Interactions between Sri Lanka and South India

in the Early and Middle Historic through the perspective of personal adornment

Volume 1 of 2

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

Signature: ……

ABSTRACT

The present research investigates the interaction between Sri Lanka and its closest neighbouring region, South India, during the Early and Middle Historic periods. This connection has often been studied based on the textual evidence available on either side with little regard for the material evidence. Therefore, previous studies have fallen short of providing an objective understanding of the interactions. Furthermore, the focus of previous studies has been large-scale, state-mandated interaction. In contrast, this study has adopted a novel approach through the perspective of personal adornment and has been able to trace far closer contact between the two regions than official interaction suggests.

To understand interpersonal interactions between the two regions, objects of personal adornment from seven different sites in Sri Lanka and South India were analysed. The patterns that emerge from assemblages of objects of adornment, including beads and other non-bead adornments were observed. The rationale behind this analysis was that body beautification expresses the individual and social identities of people across time and space. Consequently, it was anticipated that, by observing artefacts that are expressions of the identities and preferences of the general populace, this would shed light on interpersonal contact between the two regions.

The patterns visible from the analysis of assemblages illustrate strong similarities between the two regions, during the Early and Middle Historic Periods. This is likely to have been the result of exchanging goods, ideas and technological knowledge. This study has also revealed that amidst shared cultural traits, each region developed preferences distinct from each other. The ethnographic study carried out provides further evidence of interactions between the two regions, which is missing in the texts and the archaeological record. These interactions probably reflect those which existed in the past. The integrated evidence used in this study clearly indicates longstanding, continuous personal-level interactions, between Sri Lanka and South India, which were hitherto unknown.

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ABBREVIATIONS

Mv. : Mahavamsa

Dv. : Deepavamsa

AG : Anuradhapura Gedige

KTD : Kantarodai

MA : Mantai

KR : Kirinda

IBB : Ibbankatuwa

AGM : Alagankulam

KDL : Kodumanal

ASW2 : Anuradhapura Salgahawatta 2

ASM : Anuradhapura Sanghamitta Mawatha

LKB : Lower Kirindi Oya Basin

IPB : Indo-Pacific Bead

RDB : Red Disc Bead

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CHAPTER 1:

INTRODUCTION

Located only 48km across the Palk Strait, Sri Lanka's proximity to neighbouring India has been more than merely geographical (Figure 1.1). The island was physically connected to mainland India several times in the past, up until 7000 years ago when the final separation of the land masses took place (Deraniyagala (1992) 2004, 174). The lowering sea levels connected the lands and this led not only to human migrations but also cultural, technological and ideological exchanges. Hence, it is no surprise that the influence of this is seen in the cultural matrix of the island. Moreover, even after the final geographical separation of the two landmasses, during a period when maritime technology was still rudimentary, contact between the closest points was very likely. Today, Dhanushkodi in South India (Figure 1.2) is India's closest point to Sri Lanka and therefore, one would expect the strongest contacts to be there between Sri Lanka and South India.

Pieris (1919, 65) describes this proximity between the two regions and thereby the people, stating, "It stands to reason that a country which is only thirty miles from India and which would have been seen by Indian fishermen every morning as they sailed out to catch their fish…". Accordingly, it is logical to surmise that the island would have attracted those same fishermen who saw the land on a daily basis. While cultural connections took place in both directions, Pillay (1963, 1) suggests that, being an island, Sri Lanka was rarely tempted to develop schemes of political, economic or cultural expansion beyond its borders, as with its agricultural abundance and resources it could pursue an insular and self-contained existence.

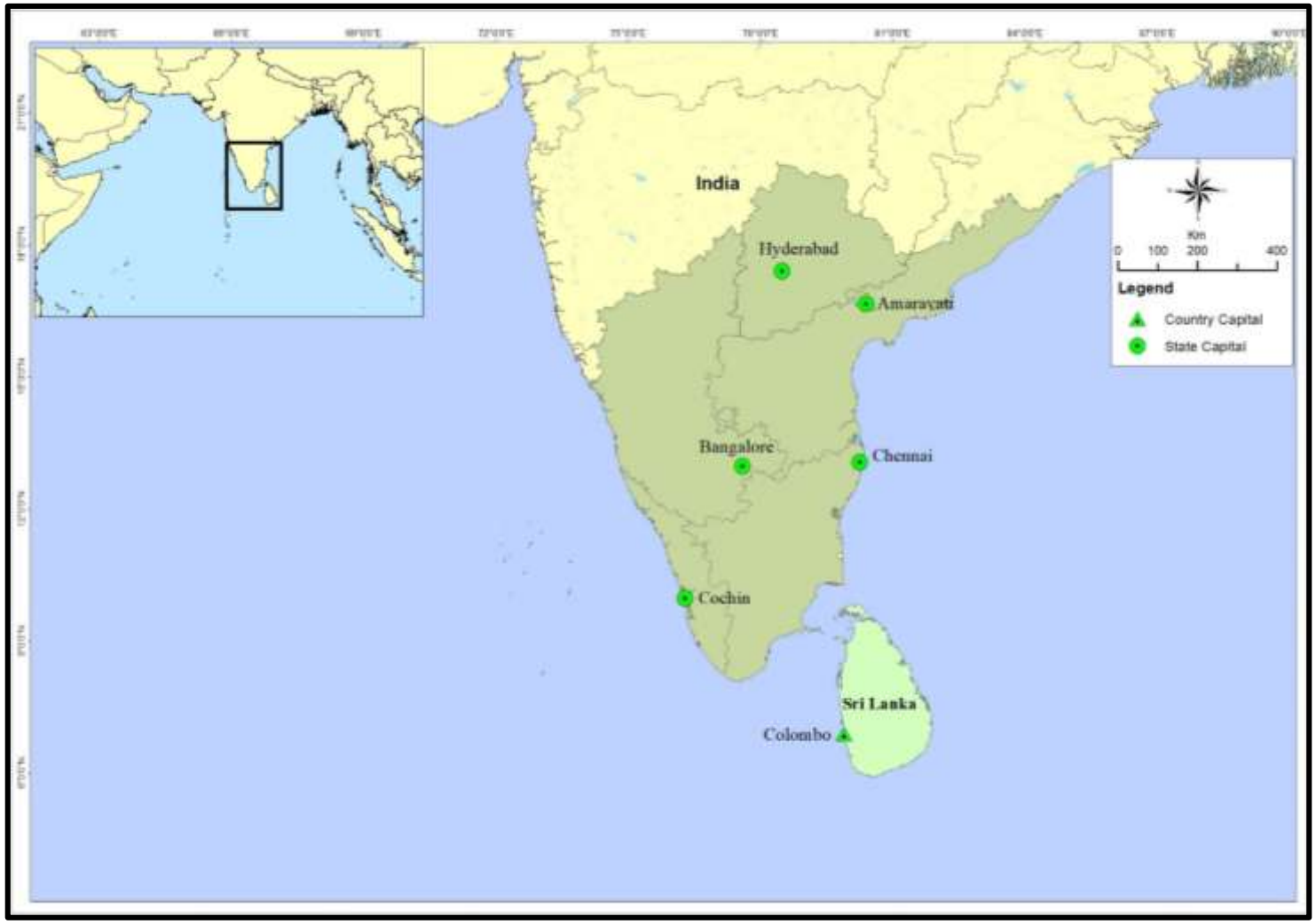

Figure 1.1: Location of Sri Lanka and South India in the wider Indian Ocean and in proximity to each other

Figure 1.2: The deserted town of Dhanushkodi. After the devastating cyclone in the 1960s that destroyed the entire city the town was abandoned. During the day, venders occupy the area to make a living from the tourists

However, despite the physical proximity of South India, in the early canonical texts of Sri Lanka (Chapter 2) there is a bias towards North India. These texts were mainly written by the Buddhist clergy and their inclination towards North India is natural because the formal introduction of Buddhism to the island was from North India. The objective of these authors was to propagate and record the development of Buddhism, therefore their writings have endeavoured to achieve these objectives, rather than to provide comprehensive details of historical events in Sri Lanka.

Nevertheless, there are ample references in these texts that demonstrate the constant contact with South India, but uncritical historical reasoning and superficial reading of the texts have led scholars to interpret the relationship with South India as rather invasive and discordant. Sri Lanka's cordial relations with North India have often been highlighted at the expense of the natural close contact with South India. Emphasis has been given to the numerous invasions

from South India in different periods (discussed further in Chapter 2), whereby marital, religious and economic interactions with South India are largely neglected. There is a necessity to revisit this issue and redress the balance in our understanding.

Sri Lanka's historical texts, being quite comprehensive and continuous, have influenced scholarship and as a consequence other sources, such as archaeological evidence, have not been given adequate attention. Until recent times, Sri Lanka-South India interactions have been traced primarily through textual evidence and material evidence has remained marginal to such discussions. These textual sources provide evidence of the socio-political, cultural, religious and economic conditions of the two regions and are supplemented by epigraphical, numismatic, artistic and architectural evidence. Based on them, South India's influence on Sri Lankan culture, politics, religion, art and architecture, as well as language have been widely discussed (Pillay 1963; Seneviratne 1984; 1985a; Bopearachchi 1997; 2004; Bopearachchi and Wickremesinghe 1999). Nonetheless, hardly any study has so far been undertaken to observe these interactions at an individual or personal level, across the general population. Such interactions are better illustrated through the archaeological evidence, which has been given less attention in understanding South India-Sri Lanka connections to date.

Cultural practices travel across cultures and generations. Migration is a fundamental human characteristic and people move from one place to another and settle down in different regions. When they do, they carry with them their cultural inheritance and practices, particularly those that are embedded in their

practices of personal adornment. They exchange and interact with various other groups they come into contact with, in the new localities. These exchanges are symbiotic and in the long run practices from other cultures are also absorbed. Material culture is likely to represent these traits. Some of these ancient practices could still be continuing while others are recorded in texts. Hence, this study envisages that these shared cultural traits are archaeologically traceable with the assistance of historical records and ethno-archaeological evidence.

Human consciousness of personal appearance is as old as humanity. Practices of personal adornment are expressions of identity, ideology and aesthetic preference. Objects of personal adornment are significant because these personal possessions express the individual, as well as a person's social, religious, ethnic and group identity (White 2005, 5). Thus, personal adornment can express individuality as well as collectiveness. Therefore, studying objects of personal adornment from the two closely related regions to identify such shared cultural traits would shed light on the interaction that existed between the general populace of South India and Sri Lanka, underlying large-scale socio-political, religious and economic conditions.

Secondly, turning to modern times, three decades of political tension involving the two main communities in Sri Lanka and South India, the Sinhalese and the Tamils, has influenced the interpretation of textual evidence. This has led not only to the misinterpretation of historical events, but also at times contributed to the misunderstandings between the communities. This demands an objective re-reading of historical connection between the two regions, adopting novel approaches to gain new insights. It is, therefore, timely to explore the shared

cultural traits between South India and Sri Lanka through the perspective of objects and practices of personal adornment to shed light on the interactions that existed on a personal level between the two regions.

1.1 Previous studies

1.1.1 Sri Lanka-South India interactions

Sri Lanka's history is dominated by its textual evidence, especially the chronicles that were written in the 4th–5th centuries AD. They record the history of the country from around the 6th century BC. In contrast to the bias towards North India in the texts, the material culture revealed through archaeological research so far demonstrates that Sri Lanka's contacts with South India have been close (Chapter 2). Epigraphical and numismatic evidence as well as evidence from ceramics and other archaeological finds show close affinity between the two regions (Indrapala 2003; 2005; Schenk 2001; 2005; 2007; Bandaranayake 1990; Prickett 1982; 1984; Bohingamuwa 2017). The strong cultural connections with South India can also be observed through some culinary practices prevalent in the two regions. The general practice of using coconut in the preparation of food, as well as wide use of sea food are such examples, though the environmental conditions have also influenced these practices. In addition, food items such as *appam, idiyappam, putta* found in South India are available in Sri Lanka with a slight change of names, *appa, indiappa and pittu* respectively.

