIM	ST 05CM		COARSE
582	MAL 16	N2	5	BROWN	UD	RIM	ST 05CM		
584	MAL 16	N2	5	DARK BROWN	D	BODY	BT 50L	CARINATED	BLACK INTERIOR AND EXTERIOR
585	MAL 16	N2	5	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
586	MAL 16	N2	5	REDDISH BROWN	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS ON INTERIOR	
587	MAL 16	N2	5	GREY	D	RIM	ST 05CM	RED SLIPPED EXTERIOR, PAINTED ON INTERIOR	BROWN PAINTED LINES ON INTERIOR, VERY FINE, TWO SHERDS, REFIT
588	MAL 16	N2	5	DARK BROWN	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	SMOOTH, BLACKISH SHERD, HIGH FIRED
589	MAL 16	N2	5	REDDISH BROWN	UD	BODY	BT 50L		
591	MAL 16	N2	5	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
592	MAL 16	N2	5	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	BLACK EXTERIOR
593	MAL 16	N2	5	REDDISH BROWN	UD	BODY	BT 50L		BLACK RESIDUE ON INTERIOR

594	MAL 16	N2	5	ORANGE	D	BODY	BT 50L	INDISTINCT	
595	MAL 16	N2	5	REDDISH BROWN	D	RIM	ST 05CM	RED SLIPPED EXTERIOR, INCISION ON LIP	
596	MAL 16	N2	5	RED	D	BODY	BT 50L	RAISED BAND	
597	MAL 16	N2	5	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
598	MAL 16	N2	5	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR, RAISED BAND	SMOOTH AND FINE
599	MAL 16	N9	3	REDDISH BROWN	UD	BODY	BT 50L		1CM THICK, VERY SYMMETRICAL, SHARP EDGES
600	MAL 16	N9	3	REDDISH BROWN	UD	BODY	BT 50L		1CM THICK, VERY SYMMETRICAL, CIRCULAR, SHARP EDGES
601	MAL 16	N9	3	CREAM	UD	BODY	BT 50L		
602	MAL 16	N9	3	ORANGE	UD	BODY	BT 50L		FINE AND SMOOTH
603	MAL 16	N9	3	REDDISH BROWN	UD	BODY	BT 50L		
604	MAL 16	N9	3	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, BLACK RESIDUE ON EXTERIOR
605	MAL 16	N9	3	REDDISH BROWN	UD	BODY	BT 50L		
606	MAL 16	N9	3	DARK BROWN	UD	BODY	BT 50L		
607	MAL 16	N9	3	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
608	MAL 16	N9	3	BLACK	D	BODY	BT 50L	THREE PARALLEL RAISED BANDS	
609	MAL 16	N9	3	REDDISH BROWN	UD	RIM	ST 05CM		BROKEN RIM
610	MAL 16	N9	3	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
611	MAL 16	N9	3	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
613	MAL 16	N9	3	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
614	MAL 16	N9	4	REDDISH BROWN	UD	BODY	BT 50L		1CM THICK, WORN OUT AND ERODED, VERY SYMMETRICAL
617	MAL 16	N9	3	ORANGE	D	RIM	ST 05CM	RAISED BAND	BROKEN RIM, LIP NON EXISTING
618	MAL 16	N9	4	REDDISH BROWN	UD	BODY	BT 50L		1.5CM THICK, WORN OUT AND ERODED, VERY SYMMETRICAL
619	MAL 16	N9	4	BROWN	UD	BODY	BT 50L		
620	MAL 16	N9	4	BLACK	UD	BODY	BT 50L		
621	MAL 16	N9	4	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR AND INTERIOR
622	MAL 16	N9	4	DARK BROWN	UD	BODY	BT 50L		
623	MAL 16	N9	4	REDDISH BROWN	UD	BODY	BT 50L		
624	MAL 16	N9	4	DARK BROWN	UD	BODY	BT 50L		SMOOTH AND FINE, WORN OUT AND ERODED
625	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE ON EXTERIOR
626	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE ON EXTERIOR
627	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE ON EXTERIOR
628	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE ON EXTERIOR
629	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, 627, BLACK RESIDUE ON EXTERIOR
630	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, 627, BLACK RESIDUE ON EXTERIOR
631	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 629
632	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 629
633	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 629

634	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE ON EXTERIOR
635	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE ON EXTERIOR
636	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE ON EXTERIOR, NECK?
637	MAL 16	N9	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, RAISED BAND	
638	MAL 16	N9	4	REDDISH ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR, MULTIPLE PARALLEL INCISIONS	
639	MAL 16	N9	4	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE ON EXTERIOR
640	MAL 16	N9	4	DARK BROWN	D	BODY	BT 50L	RAISED BAND	
641	MAL 16	N9	4	RED	D	BODY	BT 50L	LINEAR PADDLED	
642	MAL 16	N9	4	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
643	MAL 16	N9	4	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
647	MAL 16	N9	4	BLACK	UD	RIM	BT 05CM		
648	MAL 16	N9	4	REDDISH BROWN	UD	RIM	BT 05CM		
649	MAL 16	N9	4	ORANGE	D	RIM	BT 05CM	MULTIPLE PARALLEL INCISIONS, RAISED BAND	MPI ON THE LIP, RB ON THE INTERIOR, REFITS WITH SHERD 650
650	MAL 16	N9	4	ORANGE	D	RIM	BT 05CM	MULTIPLE PARALLEL INCISIONS	MPI ON THE LIP, REFITS WITH SHERD 649
651	MAL 16	N9	5	CREAM	UD	BODY	BT 50L		SIMILAR TO 601,604, BLACK RESIDUE ON EXTERIOR
652	MAL 16	N9	5	LIGHT BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
653	MAL 16	N9	5	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
654	MAL 16	N9	5	LIGHT BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
655	MAL 16	N9	5	YELLOW	UD	BODY	BT 50L		FINE AND SMOOTH
656	MAL 16	N9	5	REDDISH BROWN	UD	BODY	BT 50L		WHITE RESIDUE ON EXTERIOR AND INTERIOR
657	MAL 16	N9	5	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR, COARSE AND ROUGH
658	MAL 16	N9	5	DARK BROWN	UD	BODY	BT 50L		VERY BLACKISH SHERD
659	MAL 16	N9	5	REDDISH BROWN	UD	RIM	ST 05CM		BROKEN RIM, LIP BROKEN
660	MAL 16	N9	5	BLACK	D	BODY	BT 50L	THREE PARALLEL RAISED BANDS, BURNISHED	FINE AND SMOOTH
661	MAL 16	N9	5	REDDISH ORANGE	UD	Body	BT 50L		VERY WORN OUT AND ERODED INCLUDING THE SIDES, WHITE AND GREY RESIDUE ALL OVER THE SHERD, RATHER HUGE COMPARED TO THE OTHERS (ABOUT 01CM), TWO SHERDS, REFIT, LOOKS ALMOST THE SAME AS SHERDS: 662 AND 345
662	MAL 16	N9	5	REDDISH ORANGE	UD	Body	BT 50L		VERY WORN OUT AND ERODED INCLUDING THE SIDES, WHITE AND GREY RESIDUE ALL OVER THE SHERD, RATHER HUGE COMPARED TO THE OTHERS (ABOUT 01CM), TWO SHERDS, REFIT, LOOKS ALMOST THE SAME AS SHERDS: 661 AND 345
663	MAL 16	N9	5	REDDISH ORANGE	UD	BODY	BT 50L		WORN OUT AND ERODED
664	MAL 16	N9	5	REDDISH BROWN	D	RIM	BT 05CM	RED SLIPPED INT/EXT, RAISED BAND ON EXTERIOR, INCISION ON THE LIP	

665	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	TWO CHANNELS	
666	MAL 16	N9	5	BROWN	D	BODY	BT 50L	IMPRESSED SURFACE	NET LIKE IMPRESSIONS
667	MAL 16	N9	5	REDDISH BROWN	D	RIM	ST 05CM	RED SLIPPED IN AND OUT	
668	MAL 16	N9	5	ORANGE	D	RIM	ST 05CM	INDISTINCT	
669	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	BURNISHED, INDISTINCT	BLACK EXTERIOR
670	MAL 16	N9	5	DARK BROWN	UD	RIM	ST 05CM		BLACK EXTERIOR AND INTERIOR
672	MAL 16	N9	5	GREY	D	RIM	ST 05CM	INCISION	VERY FINE, WIDE INCISION
673	MAL 16	N9	5	ORANGE	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS ON INTERIOR	
674	MAL 16	N9	5	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE EXTERIOR
675	MAL 16	N9	5	CREAM	D	BODY	BT 50L	INCISION	SIMILAR TO 601, 604, BLACK RESIDUE EXTERIOR, DEEP INCISION
676	MAL 16	N9	5	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE EXTERIOR
677	MAL 16	N9	5	CREAM	UD	BODY	BT 50L		SIMILAR TO 601, 604, BLACK RESIDUE EXTERIOR
678	MAL 16	N9	5	GREYISH BLACK	UD	BODY	BT 50L		GREY EXTERIOR, BLACK INTERIOR, FINE AND SMOOTH
680	MAL 16	N9	5	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
681	MAL 16	N9	5	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
682	MAL 16	N9	5	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
683	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
684	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
685	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
686	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	BLACK EXTERIOR
687	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
688	MAL 16	N9	5	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
689	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
690	MAL 16	N9	5	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
691	MAL 16	N9	5	BROWN	D	BODY	BT 50L	INDISTINCT	
692	MAL 16	N9	5	BROWN	D	BODY	BT 50L	MULTIPLE INCISIONS	ON INTERIOR- GOING BOTH VERTICAL AND HORIZONTAL
693	MAL 16	N12	2	BROWN	UD	BODY	BT 50L		1CM THICK, WORN OUT AND ERODED
694	MAL 16	N12	2	REDDISH BROWN	UD	BODY	BT 50L		GREY RESIDUE ON EXTERIOR AND INTERIOR
695	MAL 16	N12	2	BROWN	UD	BODY	BT 50L		
696	MAL 16	N12	2	REDDISH ORANGE	UD	BODY	BT 50L		
697	MAL 16	N12	2	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
698	MAL 16	N12	2	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
699	MAL 16	N12	2	ORANGE	D	BODY	BT 50L	WAFFLE	TWO SHERDS, REFIT
700	MAL 16	N12	2	ORANGE	D	BODY	BT 50L	INDISTINCT	
701	MAL 16	N12	2	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
702	MAL 16	N12	2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
703	MAL 16	N12	2	ORANGE	D	BODY	BT 50L	INDISTINCT	
704	MAL 16	N12	2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
705	MAL 16	N12	2	BROWN	D	BODY	BT 50L	INDISTINCT	
706	MAL 16	N12	2	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
712	MAL 16	N12	EXT 2	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR AND INTERIOR, WORN OUT AND ERODED

713	MAL 16	N12	EXT 2	REDDISH BROWN	UD	RIM	ST 05CM		
714	MAL 16	N12	EXT 2	REDDISH BROWN	UD	RIM	ST 05CM		
715	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
716	MAL 16	N12	EXT 2	LIGHT BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
717	MAL 16	N12	EXT 2	REDDISH BROWN	UD	BODY	BT 50L		
718	MAL 16	N12	EXT 2	REDDISH BROWN	UD	RIM	ST 05CM		FINE
719	MAL 16	N12	EXT 2	REDDISH BROWN	UD	BODY	BT 50L		
720	MAL 16	N12	EXT 2	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
721	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
722	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
723	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
724	MAL 16	N12	EXT 2	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
725	MAL 16	N12	EXT 2	REDDISH BROWN	D	RIM	ST 05CM	INCISION, RAISED BAND	
726	MAL 16	N12	EXT 2	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
727	MAL 16	N12	EXT 2	DARK BROWN	UD	RIM	ST 05CM		BLACK EXTERIOR AND INTERIOR
728	MAL 16	N12	EXT 2	ORANGE	UD	RIM	ST 05CM		
729	MAL 16	N12	EXT 2	ORANGE	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	
731	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
732	MAL 16	N12	EXT 2	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
733	MAL 16	N12	EXT 2	BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
734	MAL 16	N12	EXT 2	DARK BROWN	D	RIM	ST 05CM	RED SLIPPED INTERIOR, INCISION ON LIP	
735	MAL 16	N12	EXT 2	BROWN	D	RIM	ST 05CM	INCISION	
736	MAL 16	N12	EXT 2	BROWN	D	BODY	BT 50L	PAINTED IN AND OUT	Indistinct colored paint
737	MAL 16	N12	EXT 2	BROWN	D	BODY	BT 50L	INDISTINCT	
738	MAL 16	N12	EXT 2	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INDISTINCT	
739	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
740	MAL 16	N12	EXT 2	DARK BROWN	UD	BODY	BT 50L		FINE AND BLACK SHERD
742	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
743	MAL 16	N12	EXT 2	BROWN	D	RIM	ST 05CM	RED SLIPPED EXTERIOR, INCISION ON LIP AND INTERIOR	
744	MAL 16	N12	EXT 2	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
745	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
746	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
747	MAL 16	N12	EXT 2	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
748	MAL 16	N12	EXT 2	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
749	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
751	MAL 16	N12	EXT 2	ORANGE	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
752	MAL 16	N12	EXT 2	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
754	MAL 16	N12	EXT 2	ORANGE	D	BODY	BT 50L	WAFFLE	
755	MAL 16	N12	EXT 2	ORANGE	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
756	MAL 16	N12	EXT 2	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
757	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
760	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
761	MAL 16	N12	EXT 2	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
762	MAL 16	N12	5	REDDISH BROWN	UD	BODY	BT 50L		
763	MAL 16	N12	5	RED	UD	RIM	ST 05CM		
764	MAL 16	N12	5	ORANGE	D	BODY	BT 50L	WAFFLE	
765	MAL 16	N12	5	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
766	MAL 16	N12	5	DARK BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT

767	MAL 16	N12	S.CLEAN 1-3	CREAM	UD	BODY	BT 50L		
768	MAL 16	N12	S.CLEAN 1-3	ORANGE	UD	BODY	BT 50L		
769	MAL 16	N12	S.CLEAN 1-3	CREAM	UD	BODY	BT 50L		
770	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	BODY	BT 50L		
771	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	BODY	BT 50L		
772	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	BODY	BT 50L		
773	MAL 16	N12	S.CLEAN 1-3	BROWN	UD	BODY	BT 50L		BLACK EXT
774	MAL 16	N12	S.CLEAN 1-3	BROWN	UD	BODY	BT 50L		BLACK INT
775	MAL 16	N12	S.CLEAN 1-3	BROWN	D	BODY	BT 50L	INDISTINCT	
776	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	BODY	BT 50L		
777	MAL 16	N12	S.CLEAN 1-3	ORANGE	UD	BODY	BT 50L		
778	MAL 16	N12	S.CLEAN 1-3	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR AND INTERIOR
779	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	BODY	BT 50L		
780	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	BODY	BT 50L		
781	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	BODY	BT 50L		
782	MAL 16	N12	S.CLEAN 1-3	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
783	MAL 16	N12	S.CLEAN 1-3	ORANGE	UD	BODY	BT 50L		
784	MAL 16	N12	S.CLEAN 1-3	DARK BROWN	UD	BODY	BT 50L		
785	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	BODY	BT 50L		
786	MAL 16	N12	S.CLEAN 1-3	BROWN	UD	BODY	BT 50L		
787	MAL 16	N12	S.CLEAN 1-3	BROWN	UD	BODY	BT 50L		
788	MAL 16	N12	S.CLEAN 1-3	BROWN	D	BODY	BT 50L	INDISTINCT	
789	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	RIM	ST 05CM	RED SLIPPED IN AND OUT, MULTIPLE PARALLEL INCISIONS ON LIP, INCISION ON EXTERIOR	
790	MAL 16	N12	S.CLEAN 1-3	BROWN	UD	RIM	ST 05CM		

791	MAL 16	N12	S.CLEAN 1-3	ORANGE	D	BODY	BT 50L	RAISED BAND	
792	MAL 16	N12	S.CLEAN 1-3	ORANGE	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
793	MAL 16	N12	S.CLEAN 1-3	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
794	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	UD	RIM	ST 05CM		
795	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
796	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	TWO RAISED BANDS	
797	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND, MULTIPLE PARALLEL INCISIONS	
798	MAL 16	N12	S.CLEAN 1-3	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
799	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE INCISIONS	UNDECORATED ON THE EXTERIOR, INCISIONS ON THE INTERIOR GOING BOTH HORIZONTAL AND VERTICAL, RE-FITS WITH SHERD 800
800	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE INCISIONS	SEE SHERD 799
801	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
802	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
803	MAL 16	N12	S.CLEAN 1-3	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
804	MAL 16	N12	S.CLEAN 1-3	ORANGE	D	BODY	BT 50L	INDISTINCT	
805	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
806	MAL 16	N12	S.CLEAN 1-3	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
807	MAL 16	N12	S.CLEAN 1-3	DARK BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	VERY BLACKISH SHERD
813	MAL 16	N12	S.CLEAN 1-3	GREY	D	BODY	BT 50L	INCISION	2MM THICK, FINE AND SMOOTH
825	MAL 16	N12	3	ORANGE	UD	BODY	BT 50L		
826	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
827	MAL 16	N12	3	CREAM	UD	BODY	BT 50L		MORE LIKE YELLOW, VERY DIFFERENT CLAY
828	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
829	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
830	MAL 16	N12	3	RED	UD	BODY	BT 50L		LOTS OF GROG INCLUSIONS VISIBLE
831	MAL 16	N12	3	BLACK	UD	BODY	BT 50L		
832	MAL 16	N12	3	LIGHT BROWN	UD	BODY	BT 50L		
833	MAL 16	N12	3	BLACK	UD	BODY	BT 50L		
835	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		BLACK EXTERIOR



836	MAL 16	N12	3	BROWN	UD	BODY	BT 50L		
837	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
838	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
839	MAL 16	N12	3	RED	UD	BODY	BT 50L		LOTS OF GROG INCLUSIONS, SIMILAR TO SHERD 830
840	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
841	MAL 16	N12	3	DARK BROWN	UD	BODY	BT 50L		
842	MAL 16	N12	3	CREAM	UD	BODY	BT 50L		REDDISH EXTERIOR
843	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
844	MAL 16	N12	3	BROWN	UD	BODY	BT 50L		
845	MAL 16	N12	3	CREAM	UD	BODY	BT 50L		
846	MAL 16	N12	3	CREAM	UD	BODY	BT 50L		BLACK INTERIOR
847	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
848	MAL 16	N12	3	BROWN	UD	BODY	BT 50L		
849	MAL 16	N12	3	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
850	MAL 16	N12	3	LIGHT BROWN	UD	BODY	BT 50L		FINE AND SMOOTH
851	MAL 16	N12	3	DARK BROWN	UD	BODY	BT 50L		
852	MAL 16	N12	3	LIGHT BROWN	UD	BODY	BT 50L		SIMILAR TO SHERD 850
853	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
854	MAL 16	N12	3	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
855	MAL 16	N12	3	GREY	UD	BODY	BT 50L		
856	MAL 16	N12	3	BROWN	UD	BODY	BT 50L		
857	MAL 16	N12	3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
858	MAL 16	N12	3	DARK BROWN	UD	BODY	BT 50L		
859	MAL 16	N12	3	CREAM	UD	BODY	BT 50L		
860	MAL 16	N12	4	RED	D	RIM	BT 05CM	RED SLIPPED EXT, INCISION ON LIP, RAISED BAND, CHANNEL AND ANOTHER RAISED BAND ON EXT	
861	MAL 16	N12	4	REDDISH ORANGE	D	RIM	BT 05CM	INCISION ON EXT, ONE RAISED BAND ON INT	
862	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		VERY FRIABLE, WORN OUT, GREYISH LAYER ALL OVER THE SHERD
863	MAL 16	N12	4	DARK BROWN	UD	RIM	ST 05CM		ONLY LIP PRESENT
864	MAL 16	N12	4	DARK BROWN	D	RIM	ST 05CM	RAISED BAND	BLACK EXTERIOR AND INTERIOR
865	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR, WORN OUT AND ERODED, COARSE
866	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND, INCISION	
867	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
868	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, LINEAR PADDLED	
869	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
870	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INDISTINCT	
871	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS, RED SLIPPED	
872	MAL 16	N12	4	BROWN	D	BODY	BT 50L	INDISTINCT	
873	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INCISION	
874	MAL 16	N12	4	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	BLACK EXTERIOR AND INTERIOR
875	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
876	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
877	MAL 16	N12	4	REDDISH BROWN	UD	RIM	ST 05CM		BROKEN LIP OF A RIM
878	MAL 16	N12	4	BLACK	D	RIM	ST 05CM	RAISED BAND	BROKEN LIP OF A RIM
879	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	

880	MAL 16	N12	4	BLACK	D	BODY	BT 50L	INDISTINCT	
881	MAL 16	N12	4	GREY	D	BODY	BT 50L	INDISTINCT	
882	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	WAFFLE	
883	MAL 16	N12	4	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, MULTIPLE PARALLEL INCISIONS	
884	MAL 16	N12	4	LIGHT BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	VERY LIKELY TO BE THE SAME VESSEL AS SHERD 883,
885	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, WAFFLE	
886	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND, MULTIPLE PARALLEL INCISIONS	
887	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND, MULTIPLE PARALLEL INCISIONS	
888	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
889	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
890	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
891	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
892	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INCISION	
899	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
900	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		
901	MAL 16	N12	4	CREAM	UD	BODY	BT 50L		BROWNISH EXTERIOR
902	MAL 16	N12	4	BLACK	D	BODY	BT 50L	BURNISHED	
903	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
904	MAL 16	N12	4	ORANGE	UD	BODY	BT 50L		
905	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
906	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED
907	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
908	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		
909	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
910	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
911	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		BLACK PATCHES ON EXTERIOR
912	MAL 16	N12	4	BROWN	UD	BODY	BT 50L		
913	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
914	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		
915	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
916	MAL 16	N12	4	BROWN	UD	BODY	BT 50L		
917	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
918	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
919	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
920	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		BLACK PATCHES ON EXTERIOR, ROUGH
921	MAL 16	N12	4	REDDISH ORANGE	UD	BODY	BT 50L		1CM THICK, VERY SYMMETRICAL, SQUARED SHERD
922	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		A LOT OF INCLUSIONS ON EXTERIOR
923	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
924	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		VERY FINE
925	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		GREYISH EXTERIOR
926	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
927	MAL 16	N12	4	GREY	UD	BODY	BT 50L		BLACK EXTERIOR, HIGH FIRED
928	MAL 16	N12	4	CREAM	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INDISTINCT	WORN OUT AND ERODED
929	MAL 16	N12	4	BROWN	UD	BODY	BT 50L		VERY FINE
930	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR
931	MAL 16	N12	4	BROWN	UD	BODY	BT 50L		
932	MAL 16	N12	4	BROWN	UD	BODY	BT 50L		

933	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR
934	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		LIGHT CREAMY PATCH ON EXTERIOR
935	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		BLACKISH SHERD
936	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		
937	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		
938	MAL 16	N12	4	REDDISH ORANGE	UD	BODY	BT 50L		ICM THICK, BLACK PATCH ON EXTERIOR
939	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
940	MAL 16	N12	4	ORANGE	UD	BODY	BT 50L		ROUGH
941	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		LIGHT BROWN INTERIOR
942	MAL 16	N12	4	GREY	UD	BODY	BT 50L		HIGH FIRED, FINE AND SMOOTH
943	MAL 16	N12	4	REDDISH BROWN	UD	BODY	BT 50L		FINE AND SMOOTH
944	MAL 16	N12	4	DARK BROWN	UD	BODY	BT 50L		ROUGH
945	MAL 16	N12	4	BROWN	UD	BODY	BT 50L		BLACK INTERIOR
946	MAL 16	N12	3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INDISTINCT	
947	MAL 16	N12	3	REDDISH BROWN	UD	BODY	BT 50L		
948	MAL 16	N12	3	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, MULTIPLE PARALLEL INCISIONS	
949	MAL 16	N12	4	CREAM	D	BODY	BT 50L	INDISTINCT	
950	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
951	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
952	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
953	MAL 16	N12	4	ORANGE	D	BODY	BT 50L	INDISTINCT	
954	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
955	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, RAISED BAND	
956	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, RAISED BAND	
957	MAL 16	N12	4	ORANGE	D	BODY	BT 50L	INDISTINCT	COULD BE FROM THE SAME VESSEL AS SHERD 958
958	MAL 16	N12	4	ORANGE	D	BODY	BT 50L	INDISTINCT	
959	MAL 16	N12	4	ORANGE	D	BODY	BT 50L	WAFFLE	
960	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, LINEAR PADDLED	
961	MAL 16	N12	4	ORANGE	UD	BODY	BT 50L		
962	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	INCISION	
963	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	RAISED BAND	
964	MAL 16	N12	4	BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
965	MAL 16	N12	4	YELLOW	D	BODY	BT 50L	LINEAR PADDLED	
966	MAL 16	N12	4	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
967	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, MULTIPLE PARALLEL INCISIONS	
968	MAL 16	N12	4	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
969	MAL 16	N12	4	DARK BROWN	D	RIM	ST 05CM	RAISED BAND	BROKEN RIM, LIP ALMOST GONE
970	MAL 16	N12	4	CREAM	UD	RIM	ST 05CM		FINE
971	MAL 16	N12	4	BROWN	D	RIM	ST 05CM	INCISION ON LIP	
972	MAL 16	N12	4	REDDISH BROWN	UD	RIM	ST 05CM		
973	MAL 16	N12	4	REDDISH BROWN	D	RIM	ST 05CM	RAISED BAND ON LIP	SMALL PART OF LIP PRESENT
974	MAL 16	N12	4	BLACK	D	RIM	ST 05CM	FOUR MULTIPLE PARALLEL RAISED BANDS, BURNISHED	VERY FINE
1028	UTH 16	1	SURFACE	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
1029	UTH 16	1	SURFACE	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
1030	UTH 16	1	SURFACE	GREY	UD	BODY	BT 50L		FINE AND SMOOTH
1031	UTH 16	1	SURFACE	GREY	UD	BODY	BT 50L		VERY FINE AND SMOOTH CLAY, DIFFERENT CLAY MATERIAL, WORN OUT AND ERODED, TWO SHERDS, REFIT

1032	UTH 16	1	SURFACE	LIGHT BROWN	UD	RIM	ST 05CM		
1033	UTH 16	1	SURFACE	BROWN	D	RIM	ST 05CM	RAISED BAND	TWO SHERDS, REFIT
1034	UTH 16	1	SURFACE	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1035	UTH 16	1	SURFACE	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1036	UTH 16	1	SURFACE	REDDISH BROWN	D	RIM	BT 05CM	MULTIPLE PARALLEL INCISIONS, RAISED BAND	
1037	UTH 16	1	0-10 CM	REDDISH BROWN	UD	BODY	BT 50L		FINE
1038	UTH 16	1	0-10 CM	DARK BROWN	UD	BODY	BT 50L		
1039	UTH 16	1	0-10 CM	YELLOW	UD	BODY	BT 50L		SEVERAL VOIDS, COARSE
1040	UTH 16	1	0-10 CM	REDDISH BROWN	UD	BODY	BT 50L		ICM THICK
1041	UTH 16	1	0-10 CM	REDDISH PINK	D	BODY	BT 50L	INDISTINCT	
1042	UTH 16	1	0-10 CM	RED	UD	BODY	BT 50L		
1043	UTH 16	1	0-10 CM	ORANGE	UD	BODY	BT 50L		WORN OUT AND ERODED
1044	UTH 16	1	0-10 CM	BROWN	UD	BODY	BT 50L		
1045	UTH 16	1	0-10 CM	GREY	UD	BODY	BT 50L		
1046	UTH 16	1	0-10 CM	RED	D	BODY	BT 50L	INDISTINCT	ICM THICK
1047	UTH 16	1	0-10 CM	ORANGE	D	BODY	BT 50L	INDISTINCT	
1048	UTH 16	1	0-10 CM	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1049	UTH 16	1	0-10 CM	DARK BROWN	D	BODY	BT 50L	CARINATED	
1050	UTH 16	1	0-10 CM	ORANGE	D	BODY	BT 50L	CARINATED	
1051	UTH 16	1	0-10 CM	REDDISH ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1052	UTH 16	1	0-10 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	TWO SHERDS, REFIT
1053	UTH 16	1	0-10 CM	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT, INCISION	NECK?
1054	UTH 16	1	0-10 CM	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1055	UTH 16	1	0-10 CM	ORANGE	UD	RIM	ST 05CM		
1056	UTH 16	1	0-10 CM	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, LINEAR PADDLED	
1057	UTH 16	1	0-10 CM	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1058	UTH 16	1	0-10 CM	BLACK	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1059	UTH 16	1	0-10 CM	DARK BROWN	UD	BODY	BT 50L		
1060	UTH 16	1	0-10 CM	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	BLACK INTERIOR
1061	UTH 16	1	0-10 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1062	UTH 16	1	0-10 CM	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1063	UTH 16	1	0-10 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1064	UTH 16	1	0-10 CM	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1065	UTH 16	1	0-10 CM	ORANGE	D	BODY	BT 50L	INDISTINCT	
1066	UTH 16	1	0-10 CM	BLACK	D	BODY	BT 50L	INDISTINCT	
1068	UTH 16	1	10-20 CM	LIGHT BROWN	UD	BODY	BT 50L		
1069	UTH 16	1	10-20 CM	LIGHT BROWN	UD	BODY	BT 50L		
1070	UTH 16	1	10-20 CM	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1071	UTH 16	1	10-20 CM	BROWN	UD	BODY	BT 50L		
1072	UTH 16	1	10-20 CM	REDDISH BROWN	UD	BODY	BT 50L		
1073	UTH 16	1	10-20 CM	REDDISH BROWN	UD	BODY	BT 50L		
1074	UTH 16	1	10-20 CM	REDDISH BROWN	UD	BODY	BT 50L		
1075	UTH 16	1	10-20 CM	DARK BROWN	UD	BODY	BT 50L		
1076	UTH 16	1	10-20 CM	REDDISH BROWN	UD	BODY	BT 50L		
1077	UTH 16	1	10-20 CM	DARK BROWN	UD	BODY	BT 50L		
1078	UTH 16	1	10-20 CM	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1079	UTH 16	1	10-20 CM	DARK BROWN	UD	BODY	BT 50L		
1080	UTH 16	1	10-20 CM	RED	UD	BODY	BT 50L		
1081	UTH 16	1	10-20 CM	DARK BROWN	UD	BODY	BT 50L		

1082	UTH 16	1	10-20 CM	DARK BROWN	UD	BODY	BT 50L		
1083	UTH 16	1	10-20 CM	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1084	UTH 16	1	10-20 CM	LIGHT BROWN	UD	BODY	BT 50L		
1085	UTH 16	1	10-20 CM	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1086	UTH 16	1	10-20 CM	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1087	UTH 16	1	10-20 CM	DARK BROWN	D	BODY	BT 50L	RAISED BAND, MULTIPLE PARALLEL INCISIONS	
1088	UTH 16	1	10-20 CM	RED	D	BODY	BT 50L	RAISED BAND	
1089	UTH 16	1	10-20 CM	YELLOW	D	BODY	BT 50L	CARINATED	
1090	UTH 16	1	10-20 CM	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1091	UTH 16	1	10-20 CM	REDDISH ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1092	UTH 16	1	10-20 CM	RED	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1093	UTH 16	1	10-20 CM	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1094	UTH 16	1	10-20 CM	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1095	UTH 16	1	10-20 CM	RED	D	BODY	BT 50L	CARINATED	
1096	UTH 16	1	10-20 CM	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1097	UTH 16	1	10-20 CM	REDDISH BROWN	D	BODY	BT 50L	TWO RAISED BAND, CHANNEL, RED SLIPPED EXTERIOR	
1098	UTH 16	1	10-20 CM	LIGHT BROWN	UD	RIM	ST 05CM		
1099	UTH 16	1	10-20 CM	DARK BROWN	D	BODY	BT 50L	RAISED BAND, MULTIPLE PARALLEL INCISIONS	
1100	UTH 16	1	10-20 CM	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1101	UTH 16	1	10-20 CM	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1102	UTH 16	1	10-20 CM	WHITE	D	BODY	BT 50L	INDISTINCT	
1103	UTH 16	1	10-20 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1105	UTH 16	1	10-20 CM	DARK BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1106	UTH 16	1	10-20 CM	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1107	UTH 16	1	10-20 CM	REDDISH BROWN	D	RIM	ST 05CM	INCISION	
1108	UTH 16	1	10-20 CM	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1109	UTH 16	1	10-20 CM	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1110	UTH 16	1	20-30 CM	LIGHT BROWN	UD	BODY	BT 50L		
1111	UTH 16	1	20-30 CM	REDDISH BROWN	UD	BODY	BT 50L		
1112	UTH 16	1	20-30 CM	DARK BROWN	UD	BODY	BT 50L		
1113	UTH 16	1	20-30 CM	DARK BROWN	UD	BODY	BT 50L		
1114	UTH 16	1	20-30 CM	DARK BROWN	UD	BODY	BT 50L		
1115	UTH 16	1	20-30 CM	DARK BROWN	UD	BODY	BT 50L		HAS STRAW MARKS VISIBLE ON THE SHERD
1116	UTH 16	1	20-30 CM	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1117	UTH 16	1	20-30 CM	DARK BROWN	UD	BODY	BT 50L		
1118	UTH 16	1	20-30 CM	ORANGE	UD	BODY	BT 50L		
1119	UTH 16	1	20-30 CM	DARK BROWN	UD	BODY	BT 50L		
1120	UTH 16	1	20-30 CM	CREAM	D	BODY	BT 50L	INDISTINCT	
1121	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1122	UTH 16	1	20-30 CM	WHITE	D	BODY	BT 50L	LINEAR PADDLED	
1123	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	RAISED BAND, TWO ROWS OF CABLES	
1124	UTH 16	1	20-30 CM	REDDISH BROWN	UD	RIM	ST 05CM		
1125	UTH 16	1	20-30 CM	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1127	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1128	UTH 16	1	20-30 CM	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1129	UTH 16	1	20-30 CM	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1130	UTH 16	1	20-30 CM	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1132	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	

1133	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1134	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1135	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1136	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1137	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1138	UTH 16	1	20-30 CM	GREY	UD	RIM	ST 05CM		
1139	UTH 16	1	20-30 CM	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	TWO SHERDS, REFIT
1140	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	INDISTINCT	
1141	UTH 16	2	3	CREAM	UD	BODY	BT 50L		
1142	UTH 16	1	20-30 CM	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1143	UTH 16	1	20-30 CM	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1144	UTH 16	1	20-30 CM	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1145	UTH 16	1	20-30 CM	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1146	UTH 16	1	30-40 CM	WHITE	UD	BODY	BT 50L		
1147	UTH 16	1	30-40 CM	ORANGE	UD	BODY	BT 50L		
1148	UTH 16	1	30-40 CM	DARK BROWN	UD	BODY	BT 50L		
1149	UTH 16	1	30-40 CM	BROWN	UD	RIM	ST 05CM		
1150	UTH 16	1	30-40 CM	YELLOWISH WHITE	D	BODY	BT 50L	CABLE, INDISTINCT	ONE ROW OF CABLE IMPRESSIONS
1151	UTH 16	1	30-40 CM	BROWN	UD	RIM	ST 05CM		
1152	UTH 16	1	30-40 CM	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1153	UTH 16	1	30-40 CM	REDDISH BROWN	D	BODY	BT 50L	CARINATED	
1154	UTH 16	1	30-40 CM	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1155	UTH 16	1	30-40 CM	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1156	UTH 16	1	30-40 CM	BLACK	D	BODY	BT 50L	INDISTINCT	
1157	UTH 16	1	60-70 CM	REDDISH BROWN	UD	BODY	BT 50L		WORN OUT AND ERODED, VERY COARSE AND ROUGH
1158	UTH 16	1	60-70 CM	RED	UD	BODY	BT 50L		
1159	UTH 16	1	60-70 CM	ORANGE	UD	BODY	BT 50L		VERY FINE
1160	UTH 16	2	3	ORANGE	UD	BODY	BT 50L		VERY ROUGH
1161	UTH 16	1	60-70 CM	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1162	UTH 16	1	60-70 CM	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1163	UTH 16	1	60-70 CM	BLACK	UD	RIM	ST 05CM		SMOOTH SURFACE
1164	UTH 16	1	60-70 CM	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1165	UTH 16	1	60-70 CM	RED	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1166	UTH 16	1	60-70 CM	GREY	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT
1167	UTH 16	1	60-70 CM	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1169	UTH 16	1	UPPER INTERFA CE	ORANGE	UD	BODY	BT 50L		THREE SHERDS, REFIT, VERY FINE AND SMOOTH, HIGH FIRED
1170	UTH 16	2	3	DARK BROWN	UD	BODY	BT 50L		2MM THICK
1171	UTH 16	2	3	REDDISH BROWN	UD	BODY	BT 50L		
1172	UTH 16	1	UPPER INTERFA CE	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	TWO SHERDS, REFIT
1173	UTH 16	1	UPPER INTERFA CE	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	TWO SHERDS, REFIT, LOOKS SIMILAR TO SHERD 1172

1174	UTH 16	1	UPPER INTERFA CE	CREAM	D	BODY	BT 50L	INDISTINCT	
1175	UTH 16	1	LOWER INTERFA CE	REDDISH BROWN	D	BODY	BT 50L	WAFFLE	
1176	UTH 16	2	1	REDDISH BROWN	UD	BODY	BT 50L		
1177	UTH 16	2	1	WHITE	UD	BODY	BT 50L		
1178	UTH 16	2	1	REDDISH BROWN	UD	BODY	BT 50L		
1179	UTH 16	2	1	ORANGE	D	RIM	BT 05CM	RAISED BAND ON INTERIOR	
1180	UTH 16	2	1	GREY	D	RIM	ST 05CM	CARINATED, INDISTINCT	
1181	UTH 16	2	1	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1182	UTH 16	2	1	CREAM	D	BODY	BT 50L	INDISTINCT	
1183	UTH 16	2	1	GREY	D	BODY	BT 50L	INDISTINCT	
1184	UTH 16	2	1	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1185	UTH 16	2	1	ORANGE	D	BODY	BT 50L	INDISTINCT	
1186	UTH 16	2	TOP LAYER	CREAM	D	BODY	BT 50L	INDISTINCT	
1187	UTH 16	2	TOP LAYER	ORANGE	UD	BODY	BT 50L		
1188	UTH 16	2	TOP LAYER	REDDISH BROWN	UD	BODY	BT 50L		TWO SHERDS, REFIT, VERY ROUGH
1189	UTH 16	2	TOP LAYER	DARK BROWN	UD	BODY	BT 50L		VERY ROUGH
1190	UTH 16	2	TOP LAYER	ORANGE	UD	BODY	BT 50L		VERY FINE
1191	UTH 16	2	TOP LAYER	REDDISH BROWN	UD	BODY	BT 50L		
1192	UTH 16	2	TOP LAYER	CREAM	UD	BODY	BT 50L		3MM THICK
1193	UTH 16	2	TOP LAYER	REDDISH BROWN	D	BODY	BT 50L	INCISION	SMOOTH EXTERIOR
1194	UTH 16	2	TOP LAYER	DARK BROWN	UD	RIM	ST 05CM		VERY COARSE, WORN OUT AND ERODED
1195	UTH 16	2	TOP LAYER	DARK BROWN	D	RIM	BT 05CM	MULTIPLE PARALLEL INCISIONS	TWO SHERDS, REFIT
1196	UTH 16	2	TOP LAYER	DARK BROWN	UD	RIM	ST 05CM		VERY COARSE
1197	UTH 16	4	102 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1198	UTH 16	2	TOP LAYER	CREAM	D	BODY	BT 50L	WAFFLE	
1199	UTH 16	2	TOP LAYER	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
1200	UTH 16	2	TOP LAYER	CREAM	D	BODY	BT 50L	LINEAR PADDLED	

1201	UTH 16	2	TOP LAYER	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1202	UTH 16	2	TOP LAYER	LIGHT BROWN	D	RIM	BT 05CM	LINEAR PADDLED	TOO ERODED LIP FOR RIM ANALYSIS
1203	UTH 16	2	TOP LAYER	CREAM	D	BODY	BT 50L	CARINATED	
1204	UTH 16	4	100 NORTH EXTENSION	ORANGE	UD	BODY	BT 50L		
1205	UTH 16	4	100 NORTH EXTENSION	GREY	UD	BODY	BT 50L		
1207	UTH 16	4	101	CREAM	UD	BODY	BT 50L		
1208	UTH 16	4	101	DARK BROWN	UD	BODY	BT 50L		
1209	UTH 16	4	101	LIGHT BROWN	UD	BODY	BT 50L		
1210	UTH 16	4	101	REDDISH BROWN	UD	BODY	BT 50L		
1211	UTH 16	4	101	DARK BROWN	UD	BODY	BT 50L		
1212	UTH 16	4	101	ORANGE	D	BODY	BT 50L	INDISTINCT	
1213	UTH 16	4	101	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1214	UTH 16	4	101	GREY	D	BODY	BT 50L	INDISTINCT	
1215	UTH 16	4	101	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1216	UTH 16	4	101	CREAM	UD	RIM	ST 05CM		
1217	UTH 16	4	102	CREAM	UD	BODY	BT 50L		BROWNISH EXTERIOR
1218	UTH 16	4	102	CREAM	UD	BODY	BT 50L		2MM THICK
1219	UTH 16	4	102	LIGHT BROWN	UD	BODY	BT 50L		
1220	UTH 16	4	102	ORANGE	UD	BODY	BT 50L		
1221	UTH 16	4	102	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1222	UTH 16	4	102	LIGHT BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
1223	UTH 16	4	102	ORANGE	UD	BODY	BT 50L		
1224	UTH 16	4	102	DARK BROWN	UD	BODY	BT 50L		
1225	UTH 16	4	102	CREAM	UD	BODY	BT 50L		WHITISH SHERD
1226	UTH 16	4	102	REDDISH BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
1227	UTH 16	4	102	ORANGE	UD	BODY	BT 50L		BLACK INTERIOR
1228	UTH 16	4	102	ORANGE	UD	BODY	BT 50L		WORN OUT AND ERODED
1229	UTH 16	4	102	DARK BROWN	UD	BODY	BT 50L		
1230	UTH 16	4	102	REDDISH PINK	UD	BODY	BT 50L		VERY REDDISH SHERD
1231	UTH 16	4	102	LIGHT BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
1232	UTH 16	4	102	DARK BROWN	UD	BODY	BT 50L		
1233	UTH 16	4	102	DARK BROWN	UD	BODY	BT 50L		
1234	UTH 16	4	102	REDDISH BROWN	UD	BODY	BT 50L		
1235	UTH 16	4	102	CREAM	UD	BODY	BT 50L		WHITISH SHERD
1236	UTH 16	4	102	CREAM	UD	BODY	BT 50L		WHITISH SHERD
1237	UTH 16	4	102	REDDISH BROWN	UD	BODY	BT 50L		
1238	UTH 16	4	102	BROWN	UD	BODY	BT 50L		
1239	UTH 16	4	102	BROWN	UD	BODY	BT 50L		
1240	UTH 16	4	102	ORANGE	UD	BODY	BT 50L		
1241	UTH 16	4	102	RED	UD	BODY	BT 50L		VERY SMOOTH EXTERIOR