The chronicles themselves mention Buddhist interactions with South India. There is reference to Buddhist monks from South India being present in Sri Lanka in *Mahavamsa,* Chapter XXXVI, Verse 112-117 (referenced throughout this thesis by abbreviation *Mv*:XXXVI.112-117). Some of these Buddhist scholars, such as

Buddhaghosha and Dhammapala, are recorded as having commanded high respect from the islanders (Adikaram 1946; Hikosaka 1989).

From an archaeological perspective, Seneviratne was one of the earliest to highlight strong cultural interactions, based on Buddhism, between the two regions (Seneviratne 1985a). He initiated the debate about South India's close contacts with Sri Lanka as being favourable, referring to Buddhism in the region. Somadeva (2005) presents more theoretical arguments, strengthening Seneviratne's views, in suggesting intense interaction with the Andhra region of South India. Nonetheless, little material evidence has so far been taken into consideration in order to reinforce these arguments. However, Bohingamuwa (2017) discusses the close contacts that existed between Sri Lanka and South India, based on ceramic and bead assemblages he studied from three different sites in Sri Lanka. He comments that unrecorded interactions between the people of the two regions would have existed, based on the findings from his ethnographic study in Alagankulam and the ceramic and bead data from the Sri Lankan sites he studied (Bohingamuwa 2017, 508). Nevertheless, his main focus is Sri Lanka's external connections and his evidence of interaction is not exclusive to Sri Lanka and South India, but Sri Lanka's far and wide contacts with countries in the East and the West, from the Early Historic Period.

Just as cultural anthropologists often base their conclusions on experiences gathered from contemporary communities, archaeologists need to draw their conclusions on past societies by looking at the material evidence, termed material culture (Renfrew and Bahn 2008, 12). Sri Lanka has indeed, made significant strides in this regard during the past few decades. Deraniyagala's (2004) work at

the Anuradhapura Citadel has also provided a greater understanding of the chronological setting of the island, as well as the development of Anuradhapura as the first capital of Sri Lanka. Coningham's work (1999; 2006) at the same site has largely reinforced Deraniyagala's findings and has given a further understanding of the material culture recovered and what it represents.

Weisshaar *et al.* (2001) carried out extensive research in Tissamaharama, an urban settlement site in Southern Sri Lanka and have revealed important information on the setting of a regional capital, as well as its interaction with the capital Anuradhapura. The ceramics recovered from the site were studied by Schenk (2001; 2005; 2007; 2014; 2016) and it is one of the most important ceramics analyses in Sri Lanka that has provided extensive detail on ceramic types. Bandaranayake *et al.*'s (1994) research in the Sigiri-Dambulu region provided a break-through in the settlement archaeology of Sri Lanka. The development of settlements around the peripheries of urban centres was studied in this research. Along the same lines, Somadeva (2006) studied the Lower Kirindi Oya Basin (LKB), a peripheral region of the Tissamaharama urban centre and provided an understanding of the nature of peripheral settlements. Based on the research carried out in the Sigiri-Dambumlu region, Karunaratne (2010) focussed on Ibbankatuwa, a Megalithic burial site, the only one site where its associated settlement site was also investigated.

In 1984, Seneviratne published pioneering work on the Megalithic-Black and Red Ware complex in Sri Lanka that observed striking similarities with Megalithic burials in Sri Lanka and South India. Bopearachchi (1997; 2004; Bopearachchi and Wickremesinghe 1999) has widely discussed numismatic finds in Sri Lanka

and the external contacts revealed through them. Juleff's work in Samanalawewa (1996; 1998; 2009) provided important information on technological advancements in iron smelting in Sri Lanka. Bohingamuwa (2017), studied three sites in Sri Lanka, namely Mantai, Kantarodai and Kirinda, in order to discuss, not only Sri Lanka's external interactions with the regions located east and west to it, but also the internal networks that were apparent from material evidence. Quantified ceramic and bead data was presented in this study, and this was the first of that nature carried out on the island. His discussions, based on the bead and bangle analysis, included provenance, production technology and colour patterns. While trade links have been Bohingamuwa's main focus, he touches on the possibilities of interactions beyond trade.

Sri Lanka-South India interactions have primarily been traced via textual evidence. Sri Lankan chronicles, both Pali and Sinhala canonical texts, are biased towards Buddhism and Buddhist patronage but they provide a wealth of information about the history of interactions between Sri Lanka and India, as well as with other regions. Similarly, the interpretations based on Tamil literature, e.g. the *Manimekalai* (Swaminatha Ayyar (ed.) 1921), *Sanga Ilakkiyam* (Pillai (ed.) 1940), *Silappadikaram* (Swaminatha Ayyar (ed.) 1920), *Yalpana-Vaipawamalai* (Brito (trans.) 1935) and *Sekarasasekaramalai* (Swaminatha Ayyar (ed.) 1920) (Chapter 2) have their share of bias.

Pillay's *South India and Sri Lanka* (1963) outlined South India's interactions with Sri Lanka, covering political, commercial and religious interactions and their influence on the language, art, architecture and writing; on the culture in general. Raghavan, in 1964, has spoken of the influence of India on Sri Lanka, and

Hikosaka (1989) has discussed Buddhism in Tamil Nadu and its connections with the island. In addition, there are numerous other publications which devote significant discussion to the interactions between the two regions (Pieris 1917; 1919; Tambiah 1950; Indrapala 1970; 2003; 2005; Pushparathnam 2001a; 2001b; Pushparathnam and Sankaran 2000).

1.1.2 Previous research on personal adornment

So far only a handful of studies of objects of personal adornment have been carried out in Sri Lanka and South India, particularly with regards to the early periods. Such research has been mainly based on adornment as depicted in artistic representations. Only a few of these explicitly discuss the significance of the practices of personal adornment. Amarasinghe (2007) presents various references to adornment in early literature and while his publication provides valuable source material, it does not critically discuss the practices of personal adornment or their relevance. Wickramasinghe (1935) described the attire of ancient Sri Lankan women. Coomaraswamy ((1908) 1979), Andagama (1985), Manasinghe (2000) have all also described the ornaments used on the island in ancient as well as later periods. However, these references are records of different types of adornment rather than critical discussions about their significance.

Indian ornaments, particularly those associated with temples have been discussed in detail by Nandagopal and Iyengar (1997). Some of the ornaments are exclusively used at temple festivals and are dedicated to the gods. They describe the ornamentation depicted in sculptures and paintings at places such as Ajanta, Hampi, Khajuraho and their publication discusses the symbolic

meanings behind ornaments when associated with temples and describes the significance of ornaments in secular and spiritual contexts. Bala Krishnan and Sushil Kumar (2001) have also written about the 5000-year-old jewellery traditions of India and do not restrict themselves to temple jewellery. In fact, this book provides a wealth of information on the personal adornments of ancient India and the values associated with these ornaments. Similarly, the volume *Traditional Jewellery of India* (Untracht 2008) covers a wide range of adornment practices that prevail across the country, within different societies. Basham (1954, 210–213), Sahay (1975), Verma (1989), Deo (2000), Barnard (2008) and Daheja (2009) are among others who have written regarding the jewellery and ornaments of India.

Several studies have been carried out on objects of personal adornment such as beads, bangles, rings, necklaces, mainly as part of material analysis from excavations. Because beads form the largest component of objects of adornment recovered from excavations, studies of them have been prominent. In both Sri Lanka and India, the study of beads is primarily based on their typology, technology and the provenance of the materials used. Hannibal-Deraniyagala (2001; 2003; 2005) has mainly concentrated on the typological and technological classifications and provenance of the beads discovered at Tissamaharama, an early regional capital in Southern Sri Lanka. Scientific analysis of these beads has been carried out by Schüssler *et al.* (2001, 227–242) and Rösch *et al*. (1997, 763–783) who have focussed on determining the provenance of materials by comparing beads from Tissamaharama, Akurugoda and Anuradhapura with those from Thailand and Oman. Francis (1994; 2002; 2013a) is the other leading researcher of Sri Lankan beads, particularly those from Mantai. His main focus is

bead production technology and he provides evidence for Mantai being a production site, particularly for Indo-Pacific beads during the Early Historic Period. A common theme revealed by this research is Sri Lanka's foreign trade links.

In recent times Abraham (2013, 239–261; 2016) has worked on glass beads discovered from the excavation at Pattanam, in Kerala, South India, and their distribution and importance in South Indian socio-cultural conditions and international maritime trade as well as on Indo-Pacific Beads and the broader socio-economic setting in which they were produced. Rajan's work at Kodumanal (1990; 1994; 1996; 1999; 2015a) concentrates on tracing trade links and understanding South Indian society. He briefly describes the stone bead industry that existed on site, as indicated by the large quantities of stone beads and production debitage. Kelly (2013) discusses social organization, technology, and craft specialization by mainly studying the techniques, technology and organization of craft of semi-precious stone ornaments from four different sites in South India, namely Kodumanal, Kadabakale and Pattanam. Dussubieux *et al*. (2008) has analysed the trace elements of beads from Africa, India and Sri Lanka to contribute to the theme of international trade. This research, however, has studied beads and other objects of personal adornment in order to discuss themes such as trade, social hierarchy and technology. There is a lacuna with regards to perceiving these artefacts as objects of personal adornment and the practices associated with them within society.

1.2 The present study

Personal adornment has been present in various forms since the beginning of human existence. People have always used different kinds of adornment, from the very simple to the extremely elaborate to beautify themselves. Moreover, the use of ornaments has not only been about beautification, but incorporates symbolic representations of human individuality and social status. Personal adornment represents individual and collective aesthetic taste, customs, beliefs and values, as well as the wearer's social, economic, religious and political status within society.

Practices of personal adornment are representations of the culture and ideology of the individual as well as their social group. When different groups of people come into contact with each other these cultural and ideological traits may be shared, transferred and transformed. This cultural exchange is symbiotic and therefore there is likely to be a sphere of shared culture. This study, then proposes to focus on shared cultural, technological and ideological elements that indicate interregional interaction and influences between Sri Lanka and South India. As discussed in section 1.1, such a material culture-based approach on Sri Lanka-South India interactions is considered significant.

This research concentrates on the period between the 6th century BC and 10th century AD. The 6th century BC marks the second urbanization period of Indian history (Chakrabarti 1995; Allchin and Allchin 1997, 223–261). It was during this period that the 16 great states, "*Solosmaha janapada*", rose to power and the beginnings and subsequent spread of Buddhism took place. Unlike Brahmanism, that prevailed at the time, Buddhism encouraged trade and travel to lands beyond

India (Ray 1994, 153). With Buddhism and trade rising to prominence, evidence of contact between India and Sri Lanka also increased. Sri Lanka's interactions further widened to other regions to both the East and West, and the island developed towns and cities (Deraniyagala 2004, 711–712). Anuradhapura became the capital of Sri Lanka and remained so for over 15 centuries. The city finally faced its decline in the hands of an attack by the neighbouring power in South India, the Cholas, in the 10th century AD. The time period of this study, therefore, encapsulates the Early and Middle Historic periods in Sri Lanka's history, as set out by Deraniyagala (2004, 707–714). This marks an era of Sri Lanka's cultural, technological and ideological interactions with its closest neighbour South India. The chronological time frame of the study is discussed further in Chapter 2.

The present study aims to trace the shared cultural traits between South India and Sri Lanka as represented through objects and practices of adornment. An abundance of artefacts, such as beads, bangles, ear and finger rings, pendants, hairpins, used for personal adornment has been recovered from numerous sites belonging to the time period under consideration, in Sri Lanka and South India (e.g.: Begley 1981; Seneviratne 1984; Deraniyagala 2004; Coningham 2006). The material culture provides strong evidence of cultural and technological diffusion that has occurred to and from the regions located on either side of the Palk Strait.

1.2.1 The significance of the present study

The traditional classification of beads has not paid adequate attention to these as objects of bodily beautification and as a means of communicating individual and

social relations. This project takes its inspirations from recent attempts to explore beads and other objects of personal adornment as social and chronological communicators (e.g. Bvocho 2005, 409–424; White 2005). Personal ornaments are expressions of cultural values and socio-economic structure and they act as communicators of cultural beliefs through symbolism. Similarly, ornaments such as beads, are also chronological indicators because their production technology, shapes and choice of colours may indicate changes over time (Bvocho 2005, 410). As practices across regions resemble or differ from each other, the spatial distribution of personal adornment is also visible in the archaeological record.