1242	UTH 16	4	102	GREY	D	BODY	BT 50L	INDISTINCT	
1243	UTH 16	4	102	REDDISH BROWN	UD	BODY	BT 50L		
1244	UTH 16	4	102	DARK BROWN	UD	BODY	BT 50L		
1245	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1246	UTH 16	4	102	RED	UD	BODY	BT 50L		VERY SMOOTH
1247	UTH 16	4	102	REDDISH BROWN	UD	BODY	BT 50L		
1248	UTH 16	4	102	RED	UD	BODY	BT 50L		
1249	UTH 16	4	102	GREY	UD	BODY	BT 50L		
1250	UTH 16	4	102	ORANGE	UD	BODY	BT 50L		
1251	UTH 16	4	102	CREAM	UD	BODY	BT 50L		
1252	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1253	UTH 16	4	102	ORANGE	UD	BODY	BT 50L		
1254	UTH 16	4	102	DARK BROWN	UD	BODY	BT 50L		
1255	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1256	UTH 16	4	102	BROWN	UD	BODY	BT 50L		
1257	UTH 16	4	102	BROWN	UD	BODY	BT 50L		
1258	UTH 16	4	102	REDDISH BROWN	UD	BODY	BT 50L		
1259	UTH 16	4	102	DARK BROWN	UD	BODY	BT 50L		BLACK INTERIOR
1260	UTH 16	4	102	CREAM	UD	BODY	BT 50L		
1261	UTH 16	4	102	ORANGE	UD	BODY	BT 50L		
1262	UTH 16	4	102	DARK BROWN	UD	BODY	BT 50L		
1263	UTH 16	4	102	CREAM	UD	BODY	BT 50L		
1264	UTH 16	4	102	CREAM	UD	BODY	BT 50L		WHITISH SHERD
1265	UTH 16	4	102	REDDISH BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
1266	UTH 16	4	102	BROWN	UD	RIM	BT 05CM		
1267	UTH 16	4	102	BROWN	UD	RIM	ST 05CM		
1268	UTH 16	4	102	ORANGE	UD	RIM	ST 05CM		
1269	UTH 16	4	102	REDDISH BROWN	D	RIM	ST 05CM	INCISION ON LIP	
1270	UTH 16	4	102	REDDISH BROWN	UD	RIM	ST 05CM		VERY FINE
1271	UTH 16	4	102	ORANGE	UD	RIM	ST 05CM		VERY FINE
1272	UTH 16	4	102	CREAM	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1273	UTH 16	4	102	CREAM	D	BODY	BT 50L	INDISTINCT	
1274	UTH 16	4	102	CREAM	D	BODY	BT 50L	LINEAR PADDLED	LOOKS SIMILAR TO SHERDS: 1272, 1273, 1276
1275	UTH 16	4	102	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1276	UTH 16	4	102	CREAM	D	BODY	BT 50L	LINEAR PADDLED	LOOKS SIMILAR TO SHERDS: 1272, 1273, 1274
1277	UTH 16	4	102	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1278	UTH 16	4	102	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1279	UTH 16	4	102	CREAM	D	BODY	BT 50L	CABLE, INDISTINCT	ONE ROW OF CABLE IMPRESSIONS
1280	UTH 16	4	102	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1281	UTH 16	4	102	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1282	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, MULTIPLE PARALLEL INCISIONS	
1283	UTH 16	4	102	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1284	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1285	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1286	UTH 16	4	102	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1287	UTH 16	4	102	BROWN	D	BODY	BT 50L	RAISED BAND	
1288	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	

1289	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1290	UTH 16	4	102	ORANGE	D	BODY	BT 50L	INDISTINCT	
1291	UTH 16	4	102	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1292	MAL 16	E7	4	BLACK	UD	RIM	ST 05CM		TOO SMALL FOR ANALYSIS
1293	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1294	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1295	UTH 16	4	102	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1296	UTH 16	4	102	ORANGE	D	BODY	BT 50L	INDISTINCT	
1297	UTH 16	4	102	ORANGE	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1298	UTH 16	4	102	ORANGE	D	BODY	BT 50L	INDISTINCT	
1299	UTH 16	4	102	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1300	UTH 16	4	102	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1301	UTH 16	4	102	ORANGE	D	BODY	BT 50L	INDISTINCT	
1302	UTH 16	4	102	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1303	UTH 16	4	102	ORANGE	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1304	UTH 16	4	102	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1305	UTH 16	4	102	ORANGE	D	BODY	BT 50L	INDISTINCT	
1306	UTH 16	4	102	BROWN	UD	RIM	ST 05CM		
1307	UTH 16	4	102	ORANGE	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1310	UTH 16	4	102	CREAM	D	BODY	BT 50L	CARINATED	
1311	UTH 16	4	102 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		
1312	UTH 16	4	102 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1313	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	BLACK EXTERIOR
1314	UTH 16	4	102 NORTH EXTENSI ON	LIGHT BROWN	UD	BODY	BT 50L		
1315	UTH 16	4	102 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1316	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	UD	BODY	BT 50L		
1317	UTH 16	4	102 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		

1318	UTH 16	4	102 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		
1319	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1320	UTH 16	4	102 NORTH EXTENSI ON	BROWN	D	RIM	ST 05CM	INCISION ON LIP	
1321	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	
1322	UTH 16	4	102 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	WAFFLE	
1323	UTH 16	4	102 NORTH EXTENSI ON	CREAM	D	BODY	BT 50L	INDISTINCT	
1324	UTH 16	4	102 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1325	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1326	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	CARINATED	
1327	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1328	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	BLACK EXTERIOR
1329	UTH 16	4	102 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	

1330	UTH 16	4	102 NORTH EXTENSION	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1331	UTH 16	4	102 NORTH EXTENSION	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1332	UTH 16	4	102 NORTH EXTENSION	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1333	UTH 16	4	102 NORTH EXTENSION	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1334	UTH 16	4	102 NORTH EXTENSION	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1335	UTH 16	4	102 NORTH EXTENSION	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1336	UTH 16	4	103	REDDISH BROWN	UD	BODY	BT 50L		
1337	UTH 16	4	103	REDDISH BROWN	UD	BODY	BT 50L		
1338	UTH 16	4	103	CREAM	D	BODY	BT 50L	INDISTINCT	
1339	UTH 16	4	103	DARK BROWN	UD	BODY	BT 50L		
1340	UTH 16	4	103	DARK BROWN	UD	BODY	BT 50L		
1341	UTH 16	4	103	ORANGE	D	BODY	BT 50L	WAFFLE	NECK
1342	UTH 16	4	103	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1343	UTH 16	4	103	ORANGE	D	BODY	BT 50L	INDISTINCT	
1344	UTH 16	4	103 NORTH EXTENSION	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
1345	UTH 16	4	103 NORTH EXTENSION	CREAM	UD	BODY	BT 50L		
1346	UTH 16	4	103 NORTH EXTENSION	ORANGE	D	BODY	BT 50L	INDISTINCT	BLACK EXTERIOR
1347	UTH 16	4	103 NORTH EXTENSION	RED	UD	BODY	BT 50L		

1348	UTH 16	4	103 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1349	UTH 16	4	103 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1350	UTH 16	4	103 NORTH EXTENSI ON	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1351	UTH 16	4	103 NORTH EXTENSI ON	CREAM	D	BODY	BT 50L	RAISED BAND	
1352	UTH 16	4	103 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1353	UTH 16	4	106	LIGHT BROWN	UD	BODY	BT 50L		TWO SHERDS, REFIT
1354	UTH 16	4	106	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1355	UTH 16	4	106	CREAM	UD	BODY	BT 50L		
1356	UTH 16	4	106	REDDISH BROWN	UD	BODY	BT 50L		
1357	UTH 16	4	106	ORANGE	UD	BODY	BT 50L		
1358	UTH 16	4	106	ORANGE	UD	BODY	BT 50L		
1359	UTH 16	4	106	ORANGE	UD	BODY	BT 50L		
1360	UTH 16	4	106	ORANGE	D	BODY	BT 50L	CARINATED, LINEAR PADDLED	
1361	UTH 16	4	106	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1362	UTH 16	4	106	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1363	UTH 16	4	106	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1364	UTH 16	4	106	ORANGE	D	BODY	BT 50L	INDISTINCT	
1365	UTH 16	4	106	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1366	UTH 16	4	106	CREAM	D	BODY	BT 50L	LINEAR PADDLED	BLACK EXTERIOR
1367	UTH 16	4	106	ORANGE	D	BODY	BT 50L	INDISTINCT	
1368	UTH 16	4	106 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1369	UTH 16	4	106 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1371	UTH 16	4	107	REDDISH BROWN	UD	BODY	BT 50L		
1372	UTH 16	4	107	CREAM	D	BODY	BT 50L	INDISTINCT	
1373	UTH 16	4	107 NORTH EXTENSI ON	ORANGE	UD	BODY	BT 50L		WORN OUT AND ERODED

1374	UTH 16	4	107 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		
1375	UTH 16	4	107 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1376	UTH 16	4	107 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1377	UTH 16	4	107 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1378	UTH 16	4	107 NORTH EXTENSI ON	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1379	UTH 16	4	107 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1380	UTH 16	4	107 NORTH EXTENSI ON	ORANGE	UD	RIM	ST 05CM		
1381	UTH 16	4	108	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1382	UTH 16	4	108	REDDISH BROWN	UD	BODY	BT 50L		
1383	UTH 16	4	108	REDDISH BROWN	UD	BODY	BT 50L		
1384	UTH 16	4	108	REDDISH BROWN	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	BLACK EXTERIOR
1385	UTH 16	4	108	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1386	UTH 16	4	108	BROWN	D	RIM	ST 05CM	RAISED BAND	
1387	UTH 16	4	108	REDDISH BROWN	UD	BODY	BT 50L		
1388	UTH 16	4	108	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1389	UTH 16	4	108	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1390	UTH 16	4	108	CREAM	D	BODY	BT 50L	INDISTINCT	
1392	UTH 16	4	108 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		
1393	UTH 16	4	108 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		

1394	UTH 16	4	108 NORTH EXTENSION	DARK BROWN	UD	BODY	BT 50L		
1395	UTH 16	4	108 NORTH EXTENSION	REDDISH BROWN	UD	BODY	BT 50L		
1396	UTH 16	4	108 NORTH EXTENSION	REDDISH BROWN	UD	BODY	BT 50L		
1397	UTH 16	4	108 NORTH EXTENSION	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1398	UTH 16	4	108 NORTH EXTENSION	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1399	UTH 16	4	108 NORTH EXTENSION	BROWN	D	BODY	BT 50L	RAISED BAND	
1400	UTH 16	4	108 NORTH EXTENSION	ORANGE	D	BODY	BT 50L	INDISTINCT	
1401	UTH 16	4	108 NORTH EXTENSION	REDDISH BROWN	UD	RIM	ST 05CM		
1402	UTH 16	4	109	ORANGE	D	BODY	BT 50L	INDISTINCT	
1403	UTH 16	4	109	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1404	UTH 16	4	110	LIGHT BROWN	UD	BODY	BT 50L		BLACK INTERIOR
1405	UTH 16	4	110	REDDISH BROWN	UD	BODY	BT 50L		
1406	UTH 16	4	110	ORANGE	UD	BODY	BT 50L		
1407	UTH 16	4	110	DARK BROWN	UD	BODY	BT 50L		BLACK INTERIOR
1408	UTH 16	4	110	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1409	UTH 16	4	110	CREAM	D	BODY	BT 50L	INDISTINCT	
1410	UTH 16	4	110	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1411	UTH 16	4	110	ORANGE	D	BODY	BT 50L	RAISED BAND	NECK
1412	UTH 16	4	110	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1413	UTH 16	4	110	CREAM	D	BODY	BT 50L	WAFFLE	
1414	UTH 16	4	110	RED	D	BODY	BT 50L	INDISTINCT	
1415	UTH 16	4	110	ORANGE	D	BODY	BT 50L	RAISED BAND	
1416	UTH 16	4	110	CREAM	D	BODY	BT 50L	CARINATED, LINEAR PADDLED	
1417	UTH 16	4	110	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1418	UTH 16	4	110	CREAM	D	BODY	BT 50L	CARINATED	

1419	UTH 16	4	110	CREAM	D	BODY	BT 50L	INDISTINCT	
1420	UTH 16	4	110	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1421	UTH 16	4	110	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1422	UTH 16	4	111	ORANGE	UD	BODY	BT 50L		
1423	UTH 16	4	111	ORANGE	UD	BODY	BT 50L		
1424	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1425	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1426	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1427	UTH 16	4	111	ORANGE	UD	BODY	BT 50L		
1428	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1429	UTH 16	4	111	BROWN	UD	BODY	BT 50L		
1430	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1431	UTH 16	4	111	LIGHT BROWN	UD	BODY	BT 50L		
1432	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1433	UTH 16	4	111	BROWN	UD	BODY	BT 50L		
1434	UTH 16	4	111	BROWN	UD	BODY	BT 50L		
1435	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1436	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1437	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1438	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1439	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1440	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1441	UTH 16	4	111	ORANGE	UD	BODY	BT 50L		
1442	UTH 16	4	111	BROWN	UD	BODY	BT 50L		
1443	UTH 16	4	111	ORANGE	UD	BODY	BT 50L		
1444	UTH 16	4	111	DARK BROWN	UD	BODY	BT 50L		
1445	UTH 16	4	111	CREAM	UD	BODY	BT 50L		
1446	UTH 16	4	111	DARK BROWN	UD	BODY	BT 50L		
1447	UTH 16	4	111	DARK BROWN	UD	BODY	BT 50L		
1448	UTH 16	4	111	REDDISH BROWN	UD	BODY	BT 50L		
1449	UTH 16	4	111	DARK BROWN	UD	BODY	BT 50L		
1450	UTH 16	4	111	BLACK	UD	BODY	BT 50L		
1451	UTH 16	4	111	ORANGE	UD	BODY	BT 50L		
1452	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1453	UTH 16	4	111	ORANGE	D	BODY	BT 50L	INDISTINCT	
1454	UTH 16	4	111	REDDISH BROWN	UD	RIM	BT 05CM		
1457	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	NECK
1458	UTH 16	4	111	ORANGE	D	BODY	BT 50L	CARINATED	
1459	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1460	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1461	UTH 16	4	111	CREAM	D	BODY	BT 50L	INDISTINCT	
1462	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED, RED SLIPPED EXTERIOR	
1463	UTH 16	4	111	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1464	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1465	UTH 16	4	111	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1466	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1467	UTH 16	4	111	DARK BROWN	D	BODY	BT 50L	CARINATED, LINEAR PADDLED	
1468	UTH 16	4	111	DARK BROWN	D	BODY	BT 50L	CARINATED, LINEAR PADDLED	
1469	UTH 16	4	111	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	



1470	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1471	UTH 16	4	111	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1472	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1473	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1474	UTH 16	4	111	ORANGE	UD	RIM	ST 05CM		
1475	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1476	UTH 16	4	111	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1477	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1478	UTH 16	4	111	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1479	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	CARINATED	
1480	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1481	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1482	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1483	UTH 16	4	111	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1484	UTH 16	4	111	DARK BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1485	UTH 16	4	111	ORANGE	D	BODY	BT 50L	WAFFLE	
1486	UTH 16	4	111	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1487	UTH 16	4	111	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1488	UTH 16	4	111	BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1489	UTH 16	4	111	CREAM	D	BODY	BT 50L	LINEAR PADDLED	REFITS WITH SHERD 1492
1490	UTH 16	4	111	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1491	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1492	UTH 16	4	111	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1493	UTH 16	4	111	REDDISH BROWN	D	BODY	BT 50L	CARINATED	
1494	UTH 16	4	111N	ORANGE	UD	BODY	BT 50L		
1495	UTH 16	4	111N	REDDISH BROWN	UD	BODY	BT 50L		
1496	UTH 16	4	111N	REDDISH BROWN	UD	BODY	BT 50L		
1497	UTH 16	4	111N	REDDISH BROWN	UD	BODY	BT 50L		
1498	UTH 16	4	111N	REDDISH BROWN	UD	BODY	BT 50L		
1499	UTH 16	4	111N	CREAM	UD	BODY	BT 50L		
1500	UTH 16	4	111N	DARK BROWN	UD	BODY	BT 50L		
1501	UTH 16	4	111N	REDDISH BROWN	UD	BODY	BT 50L		
1502	UTH 16	4	111N	ORANGE	UD	BODY	BT 50L		
1503	UTH 16	4	111N	ORANGE	UD	RIM	ST 05CM		
1504	UTH 16	4	111N	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1505	UTH 16	4	111N	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1506	UTH 16	4	111N	LIGHT BROWN	UD	RIM	BT 05CM		
1507	UTH 16	4	111N	REDDISH BROWN	UD	RIM	ST 05CM		
1510	UTH 16	4	111N	LIGHT BROWN	D	BODY	BT 50L	CARINATED	
1511	UTH 16	4	111N	ORANGE	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1512	UTH 16	4	111N	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1513	UTH 16	4	111N	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1514	UTH 16	4	111N	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1515	UTH 16	4	111N	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1516	UTH 16	4	111N	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR, LINEAR PADDLED	
1517	UTH 16	4	111N	REDDISH BROWN	D	BODY	BT 50L	CARINATED	
1518	UTH 16	4	111N	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	

1519	UTH 16	4	111 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		
1520	UTH 16	4	111 NORTH EXTENSI ON	BLACK	UD	BODY	BT 50L		
1521	UTH 16	4	111 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		
1522	UTH 16	4	111 NORTH EXTENSI ON	LIGHT BROWN	UD	BODY	BT 50L		
1523	UTH 16	4	111 NORTH EXTENSI ON	BLACK	UD	BODY	BT 50L		
1524	UTH 16	4	111 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1525	UTH 16	4	111 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		
1526	UTH 16	4	111 NORTH EXTENSI ON	ORANGE	UD	BODY	BT 50L		
1527	UTH 16	4	111 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1528	UTH 16	4	111 NORTH EXTENSI ON	GREY	UD	BODY	BT 50L		
1529	UTH 16	4	111 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1530	UTH 16	4	111 NORTH EXTENSI ON	REDDISH ORANGE	D	RIM	BT 05CM	RAISED BAND ON INT	BLACKISH INTERIOR

1531	UTH 16	4	111 NORTH EXTENSI ON	REDDISH BROWN	UD	RIM	ST 05CM		
1534	UTH 16	4	111 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1535	UTH 16	4	111 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1536	UTH 16	4	111 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1537	UTH 16	4	111 NORTH EXTENSI ON	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1538	UTH 16	4	111 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	INDISTINCT	
1539	UTH 16	4	111 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1540	UTH 16	4	111 NORTH EXTENSI ON	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1541	UTH 16	4	111 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1542	UTH 16	4	111 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1543	UTH 16	4	111 NORTH EXTENSI ON	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1544	UTH 16	4	111 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	

1545	UTH 16	4	111 NORTH EXTENSION	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1546	UTH 16	4	111 NORTH EXTENSION	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR, LINEAR PADDLED	
1547	UTH 16	4	113	BLACK	UD	BODY	BT 50L		
1548	UTH 16	4	113	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1549	UTH 16	4	115	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1550	UTH 16	4	117	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1551	UNLABELLED/ DOES NOT EXIST								
1552	UTH 16	4	118	REDDISH BROWN	UD	BODY	BT 50L		
1553	UTH 16	4	118	ORANGE	UD	BODY	BT 50L		BLACK EXTERIOR, REFFITS WITH SHERD 1554
1554	UTH 16	4	118	ORANGE	UD	BODY	BT 50L		
1555	UTH 16	4	118	CREAM	UD	BODY	BT 50L		FINE AND SMOOTH
1556	UTH 16	4	118	ORANGE	UD	BODY	BT 50L		
1557	UTH 16	4	118	REDDISH BROWN	UD	BODY	BT 50L		
1558	UTH 16	4	118	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1559	UTH 16	4	118	BROWN	UD	BODY	BT 50L		
1560	UTH 16	4	118	BROWN	UD	BODY	BT 50L		
1561	UTH 16	4	118	BROWN	UD	BODY	BT 50L		
1562	UTH 16	4	118	BROWN	UD	BODY	BT 50L		
1563	UTH 16	4	118	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
1564	UTH 16	4	118	WHITE	D	BODY	BT 50L	INDISTINCT	
1565	UTH 16	4	118	REDDISH BROWN	D	BODY	BT 50L	WAFFLE	
1566	UTH 16	4	118	REDDISH BROWN	UD	BODY	BT 50L		
1567	UTH 16	4	118	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1568	UTH 16	4	118	DARK BROWN	D	BODY	BT 50L	THREE PARALLEL RAISED BANDS, MULTIPLE PARALLEL INCISIONS	
1569	UTH 16	4	118	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1570	UTH 16	4	118	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1571	UTH 16	4	118	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1572	UTH 16	4	118	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1573	UTH 16	4	118	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1574	UTH 16	4	118	ORANGE	D	BODY	BT 50L	WAFFLE	
1575	UTH 16	4	118	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1576	UTH 16	4	118	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1577	UTH 16	4	118	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1578	UTH 16	4	118N	BROWN	UD	BODY	BT 50L		
1579	UTH 16	4	118N	RED	UD	BODY	BT 50L		
1580	UTH 16	4	118N	BROWN	UD	BODY	BT 50L		
1581	UTH 16	4	118N	BROWN	UD	BODY	BT 50L		
1582	UTH 16	4	118N	REDDISH BROWN	UD	BODY	BT 50L		
1583	UTH 16	4	118N	REDDISH BROWN	UD	BODY	BT 50L		
1584	UTH 16	4	118N	BROWN	UD	BODY	BT 50L		
1585	UTH 16	4	118N	BROWN	UD	BODY	BT 50L		

1586	UTH 16	4	118N	BROWN	UD	BODY	BT 50L		
1587	UTH 16	4	118N	REDDISH BROWN	UD	BODY	BT 50L		
1588	UTH 16	4	118N	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1589	UTH 16	4	118N	DARK BROWN	D	BODY	BT 50L	CARINATED	
1590	UTH 16	4	118N	REDDISH BROWN	D	BODY	BT 50L	WAFFLE	ICM THICK, MORE LIKE INDISTINCT
1591	UTH 16	4	118N	REDDISH BROWN	D	BODY	BT 50L	TWO RAISED BANDS, CHANNEL	
1592	UTH 16	4	118N	LIGHT BROWN	UD	RIM	BT 05CM		TWO SHERDS REFITTED
1593	UTH 16	4	118 NORTH EXTENSION	LIGHT BROWN	D	RIM	BT 05CM	RAISED BAND ON INT	
1594	UTH 16	4	118 NORTH EXTENSION	ORANGE	UD	RIM	ST 05CM		
1595	UTH 16	4	118 NORTH EXTENSION	BROWN	UD	RIM	ST 05CM		
1599	UTH 16	4	118 NORTH EXTENSION	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1600	UTH 16	4	118 NORTH EXTENSION	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1601	UTH 16	4	118 NORTH EXTENSION	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1602	UTH 16	4	118 NORTH EXTENSION	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1603	UTH 16	4	118 NORTH EXTENSION	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1604	UTH 16	4	118 NORTH EXTENSION	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1605	UTH 16	4	118 NORTH EXTENSION	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	

1606	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1607	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1608	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	WAFFLE	
1609	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1610	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	UD	BODY	BT 50L		
1611	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
1612	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT, CARINATED	
1613	UTH 16	4	118 NORTH EXTENSI ON	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1614	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
1615	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	WAFFLE	
1616	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1617	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	

1618	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1619	UTH 16	4	118 NORTH EXTENSI ON	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1620	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	RAISED BAND	
1621	UTH 16	4	118 NORTH EXTENSI ON	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1622	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1623	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1624	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1625	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1626	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	D	BODY	BT 50L	WAFFLE	
1627	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1628	UTH 16	4	118 NORTH EXTENSI ON	BLACK	D	BODY	BT 50L	INDISTINCT	
1629	UTH 16	4	118 NORTH EXTENSI ON	BLACK	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	

1630	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	UD	BODY	BT 50L		
1631	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1632	UTH 16	4	118 NORTH EXTENSI ON	BROWN	D	BODY	BT 50L	INDISTINCT	
1633	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	UD	BODY	BT 50L		
1634	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1635	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1636	UTH 16	4	118 NORTH EXTENSI ON	BROWN	UD	BODY	BT 50L		
1637	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1638	UTH 16	4	118 NORTH EXTENSI ON	LIGHT BROWN	UD	BODY	BT 50L		
1639	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1640	UTH 16	4	118 NORTH EXTENSI ON	REDDISH BROWN	UD	BODY	BT 50L		
1641	UTH 16	4	118 NORTH EXTENSI ON	DARK BROWN	UD	BODY	BT 50L		



1642	UTH 16	4	118 NORTH EXTENSION	REDDISH BROWN	UD	BODY	BT 50L		
1643	UTH 16	4	118 NORTH EXTENSION	DARK BROWN	UD	BODY	BT 50L		
1644	UTH 16	4	118 NORTH EXTENSION	CREAM	UD	BODY	BT 50L		
1645	UTH 16	4	118 NORTH EXTENSION	DARK BROWN	UD	BODY	BT 50L		
1646	UTH 16	4	118 NORTH EXTENSION	DARK BROWN	UD	BODY	BT 50L		
1647	UTH 16	4	118 NORTH EXTENSION	DARK BROWN	UD	BODY	BT 50L		
1648	UTH 16	4	111/118	WHITE	UD	BODY	BT 50L		
1649	UTH 16	4	111/118	REDDISH BROWN	UD	BODY	BT 50L		
1650	UTH 16	4	111/118	REDDISH BROWN	UD	BODY	BT 50L		
1651	UTH 16	4	111/118	REDDISH BROWN	UD	BODY	BT 50L		
1652	UTH 16	4	111/118	CREAM	UD	BODY	BT 50L		
1653	UTH 16	4	111/118	CREAM	UD	BODY	BT 50L		
1654	UTH 16	4	111/118	REDDISH BROWN	UD	BODY	BT 50L		
1655	UTH 16	4	111/118	DARK BROWN	UD	BODY	BT 50L		
1656	UTH 16	4	111/118	REDDISH BROWN	UD	BODY	BT 50L		
1657	UTH 16	4	111/118	REDDISH BROWN	UD	BODY	BT 50L		
1658	UTH 16	4	111/118	CREAM	UD	BODY	BT 50L		
1659	UTH 16	4	111/118	LIGHT BROWN	D	BODY	BT 50L	WAFFLE	
1660	UTH 16	4	111/118	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL RAISED BANDS	
1661	UTH 16	4	111/118	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1662	UTH 16	4	111/118	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1663	UTH 16	4	111/118	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1664	UTH 16	4	111/118	BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1665	UTH 16	4	111/118	REDDISH BROWN	UD	RIM	ST 05CM		
1667	UTH 16	4	119	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1668	UTH 16	4	119	BROWN	D	BODY	BT 50L	INDISTINCT	
1669	UTH 16	4	119	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1670	UTH 16	4	119	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1671	UTH 16	4	119	BROWN	D	BODY	BT 50L	WAFFLE	
1672	UTH 16	4	119	BROWN	UD	BODY	BT 50L		FEW SANDY GRIT
1673	UTH 16	4	119	BROWN	D	BODY	BT 50L	INDISTINCT	

1674	UTH 16	4	119 MIXED	REDDISH BROWN	UD	BODY	BT 50L		FEW SANDY GRIT
1675	UTH 16	4	119 MIXED	ORANGE	D	BODY	BT 50L	INDISTINCT	
1676	UTH 16	4	119 MIXED	REDDISH BROWN	D	BODY	BT 50L	CARINATED	
1677	UTH 16	4	119 MIXED	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1678	UTH 16	4	119 MIXED	BROWN	D	BODY	BT 50L	INDISTINCT	
1679	UTH 16	4	119 MIXED	LIGHT BROWN	D	BODY	BT 50L	CABLE	ONE ROW OF CABLE IMPRESSIONS
1680	UTH 16	4	119 MIXED	CREAM	D	BODY	BT 50L	INDISTINCT	
1681	UTH 16	4	119 MIXED	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1682	UTH 16	4	119 MIXED	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1683	UTH 16	4	120	REDDISH BROWN	UD	BODY	BT 50L		
1684	UTH 16	4	120	REDDISH BROWN	UD	BODY	BT 50L		
1685	UTH 16	4	120	BLACK	UD	BODY	BT 50L		
1686	UTH 16	4	120	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1687	UTH 16	4	120	DARK BROWN	UD	BODY	BT 50L		
1688	UTH 16	4	120	WHITE	UD	BODY	BT 50L		
1689	UTH 16	4	120	LIGHT BROWN	UD	BODY	BT 50L		
1690	UTH 16	4	120	RED	UD	BODY	BT 50L		
1691	UTH 16	4	120	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1692	UTH 16	4	120	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1693	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	CARINATED	
1694	UTH 16	4	120	DARK BROWN	D	BODY	BT 50L	ORDERED IMPRESSED (OI)	CRISP, ORDERED ROWS OF IMPRESSIONS
1695	UTH 16	4	120	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	BLACK INTERIOR
1696	UTH 16	4	120	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1697	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1698	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1699	UTH 16	4	120	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1700	UTH 16	4	120	LIGHT BROWN	D	BODY	BT 50L	WAFFLE	
1701	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1702	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	VERY PINK SHERD
1703	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1704	UTH 16	4	120	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	BLACK EXTERIOR
1705	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1706	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS, RAISED BAND	
1707	UTH 16	4	120	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	BLACK INTERIOR
1710	UTH 16	4	122	REDDISH ORANGE	UD	BODY	BT 50L		
1711	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1712	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1713	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1714	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1715	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		

1716	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1717	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1718	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1719	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L	VERY BLACKISH SHERD	
1720	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L	VERY WHITISH DHERD	
1721	UTH 16	4	122	BLACK	UD	BODY	BT 50L		
1722	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1723	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1724	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1725	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1726	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1727	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1728	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1729	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1730	UTH 16	4	122	BLACK	UD	BODY	BT 50L		
1731	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1732	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1733	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1734	UTH 16	4	122	YELLOW	UD	BODY	BT 50L		VERY WHITISH
1735	UTH 16	4	122	REDDISH PINK	UD	BODY	BT 50L		MORE YELLOWISH/ WHITISH
1736	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L		
1737	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1738	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L		
1739	UTH 16	4	122	BLACK	UD	BODY	BT 50L		
1740	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1741	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1742	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1743	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L		
1744	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L		
1745	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1746	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1747	UTH 16	4	122	BROWN	UD	BODY	BT 50L		
1748	UTH 16	4	122	REDDISH BROWN	UD	BODY	BT 50L		
1749	UTH 16	4	122	ORANGE	UD	BODY	BT 50L		
1750	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1751	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1752	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1753	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1754	UTH 16	4	122	RED	UD	BODY	BT 50L		
1755	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1756	UTH 16	4	122	WHITE	UD	BODY	BT 50L		
1757	UTH 16	4	122	DARK BROWN	UD	BODY	BT 50L		
1758	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT, MULTIPLE PARALLEL INCISIONS	
1759	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	INDISTINCT, MULTIPLE PARALLEL INCISIONS	
1760	UTH 16	4	122	RED	D	BODY	BT 50L	INDISTINCT, MULTIPLE PARALLEL INCISIONS	
1761	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1762	UTH 16	4	122	BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1763	UTH 16	4	122	YELLOW	D	BODY	BT 50L	INDISTINCT	
1764	UTH 16	4	122	YELLOW	D	BODY	BT 50L	INDISTINCT	

1765	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1766	UTH 16	4	122	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1767	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	WAFFLE	
1768	UTH 16	4	122	BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1769	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1770	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1771	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1772	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L		
1773	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L		
1774	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1775	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L		
1776	UTH 16	4	122	LIGHT BROWN	UD	BODY	BT 50L		
1777	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1778	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	WAFFLE	
1779	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1780	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS, RED SLIPPED	
1781	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT	
1782	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	CHANNEL, TWO RAISED BANDS, CARINATED	
1783	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT	
1784	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1785	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1786	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1787	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT
1788	UTH 16	4	122	CREAM	D	BODY	BT 50L	INDISTINCT	
1789	UTH 16	4	122	BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1790	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1791	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1792	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1793	UTH 16	4	122	CREAM	D	BODY	BT 50L	INDISTINCT	
1794	UTH 16	4	122	CREAM	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1795	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT	
1796	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT	
1797	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1798	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1799	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT, RAISED BAND	
1800	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1801	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
1802	UTH 16	5	202	REDDISH BROWN	UD	BODY	BT 50L		COARSE
1803	UTH 16	4	122	CREAM	D	BODY	BT 50L	LINEAR PADDLED	
1804	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	CARINATED, LINEAR PADDLED	
1805	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1806	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1807	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1808	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT	
1809	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1810	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT
1811	UTH 16	4	122	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1812	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1813	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	

1814	UTH 16	4	122	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1815	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT	
1816	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1817	UTH 16	4	122	BROWN	D	BODY	BT 50L	INDISTINCT	
1818	UNLABELLED/ DOES NOT EXIST								
1819	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1820	UTH 16	4	122	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1821	UTH 16	4	122	BROWN	D	RIM	ST 05CM	INDISTINCT	
1824	UTH 16	4	122	REDDISH BROWN	D	RIM	ST 05CM	INCISION	
1825	UTH 16	4	122	CREAM	UD	RIM	ST 05CM		
1826	UTH 16	4	122	REDDISH BROWN	UD	RIM	ST 05CM		
1827	UTH 16	4	122	REDDISH BROWN	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS ON LIP	
1828	UTH 16	4	122	DARK BROWN	UD	RIM	ST 05CM		TWO SHERDS, REFIT, VERY FRIABLE
1829	UTH 16	4	122	REDDISH BROWN	D	RIM	ST 05CM	RAISED BAND	
1830	UTH 16	5	204	BROWN	UD	BODY	BT 50L		
1831	UTH 16	4	122	BROWN	D	RIM	ST 05CM	INCISION ON LIP	TWO SHERDS, REFIT
1832	UTH 16	4	122	BROWN	UD	RIM	ST 05CM		
1833	UTH 16	4	122	DARK BROWN	UD	RIM	ST 05CM		
1836	UTH 16	5	204	REDDISH BROWN	UD	BODY	BT 50L		FINE EXTERIOR, ROUGH INTERIOR
1837	UTH 16	5	204	DARK BROWN	UD	BODY	BT 50L		FINE, BLACK PATCHES ON THE EXTERIOR
1838	UTH 16	5	204	DARK BROWN	D	BODY	BT 50L	CARINATED	REFITS WITH SHERD 1839
1839	UTH 16	5	204	DARK BROWN	D	BODY	BT 50L	CARINATED	REFITS WITH SHERD 1838
1841	UTH 16	5	206	DARK BROWN	UD	BODY	BT 50L		FINE
1842	UTH 16	5	212	REDDISH BROWN	UD	BODY	BT 50L		VERY GREYISH
1843	UTH 16	5	211	DARK BROWN	UD	BODY	BT 50L		FINE
1844	UTH 16	5	211	DARK BROWN	UD	BODY	BT 50L		FINE, BLACK EXTERIOR
1845	UTH 16	5	211	REDDISH BROWN	UD	BODY	BT 50L		FINE
1846	UTH 16	5	211	REDDISH BROWN	UD	BODY	BT 50L		FINE
1847	UTH 16	5	211	REDDISH BROWN	UD	BODY	BT 50L		COARSE
1848	UTH 16	5	211	DARK BROWN	UD	BODY	BT 50L		FINE
1849	UTH 16	5	211	DARK BROWN	UD	BODY	BT 50L		FINE, BLACK INTERIOR
1850	UTH 16	5	211	LIGHT BROWN	UD	BODY	BT 50L		YELLOWISH EXTERIOR, INCLUSIONS VISIBLE ON EXTERIOR
1851	UTH 16	5	211	DARK BROWN	UD	BODY	BT 50L		FINE
1852	UTH 16	5	211	DARK BROWN	UD	BODY	BT 50L		FINE, BLACK INTERIOR
1853	UTH 16	5	211	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1854	UTH 16	5	211	PINK	UD	BODY	BT 50L		A LOT OF GROG INCLUSIONS
1855	UTH 16	5	211	REDDISH BROWN	UD	BODY	BT 50L		FINE, SMOOTH AND RED EXTERIOR
1856	UTH 16	5	211	REDDISH BROWN	UD	BODY	BT 50L		FINE, SMOOTH AND RED EXTERIOR
1857	UTH 16	5	211	DARK BROWN	UD	BODY	BT 50L		FINE
1858	UTH 16	5	211	BLACK	UD	BODY	BT 50L		ROUGH, A LOT OF GRIT INCLUSION ON THE SURFACE
1859	UTH 16	5	211	REDDISH BROWN	UD	BODY	BT 50L		FINE, MAYBE FROM THE SAME VESSEL AS SHERD 1861
1860	UTH 16	5	211	DARK BROWN	UD	BODY	BT 50L		FINE, BLACK INTERIOR
1861	UTH 16	5	211	REDDISH BROWN	UD	BODY	BT 50L		FINE, BLACK INTERIOR, MAYBE FROM THE SAME VESSEL AS SHERD 1859
1862	UTH 16	5	211	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, CHANNEL, INCISION, RAISED BAND	

1863	UTH 16	5	211	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1864	UTH 16	5	211	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1865	UTH 16	5	211	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1866	UTH 16	5	211	DARK BROWN	D	BODY	BT 50L	INDISTINCT, MULTIPLE PARALLEL INCISIONS	
1867	UTH 16	5	211	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1868	UTH 16	5	211	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1869	UTH 16	5	211	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1870	UTH 16	5	211	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	COULD BE FROM THE SAME VESSEL AS SHERDS 1871 - 1873
1871	UTH 16	5	211	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1872	UTH 16	5	211	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1873	UTH 16	5	211	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1874	UTH 16	5	211	REDDISH BROWN	D	RIM	ST 05CM	INCISION ON LIP, MULTIPLE PARALLEL INCISIONS ON INTERIOR	
1876	UTH 16	5	214	BROWN	UD	BODY	BT 50L		FINE
1877	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1878	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1879	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		COARSE
1881	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1882	UTH 16	5	214	BROWN	UD	BODY	BT 50L		FINE
1883	UTH 16	5	214	CREAM	UD	BODY	BT 50L		FINE
1884	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1885	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		FINE
1886	UTH 16	4	123	REDDISH BROWN	UD	BODY	BT 50L		BLACK EXTERIOR
1887	UTH 16	4	123	REDDISH BROWN	UD	BODY	BT 50L		
1888	UTH 16	4	123	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR
1889	UTH 16	4	123	DARK BROWN	UD	BODY	BT 50L		
1890	UTH 16	4	123	LIGHT BROWN	UD	BODY	BT 50L		
1891	UTH 16	4	123	DARK BROWN	UD	BODY	BT 50L		COARSE
1892	UTH 16	4	123	REDDISH BROWN	UD	BODY	BT 50L		
1893	UTH 16	4	123	REDDISH BROWN	UD	RIM	ST 05CM		
1894	UTH 16	4	123	REDDISH BROWN	UD	RIM	ST 05CM		TWO SHERDS, REFIT
1895	UTH 16	4	123	CREAM	UD	BODY	BT 50L		
1896	UTH 16	4	123	CREAM	D	BODY	BT 50L	INDISTINCT	THREE SHERDS, REFIT, VERY FRIABLE
1897	UTH 16	4	123	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT
1899	UTH 16	4	SECTION CLEAN	REDDISH BROWN	UD	BODY	BT 50L		
1900	UTH 16	4	SECTION CLEAN	PINK	UD	BODY	BT 50L		GREYISH INTERIOR
1901	UTH 16	4	SECTION CLEAN	DARK BROWN	UD	BODY	BT 50L		BLACK INTERIOR
1902	UTH 16	4	SECTION CLEAN	REDDISH BROWN	UD	BODY	BT 50L		TWO SHERDS, REFIT
1903	UTH 16	4	SECTION CLEAN	DARK BROWN	UD	BODY	BT 50L		ALMOST BLACKISH, VERY COARSE
1904	UTH 16	4	SECTION CLEAN	REDDISH BROWN	UD	BODY	BT 50L		
1905	UTH 16	4	SECTION CLEAN	DARK BROWN	UD	BODY	BT 50L		ALMOST BLACKISH

1906	UTH 16	4	SECTION CLEAN	REDDISH BROWN	UD	BODY	BT 50L		
1907	UTH 16	4	SECTION CLEAN	ORANGE	D	BODY	BT 50L	RED SLIPPED EXTERIOR, TWO RAISED BANDS, CHANNEL, CARINATED	
1908	UTH 16	4	SECTION CLEAN	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT, LINEAR PADDLED	BLACK EXTERIOR
1909	UTH 16	4	SECTION CLEAN	DARK BROWN	D	BODY	BT 50L	CARINATED, RED SLIPPED EXTERIOR	TWO SHERDS, REFIT
1910	UTH 16	4	SECTION CLEAN	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT
1911	UTH 16	4	SECTION CLEAN	GREY	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	THREE SHERDS, REFIT
1912	UTH 16	4	SECTION CLEAN	GREY	D	BODY	BT 50L	INDISTINCT	
1913	UTH 16	4	SECTION CLEAN	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1914	UTH 16	4	SECTION CLEAN	DARK BROWN	D	BODY	BT 50L	INDISTINCT	TWO SHERDS, REFIT
1915	UTH 16	4	SECTION CLEAN	BROWN	D	BODY	BT 50L	INDISTINCT, LINEAR PADDLED	
1916	UTH 16	4	SECTION CLEAN	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1917	UTH 16	4	SECTION CLEAN	BROWN	D	BODY	BT 50L	INDISTINCT	IMM THICK
1918	UTH 16	4	SECTION CLEAN	PINK	UD	RIM	ST 05CM		BROKEN RIM
1919	UTH 16	4	SECTION CLEAN	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
1920	UTH 16	4	SECTION CLEAN	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	VERY FRIABLE
1921	UTH 16	4	SECTION CLEAN	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	BLACK EXTERIOR
1922	UTH 16	4	SECTION CLEAN	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1924	UTH 16	4	SECTION CLEAN	BROWN	D	BODY	BT 50L	INDISTINCT, LINEAR PADDLED	
1925	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		FINE
1926	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1927	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		ROUGH
1928	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1929	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		FINE
1930	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		ROUGH
1931	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1932	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		FINE
1933	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1934	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1935	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		FINE, GREYISH SHERD
1936	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		ROUGH AND COARSE
1937	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE

1938	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		FINE
1939	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		FINE
1940	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		FINE, BLACK INTERIOR
1941	UTH 16	5	214	DARK BROWN	UD	BODY	BT 50L		COARSE
1942	UTH 16	5	214	BROWN	UD	BODY	BT 50L		COARSE
1943	UTH 16	5	214	REDDISH BROWN	UD	BODY	BT 50L		BLACK PATCHES ON EXTERIOR AND INTERIOR, FINE
1944	UTH 16	5	214	DARK BROWN	D	BODY	BT 50L	INDISTINCT	CIRCULAR DEPRESSION ON THE SHERD
1945	UTH 16	5	214	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1946	UTH 16	5	214	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
1947	UTH 16	5	214	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1948	UTH 16	5	214	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
1949	UTH 16	5	214	YELLOW	D	BODY	BT 50L	CARINATED	WORN OUT AND ERODED
1950	UTH 16	5	214	DARK BROWN	D	BODY	BT 50L	INDISTINCT	FINE
1951	UTH 16	5	214	PINK	D	BODY	BT 50L	LINEAR PADDLED	
1952	UTH 16	5	214	ORANGE	D	BODY	BT 50L	LINEAR PADDLED	
1953	UTH 16	5	214	LIGHT BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS, LINEAR PADDLED	
1954	UTH 16	5	214	REDDISH BROWN	D	RIM	BT 05CM	RAISED BAND AND LINEAR PADDLED ON EXTERIOR, INCISION ON INTERIOR	
1956	UTH 16	5	215	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
1957	UTH 16	5	216	RED	UD	BODY	BT 50L		VERY FINE, HIGH FIRED, VERY SMOOTH, VERY DIFFERENT RED CLAY
1958	UTH 16	5	216	DARK BROWN	UD	BODY	BT 50L		THREE SHERDS, REFIT, VERY FRIABLE, COARSE AND ROUGH
1959	UTH 16	5	216	RED	D	BODY	BT 50L	INDISTINCT	SIMILAR TO 1957, HAS A RAISED CLAY INCLUSION BUT BARELY VISIBLE
1960	UTH 16	5	216	DARK BROWN	D	BODY	BT 50L	CARINATED, INDISTINCT	
1961	UTH 16	5	217	BLACK	UD	BODY	BT 50L		FINE
1962	UTH 16	5	217	BROWN	D	BODY	BT 50L	CARINATED	
1963	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE, BLACK PATCHES ON EXTERIOR
1964	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
1965	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE
1966	UTH 16	5	217	YELLOW	UD	BODY	BT 50L		IMM THICK
1967	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE
1968	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		ROUGH AND COARSE
1969	UTH 16	5	217	DARK BROWN	UD	BODY	BT 50L		FINE AND SMOOTH
1970	UTH 16	5	217	DARK BROWN	UD	BODY	BT 50L		FINE
1971	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE
1972	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		VERY COARSE AND ROUGH
1973	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE, BLACK EXTERIOR
1974	UTH 16	5	217	DARK BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
1975	UTH 16	5	217	DARK BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
1976	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE, BLACK EXTERIOR
1977	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE, BLACK EXTERIOR
1978	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE
1979	UTH 16	5	217	DARK BROWN	UD	BODY	BT 50L		BLACK INTERIOR, COARSE AND ROUGH
1980	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
1981	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		FINE, BLACKISH SHERD