Adornment has been taken to signify modes of social positioning, placing individuals and communities in time and space. There have been recent attempts to correlate forms of adornment to political leadership in West Africa and the Pacific region (Steiner 1990, 431–445). Considering the association of ornaments in human history they can be viewed as symbolic expressions of the individual and their social relations. The discovery at the burial site at Varna in Bulgaria (Renfrew and Bahn 2008, 409) is a strong example of self-expression that exhibits the status of the deceased in society. The burial yielded a large quantity of gold, with necklaces and bangles still intact on the skeleton. Similarly, the necklace or waistband discovered at Ibbankatuwa, in Sri Lanka clearly demonstrates the personality of the wearer (Karunarathne 2010, 184–185).

This project intends to take this material expression of Sri Lanka—South India interactions a step further to fill the lacuna that exists in current discussions on the interaction between Sri Lanka and South India during the early and middle historic period. Objects of personal adornment are expressions of individual as

well as social beliefs, perceptions and hierarchy. By exploring beads and other objects of adornment, as well as practices associated with personal adornment and their symbolic meanings, an attempt is made to explore the shared cultural, technological and ideological traits of Sri Lanka and South India. This understanding of personal interactions will shed light on a closer connection that may have existed between the two regions underlying interactions at state-level.

1.3 Aims

The prime aim of the present study is to advance the material culture studies, recently initiated, on the subject of Sri Lanka-South India interactions that existed during the early and middle historic periods (*c.* 6th century BC to 10th century AD). As discussed in section 1.2.1, the majority of research on Sri Lanka-South India contact is largely based on historical resources. Although this trend has recently shifted from textual to archaeological sources, little thought has been given to the evidence of personal level interaction. The movement of people and goods is always accompanied by cultural traits, as well as the transfer of technology and ideologies. Therefore, the aim of this study is not only to understand cultural, technological and ideological interactions and their patterns, but also the agents involved, as well as their impact on society in both regions. An attempt will also be made to understand the individuality of the wearer and his or her social relations.

1.4 Research questions and objectives

1.4.1 Research questions

This research is based on a number of research questions that can be characterized as below;

- How best to delineate the nature and the patterns of cultural, technological and ideological interactions that existed between Sri Lanka and South India between the 6th century BC and 10th century AD?

- How significant is the material representing personal adornment in understanding cross regional and cross cultural interactions? How does it differ from other categories of evidence?

- Do objects and practices of personal adornment in the material culture and ethnographic studies reflect the 'individuality' of the wearer/maker and of the 'society' wherein they lived and their 'social relations'?

- What are the associated values embedded in personal adornments and is it possible to identify them?

- What was the true nature of the historical connections that existed between Sri Lanka and South India? What influence did such interactions have on both regions and their cultures?

Through these research questions it is proposed to achieve the following research objectives.

1.4.2 Objectives:

- To identify the best sources for understanding the nature and patterns of cultural, technological and ideological interaction that existed between Sri Lanka and South India between the 6th century BC and 10th century AD

- To determine the significance of objects and practices of personal adornment in identifying cross-cultural and cross-regional interactions

- To trace the individual and his/her social relations through material culture related to personal adornment, including those practices revealed through ethnographic studies

- To identify symbolic meanings embedded in practices and objects of personal adornment to understand individual and group relations and then to explore cross-regional and cross-cultural interactions.

- To make an objective assessment of the historical connections that existed between Sri Lanka and South India and the lasting influence on both regions and cultures.

1.5 Strategy and methodology

The approach towards research into Sri Lanka-South India interaction has mainly been based on textual evidence. The focus, therefore, has been on the South Indian invasions of the island, concluding in constantly discordant interaction between the two regions. Based on such research, Sri Lanka's interaction with its nearest neighbour South India has restricted, and to some extent, misguided our understanding. Therefore, this research envisages that thorough examination of material culture and re-assessing the textual evidence are the ways forward for an objective assessment of Sri Lanka—South India contacts. With regards to the material culture, this study will focus on objects of personal adornment, for example, beads, bangles, rings and pendants.

Assemblages from selected sites in Sri Lanka and South India were studied. The rationale in the selection of the sites is discussed in Chapters 4 and 5. Quantitative samples of objects of personal adornment from each site were examined or re-examined and classified on a database. As beads form the largest component of objects of personal adornment from excavated sites, the classification of beads was carried out drawing from the previous works of Beck (1928), Kidd and Kidd (1970), Sleen (1973), Karklins (1985), Dubin (1995), Deo (2000), Hannibal-Deraniyagala (2001), Francis (2002; 2013a), Bohingamuwa

(2017) and developing my own classification method (Chapter 3.2). Assemblages of other types of personal adornment (bangles, rings etc.) were also classified based on the developed bead classification method. Accordingly, the data was recorded on a database and was then tabulated to identify the emerging patterns relating to raw materials, colours and shapes. Changes in preferences across sites and time have been observed.

The nature of material culture is such that tracing individuals and their consciousness of being social beings in past societies is extremely difficult from artefactual remains alone. An ethnographic study was carried out among the plantation worker community in Sri Lanka, who are descendants of South Indian migrants of the 19th and 20th centuries (Chapter 7). While direct historical analogies could not be made, the study helped to understand traditional practices of adornment and their associated symbolic meanings, as well as insights to inter-regional contact, that could supplement the archaeological findings. In addition, brief visits to Khambhat to observe the traditional stone bead-makers, as well as to Kerala to gather information on the Ezhava community, who supposedly trace their origin to Sri Lanka, added valuable insights to this study. The information gathered through material evidence and ethnographic studies are integrated with those of critically re-evaluated historical evidence in order to draw conclusions. All photographs and maps used in this thesis are from the author's personal collection, unless stated otherwise.

1.6 Organization of the thesis

The thesis consists of eight chapters including the introduction. Chapter 2 provides the geographical and historical backgrounds of the two regions. The

impact of the geographical setting on the interaction between Sri Lanka and South India is discussed here. Further, the historical background of these two regions, historical chronology, literary and archaeological sources that provide evidence of contacts between the regions are also reviewed. Geographical and historical information discussed in this chapter sets the background for subsequent chapters and the present study in general.

Chapter 3 provides a more theoretical and methodological background to this study. Theoretical perspectives in material culture studies are discussed in relation to objects and practices of personal adornment. In the second section of the chapter, the methods used to analyse the archaeological assemblages are recorded in detail.

Chapter 4 is devoted to describing the selected sites and assemblages from Sri Lanka. The rationale to the site selection, a brief background to the sites and the composition of assemblages recovered from each site are detailed in this chapter.

Chapter 5 is the South Indian counterpart of Chapter 4. In addition to the sites and assemblages I studied in South India, brief descriptions of three other sites, are given for the purpose of comparison.

A broad discussion on the archaeological data gathered from the sites in Sri Lanka and South India is given in Chapter 6. Comparisons between sites and regions, as well as across time periods, are presented in this chapter. The patterns related to raw materials, shapes, colours of beads and non-bead

material in general and Indo-Pacific Beads in particular are discussed in order to make inferences about the interaction between Sri Lanka and South India.

The Chapter 7 contains two parts. The first part discusses a range of expressions associated with personal adornment across cultures to provide an understanding of various values and meanings attached to these practices. In the second part of the chapter, the ethnographic study carried out among the plantation workers of Sri Lanka is described in detail. The migratory patterns and adornment practices revealed by this study enables a broader understanding of personal adornment and migration between the two regions.

The final chapter provides a synthesis of what is discussed in this thesis and draws some general conclusions about possible interactions that existed between South India and Sri Lankan during the Early and Middle Historic Periods. The chapter concludes with some suggestions for future research. Additional information is given in appendices.

1.7 Limitations

This research involved two countries, between which constant travelling for fieldwork and data collection was required. The artefacts analysed during this research were from already excavated assemblages and accessing them for the purpose of study was a challenging task. Given the situation that all the excavations were not carried out using the same methodology, and there were varying storage procedures, crucial contextual details related to the artefacts were missing, which affected the uniform methodology I proposed, as well as smooth comparisons across time and sites. The ethnographic study was

conducted during a brief period of time. While a larger sample of interviewees would have been preferred, time constraints as well as limitations in accessing participants (detailed in Chapter 7), prevented such endeavours.

Despite these limitations, the data gathered from the present research has shown great potential in identifying closer contacts between Sri Lanka and South India that prevailed on a personal level, underlying the state-mandated interaction. The personal adornment perspective adopted in this research helps to understand individual and social meanings associated with objects of adornment and how they reveal contacts at an individual level.

CHAPTER 2:

GEOGRAPHICAL AND HISTORICAL BACKGROUND

2.1 Introduction

This chapter provides an overview of the topography and the climate of both Sri Lanka and South India as well as brief descriptions of the geology. After which, the sources that refer to historical relations of the two regions are discussed. The cultural chronology and the historical background of both Sri Lanka and South India from the 6th century BC until the 10th century AD are outlined to set the scene for this research. Lastly, there is a discussion about the contacts that existed between Sri Lanka and South India as outlined in historical sources under the themes of migration and royal marriages, invasion, military alliance, religion and trade.

As the environment plays a major role in shaping the history and society of a region (Steward 1955; White 1959), this outline of the geographical setting is expected to give the reader a broad overview of the two regions and the close connections between them. The cultural chronology of each region is laid out and a brief historical narrative of the time period under discussion is laid out to give an understanding of the historical setting of the period. The reader will be familiarized with the sources through which the nature of Sri Lanka-South India interactions can be delineated. There are a wide range of sources that describe the connection between Sri Lanka and South India, belonging to both the regions. A discussion of these sources is expected to provide the reader with a broader understanding of the nature of Sri Lanka-South India interactions depicted by these sources. A text-based reading of history has been the most common

approach adopted so far to understand the contact between the two regions. Therefore, interactions depicted through textual evidence are outlined in order to set the scene for the importance of a different approach. Hence, this chapter essentially sets out the main background for the present research by overviewing the geographical and historical setting of the regions and the nature of the relationship between Sri Lanka and South India as outlined by historical sources.

2.2 Geographical setting

2.2.1 Sri Lanka

Sri Lanka has, throughout history, attracted the interest of different countries owing to its central location in the Indian Ocean (Figure 1.1). The country is located between 5º 55' and 9º 51' N latitude and 79º 43' and 81º 53' E longitude with an area of only 65610 km^2. The importance of Sri Lanka in the Indian Ocean network is evidenced by the emphasis given to it in Ptolemy's map of the 2nd century AD (Figure 2.1). According to this map, the size of Sri Lanka is much larger than reality, being as large as one third of India and 1/25th of the Indian Ocean (Silva 2006, 13). This exaggerated representation of the size of the island indicates its importance in the Indian Ocean at the time. However, it has been argued that Ptolemy's map is longitudinally stretched out from west to east, and therefore the accuracy of the locations depicted in his map is questioned (Shcheglov 2016a and b). It was possible to reach Sri Lankan shores in less than three months from China with the help of trade winds and the journey took nearly the same time from the northern ports of the Red Sea (Silva 2006, 2), and only fourteen days of sailing for Fa-Hien, a Chinese monk who lived in the 4th century AD, to travel from Tamralipti-modern Tamluk, West Bengal, India (Legge 1886, 100).

Sri Lanka, being an island, is geographically isolated. Hence, it developed an independent identity but its closeness to the sub-continent led to it being enormously influenced by the latter, as does any island in proximity to main-land continents (Fabre (1950) 2013, 315). The geographical setting of the island is extensively discussed by Cooray (1984) and Somasekaram *et al.* (1988) 2007), for example.