1982	UTH 16	5	217	DARK BROWN	UD	BODY	BT 50L		BLACK EXTERIOR, GREYISH RESIDUE ON THE INTERIOR, FINE
1983	UTH 16	5	217	REDDISH BROWN	UD	BODY	BT 50L		BACKISH SHERD, FINE
1984	UTH 16	5	217	REDDISH BROWN	D	BODY	BT 50L	WAFFLE	2MM THICK
1985	UTH 16	5	217	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1986	UTH 16	5	217	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT, CARINATED	
1987	UTH 16	5	217	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
1988	UTH 16	5	217	YELLOW	D	BODY	BT 50L	INDISTINCT	
1989	UTH 16	5	217	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, PAINTED	ONE BLACK PAINTED LINE ON EXTERIOR, VERY FINE AND SMOOTH
1990	UTH 16	5	217	DARK BROWN	D	BODY	BT 50L	INDISTINCT	COARSE
1991	UTH 16	5	217	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT, LINEAR PADDLED	
1992	UTH 16	5	217	PINK	D	BODY	BT 50L	INDISTINCT	
1993	UTH 16	5	217	WHITE	D	BODY	BT 50L	INDISTINCT, LINEAR PADDLED	
1994	UTH 16	5	217	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	FINE AND SMOOTH
1995	UTH 16	5	217	DARK BROWN	D	BODY	BT 50L	INDISTINCT, LINEAR PADDLED	
1996	UTH 16	5	217	REDDISH BROWN	D	RIM	BT 05CM	RED SLIPPED EXT, MULTIPLE PARALLEL RAISED BANDS	TWO SHERDS REFITTED
1998	UTH 16	5	218	DARK BROWN	UD	BODY	BT 50L		BLACKISH SHERD, FINE
1999	UTH 16	5	218	DARK BROWN	D	BODY	BT 50L	INDISTINCT	UNKNOWN, DIFFERENT KIND OF DECORATION- LOOKS LIKE IT HAS BEEN INCISED TO MAKE AN OVAL CARTOUCHE AND CIRCLES RAISED INSIDE
2001	UTH 16	5	219	DARK BROWN	UD	BODY	BT 50L		FINE
2002	UTH 16	5	220	BROWN	UD	BODY	BT 50L		FINE
2003	UTH 16	5	220	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
2004	UTH 16	5	220	CREAM	UD	BODY	BT 50L		COARSE AND ROUGH
2005	UTH 16	5	220	REDDISH BROWN	UD	BODY	BT 50L		FINE, GREY RESIDUE ON THE SHERD
2006	UTH 16	5	220	LIGHT BROWN	UD	BODY	BT 50L		FINE
2007	UTH 16	5	220	LIGHT BROWN	UD	BODY	BT 50L		FINE
2008	UTH 16	5	220	DARK BROWN	UD	BODY	BT 50L		FINE
2009	UTH 16	5	220	DARK BROWN	UD	BODY	BT 50L		BLACKISH SHERD, COARSE EXTERIOR
2010	UTH 16	5	220	DARK BROWN	UD	BODY	BT 50L		FINE
2011	UTH 16	5	220	REDDISH BROWN	UD	BODY	BT 50L		FINE
2012	UTH 16	5	220	DARK BROWN	UD	BODY	BT 50L		COARSE, WORN OUT AND ERODED
2013	UTH 16	5	220	REDDISH BROWN	UD	BODY	BT 50L		FINE, BLACK EXTERIOR
2014	UTH 16	5	220	LIGHT BROWN	UD	BODY	BT 50L		VERY FINE AND SMOOTH, HIGH FIRED, LOOKS LIKE A GLAZE WAS THERE BUT NOW IT IS COMPLETELY GONE
2015	UTH 16	5	220	DARK BROWN	UD	BODY	BT 50L		FINE, BLACK EXTERIOR
2016	UTH 16	5	220	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
2017	UTH 16	5	220	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
2018	UTH 16	5	220	REDDISH BROWN	UD	BODY	BT 50L		FINE
2019	UTH 16	5	220	DARK BROWN	D	BODY	BT 50L	CARVED PADDLE (CP)	NET LIKE IMPRESSION- WITH SOMEWHAT SLANTED RECTANGLE STAMPED
2020	UTH 16	5	220	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	
2021	UTH 16	5	220	LIGHT BROWN	D	BODY	BT 50L	LINEAR PADDLED, WAFFLE	GREY RESIDUE ON INTERIOR

2022	UTH 16	5	220	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
2023	UTH 16	5	220	DARK BROWN	D	BODY	BT 50L	LINEAR PADDLED	BLACK EXTERIOR
2024	UTH 16	5	220	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
2025	UTH 16	5	220	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
2026	UTH 16	5	220	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
2027	UTH 16	5	220	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
2028	UTH 16	5	220	DARK BROWN	D	BODY	BT 50L	INDISTINCT	
2030	UTH 16	5	222	BROWN	UD	BODY	BT 50L		FINE
2031	UTH 16	5	222	REDDISH BROWN	UD	BODY	BT 50L		FINE
2032	UTH 16	5	222	BROWN	UD	BODY	BT 50L		FINE
2033	UTH 16	5	222	REDDISH BROWN	UD	BODY	BT 50L		VERY FLAT SHERD
2034	UTH 16	5	222	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
2035	UTH 16	5	222	REDDISH BROWN	D	BODY	BT 50L	CARINATED, LINEAR PADDLED	TWO SHERDS, REFIT
2036	UTH 16	5	222	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT, RED SLIPPED EXTERIOR	FINE
2038	UTH 16	5	224	REDDISH BROWN	D	BODY	BT 50L	BURNISHED	BLACKISH SHERD
2039	UTH 16	5	224	REDDISH BROWN	UD	BODY	BT 50L		FINE
2040	UTH 16	5	224	REDDISH BROWN	UD	BODY	BT 50L		FINE
2041	UTH 16	5	224	REDDISH BROWN	UD	BODY	BT 50L		FINE, VERY REDDISH EXTERIOR, GREY INTERIOR
2042	UTH 16	5	224	LIGHT BROWN	UD	BODY	BT 50L		FINE
2043	UTH 16	5	224	REDDISH BROWN	UD	BODY	BT 50L		FINE, BLACK EXTERIOR
2044	UTH 16	5	224	DARK BROWN	UD	BODY	BT 50L		FINE AND SMOOTH
2045	UTH 16	5	224	DARK BROWN	UD	BODY	BT 50L		COARSE
2046	UTH 16	5	224	REDDISH BROWN	UD	BODY	BT 50L		FINE
2047	UTH 16	5	224	BLACK	D	BODY	BT 50L	CARINATED	
2048	UTH 16	5	224	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
2049	UTH 16	5	224	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
2050	UTH 16	5	225	DARK BROWN	UD	BODY	BT 50L		COARSE
2051	UTH 16	5	225	PINK	UD	BODY	BT 50L		FINE
2052	UTH 16	5	225	BROWN	UD	BODY	BT 50L		FINE
2053	UTH 16	5	225	BROWN	UD	BODY	BT 50L		FINE
2054	UTH 16	5	225	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
2055	UTH 16	5	226	DARK BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
2056	UTH 16	5	226	DARK BROWN	UD	BODY	BT 50L		FINE, BLACK INTERIOR
2057	UTH 16	5	226	REDDISH BROWN	UD	BODY	BT 50L		COARSE AND ROUGH
2058	UTH 16	5	226	REDDISH BROWN	UD	BODY	BT 50L		FINE
2059	UTH 16	5	226	REDDISH BROWN	UD	BODY	BT 50L		VERY REDDISH AND FINE, LOOKS SIMILAR TO 2060 & 2061
2060	UTH 16	5	226	REDDISH BROWN	UD	BODY	BT 50L		VERY REDDISH AND FINE
2061	UTH 16	5	226	REDDISH BROWN	UD	BODY	BT 50L		VERY REDDISH AND FINE
2062	UTH 16	5	226	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
2063	UTH 16	5	226	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
2064	UTH 16	5	227	DARK BROWN	UD	BODY	BT 50L		FINE
2065	UTH 16	5	227	REDDISH BROWN	UD	BODY	BT 50L		FINE
2066	UTH 16	5	227	REDDISH BROWN	UD	BODY	BT 50L		COARSE
2067	UTH 16	5	227	REDDISH BROWN	UD	BODY	BT 50L		FINE
2068	UTH 16	5	227	BROWN	D	BODY	BT 50L	MULTIPLE PARALLEL INCISIONS	
2069	UTH 16	5	227	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
2070	UTH 16	5	227	LIGHT BROWN	UD	RIM	BT 05CM		

2071	UTH 16	5	227	CREAM	D	RIM	BT 05CM	MULTIPLE PARALLEL INCISIONS ON THE LIP	
2072	UTH 16	5	229	DARK BROWN	UD	BODY	BT 50L		COARSE
2073	UTH 16	5	229	DARK BROWN	UD	BODY	BT 50L		COARSE
2074	UTH 16	5	229	REDDISH BROWN	UD	BODY	BT 50L		BLACK INTERIOR
2075	UTH 16	5	229	LIGHT BROWN	UD	BODY	BT 50L		COARSE
2076	UTH 16	5	229	REDDISH BROWN	D	BODY	BT 50L	RAISED BAND	
2077	UTH 16	5	229	CREAM	D	BODY	BT 50L	CARINATED	
2078	UTH 16	5	229	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
2079	UTH 16	5	229	LIGHT BROWN	D	BODY	BT 50L	INDISTINCT	
2080	UTH 16	5	233	REDDISH BROWN	UD	BODY	BT 50L		FINE
2081	UTH 16	5	233	REDDISH BROWN	D	RIM	BT 05CM	MULTIPLE PARALLEL INCISIONS	TWO SHERDS REFITTED
2082	UTH 16	5	233	REDDISH BROWN	UD	BODY	BT 50L		UNDER THE STONE, FINE, BLACK INTERIOR
2083	UTH 16	5	233	REDDISH BROWN	UD	BODY	BT 50L		UNDER THE STONE, FINE, BLACK INTERIOR, LOOKS SIMILAR TO 2084
2084	UTH 16	5	233	REDDISH BROWN	UD	BODY	BT 50L		UNDER THE STONE, FINE, BLACK INTERIOR
2085	UTH 16	5	233	LIGHT BROWN	UD	BODY	BT 50L		UNDER THE STONE, BLACK EXTERIOR, COARSE
2086	UTH 16	5	233	REDDISH BROWN	UD	BODY	BT 50L		UNDER THE STONE, FINE AND FRIABLE
2087	UTH 16	5	233	DARK BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	UNDER THE STONE
2088	UTH 16	5	234	REDDISH BROWN	UD	BODY	BT 50L		FINE, VERY REDDISH EXTERIOR
2089	UTH 16	5	233 & 234	BROWN	UD	BODY	BT 50L		FINE
2090	UTH 16	5	236	DARK BROWN	UD	BODY	BT 50L		COARSE AND ROUGH, LOTS OF INCLUSIONS VISIBLE
2091	UTH 16	5	236	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED INTERIOR	VERY FINE
2092	UTH 16	5	236	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	COARSE AND ROUGH
2093	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		COARSE
2094	UTH 16	5	238	DARK BROWN	UD	BODY	BT 50L		FINE
2095	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		ROUGH
2096	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		COARSE INTERIOR, FINE INTERIOR
2097	UTH 16	5	238	DARK BROWN	UD	BODY	BT 50L		COARSE INTERIOR, FINE INTERIOR, GREYISH BLACK INTERIOR
2098	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		FINE
2099	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		FINE EXTERIOR, ROUGH INTERIOR
2100	UTH 16	5	238	BLACK	UD	BODY	BT 50L		FINE
2101	UTH 16	5	238	DARK BROWN	UD	BODY	BT 50L		FINE
2102	UTH 16	5	238	DARK BROWN	UD	BODY	BT 50L		FINE
2103	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		FINE
2104	UTH 16	5	238	DARK BROWN	UD	BODY	BT 50L		FINE
2105	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		VERY FINE
2106	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		VERY SMOOTH AND FINE EXTERIOR
2107	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		FINE AND SMOOTH
2108	UTH 16	5	238	REDDISH BROWN	UD	BODY	BT 50L		FINE
2109	UTH 16	5	238	DARK BROWN	UD	BODY	BT 50L		FINE
2110	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	CARINATED	FINE, VERY ORANGE SHERD
2111	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
2112	UTH 16	5	238	BROWN	D	BODY	BT 50L	BURNISHED, LINEAR PADDLED	

2113	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR, INDISTINCT	
2114	UTH 16	5	238	DARK BROWN	D	BODY	BT 50L	INDISTINCT	PINKISH INTERIOR
2115	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	LINEAR PADDLED	
2116	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	CARINATED, INDISTINCT	
2117	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	WAFFLE	
2118	UTH 16	5	238	REDDISH BROWN	D	RIM	ST 05CM	RED SLIPPED IN AND OUT, INCISION ON LIP, MULTIPLE PARALLEL INCISIONS ON INTERIOR	
2119	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
2120	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
2121	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	
2122	UTH 16	5	238	REDDISH BROWN	D	BODY	BT 50L	RED SLIPPED EXTERIOR	BLACK INTERIOR
2123	UTH 16	5	239	ORANGE	UD	BODY	BT 50L		FINE
2124	UTH 16	5	239	DARK BROWN	UD	BODY	BT 50L		FINE
2125	UTH 16	5	239	REDDISH BROWN	UD	BODY	BT 50L		COARSE
2126	UTH 16	5	239	REDDISH BROWN	UD	BODY	BT 50L		COARSE, TWO SHERDS, REFIT
2127	UTH 16	5	239	REDDISH BROWN	D	RIM	ST 05CM	MULTIPLE PARALLEL INCISIONS	TWO SHERDS, REFIT
2128	UTH 16	5	SECTION CLEAN	DARK BROWN	UD	BODY	BT 50L		FINE
2129	UTH 16	5	SECTION COLLAPSE	REDDISH BROWN	UD	BODY	BT 50L		FINE
2130	UTH 16	5	SECTION COLLAPSE	REDDISH BROWN	UD	BODY	BT 50L		COARSE
2131	UTH 16	5	SECTION COLLAPSE	REDDISH BROWN	D	RIM	BT 05CM	TWO PARALLEL INCISIONS ON INTERIOR	COARSE AND ROUGH
2132	UTH 16	5	228	REDDISH BROWN	D	BODY	BT 50L	INDISTINCT	
2133	UTH 16	5	228	LIGHT BROWN	D	BODY	BT 50L	TWO RAISED BANDS, UNDECORATED, WAFFLE, UNDECORATED	
2134	MAL 16	E14	5	BLACKISH BROWN	UD	RIM	ST 05CM		RIM OF A SPOUTTED VESSEL, BLACKISH SHERD, TAKEN FOR RIM ANALYSIS DUE TO IT BEING ONE OF A KIND

**Appendix 4: Description of individual glazed ware sherds**

SHERD NO	SITE	UNIT	CONTEXT	COLOR	GROUP/CLASS	MANUFACTURING PLACE	ROUGH DATING	SHERD TYPE	SIZE	DESCRIPTION	COMMENTS
22	VEY 16	1	2	PINKISH ORANGE	HALF-GLAZED MARTABAN?			BODY	BT 50L	PARTIALLY GLAZED DARK BROWN EXTERIOR	INTERIOR UNGLAZED GREY CLAY WITH WHITE RESIDUE PATCHES, THREE SHERDS THAT REFIT
23	VEY 16	3	1	WHITE	CBW	JINGDEZHEN	LATE MING (15TH-16TH CENTURY AD)	BASE	BT 50L	INDISTINCT BLUE LINE PRINT ON INTERIOR	
32	VEY 16	3	3	PINKISH ORANGE	UNIDENTIFIED			BODY	BT 50L	GREEN GLAZED EXTERIOR, PARTIALLY GREEN GLAZED INTERIOR	ABOUT 1CM THICK
33	VEY 16	3	3	White	CBW	JINGDEZHEN	LATE MING	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL AND LINE PRINT ON EXTERIOR
35	VEY 16	3	4	White	CWP	JINGDEZHEN	MID-LATE MING	RIM	ST 03CM	WHITE GLAZED IN AND OUT	5 SHERDS REFITTED
56	VEY 16	5	2	White	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	INDISTINCT BLUE PRINT ON EXTERIOR
78	VEY 16	5	4	Grey	SOUTH EAST ASIAN LQC	THAILAND?		BODY	ST 50L	INDISTINCT COLORED GLAZE BUT BADLY ERODED AND ALMOST GONE ON BOTH SIDES	
82	VEY 16	5	4	GREY	SOUTH EAST ASIAN LQC	THAILAND?		BODY	ST 50L	GREEN GLAZED IN AND OUT	
83	VEY 16	5	4	GREY	SOUTH EAST ASIAN LQC	THAILAND?		BODY	ST 50L	LIGHT GREEN GLAZED IN AND OUT	
92	VEY 16	5	7	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	BT 03CM	DARK GREEN GLAZED IN AND OUT	INCISED LINE ON INTERIOR, TWO SHERDS REFITTED, ALSO REFITS WITH SHERD 103
93	VEY 16	5	7	WHITE	SOUTH EAST ASIAN LQC	THAILAND?		BODY	ST 50L	GREEN GLAZED IN AND OUT	

103	VEY 16	5	9	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	BT 03CM	DARK GREEN GLAZED IN AND OUT	INCISED LINE ON INTERIOR, TWO SHERDS REFITTED, ALSO REFITS WITH SHERD 92
238	VEY 16	5	3	WHITE	UNIDENTIFIED			RIM	ST 50L	TOO FRAGMENTARY AND ERODED FOR ANALYSIS	
236	MAL 16	E7	1	WHITE	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
252	MAL 16	E7	2	WHITE	EUROPEAN		VICTORIAN (19TH-20TH CENTURY AD)	RIM	ST 03CM	WHITE GLAZED IN AND OUT, RED AND YELLOW FLORAL PRINT ON INTERIOR	
253	MAL 16	E7	2	WHITE	CBW	JINGDEZHEN	LATE MING	RIM	ST 03CM	BLUE AND WHITE GLAZED IN AND OUT	BLUE COLORED ON INTERIOR
254	MAL 16	E7	2	WHITE	LQC	LONGQUAN	YUAN	BASE	BT 50L	GREEN GLAZED IN AND OUT	FOOT OF BASE UNGLAZED WITH ORANGE LINES AROUND THE FOOT
262	MAL 16	E7	3	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	BT 50L	BLUE AND WHITE GLAZED IN AND OUT	INTERIOR: TWO PARALLEL BLUE LINES, EXTERIOR: BLUE CIRCLE
263	MAL 16	E7	3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	RIM	ST 50L	WHITE GLAZED IN AND OUT	
275	MAL 16	E7	4	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	LIGHT GREEN GLAZED IN AND OUT	
276	MAL 16	E7	4	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	GREEN GLAZED IN AND OUT	VERY ERODED
277	MAL 16	E7	4	WHITE	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	
278	MAL 16	E7	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	YELLOW GLAZED EXTERIOR	INTERIOR NONGLAZED, BADLY ERODED GLAZE
279	MAL 16	E7	4	GREYISH WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	TWO SHERDS, REFIT, INDISTINCT BLUE PRINT ON INTERIOR
280	MAL 16	E7	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED

281	MAL 16	E7	4	GREY	LQC	LONGQUAN	EARLY-MIDDLE MING	BODY	ST 50L	GREEN GLAZED IN AND OUT	
282	MAL 16	E7	4	GREY	LQC	LONGQUAN	EARLY-MIDDLE MING	BODY	ST 50L	GREEN GLAZED IN AND OUT	VERY SIMILAR TO SHERD 281, MAYBE FROM SAME VESSEL BUT DOES NOT REFIT
310	MAL 16	E4	3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	ST 50L	WHITE GLAZED IN AND OUT	
354	MAL 16	E4	5	GREY	TRANSPORT	GUANGDONG	MING	BODY	BT 50L	BROWNISH GLAZED	INTERIOR NONGLAZED,
356	MAL 16	E4	5	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED
374	MAL 16	E4	5	WHITE	UNIDENTIFIED			BODY	BT 50L	TOO ERODED FOR ANALYSIS	
376	MAL 16	E4	5	GREY	LQC	LONGQUAN	YUAN (14TH CENTURY AD)	RIM	ST 03CM	GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED, VERY SHALLOW DISH/ POT LID
381	MAL 16	E4	5	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	ST 50L	WHITE GLAZED IN AND OUT	
382	MAL 16	E4	5	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	DARK GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED
383	MAL 16	E4	5	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
389	MAL 16	E14	5	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	LIGHT GREEN GLAZED IN AND OUT	
390	MAL 16	E14	3	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	BT 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE GEOMETRICAL PRINT ON EXTERIOR
391	MAL 16	E14	3	WHITE	CBW	JINGDEZHEN	LATE MING	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE LINE ON INTERIOR
392	MAL 16	E14	3	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	INDISTINCT BLUE PRINT ON EXTERIOR
404	MAL 16	E14	4	ORANGISH	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	YELLOW GLAZED EXTERIOR	WORN OUT AND ERODED, SMOOTH AND SHARP SIDES, HIGH FIRED, COULD HAVE BEEN GLAZED BUT GLAZE WORN OUT

405	MAL 16	E14	4	WHITE	CWP	JINGDEZHEN	MID-LATE MING	RIM	ST 03CM	WHITE GLAZED IN AND OUT	BADLY ERODED
413	MAL 16	E14	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BROWNISH GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED, ABOUT 1CM THICK
415	MAL 16	E14	4	WHITE	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BROWN GLAZED EXTERIOR	BROWN LINES ON THE EXTERIOR, INTERIOR NONGLAZED, GLAZE BADLY ERODED
417	MAL 16	E14	4	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	BT 50L	WHITE GLAZED IN AND OUT	
421	MAL 16	E14	4	GREY	LQC	LONGQUAN	EARLY-MIDDLE MING	BODY	ST 50L	GREEN AND RED GLAZED EXTERIOR WITH TWO PARALLEL GROOVES, GREEN GLAZED INTERIOR	
423	MAL 16	E14	4	WHITE	CBW	JINGDEZHEN	YUAN (14TH CENTURY AD)	BODY	BT 50L	BLUE AND WHITE GLAZED INTERIOR	BLUE FLORAL AND GEOMETRIC PRINT ON INTERIOR, NONGLAZED EXTERIOR, VERY FLAT SHERD
428	MAL 16	E14	4	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	ST 50L	WHITE GLAZED IN AND OUT	
429	MAL 16	E14	4	WHITE	LQC	LONGQUAN	EARLY-MIDDLE MING	BODY	ST 50L	GREEN GLAZED IN AND OUT	BROWN GLAZE ON INTERIOR AND UNGLAZED AT THE BOTTOM INTERIOR
430	MAL 16	E14	4	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
431	MAL 16	E14	4	WHITE	ENAMEL PORCELAIN	CHINA?	MID-LATE MING	BODY	ST 50L	WHITE GLAZED IN AND OUT	BROWN AND GREEN FLORAL AND LINE PRINT ON THE INTERIOR
432	MAL 16	E14	4	WHITE	CBW	JINGDEZHEN	LATE MING	BASE	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL AND GEOMETRIC PRINT ON INTERIOR
433	MAL 16	E14	4	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	INDISTINCT BLUE PRINT ON INTERIOR



435	MAL 16	E14	4	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	INDISTINCT BLUE PRINT ON EXTERIOR
436	MAL 16	E14	4	LIGHT CREAMY	UNIDENTIFIED			BODY	ST 50L	LIGHT ORANGE GLAZED IN AND OUT	TOO ERODED FOR ANALYSIS
437	MAL 16	E14	4	WHITE	UNIDENTIFIED			BODY	ST 50L	WHITE GLAZED EXTERIOR	TOO ERODED FOR ANALYSIS
438	MAL 16	E14	4	WHITE	SOUTH EAST ASIAN LQC	THAILAND?		BODY	BT 50L	LIGHT GREEN GLAZED IN AND OUT	
439	MAL 16	E14	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	DARK GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED
440	MAL 16	E14	4	WHITE	CBW	JINGDEZHEN	LATE MING	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL AND LINE PRINT ON EXTERIOR
441	MAL 16	E14	4	WHITE	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	LIGHT GREEN GLAZED IN AND OUT	
442	MAL 16	E14	4	WHITE	CBW	JINGDEZHEN	LATE MING	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE GEOMETRICAL PRINT ON EXTERIOR
444	MAL 16	E14	4	WHITE	SOUTH EAST ASIAN LQC	THAILAND?		BODY	ST 50L	LIGHT GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED
446	MAL 16	E14	4	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE LEAFY PRINT ON EXTERIOR, BLUE LINE ON THE INTERIOR
451	MAL 16	E14	4	WHITE	UNIDENTIFIED			BODY	ST 50L	TOO ERODED FOR ANALYSIS	
453	MAL 16	E14	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	BROWN GLAZED EXTERIOR	THREE MULTIPLE PARALLEL DARK BROWN LINES ON EXTERIOR, INTERIOR NONGLAZED
467	MAL 16	E14	5	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK BROWN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED
528	MAL 16	N5	2	WHITE	UNIDENTIFIED			BODY	ST 50L	TOO ERODED FOR ANALYSIS	
538	MAL 16	N5	2	WHITE	CBW	JINGDEZHEN	LATE MING	RIM	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE LINES PRINTED ON INTERIOR
551	MAL 16	N2	3	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	RIM	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	INTERIOR: ONE BLUE LINE PARALLEL TO RIM

564	MAL 16	N2	4	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	BT 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL AND LINE PRINT ON BOTH SIDES
583	MAL 16	N2	5	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN AND CREAMY GLAZED EXTERIOR	SMALL GLAZED PATCH ON INTERIOR BUT MOSTLY NONGLAZED
590	MAL 16	N2	5	WHITE	CWP	JINGDEZHEN	MID-LATE MING	RIM	ST 03CM	WHITE GLAZED IN AND OUT	
612	MAL 16	N9	3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		BODY	ST 50L	GREEN GLAZED IN AND OUT	GLAZE WORN OUT
615	MAL 16	N9	3	GREY	LQC	LONGQUAN	EARLY- MIDDLE MING	BODY	BT 50L	DARK GREEN GLAZED IN AND OUT	
616	MAL 16	N9	3	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	
644	MAL 16	N9	4	WHITE	LQC	LONGQUAN	YUAN	BODY	ST 50L	DARK GREEN GLAZED IN AND OUT	REFITS WITH SHERD 646
645	MAL 16	N9	4	WHITE	QINGBAI	SOUTH CHINA	14TH CENTURY	RIM	BT 03CM	WHITE GLAZED IN AND OUT	NONGLAZED ON THE INTERIOR TOP RING OF THE LIP
646	MAL 16	N9	4	WHITE	LQC	LONGQUAN	YUAN	RIM	BT 03CM	DARK GREEN GLAZED IN AND OUT	REFITS WITH SHERD 644
671	MAL 16	N9	5	GREY	LQC?	LONGQUAN?	18-19TH CENTURY	BASE	BT 50L	GREEN GLAZED IN AND OUT	BROKEN BASE, LOTUS SHAPED GLAZE ON EXTERIOR, BOTTOM OF BASE NONGLAZED
679	MAL 16	N9	5	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	RIM	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	DARK BLUE FLORAL PRINT ON BOTH SIDES
707	MAL 16	N12	2	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	BLACK GLAZED EXTERIOR	INTERIOR NONGLAZED
708	MAL 16	N12	2	GREY	SOUTH EAST ASIAN LQC	THAILAND?		BODY	ST 50L	LIGHT GREEN GLAZED IN AND OUT	
709	MAL 16	N12	2	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	GREEN GLAZED IN AND OUT	WORN OUT AND ERODED
710	MAL 16	N12	2	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	GREENISH BROWN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED, SIMILAR TO SHERD 711

711	MAL 16	N12	2	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	GREENISH BROWN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED, SIMILAR TO SHERD 710
730	MAL 16	N12	EXT 2	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN GLAZED IN AND OUT	GLAZE BADLY ERODED AND ALMOST GONE ON THE INTERIOR
741	MAL 16	N12	EXT 2	GREY	LQC	LONGQUAN	YUAN	RIM	ST 03CM	GREEN GLAZED IN AND OUT	
750	MAL 16	N12	EXT 2	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
753	MAL 16	N12	EXT 2	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	ST 50L	WHITE GLAZED IN AND OUT	
758	MAL 16	N12	EXT 2	GREY	UNIDENTIFIED			BODY	ST 50L	WHITE GLAZED IN AND OUT	TOO ERODED FOR ANALYSIS
759	MAL 16	N12	EXT 2	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
808	MAL 16	N12	S.CLEAN 1-3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED AND ALMOST GONE
809	MAL 16	N12	S.CLEAN 1-3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED
810	MAL 16	N12	S.CLEAN 1-3	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	
811	MAL 16	N12	S.CLEAN 1-3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN GLAZED EXTERIOR	EXTERIOR HAS A CIRCULAR INCISION, INTERIOR NONGLAZED, GLAZE BADLY ERODED
812	MAL 16	N12	S.CLEAN 1-3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	GREENISH BROWN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED
814	MAL 16	N12	S.CLEAN 1-3	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
815	MAL 16	N12	S.CLEAN 1-3	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
816	MAL 16	N12	S.CLEAN 1-3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	ST 50L	WHITE GLAZED IN AND OUT	
817	MAL 16	N12	S.CLEAN 1-3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 50L	GREEN GLAZED IN AND OUT	

818	MAL 16	N12	S.CLEAN 1-3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	DARK GREEN GLAZED IN AND OUT	
819	MAL 16	N12	S.CLEAN 1-3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	DARK GREEN GLAZED IN AND OUT	
820	MAL 16	N12	S.CLEAN 1-3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	BT 50L	WHITE GLAZED IN AND OUT	BADLY ERODED
821	MAL 16	N12	S.CLEAN 1-3	GREY	UNIDENTIFIED			RIM	ST 03CM	INDISTINCT COLOURED GLAZE IN AND OUT	GLAZE TOO ERODED FOR ANALYSIS
822	MAL 16	N12	S.CLEAN 1-3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	GREEN GLAZED IN AND OUT	EXTERIOR HAS A LOTUS PETAL SHAPED DESIGN INCISED
823	MAL 16	N12	S.CLEAN 1-3	GREY	LQC	LONGQUAN	EARLY-MIDDLE MING	RIM	ST 03CM	LIGHT GREEN GLAZED IN AND OUT	
824	MAL 16	N12	S.CLEAN 1-3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	GREEN GLAZED IN AND OUT	
834	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	INDISTINCT COLORED GLAZED EXTERIOR	NONGLAZED INTERIOR, GLAZE BADLY ERODED
893	MAL 16	N12	4	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	
894	MAL 16	N12	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK BROWN GLAZED EXTERIOR	NONGLAZED INTERIOR, GLAZE BADLY ERODED
895	MAL 16	N12	4	GREY	LQC	LONGQUAN	YUAN	RIM	ST 03CM	GREEN GLAZED IN AND OUT	
896	MAL 16	N12	4	GREY	LQC	LONGQUAN	YUAN	RIM	BT 03CM	GREEN GLAZED IN AND OUT	EXTERIOR IS LOTUS PETAL SHAPED
897	MAL 16	N12	4	WHITE	CBW	JINGDEZHEN	MID MING	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	EXTERIOR: BLUE FLORAL PRINT, INTERIOR: BLUE LINE
898	MAL 16	N12	4	WHITE	CBW	JINGDEZHEN	MID MING	BODY	BT 50L	BLUE AND WHITE GLAZED IN AND OUT	INDISTINCT BLUE PRINT ON EXTERIOR
975	MAL 16	N12	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK BROWN GLAZED EXTERIOR	NONGLAZED INTERIOR, GLAZE BADLY ERODED
976	MAL 16	N12	4	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	
977	MAL 16	N12	4	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	

978	MAL 16	N12	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	GREYISH GLAZED EXTERIOR	INTERIOR NONGLAZED
979	MAL 16	N12	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	LIGHT BROWN/CREAMY GLAZED EXTERIOR	BLACK MULTIPLE PARALLEL LINES ON EXTERIOR, INTERIOR NONGLAZED, GLAZE BADLY ERODED
980	MAL 16	N12	4	GREY	UNIDENTIFIED			BODY	BT 50L	GREYISH GLAZED IN AND OUT	GLAZE TOO ERODED FOR ANALYSIS, THREE PARALLEL WAVY RAISED BANDS ON EXTERIOR, ABOUT 1CM THICK
981	MAL 16	N12	4	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	DARK GREEN GLAZED IN AND OUT	
982	MAL 16	N12	4	GREY	LQC	LONGQUAN	YUAN	RIM	ST 03CM	GREEN GLAZED IN AND OUT	DARK GREEN LOTUS PATTERN PRINTED ON THE EXTERIOR
983	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	DARK BROWN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED AND ALMOST GONE ON EXTERIOR
984	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	BROWN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED AND ALMOST GONE ON EXTERIOR
985	MAL 16	N12	3	GREY	UNIDENTIFIED			RIM	ST 50L	GREEN GLAZED IN AND OUT	TOO ERODED FOR ANALYSIS
986	MAL 16	N12	3	GREY	LQC	LONGQUAN	EARLY-MIDDLE MING	BODY	BT 50L	GREEN GLAZED IN AND OUT	
987	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BLACK GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE VERY BADLY ERODED ON EXTERIOR, SIMILAR TO SHERD 1013, LIKELY FROM THE SAME VESSEL
988	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	

989	MAL 16	N12	3	GREY	UNIDENTIFIED			RIM	BT 03CM	DARK GREEN GLAZED IN AND OUT	GLAZE TOO ERODED FOR ANALYSIS
990	MAL 16	N12	3	GREY	SOUTH EAST	THAILAND?		RIM	BT	GREEN GLAZED IN	GLAZE VERY ERODED
991	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED AND ALMOST GONE ON EXTERIOR
992	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	RIM	BT 03CM	DARK GREEN GLAZED IN AND OUT	DARK GREEN LOTUS PETAL IMPRESSIONS SHAPED ON THE EXTERIOR
993	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BROWN GLAZED IN AND OUT	GLAZE VERY BADLY ERODED AND ALMOST GONE FROM BOTH SIDES
994	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	RIM	BT 03CM	INDISTINCT COLORED GLAZED IN AND OUT	RAISED BAND ON THE EXTERIOR, TWO THUMB PRESSED IMPRESSIONS ON THE INTERIOR, GLAZE VERY ERODED
995	MAL 16	N12	3	GREY	UNIDENTIFIED			RIM	ST 50L	INDISTINCT COLOURED GLAZE IN AND OUT	GLAZE TOO ERODED FOR ANALYSIS
996	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BROWN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED AND ALMOST GONE ON EXTERIOR
997	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	DARK GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED
998	MAL 16	N12	3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	ST 50L	WHITE GLAZED IN AND OUT	
999	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	
1000	MAL 16	N12	3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	RIM	ST 03CM	WHITE GLAZED IN AND OUT	

1001	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	GREEN GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED AND ALMOST GONE ON EXTERIOR
1002	MAL 16	N12	3	WHITE	CBW	JINGDEZHEN	LATE MING	RIM	ST 03CM	BLUE AND WHITE GLAZED IN AND OUT	EXTERIOR: BLUE FLORAL AND LINE PRINT, INTERIOR: BLUE LINES
1003	MAL 16	N12	3	WHITE	QINGBAI	SOUTH CHINA	14TH CENTURY	RIM	BT 03CM	WHITE GLAZED IN AND OUT	NONGLAZED ON THE INTERIOR TOP RING OF THE LIP
1004	MAL 16	N12	3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	DARK GREEN GLAZED IN AND OUT	
1005	MAL 16	N12	3	WHITE	QINGBAI	SOUTH CHINA	14TH CENTURY	RIM	ST 03CM	WHITE GLAZED IN AND OUT	NON GLAZED ON THE INTERIOR TOP RING OF THE LIP
1006	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
1007	MAL 16	N12	3	GREY	UNIDENTIFIED			RIM	ST 03CM	INDISTINCT COLOURED GLAZE IN AND OUT	GLAZE TOO ERODED FOR ANALYSIS
1008	MAL 16	N12	3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	BT 03CM	GREEN GLAZED IN AND OUT	
1009	MAL 16	N12	3	GREY	LQC	LONGQUAN	EARLY-MIDDLE MING	RIM	ST 50L	DARK GREEN GLAZED IN AND OUT	
1010	MAL 16	N12	3	GREY	LQC	LONGQUAN	EARLY-MIDDLE MING	BODY	BT 50L	DARK GREEN GLAZED IN AND OUT	
1011	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	BASE	BT 50L	GREEN GLAZED IN AND OUT	BASE- FOOT BROKEN
1012	MAL 16	N12	3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	ST 50L	WHITE GLAZED IN AND OUT	
1013	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BLACK GLAZED EXTERIOR	INTERIOR NONGLAZED, SIMILAR TO SHERD 987, LIKELY SAME VESSEL
1014	MAL 16	N12	3	GREY	LQC	LONGQUAN	EARLY-MIDDLE MING	BASE	BT 50L	DARK GREEN GLAZED IN AND OUT	BOTTOM OF INTERIOR NONGLAZED AT THE CENTER

1015	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	BLACK GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED AND ALMOST GONE ON EXTERIOR
1016	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	BLACK GLAZED EXTERIOR	INTERIOR NONGLAZED
1017	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
1018	MAL 16	N12	3	GREY	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	DARK GREEN GLAZED IN AND OUT	WORN OUT AND ERODED
1019	MAL 16	N12	3	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	RIM	ST 50L	WHITE GLAZED IN AND OUT	BLACK AND DARK BLUE GEOMETRIC PRINT ON BOTH SIDES
1020	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BROWN GLAZED EXTERIOR	INTERIOR NONGLAZED
1021	MAL 16	N12	3	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BLACK GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED
1022	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	DARK GREEN GLAZED IN AND OUT	
1023	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	RIM	ST 03CM	GREEN GLAZED IN AND OUT	
1024	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	BODY	ST 50L	GREEN GLAZED IN AND OUT	
1025	MAL 16	N12	3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	RIM	ST 50L	WHITE GLAZED IN AND OUT	
1026	MAL 16	N12	3	WHITE	CWP	JINGDEZHEN	MID-LATE MING	RIM	ST 03CM	WHITE GLAZED IN AND OUT	
1027	MAL 16	N12	3	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	
1067	UTH 16	1	0-10 CM	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	BT 50L	WHITE GLAZED IN AND OUT	
1104	UTH 16	1	10-20 CM	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	BT 50L	WHITE GLAZED IN AND OUT	
1126	UTH 16	1	20-30 CM	REDDISH BROWN	SOUTH EAST ASIAN CELADON?	SOUTH EAST ASIA?		RIM	BT 03CM	WHITE GLAZED IN AND OUT	
1131	UTH 16	1	20-30 CM	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	INDISTINCT BLUE PRINT ON EXTERIOR










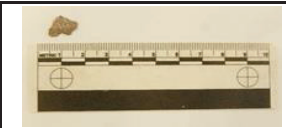
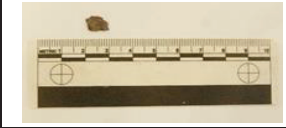

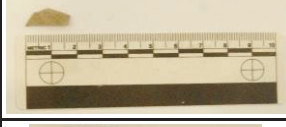


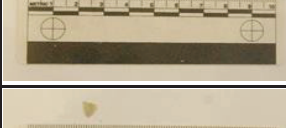
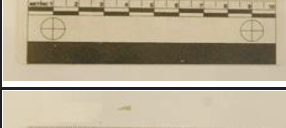
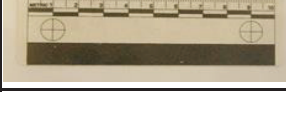
1168	UTH 16	1	60-70 CM	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BLACK GLAZED EXTERIOR	INTERIOR NONGLAZED
1206	UTH 16	4	100 NORTH EXTENSION	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	RIM	BT 03CM	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL AND GEOMETRIC PRINT ON INTERIOR
1308	UTH 16	4	102	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	ST 50L	LIGHT GREEN GLAZED IN AND OUT	
1309	UTH 16	4	102	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	GREEN GLAZED IN AND OUT	
1370	UTH 16	4	107	ORANGE	UNIDENTIFIED	SOUTH EAST ASIA?	16TH CENTURY AD?	RIM	BT 03CM	TURQUOISE GREEN GLAZED IN AND OUT	
1391	UTH 16	4	108	ORANGE	UNIDENTIFIED	SOUTH EAST ASIA?	16th CENTURY AD?	RIM	ST 03CM	TURQUOISE GREEN GLAZED IN AND OUT	SIMILAR TO SHERD 1370, DOES NOT REFIT BUT LIKELY FROM THE SAME VESSEL
1455	UTH 16	4	111	REDDISH BROWN	SOUTH EAST ASIAN CELADON?	SOUTH EAST ASIA?		RIM	BT 03CM	WHITE GLAZED IN AND OUT, TWO PARALLEL HORIZONTAL INCISIONS AND TWO PARALLEL VERTICAL INCISIONS ON EXTERIOR	
1456	UTH 16	4	111	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	RIM	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL AND LINE PRINT ON BOTH SIDES
1508	UTH 16	4	111N	GREY	LQC	LONGQUAN	YUAN	BODY	BT 50L	GREEN GLAZED IN AND OUT	
1509	UTH 16	4	111N	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	DARK GREEN GLAZED IN AND OUT	
1532	UTH 16	4	111 NORTH EXTENSION	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	BROWNISH BLACK GLAZED EXTERIOR	INTERIOR NONGLAZED
1533	UTH 16	4	111 NORTH EXTENSION	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	INDISTINCT BLUE PRINT ON EXTERIOR
1596	UTH 16	4	118 NORTH EXTENSION	WHITE	SOUTH EAST ASIAN LQC	THAILAND?		RIM	ST 03CM	GREEN GLAZED IN AND OUT	
1597	UTH 16	4	118 NORTH EXTENSION	WHITE	SOUTH EAST ASIAN LQC	THAILAND?		BODY	BT 50L	GREEN GLAZED IN AND OUT	

1598	UTH 16	4	118 NORTH EXTENSION	REDDISH BROWN	SOUTH EAST ASIAN CELADON?	SOUTH EAST ASIA?		BODY	ST 50L	WHITE GLAZED IN AND OUT	
1666	UTH 16	4	111/118	WHITE	CBW	JINGDEZHEN	LATE MING	BODY	BT 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL PRINT ON EXTERIOR
1708	UTH 16	4	120	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	INDISTINCT BLUE PRINT ON EXTERIOR
1709	UTH 16	4	120	REDDISH BROWN	SOUTH EAST ASIAN CELADON?	SOUTH EAST ASIA?		BODY	BT 50L	WHITE GLAZED IN AND OUT	
1822	UTH 16	4	122	REDDISH BROWN	SOUTH EAST ASIAN CELADON?	SOUTH EAST ASIA?		BODY	BT 50L	WHITE GLAZED EXTERIOR, NONGLAZED INTERIOR	ABOUT 1CM THICK
1823	UTH 16	4	122	ORANGE	UNIDENTIFIED	SOUTH EAST ASIA?	16TH CENTURY AD?	BODY	ST 50L	TURQUOISE GREEN GLAZED IN AND OUT	
1834	UTH 16	4	122	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	RIM	ST 03CM	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL AND GEOMETRIC PRINT ON BOTH SIDES
1835	UTH 16	4	122	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	RIM	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE FLORAL AND GEOMETRIC PRINT ON BOTH SIDES
1840	UTH 16	5	204	WHITE	EUROPEAN		VICTORIAN (19TH-20TH CENTURY AD)	RIM	BT 03CM	WHITE GLAZED IN AND OUT, BLUE FLORAL AND GEOMETRIC PRINT ON INTERIOR	
1875	UTH 16	5	211	WHITE	CBW	JINGDEZHEN	LATE MING (LOW QUALITY)	BASE	BT 50L	WHITE GLAZED INTERIOR	BROKEN BASE, EXTERIOR NONGLAZED WITH A PROTRUDING KNOB AT THE CENTER, INTERIOR: INDISTINCT WRITING? GOING AROUND ON THE INTERIOR CENTER