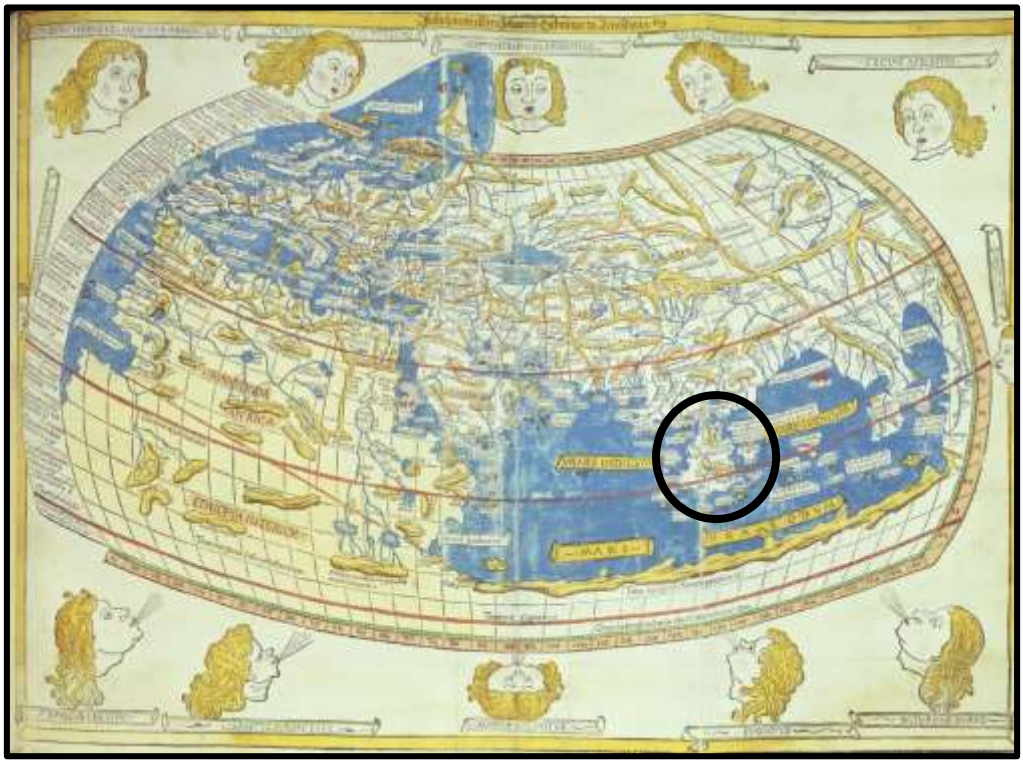

Figure 2.1: Sri Lanka on Ptolemy's world map (Source: The British Library)

Topography

Sri Lanka is separated from the mainland of South Asia by the Palk Strait, and the shortest distance between the two landmasses is 48km. The shallow Palk Strait is only 11m at its deepest and it is strongly believed that before the final geographical separation of South India and Sri Lanka, which took place 7000 years BP, frequent movement of man and animals between the landmasses had occurred (Deraniyagala (1992) 2004, 174). According to Dikshitar (1951, 7),

“Madagascar, Sri Lanka and South India have strong geological resemblances. The presence of a series of rocks of a similar nature in these areas supports the suggestions that these areas once formed part of one land mass”. Geiger (1960,1) also states that Sri Lanka is a continuation of the Deccan Plateau, due to the geological uniformity of the areas.

The island is topographically divided into three primary zones, coastal plain, intermediate plain or plateau and central highlands. Sometimes in less technical terms the division is limited to only ‘upcountry’ and ‘low-country’. The former comprises several mountain ranges and high lands. The highest peak on the island is Pidurutalagala Mountain at 2524m. Other than mountains, plateaux, gaps and valleys are special topographic features in the upcountry zone. The intermediate and the coastal plains fall into the low-country zone. The intermediate plain lies between 30–300m contour lines and is generally flat, but also has rolling hills in south. The coastal plain forms the outline of the island and lies below the 30m contour line. It has many features such as bays, points, estuaries, and lagoons along the coast line. There are rivers that fall into the ocean from all around the island except the Jaffna Peninsula in the North (Somasekaram *et al.* (1988) 2007, 38). While many of these are seasonal, the Mahaveli, Kalu, Kelani, and Walawe rivers are the four main perennial rivers, the first of which is the longest on the island (Figure 2.2). River valleys have played a major role in the settlement of the island.

Climate

Sri Lanka is a tropical island and is climatically divided into the Wet Zone and Dry Zone based on annual rainfall (Figure 2.3). The average annual temperature of

the island is 26–28˚C. The annual climatic seasons of the island are four in number and comprise the first intermonsoon (March–April), the Southwest monsoon (May–September), and the second intermonsoon (October–November), the Northeast monsoon (December–February) (Somasekaram *et al*. 1988)2007, 52).

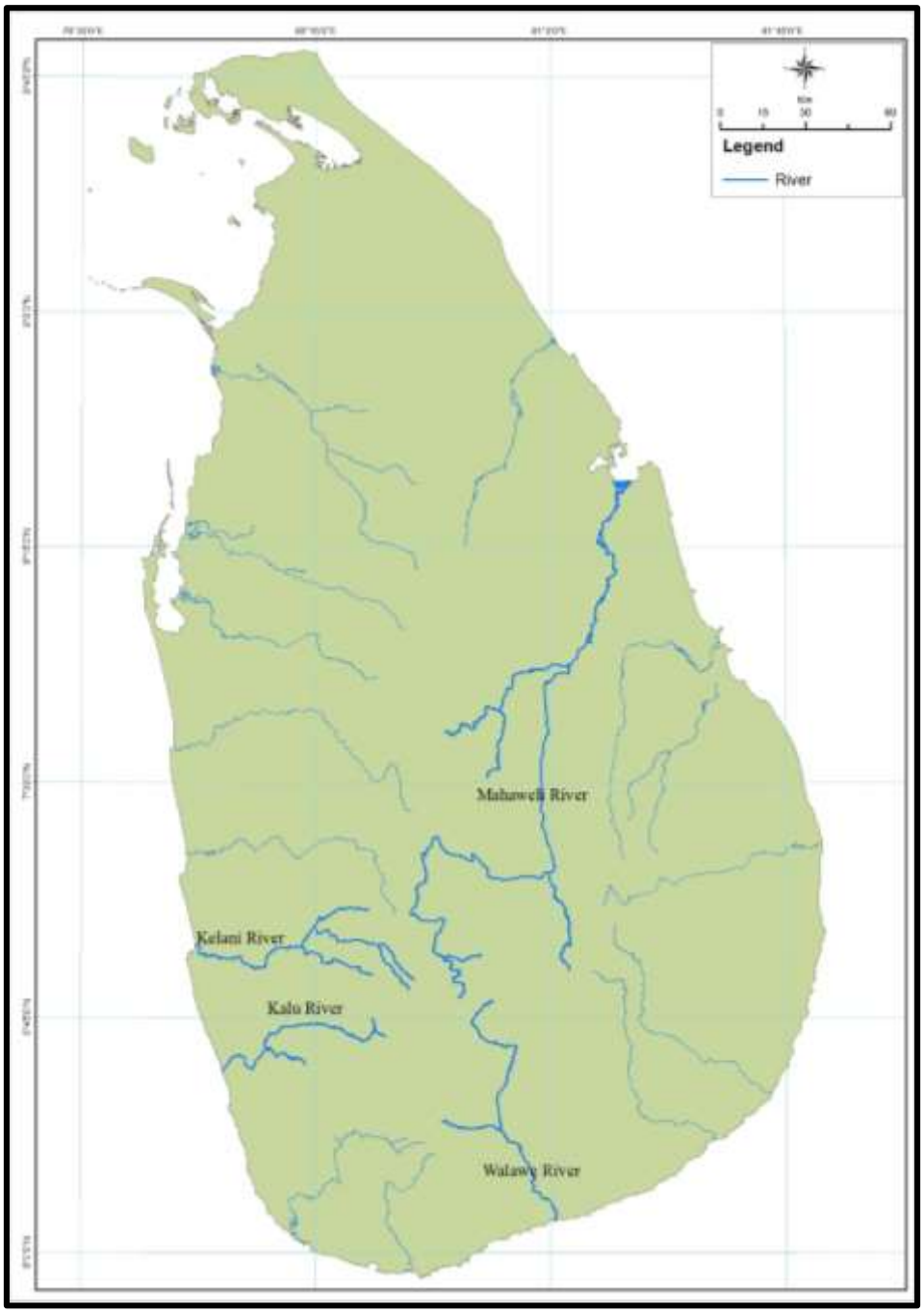

Figure 2.2: The four perennial rivers and other rivers in Sri Lanka

The range of hills stretching almost north to south, and mountains in the central hills act as a climatic divide (Thambyahpillay 1965, 33). The Southwest monsoonal rains between June to September, according to (Domrös 1974), are not just the longest but form the most varied season, with a rainfall ranging between 200–2000mm per season. During this season, the Dry Zone receives occasional rain due to the mountainous barrier. The Northeast monsoon rains, occurring from December to February, bring less precipitation as they travel across the Bay of Bengal. While the Southwestern Wet Zone is bereft of rain during the period, its effect is not strong enough to create a drought situation (Deraniyagala 2004, 497). Inter-monsoonal cyclonic rains occur between the monsoons, especially during atmospheric depressions in the Bay of Bengal region.

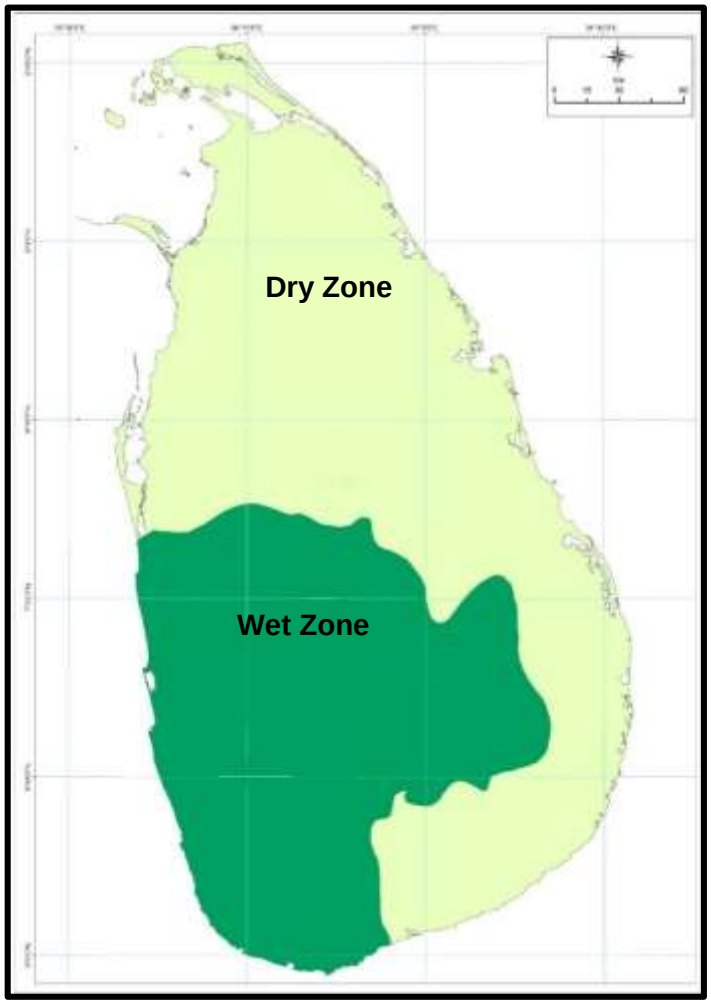

Figure 2.3: Climatic zones of Sri Lanka

Geology

Cooray (1984, 77) describes the geology of the island stating “geologically, nine-tenths of Sri Lanka is made up of highly crystalline, non-fossiliferous rock of Precambrian Age belonging to one of the most ancient and stable parts of the earth’s crust, the Indian Shield”. The rest of the island is made up of Mesozoic, Tertiary and Quaternary sedimentary formations. This section will not discuss the geology of the country in depth, but will outline the geological resources that have been widely used as raw materials for objects of adornment.

With regards to metals, iron ore is present on many parts of the island, particularly in areas such as Balangoda, Rakwana, Bingiriya and Kandyan districts (Cooray 1984, 211). In addition, copper magnetite ore occurs in Seruwawila in the Trincomalee district. This is an important resource considering the copper usage from early periods in items of adornment. Gold, on the other hand, occurs in “extremely minute quantities” mostly as dust in the alluvium and gravel of rivers. Maha Oya near Ambepussa, Kelani River at Malwana, Katugasella near Ratnapura, and the Weralupe Dola are rivers where gold dust occurs. Furthermore, gold flakes are found among the gem beds of the south-eastern part of the Ratnapura sheet (Figure 2.4).