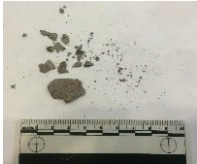




1880	UTH 16	5	214	GREY	TRANSPORT JARS	GUANGDONG	MING	BODY	BT 50L	INDISTINCT GLAZED EXTERIOR	INTERIOR NONGLAZED, GLAZE BADLY ERODED AND ALMOST GONE ON EXTERIOR
1898	UTH 16	4	123	WHITE	LQC	LONGQUAN	EARLY- MIDDLE MING	BODY	BT 50L	GREEN GLAZED IN AND OUT	LIGHT BLUISH TWO PARALLEL WIDE BUT NOT TOO DEEP GROOVES ON EXTERIOR
1923	UTH 16	4	SECTION CLEAN	GREY	UNIDENTIFIED	SOUTH EAST ASIA?		BODY	BT 50L	YELLOW GLAZED IN AND OUT	
1955	UTH 16	5	214	WHITE	UNIDENTIFIED			BODY	BT 50L	WHITE GLAZED IN AND OUT	TOO ERODED FOR ANALYSIS, TWO SHERDS REFIT
1997	UTH 16	5	217	WHITE	CWP	JINGDEZHEN	MID-LATE MING	BODY	BT 50L	WHITE GLAZED IN AND OUT	
2000	UTH 16	5	218	WHITE	CBW	JINGDEZHEN	LATE MING	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE LINES ON EXTERIOR
2029	UTH 16	5	220	WHITE	CBW	JINGDEZHEN	LATE MING	BODY	ST 50L	BLUE AND WHITE GLAZED IN AND OUT	BLUE GEOMETRIC PRINT ON INTERIOR
2037	UTH 16	5	222	WHITE	STAMPED	JINGDEZHEN	19TH CENTURY	RIM WITH THE BASE	BT 03CM	HALF A VESSEL, GREEN GLAZED IN AND OUT	STAMPED PATTERN: YELLOW AND BROWN FLORAL AND GEOMETRIC PATTERN ON BOTH SIDES, PARTIALLY GLAZED ON THE EXTERIOR, FOOT NONGLAZED, BOTTOM CENTER HAS A NON GLAZED RING ON THE INTERIOR, FIVE SHERDS REFITTED









Appendix 5a: Description of small finds from Ha. Utheemu (Based on a table designed by MA students Fran McArthur and Valeria Van Der Westhuizen)

Small finds number	Image	Unit	Context	Object basic description & material	Date	Dimensions				Additional description
						Length (cm)	Width (cm)	Depth/diameter (cm)	Weight (g)	
1		UTH16-01	Section clean	Metal	25.01.16	15.5	0.5	0.5	32	Single piece of curved metal object, iron nail?
5		UTH16-04	103	Metal	27.01.16	3.5			6	Single piece of metal, iron nail?
6a		UTH16-04	117	Metal	28.01.16	1.4	<0.1		<0.1	Broken curved metal, copper bolt?
6b		UTH16-04	117	Metal	28.01.16	0.9	<0.1		<0.1	Broken curved metal, copper bolt?
6c		UTH16-04	117	Metal	28.01.16	0.4	<0.1		<0.1	Broken curved metal, copper bolt?
6d		UTH16-04	117	Metal	28.01.16	1	<0.1		<0.1	Broken curved metal, copper bolt?
7		UTH16-04	118	Metal	28.01.16	4.5	0.2		49	Single piece of rounded metal, copper







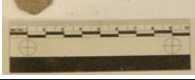


8a		UTH16-04	102/ N. Extension	Metal	21.02.16	1.2	<0.1		<0.1	Small piece of metal, iron
8b		UTH16-04	102/ N. Extension	Metal	21.02.16	0.9	<0.1		<0.1	Small piece of metal, iron
8c		UTH16-04	102/ N. Extension	Metal	21.02.16	0.9	<0.1		<0.1	Small piece of metal, iron
9		UTH16-04	102/ N. Extension	Glass	21.02.16	1.8	0.2		<0.1	Single piece of glass
10a		UTH16-04	118/ N. Extension	Metal	22.02.16	4.5	0.9	8		Curved piece of metal, iron nail?
10b		UTH16-04	118/ N. Extension	Metal	22.02.16	3.9	0.8	4		Piece of metal, iron nail?
11a		UTH16-04	120	Glass	21.02.16		<0.1		<0.1	Small piece of glass
11b		UTH16-04	120	Glass	21.02.16		<0.1		<0.1	Small piece of glass
11c		UTH16-04	120	Glass	21.02.16		<0.1		<0.1	Small piece of glass








12a		UTH16-04	120	Lime plaster	21.02.16	2.1	0.3		5	Piece of lime plaster
12b		UTH16-04	120	Lime plaster	21.02.16	2.2	0.3		<0.1	Piece of lime plaster
13a		UTH16-04	122	Metal	21.02.16	3.7	0.3		13	Curved metal piece, iron
13b		UTH16-04	122	Metal	21.02.16	2.3	<0.1		<0.1	Small piece of metal, iron
13c		UTH16-04	122	Metal	21.02.16	1.2	<0.1		<0.1	Small piece of metal, iron
13d		UTH16-04	122	Metal	21.02.16	1	<0.1		<0.1	Small piece of metal, iron
14a		UTH16-04	122	Stone	22.02.16	2			13	Grey coloured smooth roundish stone
14b		UTH16-04	122	Stone	22.02.16	4.7			46	Light peach-coloured irregular shaped stone, smooth
15a		UTH16-05	202	Metal	21.02.16	2.8	0.2		5	Broken pieces of irregular shaped metal, Iron. 15a is the biggest piece

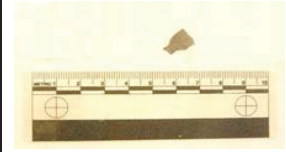

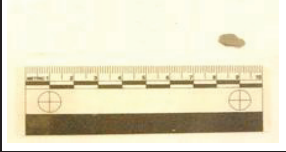
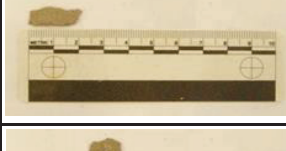

15b	see image in 15a	UTH16-05	202	Metal	21.02.16	1.6	<0.1		<0.1	Broken pieces of irregular shaped metal, iron. Arranged according to image
15c	see image in 15a	UTH16-05	202	Metal	21.02.16	1.6	<0.1		<0.1	Broken pieces of irregular shaped metal, iron. Arranged according to image
15d	see image in 15a	UTH16-05	202	Metal	21.02.16	1.4	<0.1		<0.1	Broken pieces of irregular shaped metal, iron. Arranged according to image
15e	see image in 15a	UTH16-05	202	Metal	21.02.16	1.2	<0.1		<0.1	Broken pieces of irregular shaped metal, iron. Arranged according to image
15f	see image in 15a	UTH16-05	202	Metal	21.02.16	1	<0.1		<0.1	Broken pieces of irregular shaped metal, iron. Arranged according to image
15g	see image in 15a	UTH16-05	202	Metal	21.02.16	0.8	<0.1		<0.1	Broken pieces of irregular shaped metal, iron. Arranged according to image
15h	see image in 15a	UTH16-05	202	Metal	21.02.16	0.8	<0.1		<0.1	Broken pieces of irregular shaped metal, iron. Arranged according to image
16		UTH16-05	203	Metal	21.02.16	a) 2.4	a) 0.2		5	Broken, often minute, pieces of iron. 16a is the biggest piece and is measured
17a		UTH16-05	203	Ceramic	21.02.16	3.5			5	Piece of modern roof tile, somewhat triangular in shape
17b		UTH16-05	203	Ceramic	21.02.16	5.3	0.8		20	Piece of modern roof tile, irregular in shape
18		UTH16-05	204	Metal	21.02.16	a) 5.6; Rest < 4	< 0.2		57	Broken metal fragments, largest piece is measured, rest varies between <2 and 4 cm
19		UTH16-05	206	Metal	21.02.16	a) 6.7; b) 4.5; the rest < 2.1	Broken pieces < 0.3		a) 30; b) 16; the rest < 0.1	Broken fragments of metal, largest two pieces measured



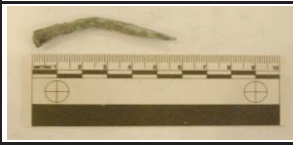
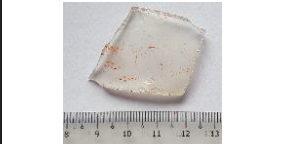

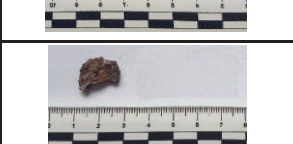
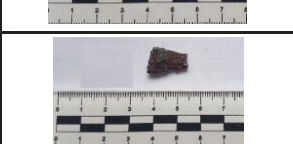
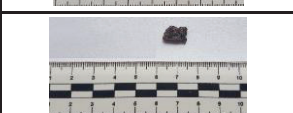
20		UTH16-05	212	Metal	22.02.16	2.4-0.5	< 0.1		30	Fragmented metal pieces, varies between 0.5 and 2.4cm
21a		UTH16-05	212	Lime plaster	22.02.16	3.4	0.5		8	Piece of lime plaster
21b		UTH16-05	212	Lime plaster	22.02.16	3	0.4		5	Piece of lime plaster
21c		UTH16-05	212	Lime plaster	22.02.16	2.7	0.2		<0.1	Piece of lime plaster
21d		UTH16-05	212	Lime plaster	22.02.16	2	0.2		4	Piece of lime plaster
22		UTH16-05	214	Metal	22.02.16	2.7	0.1		<0.1	Single piece of metal, ?cuprous
23		UTH16-05	214	Metal	23.02.16	1.5			<0.1	Somewhat round, but mostly irregular shaped metal piece, ?cuprous
24a		UTH16-05	214	Glass	22.02.16	3.7	0.2		<0.1	Piece of curved glass




24b		UTH16-05	214	Glass	22.02.16	2.8	0.2		<0.1	Piece of curved glass
25a		UTH16-05	215	Stone containing metal	22.02.16	6.6	1.3		92	Stone containing metal
25b		UTH16-05	215	Stone containing metal	22.02.16	6	1.3		34	Stone containing metal
25c		UTH16-05	215	Stone containing metal	22.02.16	3.7	0.8		17	Stone containing metal
26a		UTH16-05	216	Metal	22.02.16	2.2			5	Iron
26b		UTH16-05	216	Metal	22.02.16	2				Iron
26c		UTH16-05	216	Metal	22.02.16	2.3				Iron
26d		UTH16-05	216	Metal	22.02.16	1.5				Iron
26e		UTH16-05	216	Metal	22.02.16	1.8				Iron



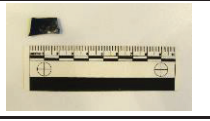




27a		UTH16-05	217	Stone	23.02.16	7.5			68	Coral stone
27b		UTH16-05	217	Stone	23.02.16	2.2			6	Coral stone
27c		UTH16-05	217	Stone	23.02.16	1.8			<0.1	Coral stone
27d		UTH16-05	217	Stone	23.02.16	1.7			<0.1	Coral stone
28a-i		UTH16-05	217	Ceramic	23.02.16	a) 6.1; b) 4; c) 5.5; d) 2.5; e) 2; f) 2; g) 1.9; h) 3.; i) 4	b) 0.9; c) 1; d) 0.8; f) & g) 0.3		a) 25; b) 8; c) 11; d) 11; e), f), g) <0.1; h) 12; i) 6	9+ broken pieces of roof tiles
29a		UTH16-05	218	Metal	22.02.16	3.2	<0.1		<0.1	Broken piece of metal, iron
29b		UTH16-05	218	Metal	22.02.16	1.3	<0.1		<0.1	Broken piece of metal, iron









29c		UTH16-05	218	Metal	22.02.16		<0.1		<0.1	Broken piece of metal, iron
29d		UTH16-05	218	Metal	22.02.16		<0.1		<0.1	Broken piece of metal, iron
29e		UTH16-05	218	Metal	22.02.16		<0.1		<0.1	Broken piece of metal, iron
29f		UTH16-05	218	Metal	22.02.16		<0.1		<0.1	Broken piece of metal, iron
30a		UTH16-05	221	Metal	22.02.16	2.1	0.1		<0.1	Broken piece of metal, iron- very thin and flat
30b		UTH16-05	221	Metal	22.02.16	1.4	0.1		<0.1	Broken piece of metal, iron- very thin and flat
30c		UTH16-05	221	Metal	22.02.16	1.3	0.2		<0.1	Broken piece of metal, iron nail?
31		UTH16-05	224	Ceramic	23.02.16	5			7	Roof tile


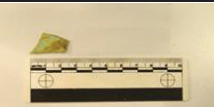





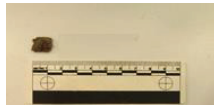

32a-h		UTH16-05	224	Metal	23.02.16	< 1.5	<0.1		<0.1	Iron, too fragmentary and small for individual measurements
33a-h		UTH16-05	Section collapse/W. side	Metal	22.02.16	< 1.5	<0.2		<0.1	Iron, too fragmentary and small for individual measurements
34		UTH16-05	Section collapse/W. side	Metal	22.02.16	5.7		0.7	6	Bent metal rod, ?cuprous
36		UTH 16-01	20-30 cm	Glass		3.3	3.1	0.4	<0.1	Rectangular shaped colourless glass fragment, transparent with brownish scratch marks
37		UTH 16-01	50-60 cm	Modern tile		6.7	3.2	0.8		Triangular shaped tile fragment, white on one side
38a		UTH 16-04	122	Metal		1.6	1.2	0.4	<0.1	Broken piece of metal, Iron, irregular shaped and corroded
38b		UTH 16-04	122	Metal		1.7	1.2	0.4	<0.1	Broken piece of metal, Iron, irregular shaped and corroded
38c		UTH 16-04	122	Metal		1.2	0.8	0.2	<0.1	Broken piece of metal, Iron, irregular shaped and corroded

39		UTH 16-05	220	Ceramic	23.02.16	2.8	2.8	1.1	L shaped roof tile
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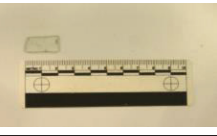




Appendix 5b: Description of small finds from K. Male' (Based on a table designed by MA students Fran McArthur and Valeriia Van Der Westhuizen)

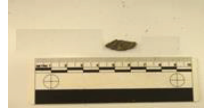
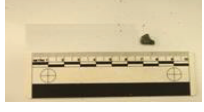



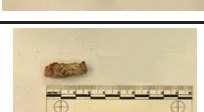


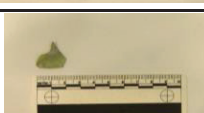
Small finds number	Image	Isalnd Site	Unit	Context	Object basic description & material	Date	Dimensions				Additional description
							Length (cm)	Width (cm)	Depth/diameter (cm)	Weight (g)	
1		MAL16-01	N2	1	Metal, apparently modern	02.02.16	1.5		1.5	<0.1	Circular in shape, central hole, polished on one side
2		MAL16-01	N2	2	Plastered stones	02.02.16				196	20+ pieces of lime mortar
3		MAL16-01	N2	3	Glass	03.02.16	2.1	2	0.16	<0.1	Dark blue glass, rectangular in shape. Not transparent. Has a small oval shaped black raised smudge on the exterior
4		MAL16-01	N2	3	Metal	03.02.16	2	2	0.1	<0.1	Octagonal shape metal piece. Professionally investigated by Norwich Castle Archaeological Conservation Department
5		MAL16-01	N2	4	Painted plaster	03.02.16	9.5		5	295	Irregularly shaped piece of painted plaster, black
6		MAL16-01	N2	5	Glass		2.2	1.2	0.1	<0.1	Translucid piece of glass, transparent no colour, close to square but irregular shape
7a		MAL16-01	N2	5	Shaped plastered stone	04.02.16	6.5	4	3.5	121	

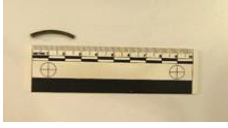


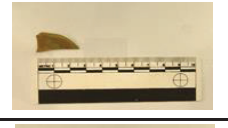
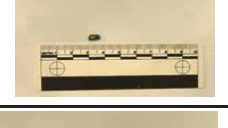
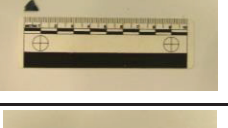
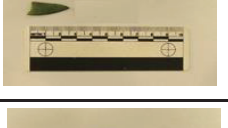


7b		MAL16-01	N2	5	Shaped plastered stone	04.02.16	3		1.5		
7c		MAL16-01	N2	5	Shaped plastered stone	04.02.16	3		1		White plaster on one side
8		MAL16-01	N5	1	Metal	02.02.16	3	2		7	Irregularly shaped metal piece
9		MAL16-01	N5	2	Metal	02.02.16	2			<0.1	Sharped end, possibly an iron nail
11a		MAL16-01	N5	2	Glass	02.02.16				<0.1	Piece of glass
11b		MAL16-01	N5	2	Glass	02.02.16				<0.1	Piece of glass
11c		MAL16-01	N5	2	Glass	02.02.16				<0.1	Piece of glass
11d		MAL16-01	N5	2	Glass	02.02.16				<0.1	Piece of glass


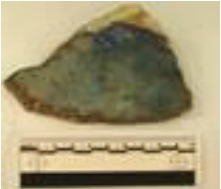




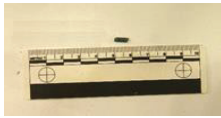
12		MAL16-01	N9	3	Metal		3.5		1	10	Curved piece of metal, ?cuprous
13a		MAL16-01	N9	4	Glass	01.02.16	2.3	0.9		<0.1	Transparent, light blue in colour, irregular in shape
13b		MAL16-01	N9	4	Glass	01.02.16	2.4	0.4			White curved glass piece with a raised strip with brown stripes around the edge and 4-5 circular ridges on top and bottom
14a		MAL16-01	N9	5	Metal	02.02.16	1.5	1		<0.1	?cuprous, irregular in shape
14b		MAL16-01	N9	5	Metal	02.02.16	1	0.5		<0.1	?cuprous, irregular in shape
15		MAL16-01	N12	2	Metal	03.02.16	3.2	0.7		11	Piece of metal, iron
16		MAL16-01	N12	2	Metal	03.02.16	1.2			<0.1	?cuprous
17a		MAL16-01	N12	2	Metal	02.02.16	1.2			<0.1	Broken iron metal piece, relatively square
17b		MAL16-01	N12	2	Metal	02.02.16			0.4	<0.1	circular, ?cuprous






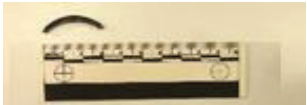






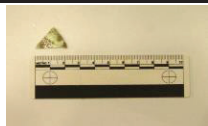


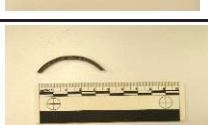


17c		MAL16-01	N12	2	Metal	02.02.16					<0.1	Iron
18		MAL16-01	N12	2	Metal	03.02.16	3	2			<0.1	Iron
19		MAL16-01	N12	2	Glass	03.02.16	2	1	0.2		<0.1	Piece of clear transparent glass, very clear, rectangular shape
20		MAL16-01	N12	2	Glass	02.02.16	4.5	1			<0.1	White curved fragment with a raised strip around the edge
21		MAL16-01	N12	2	Shaped coral stone	03.02.16	4		2.9 (height)		32	Irregularly shaped
22a		MAL16-01	N12	1 to 3	Metal	04.02.16	2.8	1.8			27	Oval in shape; an iron bolt?
22b		MAL16-01	N12	1 to 3	Metal	04.02.16	4	2.8				Sharp end, possibly an iron nail?
23a		MAL16-01	N12	3	Metal	04.02.16					9	?cuprous
23b		MAL16-01	N12	3	Metal	04.02.16						?cuprous



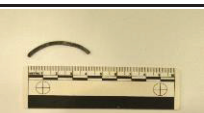



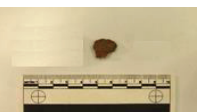
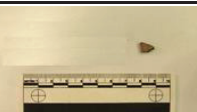
23c		MAL16-01	N12	3	Metal	04.02.16					?cuprous
23d		MAL16-01	N12	3	Metal	04.02.16					?cuprous
24		MAL16-01	N12	3	Metal	04.02.16	1.2	0.8		<0.1	Small piece of metal, ?cuprous
25		MAL16-01	N12	3	Metal	04.02.16	3	0.1		<0.1	Iron nail?
26		MAL16-01	N12	3	Metal	04.02.16	2.5			4	Iron
27a		MAL16-01	N12	3	Metal	04.02.16	3			17	Iron
27b		MAL16-01	N12	3	Metal	04.02.16	3				Iron
28		MAL16-01	N12	1 to 3	Glass	04.02.16	3.5	1.5	0.2	0.2	Translucent piece of glass, very light greenish, irregular rectangle
29		MAL16-01	N12	3	Glass	04.02.16	1.9		1.5 (D)x 2.3 (D) x 2.1 (D)	<0.1	Translucid piece of glass, transparent very light green, irregular in shape






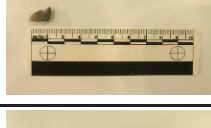


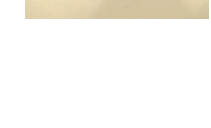
30a		MAL16-01	N12	3	Glass	04.02.16	2.5		0.2	<0.1	Curved black glass fragment, ?bracelet
30b		MAL16-01	N12	3	Glass	04.02.16	2.5		0.2	<0.1	Curved glass fragment, ?bracelet, with a white opaque on the bottom or inner side and dark transparent blue colour on the outer side
30c		MAL16-01	N12	3	Glass	04.02.16	1.5		0.3	<0.1	Curved blue broken glass fragment, transparent, ?bracelet
31a		MAL16-01	N12	3	Glass	04.02.16	0.7	0.4		<0.1	Translucid light yellowish green irregular in shape
31b		MAL16-01	N12	3	Glass	04.02.16	2.5	1.3		<0.1	Small, translucent dark blue rectangular shaped, has a tiny hole on the interior
32		MAL16-01	N12	3	Glass	04.02.16	0.7	0.4		<0.1	Translucid very dark blue piece of glass, transparent irregular almost blackish
33a		MAL16-01	N12	3	Glass	04.02.16	2.7	1		<0.1	Translucid green, a rim piece -the rim has a reddish very thin line on the lip top,triangular in shape
33b		MAL16-01	N12	3	Glass	04.02.16	2.4	0.4		<0.1	Translucid blue curved fragment, has a somewhat deep ridge (cut) around the exterior, cross section is B shaped, ?bracelet
34		MAL16-01	N12	1 to 3	Plaster	04.02.16	2.2	2		<0.1	Single piece of plaster

35		MAL16-01	N12	3	Plaster	04.02.16	5.2	4		23	Single piece of plaster, shaped, smooth on one side
36a		MAL16-01	N12	3	Painted plaster	04.02.16	15	7.5	1.6	126	Blue painted plaster
36b		MAL16-01	N12	3	Painted plaster	04.02.16	2.5	1	0.9		Blue painted plaster
36c		MAL16-01	N12	3	Painted plaster	04.02.16	2	2	1		Blue painted plaster
36d		MAL16-01	N12	3	Plaster	04.02.16	6.8	5.6	1.9	57	
37a		MAL16-01	N12	3	Glass	03.02.16	4.3	0.5		<0.1	Dark blue colour curved glass fragment, ?bracelet, non transparent
37b		MAL16-01	N12	3	Glass	03.02.16	0.9	0.3		<0.1	Blue/green black curved glass fragment, shaped like a screw with ridges all around, ?bracelet









38a		MAL16-01	N12	4	Metal	06.02.16	6		1.6	18	Metal tube, ?cuprous
38b		MAL16-01	N12	4	Metal	06.02.16	3.5	2		12	?cuprous
38c		MAL16-01	N12	4	Metal	06.02.16	3.2	2		7	?cuprous
38d		MAL16-01	N12	4	Metal	06.02.16	2.7	1.1		<0.1	?cuprous
39a		MAL16-01	N12	4	Glass	06.02.16	3.2	1.2	0.1	<0.1	Light blue; irregular shaped and transparent
39b		MAL16-01	N12	4	Glass	06.02.16	3.2	0.2	0.2	<0.1	Dark blue curved glass fragment, ?bracelet
39c		MAL16-01	N12	4	Glass	06.02.16	1.6	1.5	0.3	<0.1	Transparent, colourless, very clear piece of irregular shaped glass
40		MAL16-01	N12	4	Plaster	03.02.16	4.5	2.5		15	Blue painted plaster, broken piece

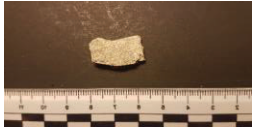

41		MAL16-01	E4	3	Metal	01.02.16	2.7	2	8	Irregularly shaped piece of metal, ?cuprous
42		MAL16-01	E4	4	Metal	01.02.16	2.4	1.8	<0.1	Single sheet of metal, ?cuprous
43		MAL16-01	E4	5	Glass	01.02.16	1)2.2x 2)2x 3)1.9		<0.1	Single piece of glass, triangular (fragile), clear transparent, has some yellowish raised circular smudge on the interior
44a		MAL16-01	E4	5	Metal	01.02.16	4.3	3.2	9	Iron
44b		MAL16-01	E4	5	Metal	01.02.16	2	1.3	<0.1	Iron
45		MAL16-01	E4	5	Glass	01.02.16	5	0.3	<0.1	Curved piece of black glass with a white circular raised strip around the edge, ?bracelet
46		MAL16-01	E7	2	Metal	01.02.16	LS 4 ; SS 3		7	Single piece of metal, with a curvature at one of its ends. (LS = long side; SS= short side), iron
47		MAL16-01	E7	2	Metal	01.02.16	6	WoB 1.1; WoT 2.2	85	Single metal nail, WoB = Width of Bottom side; WoT = Width of Top side

48		MAL16-01	E7	2	Glass	01.02.16	1.5	1	<0.1	Single piece of orange transparent glass, irregular shaped
49		MAL16-01	E7	2	Metal	01.02.16	4.5	2.2	9	Single piece of metal, iron
50		MAL16-01	E7	3	Glass	02.02.16	4.2	0.3	<0.1	One curved piece black colour glass
51		MAL16-01	E7	3	Glass	02.02.16	3	2.5	13	Single piece of glass bottle rim, with relief details, dark blue, non transparent, lid included, diagnostic, 4 circular relief added on the exterior around the lip: each circle has tiny circular dots added within them, closed vessel, with a raised ring in the middle
52		MAL16-01	E7	3	Metal	02.01.16	3	1.7	4	Single piece of metal, iron
53a		MAL16-01	E7	3	Plaster	02.02.16	3.9	2.9	8	Brown painted plaster
53b		MAL16-01	E7	3	Plaster	02.02.16	1.8	1.3	<0.1	Brown painted plaster
53c		MAL16-01	E7	3	Plaster	02.02.16	1	0.7	<0.1	Brown painted plaster




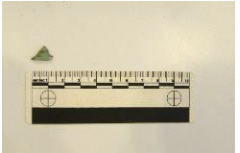


54		MAL16-01	E7	3	Plaster	02.02.16	2.9	1.8		4	Blue painted lime plaster
56		MAL16-01	E14	3	Plaster	04.02.16	5.5	2.9		10	Single broken piece, with white single curving line on its bottom side
57a		MAL16-01	E14	3	Plaster	04.02.16	3.6	2.8		11	Single piece of plaster, smooth and flat on one side
57b		MAL16-01	E14	3	Stone	04.02.16	2.1		1.2 (height)	4	Single piece of stone, round
58		MAL16-01	E14	3	Metal	04.02.16	1.2	1		<0.1	Single piece of metal, ?cuprous
59		MAL16-01	E14	3	Metal	04.02.16	1.2	0.9		<0.1	Single piece of metal, ?cuprous
60		MAL16-01	E14	3	Plaster	04.02.16	0.8	0.5		<0.1	Single piece of possibly plaster, painted blue
61		MAL16-01	E14	4	Metal	04.02.16	1.9	1.1		<0.1	Single piece of metal, ?cuprous
62		MAL16-01	E14	4	Metal	06.02.16	3		0.9 (Dobs)	7	Single piece, possibly metal. Dobs = Diameter of biggest side, iron

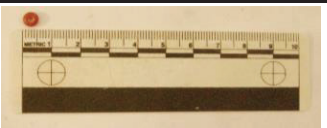
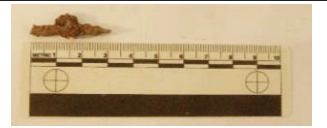


63		MAL16-01	E14	5	Metal	06.02.16	1.8	1.4		<0.1	Square piece of metal, iron
65		MAL16-01	E14	6	Glass	06.02.16	2.1	1.6	0.2	<0.1	Piece of dark blue translucent glass, has ring marks inside, a base? Roughly rectangular shaped but two sides straight the other two sides not straight and very irregular
66		MAL16-01	N12	3	Shaped plaster		2.3	2.2	0.8	<0.1	Shaped plaster fragment
67		MAL16-01	N12	2 Ext	Burnt clay		2.3	1.6	1	<0.1	Burnt clay fragment, with a circular depression in the middle on one side, cube shaped
68		MAL16-01	E7	4	Metal		2.5		0.5	0.3	Irregular shaped metal, iron
69		MAL16-01	E4	5	Glass		2.5	1.7	0.4	<0.1	Clear transparent irregular shaped glass piece
70		MAL16-01	E14	5	Glass	06.02.16	2	1	0.3	<0.1	Very light green/yellowish curved piece of glass, very rough texture
71		MAL16-01	E4	3	Metal		7	2.5	0.8	10	Broken piece of metal sheet, iron, rectangular in shape

72		MAL16-01	N9	5	Metal	02.01.16	2.3	1.3	0.5	<0.1	Rectangular shaped iron sheet
73		MAL16-01	E14	6	Metal		3.6	1.7	0.6	0.2	Irregular shaped iron fragment

Appendix 5c: Description of small finds from M. Veyvah (Based on a table designed by MA students Fran McArthur and Valeriia Van Der Westhuizen)

Small Finds Number	Image	Unit	Context	Object basic description & material	Date	Dimensions				Additional description
						Length (cm)	Width (cm)	Depth/diameter (cm)	Weight (g)	
1		VEY16-03	1	Stone	16.02.16	5			32	Single piece of irregularly shape worked stone
3		VEY16-05	1	Stone	17.02.16	3.5	1.5		9	Single piece of shaped stone
4		VEY16-05	1	Plastic	17.02.16	6			<0.1	Single piece of transparent plastic with rims on one side, maybe part of a vessel.
5		VEY16-05	2	Glass	17.02.16	1.4	0.9		<0.1	Single piece of blue glass
6		VEY16-05	4	Glass	18.02.16	4.3	0.5	0.3	<0.1	Single piece of black curved ; ?bracelet
7		VEY16-05	4	Glass Bead	18.02.16	0.8	0.6	0.8	<0.1	Single piece of bead of faded teal colour. Professionally investigated by Laure Dussubieux, Field Museum of Natural History.

8		VEY16-05	4	Glass Bead	18.02.16	0.5	0.2	0.5	<0.1	Single bead, reddish in colour. Professionally investigated by Laure Dussubieux, Field Museum of Natural History.
9		VEY16-05	4	Metal	18.02.16	3.1	0.3	0.3	<0.1	Single piece of metal, iron nail?



**Appendix 6: Report on bead analysis (Dussubieux 2018)**

**LA-ICP-MS analysis of 2 glass beads from The Maldives**

**Principal Investigators:**

Marilee Wood

Anne Haour

**Objects:**

2 glass beads

**Operator of the LA-ICP-MS:**

Laure Dussubieux

Field Museum of Natural History

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**Author of this document:**

Laure Dussubieux

## Experimental

The analyses were carried out at the Field Museum of Natural History in Chicago, USA, with a Thermo ICAP Q Inductively Coupled Plasma - Mass Spectrometer (ICP-MS) connected to a New Wave UP213 laser for direct introduction of solid samples.

The parameters of the ICP-MS are optimized to ensure a stable signal with a maximum intensity over the full range of masses of the elements and to minimize oxides and double ionized species formation ( $XO^+/X^+$  and  $X^{++}/X^+ < 1$  to 2 %). For that purpose, the argon flows, the RF power, the torch position, the lenses, the mirror and the detector voltages are adjusted using an auto-optimization procedure.

For better sensitivity, helium is used as a gas carrier in the laser. The choice of the parameters of the laser ablation not only will have an effect on the sensitivity of the method and the reproducibility of the measurements but also on the damage to the sample. To be able to determine elements with concentrations in the range of ppm and below while leaving a trace on the surface of the sample invisible to the naked eye, we use the single point analysis mode with a laser beam diameter of 100  $\mu\text{m}$ , operating at 80 % of the laser energy (0.1 mJ) and at a pulse frequency of 20 Hz. A pre-ablation time of 20 s is set in order, first, to eliminate the transient part of the signal and, second, to be sure that a possible surface contamination or corrosion does not affect the results of the analysis. For each glass sample, the average of four measurements corrected from the blank is considered for the calculation of concentrations. For carnelian, 10 measurements are carried out in order to account for the heterogeneity of the material.

To improve reproducibility of measurements, the use of an internal standard is required to correct possible instrumental drifts or changes in the ablation efficiency. The element chosen as internal standard has to be present in relatively high concentration so its measurement is as accurate as possible. In order to obtain absolute concentrations for the analyzed elements, the concentration of the internal standard has to be known. The isotope Si29 was used for internal standardization. Concentrations for major elements, including silica, are calculated assuming that the sum of their concentrations in weight percent in glass is equal to 100 % (Gratuze, 1999).

Fully quantitative analyses are possible by using external standards. To prevent matrix effects, the composition of standards has to be as close as possible to that of the samples. Two different series of standards are used to measure major, minor and trace elements. The first series of external standards are standard reference materials (SRM) manufactured by NIST: SRM 610 and SRM 612. Both of these standards are soda-lime-silica glass doped with trace elements in the range of 500 ppm (SRM 610) and 50 ppm (SRM 612). Certified values are available for a

very limited number of elements. Concentrations from Pearce et al. (1997) will be used for the other elements. The second series of standards were manufactured by Corning. Glass B and D are glasses that match compositions of ancient glass (Brill, 1999, vol. 2, p. 544).

## **Results**

Bead SF8 has a high lead composition (~52 % of PbO). The only other constituents present in significant concentrations are silica (41 %) and potash (5 %). Such a composition is characteristic of Chinese glass starting around the 2<sup>nd</sup> century AD (Gan Fuxi, 2009) and continuing until very recently (Burgess and Dussubieux, 2008); however, it is possible to distinguish different trace element signatures depending on the time periods. The Maldives bead composition was compared to the compositions of two sets of beads with a Chinese origin. The first group of beads was excavated in Singapore at the site of Fort Canning Hill and dates to the 14<sup>th</sup> century (Borell, 2010; Dussubieux, 2010). The second group of beads is from a burial excavated by Karl Hutterer at Tanjay, The Philippines, that was dated to the late 15<sup>th</sup> to early 16<sup>th</sup> century based on associated porcelain ceramics (Laura Junker, personal communication) the Philippines. Bead SF8 has rather low rubidium and higher lithium concentrations and is similar to the beads found in Singapore suggesting a dating in the early 15<sup>th</sup> c. AD or before.

The red color of the bead is certainly due to the presence of copper (0.25 % as CuO). According to Peter Francis Jr., translucent copper red beads were “exclusively a Chinese product until the nineteenth century (Francis Jr., 2002:80).” The use of gold to produce transparent red glass had been known at least from the Roman era and was re-discovered during the 17<sup>th</sup> c. A.D. in Europe with the recipe of the purple of Cassius that provided an efficient way to produce different shades of red glass and enamel (Hunt, 1976). The use of gold as a colorant in red glass or glaze was certainly introduced to China from Europe around the 17<sup>th</sup> c. AD (Kerr and Wood, 2004:647).

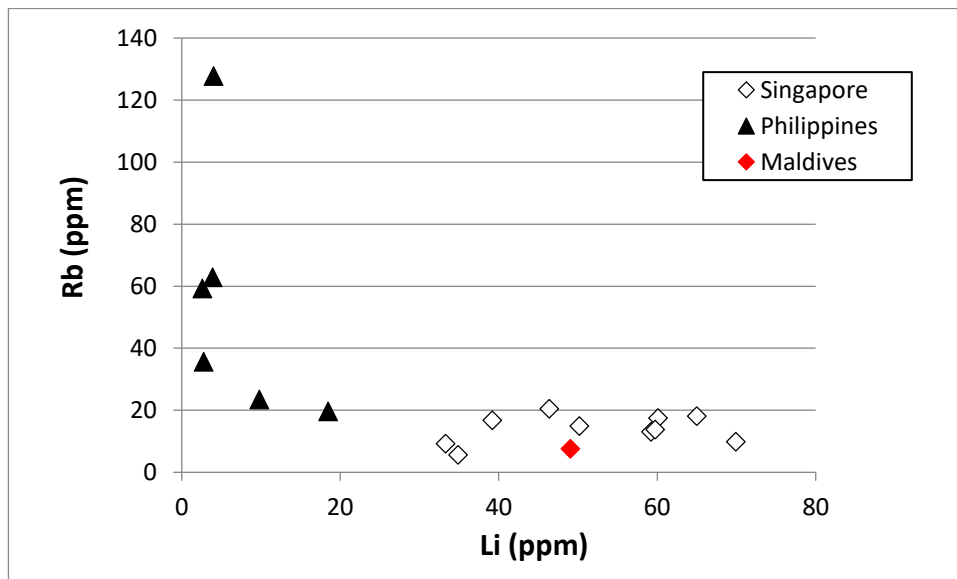


Figure 1. Li-Rb scatter-plot for some beads from Singapore (Dussubieux 2010) and from the Philippines (unpublished data) and SF8

Bead SF7 has a very different composition with low lead (0.8 %) but a high soda concentration (15 %) and magnesia and potash concentrations higher than 1.5 % suggesting the use of soda plant ashes as flux. Among soda plant ash, two types depending whether their alumina concentrations are below or above 4 % were identified. Sample SF7, with 5.6 % of alumina belong to the high alumina soda plant ash (*v*-Na-Al) glass group. The blue color of the glass is certainly due to the presence of copper (1.0 % as CuO).

The provenance of that kind of glass is very uncertain. Soda plant ash glass with high alumina are fairly common in a region including Afghanistan (Brill 1999), Uzbekistan (Abdurazakov 2009; Rehren et al. 2010) and Pakistan (Dussubieux and Gratuze 2003) for a wide period ranging from the 2<sup>nd</sup> c. BC to the 14<sup>th</sup> c. AD. If the glass from Pakistan that is fairly early (200 BC – 200 AD) has also a very different trace element pattern with fairly high trace elements such as uranium, can be excluded, comparison with the other regions is more difficult due to the fact that compositions that are available do not include trace elements.

This type of glass was described by Robertshaw et al. (2010) for glass beads found in southern Africa and two sub-groups were identified. These two sub-types correspond to the Mapungubwe oblate (MO), 1240-1300 AD, and the Zimbabwe (Z), 1300-1430 AD, bead series. The MO *v*-Na-Al glass has lower zirconium concentrations compared to the Z *v*-Na-Al glass type. SF7 seems to belong to the MO *v*-Na-Al sub-type as shown on Figure 2.



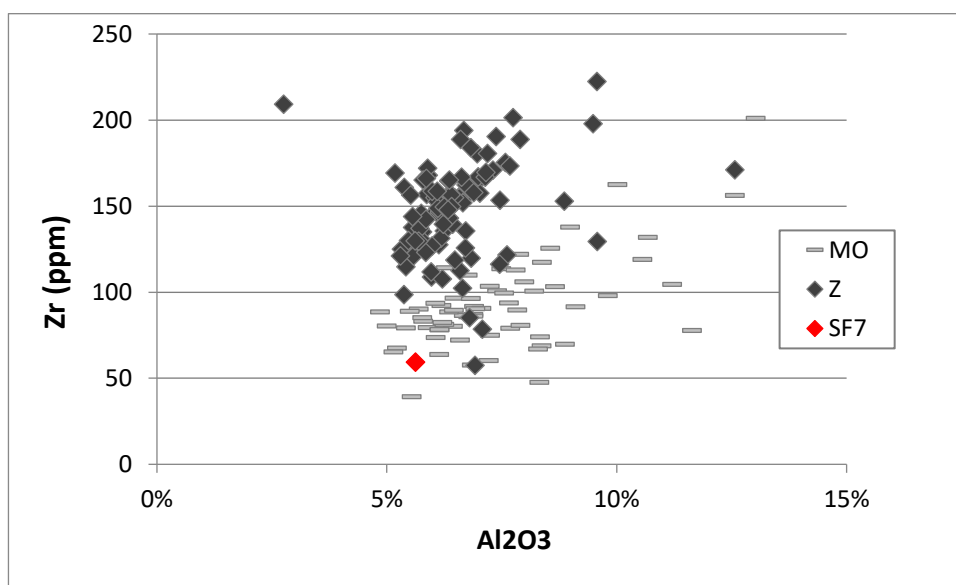


Figure 2. Bi-plot for the Al<sub>2</sub>O<sub>3</sub> and Zr concentrations of MO and Z bead series (Robertshaw et al. 2010) and the SF7 bead.

## Conclusion

These two beads from Maldives have different origins, with SF8 having a possible Chinese origin and SF7 having a possible central Asian provenance. Both beads have composition similar to other beads dating from a narrow time period: 14<sup>th</sup> c. AD and 13<sup>th</sup> c. AD.

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	SF7	SF8
SiO2	63.85%	41.34%
Na2O	14.94%	0.34%
MgO	3.45%	0.03%
Al2O3	5.62%	0.65%
P2O5	0.38%	0.01%
Cl	0.56%	0.17%
K2O	3.39%	5.00%
CaO	4.58%	0.08%
MnO	0.05%	0.01%
Fe2O3	1.05%	0.13%
CuO	1.04%	0.25%
SnO2	0.26%	0.06%
PbO	0.78%	51.94%
Li	10.3	49.0
Be	0.8	0.3
B	130.3	0.9
Sc	3.9	1.3
Ti	743.5	36.1
V	14.8	1.8
Cr	18.6	1.9
Ni	16.2	6.3
Co	4.4	0.9
Zn	59.6	5.4
As	22.4	36.3
Rb	39.0	7.5
Sr	319.9	5.9
Zr	59.4	2.9
Nb	3.8	0.4
Ag	1.8	20.1
In	7.7	1.7
Sb	13.9	10.7
Cs	0.6	0.2
Ba	410.9	21.0
La	6.5	1.1

Ce	13.1	8.4
Pr	1.6	0.3
Ta	0.3	0.1
Au	0.1	0.1
Y	5.7	0.5
Bi	4.1	8.7
U	0.6	0.2
W	0.2	0.1
Mo	0.8	0.9
Nd	5.5	0.8
Sm	1.2	0.1
Eu	0.4	0.1
Gd	1.0	0.1
Tb	0.2	0.0
Dy	1.0	0.1
Ho	0.2	0.0
Er	0.6	0.1
Tm	0.1	0.0
Yb	0.6	0.1
Lu	0.1	0.0
Hf	1.7	0.1
Th	1.8	0.6

Table 1: Results