Sri Lanka has been known for its gemstones and possesses a range of precious and semi-precious stones which have been extensively used in adornment. Most of the gem deposits are concentrated in the south-west of the island within an area of around 800 square miles (Cooray 1984, 241) but these can also occur in other parts of the island. The minerals are broadly categorized as corundum, chrysoberyl, beryl, topaz, zircon, spinel, garnet, feldspar, tourmaline, quartz and

cordierite (Cooray 1984, 241–242). Amongst the most commonly used materials for adornment are quartz, garnet and amethyst, while the sapphires, rubies and cat's eye from the island are universally famed. Garnet sand is mostly concentrated along the beaches and sand dunes of the coastal belt with 9–24% at Dondra and 20% at Hambantota, both along the southern coast (Cooray 1984, 219). In addition, Elahera, Ratnapura, Polonnaruwa, Rakwana, Morawaka, Avissawella, Hatton and Haputale are among the other locations where garnets occur (Dissanayake *et al.* 2000, 14). Pure quartz occurs widely throughout the country with the highest occurrence being in the Opanayaka, Pelmadulla, Pussella, Rattota and Ratnapura areas (Cooray 1984, 226) (Figure 2.4). Amethyst is another local stone that was widely used in producing objects of adornment in ancient times. This is found in places such as Kurunegala, Kandy, Ratnapura, Avissawella and Nuwaraeliya (Dissanayake *et al.* 2000, 14).

Though not strictly geological, shell, coral and pearl are the main marine materials used for personal adornment. Coral deposits along the island's coastal belts stretch from Matara to Ambalangoda, Kuchchaveli, Puttalam, Kalpitiya and Jaffna Peninsula, with the best being found in the Akurala-Hikkaduwa area (Somasekaram *et al.* 1988)2007, 45). Shells are found in abundance along the coast with extensive beds of seashells being found at Hungama over a stretch of 15km. Pearl banks are concentrated along the Kalpitiya-Mannar Gulf regions (Figure 2.4) and these pearls were famous among the ancient Greeks, Romans, Phoenicians, Arabs and Chinese (Dubin 1987, 102).

Table 2.1: Distribution of selected minerals in Sri Lanka (based on Figure 2.4)

1	Ratnapura	garnet, quartz, amethyst	17	Maha Oya	gold dust
2	Balangoda	iron ore,	18	Morawaka	garnet
3	Rakwana	iron ore, garnet	19	Akurala-Hikkaduwa	coral
4	Elahera	Garnet	20	Matara-Ambalangoda	coral
5	Weralupa	gold dust	21	Dondra to Hambantota	garnet sand
6	Katugasella	gold dust	22	Hungama	shell
7	Opanayaka	Quartz	23	Ambepussa	gold dust
8	Pelmadulla	Quartz	24	Bingiriya	iron ore
9	Pussella	Quartz	25	Kurunegala	amethyst
10	Rattota	Quartz	26	Polonnaruwa	garnet
11	Avissawella	garnet, amethyst	27	Puttalam	coral
12	Nuwaraeliya	Amethyst	28	Kalpitiya	coral
13	Haputale	Garnet	29	Kalpitiya-Mannar gulf	pearl
14	Hatton	Garnet	30	Jaffna peninsula	coral
15	Kandy	iron ore, amethyst	31	Kuchchaveli	coral
16	Malwana	gold dust	32	Seruwawila	copper

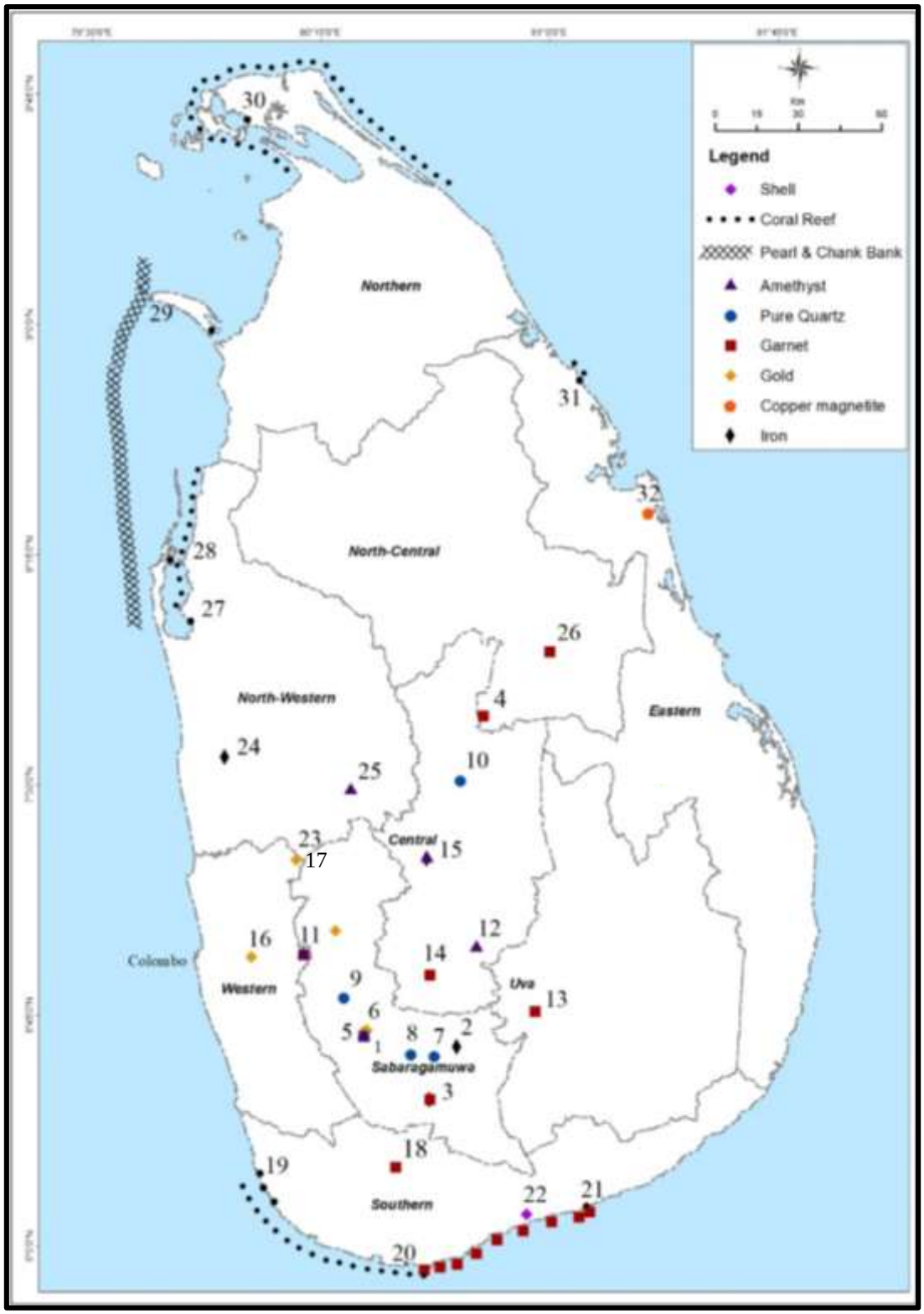

Figure 2.4: Distribution of selected minerals in Sri Lanka

2.2.2 South India

Shaped like an inverted triangle, peninsular India stretches roughly between 8˚–22˚N and 73˚–86˚E. It covers just over 19% of India's total land area, amounting

to 635,780km^2 and is nearly 10 times larger than its island neighbour, Sri Lanka. Modern South India comprises five states, namely Tamil Nadu, Kerala, Karnataka, Andhra and Telangana (Figure 2.5). Sastri, in his book *A History of South India* (1955) 2014), devotes a complete chapter to the geographical setting of South India and a lot of the information here has been drawn from it.

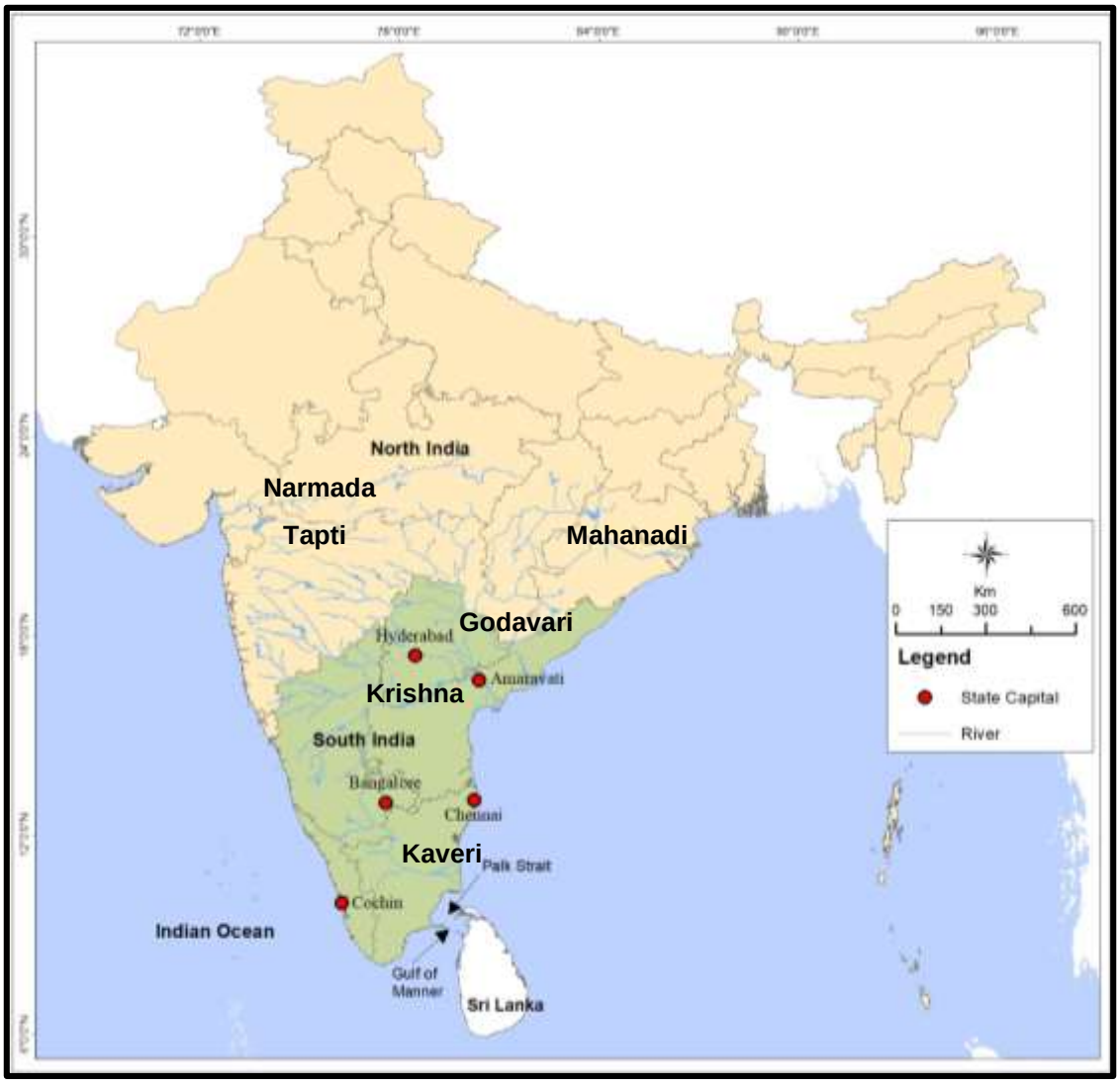

Figure 2.5: States and main rivers of South India

Topography

The division between the North Indian plains and rugged peninsular India is clearly demarcated geographically by the Vindhya-Satpura mountain ranges that run east-west, almost parallel to the Tropic of Cancer. They create the valleys for

the Narmada and Tapti rivers that fall into the ocean at the western coast at the Gulf of Cambay (Sastri 2014). While these mark the barriers in the west, the river Mahanadi, which runs into the Bay of Bengal, sets the border to the east. Though geographical barriers mark a separation, they never completely isolated the south from the north, and north-south interaction took place throughout time. It is notable that, apart from the Narmada and the Tapti, no major river in the south flows westward. All the major rivers such as Godavari, Krishna-Tungabhadra and Kaveri (Figure 2.5) spring from the Western Ghats and fall into the Bay of Bengal on the eastern coast.

The Peninsular Plateau, or Deccan Plateau as it is commonly known, encompasses the Western Ghats up to Coorg, the Nilgiri block along with the Cardamom and Palani hills (Gopalakrishnan 1996, 2–3) (Figure 2.6). Deccan Plateau has been an important region in South Indian history, particularly as the kingdoms of the Satavahanas and Rashtrakutas were centred in this region. The Western Ghats are a group of rugged hills that appear almost like a giant sea wall with varying altitudes. These are situated along the western coast of the peninsula and comprises parts of Tamil Nadu, Kerala, Karnataka, Maharashtra and Goa (Gopalakrishnan 1996, 59). The Eastern Ghats, in contrast, are irregular, scattered, broken and with lower elevations (GSI (1988) 2002). The Western and Eastern Ghats meet south of the Nilgiri Hills forming the Palghat or Coimbatore gap (Figure 2.6).

The southernmost point of the peninsula is Cape Comorin, also known as Kanya Kumari. The western coast facing the Arabian Sea is called the Malabar Coast while the opposite, the Coromandel Coast, faces the Bay of Bengal. Both coasts

are studded with a number of natural harbours. However, it is the Malabar Coast that Western sailors first reached and maritime trade flourished in the area. The modern states of Maharashtra, Goa, Karnataka and Kerala in the west and Telangana, Andhra, Tamil Nadu and southern parts of Orissa and Chhattisgarh in the east, form peninsular India, south of Vindhya-Satpura and Mahanadi. However, the general notion is that the states of Tamil Nadu, Kerala, Karnataka, Andhra and Telengana comprise South India; southwards from the River Godavari. The eastern land-stretch, off Rameshvaram up to Dhanushkodi, is the narrow strip of land that marks India's closest point to Sri Lanka.

Climate

Most of peninsular India is located south of the Tropic of Cancer and the climate is dominated by the tropical system of the monsoon. The summer season is experienced from the end month of March until June, when in the interior peninsular regions, the mean temperature is 30°C–35°C. The coastal areas of southern India have milder temperatures during this season due to influence of land and sea breezes. Almost the entirety of rained received in this region occurs during the summer—between the months of June and September—as a result of the south-west monsoon (Allchin and Allchin 1997, 16). Kerala is the first state to receive rainfall as the southwest wind bifurcates in two branches due to the topography of peninsular India—the Bay of Bengal branch and the Arabian Sea branch. The Arabian Sea branch first strikes the Western Ghats and causes heavy rainfall on the Western Coastal Plains. On the other side of the Ghats, rainfall is much less due to the rain shadow effect and interior Tamil Nadu remains almost dry during this season. The wind crossing over the Western Ghats

provides rainfall over large part of the Deccan Plateau. The amount of rainfall depends on the landforms and the distance from the sea.

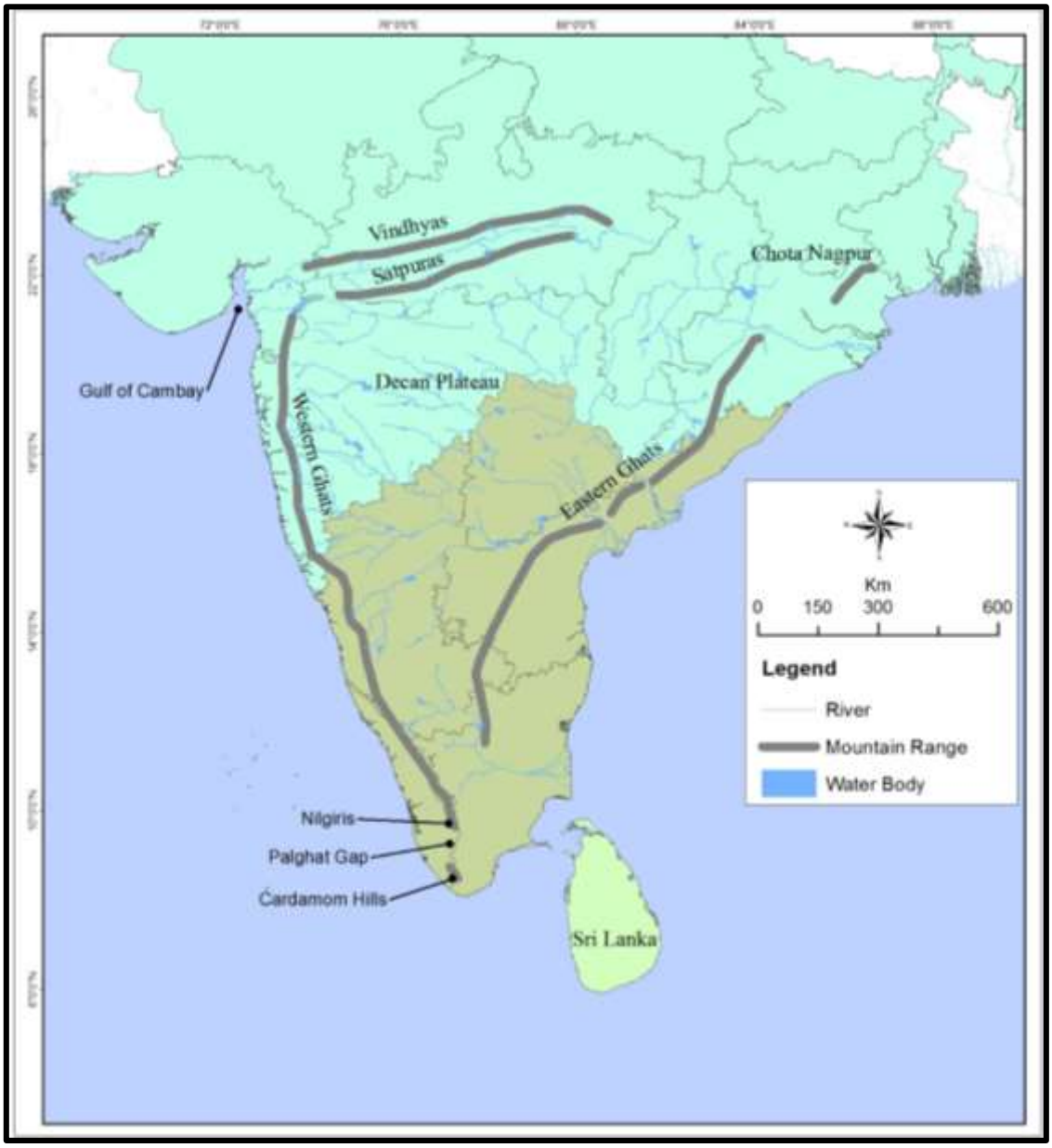

Figure 2.6: Topography of South India

From mid-November to February the winter season prevails. In peninsular India, particularly the hinterlands of Maharashtra, parts of Karnataka, and Andhra Pradesh, cool weather prevails. Minimum temperatures in western Maharashtra and Chhattisgarh hover around 10°C, in the southern Deccan Plateau they reach 16°C. Coastal areas, especially those near the Coromondel Coast and adjacent low-elevation interior tracts are warm, with daily highs of 30°C. The Western

Ghats, including the Nilgiri Range, are exceptional; lows there can fall below freezing. This compares with a range of 12–14°C on the Malabar Coast; there, as is the case with other coastal areas, the Indian Ocean exerts a strong moderating influence on the weather.

Geology

South India is the source of crystalline quartz (rock crystal, amethyst) and non-quartz minerals (garnet, corundum, diamond, beryl) minerals, that provided raw materials for the production of adornments. The Deccan Trap, in particular, is one such region. It was formed as a result of volcanic activity over sixty million years ago (Wadia 1990, 275–286). While the Gujarat region is more famous for carnelians and agates, they were available as nodules which washed down from the Deccan Trap and are found along the rivers Godavari and Krishna (Figure 2.5). It is argued that the carnelian and agate beads produced in South India were sourced from this region rather than from Gujarat (Francis 2002,117; Carter 2013, 225–271). The Kodumanal area is rich in minerals and is located 5km north and south of two major deposits of crystalline quartz at Vengamedu and Arasampalayam. In addition, a source of beryl is located 15km south of Kodumanal, at Padiyar and a similar distance southeast is Sivamalai, where sapphires are found. Almadine garnets are found in Andhra Pradesh, particularly in the area of Kondapalli, which has been famous for this stone for a long time (Bauer 1968, 354).

The Golconda region, which is located about 11km from Hyderabad, in Andhra Pradesh is famous for its diamonds. The diamond mines are located along the lower areas of the Krishna River. The famous Kohinoor diamond too is said to

have been from the Golconda region (Untract 2008, 321). In addition to the diamond mines, the region also yields agate, carnelian and other chalcedony stones (Bauer 1968, 149). Wad and copper are also available in this region (Francis 2002, 118). Although pearls cannot be categorized as a mineral, they are important as raw materials for adornments. Just like Sri Lanka, South India shares access to the pearls of the Gulf of Mannar. Korkai was famous as a centre for pearl fishing in ancient India but this centre shifted to Palaiya-kayal around the 13th century AD (Francis 2002, 160).

2.3 Sources for understanding Sri Lanka-South India connections

Archaeological and historical sources play a major role in understanding the nature of the interactions that existed between Sri Lanka and South India during ancient times. Sources that give us insights into the past are varied. The historical sources are mainly from the literature of different traditions that narrate the incidents that unfolded in previous times. They are sometimes contemporary to the related incident but more often written much later. Other important sources include the archaeological record, which is often believed to be more accurate than the former, as it does not contain the bias of a writer. Further, inscriptions that are mostly issued by rulers can also be biased and exaggerated. The archaeological sources include material remains such as artefacts, art and architectural remains, inscriptions and coins. These are contemporary sources, but interpreting them can a challenging task.

2.3.1 Historical sources

Historical sources are mainly the literary sources that provide the most information. While they have their own drawbacks, for example, exaggerations

and authors' bias, it is necessary to consider them to create a picture of the interrelationship that existed between Sri Lanka and South India from the 6th century BC to the 10th century AD.

Sri Lankan sources

Sri Lanka possesses a number of canonical texts which illustrate a continuous history of the island from *c.* the 6th century BC. Sri Lanka is perhaps the only South Asian country which has a continuous written record of its history spanning over 2500 years. The most prominent among these chronicles are the *Deepavamsa (Dv),* the *Mahavamsa (Mv)* and the *Chulavamsa (Cv).* The chronicle considered to be the earliest is the *Deepavamsa,* which is assumed to have been written in *c.* the 4th century AD. It describes the events that unfolded on the island from the time of the Buddha's first arrival up to the reign of King Mahasena (AD 276–303). Due to the inconsistencies in the writing, its authenticity is often questioned (Kiribamune 1979, 89–100). However, it provides some details that are not available in the *Mahavamsa*, for example, more comprehensive details about the *Bhikkhuni* order (the Buddhist nuns), in Sri Lankan history (Liyanagamage and Gunawardana 1961, 3; *Dv*:XVIII.11–13). Yet, because it lacks certain other details that are available in the *Mahavamsa*, the latter is considered the prime textual source of the island's history.

The *Mahavamsa* (the Great Chronicle), is accepted to have been written by a Buddhist monk named Mahanama in *c.* 5th century AD. It records incidents that occurred from *c.* 6th century BC: about a millennium prior to it being actually written. The *Mahavamsa* was based on previous Sinhala chronicles called *Seehalattakatha,* which were probably destroyed in *c.* 5th century AD. In addition,

some of the incidents mentioned are corroborated by inscriptional as well as foreign and other local sources. The *Mahavamsa* describes events from the Buddha's three visits to the island and the arrival of Prince Vijaya and his men, up to the reign of King Mahasena in *c.* AD 300. The early chapters comprise a lot of mythical and historically improbable detail. For example, there is reference to descriptions of groups of people called *Yakshas* and *Nagas* who were demons and serpents. Nevertheless, most of the facts, especially those in the Common Era are accurate and have been reinforced by other sources, particularly inscriptional evidence. Interestingly, the *Mahavamsa* has also contributed to historical discoveries in regions beyond Sri Lanka. For instance, initially scholars were unable to identify which king was referred to as "*Devanampiya Piyadasi*" in some Indian inscriptions. It is only by cross referencing with the *Mahavamsa* that the reference was shown to be to Emperor Asoka of India (Wimalananda 1957, 42; Thapar 2002, 179).

The continuation of the *Mahavamsa* is the *Chulavamsa*. The royal lineage of the *Chulavamsa* begins with King Keerti Sri Meghavanna (AD 362–390), the successor of King Mahasena and the history of the country till 1815, when British rule commenced has been written in the *Chulavamsa*. Because the *Chulavamsa* is the continuation of the *Mahavamsa*, references to it will be made similar to the latter (e.g.: *Mv*:XXXVIII.5–10). The *Mahavamsa* ends in verse number 37 and the *Chulavamsa* begins with 38. Thus, any reference to a verse above 37 will be understood to be in the *Chulavamsa*. It is in this chronicle that references to several invasions, as well as military alliances, between South India and Sri Lanka are detailed. These chronicles, without their excessive imagery, provide a fairly comprehensive picture of the historical setting. Hence, historians and

archaeologists alike refer to the chronicles to understand the socio-political, religious and cultural situation of the period.

The *Vamsatthappakkasini* is the commentary on the *Mahavamsa*. Though it is difficult to determine the period in which it was written, it may be placed post 7th century AD (Liyanagamage and Gunawardana 1979, 5) because it contains details about King Datopatissa (AD 650–658) who reigned in the 7th century AD. The text provides clarification on the writings in the *Mahavamsa* and gives details of the sources used by *Pali* commentators.

The *Mahabodhivamsa* is a pali chronicle that was written about the Sri Maha Bodhi, the sacred Bodhi tree under which the Buddha is said to have attained enlightenment. The text begins with a description of the former Buddhas and provides information regarding Gautama Buddha, the history of Buddhism, its introduction to Sri Lanka, the arrival of relics and the Bodhi sapling and on the veneration of the Bodhi tree in the island. Since the *Dharmapradipikawa,* written by Gurulugomin in the Polonnaruwa period (AD 1077–1215), was based on it, the *Mahabodhivamsa* is dated to a time earlier than the *Dharmapradipikawa*. The *Chulavamsa* mentions that this text was written in the 10th century AD by a monk named Upatissa. The Sinhala translation of this *Pali* book is called the *Sinhala Bodhivamsa*.

The *Rajavaliya* is another important source of Sri Lankan history, which literally means the “line of kings”. This 17th century source provides details of the reigns of the Sri Lankan kings beginning with Vijaya until Vimaladharmasuriya II. The writing style of this book suggests that it was the work of several authors

(Gunasekara 1900, iii). The source contains certain information that is absent in the Mahavamsa, such as King Gajabahu's invasion of South India (Chapter 2.5.2). On the other hand, the authors of the *Rajavaliya* have omitted the reigns of certain kings who are mentioned in *Mahavamsa* (Gunasekara 1900, iv).

These Sri Lankan canonical texts provide a wealth of information regarding the island's contacts with South India. Hence, while being historical and religious narratives of the island, the evidence revealed makes these useful sources for understanding the history of the regions as well as their close contacts. Nonetheless, they are not devoid of bias, therefore, should be read critically.

Indian sources

Sangam literature is the most prominent of the textual sources on South India. These texts are a collection of Tamil poetry written by a group of Tamil scholars during the Pandyan Kingdom (Basham 1954, 462). *Sangam* is a Sanskrit word which means "association", and this is an association of Tamil scholars or a literary academia established by the Pandyan kings in Madurai, their ancient capital (Subrahmanium 1966). While we are unaware of the quantity of works produced by this association, what remains comprises eight anthologies and ten idylls, one work on grammar and 18 minor works. There are altogether 2381 poems by 473 poets and 102 poems by anonymous authors (Hart 1975). These poems were written to glorify the feats and achievements of kings, warriors and patrons. It is through these glorifications that we can gather information about the socio-political and cultural organization of the contemporary society (Champakalakshmi 1996). However, while these are full of exaggerated

glorification, they remain a main source through which both historians and archaeologists draw evidence and inference.

The date of the *Sangam* works is highly debated. Most scholars date them to the early centuries of the Common Era, and sometimes the upper limit is considered to be as late as the 5th–6th centuries AD (Ray 1995, 78). Two of the five great epics of *Sangam* literature are the *Silappadikaram* and the *Manimekhalai*. Both of these give reference to Sri Lanka. The *Silappadikaram* is the story of a merchant named Kovalan, his chaste wife, Kannagi, and his mistress, Madhavi. There is reference to the Ilanki king, Gajabahu, who is identified as King Gajabahu (AD 114–136) in Sri Lanka. Accordingly, scholars have dated this epic using Gajabahu synchronism. The *Manimekhalai* is a continuation of the *Silappadikaram*, and is titled after the protagonist, who is the daughter of Kovalan and his mistress, Madhavi. The story relates how Manimekhalai renounces worldly attachments and becomes a Buddhist nun. This provides references to Buddhism in Tamil Nadu and Sri Lanka. Amongst other *Sangam* writings, the *Pattinappalai* refers to food being imported from Sri Lanka (Pillay 1963, 31).

There are many references in these *Sangam* texts to historical settlements, incidents and landscapes, as well as the character of ancient South India. Kaveripumpattinam, Korkai, Kanchipuram, Madurai are among the historical settlements mentioned in the texts. Some of the incidents mentioned can be corroborated with other sources. Kautilya's *Arthasastra* refers to Sri Lanka as Tamraparni and Parasamudra in the 11th chapter (Shamasastry 1967, 76–84). Kautilya was the chief minister of King Chandragupta Maurya's (340–297 BC) court, and is renowned for his knowledge of polity, economy and royal

administration. His book, *Arthasastra*, akin to Machiavelli's "The Prince", remains a handbook on strategic political administration, even today. He refers to two kinds of pearls, namely, *Pandyakavata* and *Tamraparnika*. This reference infers the fame of the pearls from the banks on either side of the Palk Strait and that it would have been a major industry with wide-spread fame. The *Rajatarangani,* written by Kalhana in the 12th century, about the history of the Kashmir region of India, provides information about textiles and gems produced in Sri Lanka. The *Mahabharat,* one of the great Indian epics, describes the war between the Pandavas and Kauravas over Hasthinapura, in the Gangetic Plain region, their ancestral kingdom, and includes references to Sri Lanka. The *Ramayana,* is another Indian epic and the most famous version of it was written by Valmiki. This epic has many references to Sri Lanka. According to *Ramayana*, Rama is the hero of the epic and his wife Sita, is abducted by the powerful demon king Ravana of Sri Lanka. Rama, with the help of his brother Lakshmana and an army of monkeys led by Hanuman, invades Sri Lanka, defeats and kills Ravana and rescues Sita. However, no corroborative descriptions to this epic are found in the island. Thus, the reliability of the text is doubted.

Foreign sources

There are a variety of foreign sources from both the eastern and western worlds that provide records of both South India and Sri Lanka that enable us to understand ancient conditions in these regions. Most of these foreign sources describe these two regions separately, with occasional references to contacts between them. This section will deal first with classical sources from the west.

Aristotle's *De Mundo* is the first foreign account that mentions Sri Lanka (Liyanagamage and Gunawardana 1961, 24). It describes the islands in the world and states that Taprobane, the name used by the Greeks for Sri Lanka, was not smaller than the British Isles (Thom 2014, 29). Onesicritus, a general of Alexander the Great wrote that Taprobane was 5000 stadia in area and was twenty days from India (Francis 2013b, 53). Megasthenes, who was a Greek ambassador at the court of Chandragupta Maurya in the 4th century BC, also wrote accounts of Sri Lanka using the information he gathered from the others. According to him, the island was divided into two by a river and people on one side produced gems and gold while on the other side, wild beasts ruled (McCrindle 1877, 62). Interestingly, he mentions that the elephants and pearls from Sri Lanka were much larger than those of India (McCrindle 1877, 62–63), which is inaccurate in reality.

Strabo, the Roman writer, describes the Pandyan embassies to Augustus Caesar and the political and economic relations between the two kingdoms as early as the 1st century BC/AD. The first centuries before and after the Common Era mark strong trade relations between Rome and South India, with special reference to the western ports of India such as Muziris, now identified with present day Pattanam in Kerala. Strabo describes Sri Lanka's location in relation to South India and mentions that elephants were reared on the island (McCrindle 1901, 20–21).

According to Strabo, Eratosthenes, another Greek mathematician and geographer, said that it took seven days to reach Sri Lanka from India and that Elephants were acquired from the island (Hamilton and Falconer 1912, III. 81).

Marcian of Heraclea, in c. 400 AD, describes the situation of the Indian Ocean. It details the sailing routes around India and the islands in the Indian Ocean (Liyanagamage and Gunawardana 1961, 25). Pliny the Elder, in *Naturalis Historia* (AD 23–75), gives a wider description of the country. His writings are based on the information gathered from Onesicritus, Megasthenes, Eratosthenes and Sri Lankan delegations to Rome. During the time of Emperor Claudius, a Sri Lankan delegation arrived in Rome. The *Mahavamsa* (*Mv:*XXXIV.47) describes how King Bhatikabhaya (AD 38–66) covered the Great Stupa with a net of red corals to venerate it and this probably suggests Pliny's information is accurate. Pliny also mentions the precious stones and pearls of the island. He gives the location of Sri Lanka in relation to India and records specific inland and coastal sites of the Chera and Pandya kingdoms (Chapter 2.3.2), namely, Muziris, Modura and Cottonara (McCrindle 1901: 111–112).

The *Periplus Maris Erythraie,* written by a Greek, in the 1st century AD, is a manual on navigating the eastern oceans. It devotes a large section to Indian ports and trade goods. The particular mention of the ports on the western coast suggests that during the early centuries of the Common Era, the western coast was more active in trade than the eastern. Furthermore, according to the *Periplus*, pearls, gems and cotton cloth were produced in Sri Lanka. It also mentions that Sri Lanka was earlier named *Taprobane* and then *Palasi Mundo* (Liyanagamage and Gunawardana 1961, 25–26).

Procopius' *Persian Wars*, written in the 6th century AD, gives interesting information. It states that Sri Lanka was a famous trade centre. But because of the rival Persians in Sri Lanka the Ethiopians could not buy silk from Sri Lanka,

thus, had to do so via Indian traders. Sri Lanka was a trade exchange centre where eastern goods would be sold to the west and vice versa (Liyanagamage and Gunawardana 1961, 26; Bohingamuwa 2017).

The internal and external trade of Sri Lanka was described by Cosmas in *Topographia Christiana*. He details the regions with which trade contacts occurred. He wrote that silk and saffron from China were sold to merchants from other countries in Sri Lanka. Ethiopian ships frequented the Sri Lankan ports and Malabarian, Kalinga, Sind and Persian traders also visited the island. Persian horses were sold to the island free of tax. A Persian sect of Christians lived in Sri Lanka and their priests were appointed from Persia itself. Cosmas' record is important because it gives a comprehensive description of the ports in Southern India with which Sri Lanka had trade contacts and the kinds of goods that were traded (Winstedt 1909; McCrindle 1901).

Progressing to sources from the Arab world in the 1st millennium AD, many Arabs also mention Sri Lanka in their writings. Suleiman in the 9th century AD referred to Sri Lanka as Serendib (Liyanagamage and Gunawardana 1961, 27). Based on Suleiman, Abu-Said wrote *Silsilat-al Tavarah*. Al Bateni and Masude also based their writing on the two former authors. Ibn-Qurdadbe, Ibn-Batuta, Beladori are others among those who mention Sri Lanka in their writings (Liyanagamage and Gunawardana 1961, 28–29).

Turning to the east, Chinese records also provide information about South India. There is a record attesting to a Chinese embassy to Kanchipuram, in the 2nd century BC (Sastri 2014, 23). Chinese annals of the 3rd–5th centuries AD show

clear evidence of Chinese, as well as Southeast Asian kingdoms, being actively in touch with South India. They also record embassies exchanged between China and the Pallava court in the 8th century AD (Sastri 2014, 23–24).

Fa-Hien, a Chinese monk who studied at *Abhayagiriya* Monastery at Anuradhapura, Sri Lanka in the 4th century AD, provides a comprehensive description of the contemporary situation on the island (Werake 2003). He travelled to Sri Lanka from Tamralipti in West Bengal, India, aboard a trading vessel. Fa-Hien states that Sri Lanka was famous and attracted many nationals from around the world. In his writings, details of the Mahayana influence on the island, the sacred Bo tree, the precious stones and pearls are given. According to Fa-Hien, settlements in Sri Lanka grew up as a result of trade. He devotes a section to describe the Deccan but the authenticity of the detail is doubtful (Sastri 1939). Fa-Hien resided on the island for two years and is said to have travelled to Java on a trading vessel and then set sail to China from there. Interestingly, his descriptions of travelling bring to our notice that trading vessels were used for the purpose and that Buddhism and trade would have had close contacts and the spreading of the religion took place hand in hand with trade (Ray 1994; Bohingamuwa 2017, 495–497).

Hieun-tsang was another Chinese monk who visited India in the 7th century AD. He is said to have spent several months in the southern states of the country and has left behind some interesting religious observations. Among these is the description of Kanchipuram and his claim of the Buddha frequenting Kanchipuram during his lifetime is quite controversial, yet interesting, as the general belief is that Buddha did not travel south of Madhya Pradesh. He further

records a Buddhist pilgrim from Sri Lanka arriving in Kanchipuram, in fact the group from whom he gathered the information about Sri Lanka that he recorded (Watters 1905, 227). The section written on Sri Lanka was probably based on this second-hand information. The arrival of the pilgrims is indicative of the contact between the two regions. With the growth of Chinese trade in the Indian Ocean, contacts between China and South India are widely recorded.

Another Chinese monk, I-tsing's records are also of great importance, especially regarding Buddhist connections between Sri Lanka and South India (Sastri (1939) 2001; Werake 2003). He gives details of six monks who went on a pilgrimage to Sri Lanka and India. He describes the visit of a monk named Ming-Yuen to Sri Lanka who, on the advice of a Sri Lankan, visited South India where the "*Mahabodhi* monastery was situated" (Sastri 1939). This is further attestation of the close religious contacts that existed between Sri Lankan and South Indian Buddhists.

An Indian tantric monk, Vajrabodhi, had travelled from India to China via Sri Lanka and is mentioned in Chinese writings. Hu-e-cho mentions that there were Persians in Sri Lanka. The Chinese Tripitaka catalogue records the names of Sri Lankan Buddhist monks who travelled to China between the 5th–7th centuries AD. Chinese writings provide valuable information related to *Bhikkhunis* and they are the only other source apart from the *Deepavamsa* to provide substantial information regarding the *Bhikkhuni* order (Liyanagamage and Gunawardana 1961, 30).

References to Sri Lanka and South India in local and foreign sources give valuable insights into the historical importance of and contacts between the

regions. Some of the sources throw light on the chronological history, the royal lineage and background of the kingdoms. Others provide a clear picture of the importance of trade, geographical features, cultural aspects and social conditions.

2.3.2 The Archaeological record

Archaeological sources comprise the material remains yielded during excavations and surveys as well as monumental remains. In this section, the material remains that reveal Sri Lanka-South India relations will be reviewed. However, it will exclude the personal adornment material which will be discussed in a forthcoming chapter.

Excavated material remains

Proto and Early Historic sites excavated on the island have yielded a large amount of material that shows Sri Lanka's strong relations with South India. Ceramics are the most abundant category of material that reveal relations between Sri Lanka and South India. Black and Red Ware (BRW) and Red Ware are the ceramics most clearly associated with protohistoric Megalithic burial complexes and provide strong cultural relations between South India and Sri Lanka. With the Protohistoric period beginning around 1200 BC in South India (Nagaraja Rao 1971; Possehl 1988), a distinct BRW ceramic practice was associated with Megalithic burial sites. It is very common to recover BRW from Proto and Early historic sites. They were first introduced to Sri Lanka in 1000/900 BC (Seneviratne 1984; Deraniyagala 1992b; Bandaranayake 1990; Schenk 2001) and were later mass produced locally, and the inverted firing technique used to create BRW seems to have continued much beyond the time frame

traditionally thought (Bohingamuwa 2017, 208–209). They occur by 900 BC at Anuradhapura (Deraniyagala 2004, 709; 713; Coningham 2006) and around the 5th–4th centuries BC at Tissamaharama (Schenk 2001). At Mantai their distribution is between the 2nd century BC and the early 7th century AD (Bohingamuwa 2017, 215). The earliest occurrence of BRW at Kanthorodai is c. 500 BC while at Kirinda it ranges from the 3rd century–the early 8th century AD (Bohingamuwa 2017, 307). Hence, the BRW firing technique that was probably introduced to Sri Lanka from South India, prevailed and was practiced in the island much later than the traditional, megalithic BRW.

Pomparippu, on the Northwestern coast of Sri Lanka, is one of the early Protohistoric burial sites that yielded evidence similar to those of South India. The ceramics used at the complex show striking similarities to those from South Indian Iron Age cemeteries (Begley 1981) in addition to the similarities in burial practices. Begley (1981, 94) concludes that through the occurrence of iron artefacts, similarities in burial practices and associated BRW ceramics, the complex shows affinity to those of South India. However, when specific details are scrutinized such similarities are absent. This suggests that though the burial practices would have had the same genealogy, they were not a direct transportation from South India. Further, Pomparippu indicated closer relations with the sites on the eastern coast of the Indian subcontinent. Senevirathne (1984, 267) claims that Pomparippu in Sri Lanka is a parallel to Adichchanallur in South India in the burial practices performed.

Ibbankatuwa in north central Sri Lanka has a settlement area, dating to the 4th century BC while the lowest context of the adjacent burial complex is dated to the

6th century BC (Karunarathne 2010, 153). The site also showed evidence of BRW ceramics and iron objects, suggesting the continuation of the South Indian Megalithic tradition of BRW usage. However, the evidence shows that the ceramics were made in the area (Karunarathne 2010, 129), which implies that after the initial ideological exchange, the practices and technology were carried out locally. The site has yielded objects of personal adornment that provide strong evidence of South India-Sri Lanka relations and will be discussed in detail in chapters 4 and 6. Nonetheless, the excavated material, burial structures and associated practices reveal continued close affinities between the two regions.

In addition to BRW, Rouletted Ware is another ceramic type that provides evidence of South India-Sri Lanka connections. Rouletted Ware first came into discussion when Wheeler identified them as evidence of Indo-Roman trade, having discovered them at Arikamedu (Wheeler *et al*. 1946). Deraniyagala (1972) recovered them from his excavations at Anuradhapura Citadel. He categorized them as decorated and undecorated Rouletted Ware and dated the former from 250BC–200BC, while the latter from 500BC–250BC. Therefore, his undecorated category pre-date Indo-Roman trade. He claimed that they originated from 'Fine Grey Ware' family and attributed its origin to Northern India. Begley (1986) also clarified that this ware should be of Indian origin, considering their pre-Indo-Roman trade dates. Schenk (2006, 123–125), based on her findings from Tissamaharama, dates this ware to between 3rd/ 2nd century to 1st century BC, and that those occurring beyond this time period are residual.

There has been much debate about the origin of this ware (Deraniyagala 1972; 2004, 712; Schenk 2001; 2006; 2014; 2015; Coningham 2006; Bohingamuwa

2017). Krishnan and Coningham (1997) through scientific analyses have assigned a South Indian Origin for Rouletted Ware. Gogte (1997) analysed samples from different sites in the peninsula, Vietnam and those from Chandraketugarh, Bangladesh as well as fired clay from these sites. The mineralogy of the pottery showed similarity to the clay from Chandraketugarh. Gogte (2001) carried out an XRD analysis on samples from Tissamaharama, in addition to those from the earlier mentioned sites, and the study confirmed his previous results. Ford *et al*.'s study (2005) concluded that Rouletted Ware has a 'single geological source' and Schenk (2006; 2014) is more inclined towards a North Indian origin of the ware. However, in a recent research, Shoebridge, argues that considering the high concentration of Rouletted Ware along the east coast of South India, it is more likely that they were of South Indian Origin (Shoebridge 2017). While the debate about the origin continues, Rouletted Ware is recorded from a vast geographical area in the Indian Ocean, highest concentration being, however, along the eastern coast of India and Sri Lanka. It is likely that Rouletted ware reached Sri Lanka via South India, either as traded goods or the technology of Rouletted Ware production was introduced.

Through his extensive excavations in the Anuradhapura Citadel, Deraniyagala confirmed the existence *Brahmi* scripts as early as 600–500 BC (2004, 745). The inscribed pot sherds bore *Brahmi* letters writing Prakrit words for example "…biya Anuradha" (Deraniyagala 2004, 746). The existence of pre-Asokan *Brahmi* in the Pandya region further attests close contacts between Sri Lanka and South India (Sridhar 2005, x). Pot sherds bearing Sinhala Prakrit discovered during excavations at Alagankulam, a port site located opposite Mantai port on Sri Lanka, provide strong evidence of regional relations. The letters 'Ga' and 'Sha'

as used in Sri Lankan *Brahmi* inscriptions do not occur in Tamil *Brahmi* script, thus, the occurrence of these letters, inscribed on pot sherds discovered from Alagankulam, instead of the Tamil letter ‘Sa’, is an indication of connection with Sri Lanka (Sridhar 2005, 42).

The Alagankulam inscribed sherds have both Tamil and Prakrit proper names, some of the Tamil ones being the Tamilized form of the Prakrit (Majeed *et al*. 1992). Similarly, Rajan (2015a, 11) states that Prakrit names inscribed in Tamil *Brahmi* on pot sherds recovered at Kodumanal, such as Kuviran, Varuni, Visaki, are evidence of close links with North India and Sri Lanka. Kodumanal, being located on the ancient trade route that connected Karur and Muziris (Rajan 2015a, 1; 2015b, 65), would have undoubtedly had close trade and cultural relations with Sri Lanka, in addition to being an important stone bead manufacturing site. Inscribed pot sherds are further discussed in the epigraphic evidence section.

At Nagarjunakonda, Andhra Pradesh, India, there is strong evidence of Buddhism flourishing particularly under the reign of the Ikshavakus (Chapter 2.4.2). There have been notable stupas and monastic buildings discovered at the site. These architectural discoveries will further be discussed in the next section. In addition, there are many other antiquities proving Buddhist connections in the area. Among the inscribed ceramics discovered, there are several that probably have the word Buddha inscribed (Soundara Rajan 2006). A large quantity of beads was discovered from the stupas and also in 26 relic caskets. These relic caskets probably contain the sacred relics of Buddha himself. Most of these relic caskets are made of gold, silver or copper and are often placed within another casket.

The importance given to these reliquaries indicate that they contained the relics of a significant person. Relic caskets or reliquaries are containers that contain corporeal relics (*sharirika dhatu*), relics of use (*paribhogika dhatu*) or relics of commemoration (*uddesika dhatu*) (Willis 2000, 16). Generally, reliquaries, especially those from ancient stupas, contain relics of the Buddha himself but they may also contain relics of other exalted members of the Buddhist Sangha. The relic casket containing a tooth relic of the Buddha at the 'Temple of the Sacred Tooth Relic' at Kandy in Sri Lanka is one of the best examples of such reliquaries.

Ninety-five pearls in a golden tube located at the feet of the Buddha statue, were discovered from site 06, Nagarjunakonda (Ramachandran (1953) 1999, 14; Pl. XIV B). It could be possible that these are pearls from the Mannar Gulf, which the Sri Lankan monks and pilgrims might have carried there as offerings. In any case, these antiquities provide evidence of the prevalence of a Buddhist stronghold in the region and naturally reinforce the possible Buddhist relations that existed between Sri Lanka and Nagarjunakonda.

Art and architectural remains

As discussed above, there is greater influence from South India on Sri Lankan art and architecture than vice versa. This is strongly visible in the monuments that were built after the Chola attack in 10th century AD. However, there is evidence of such influence prior to the attack, especially in association with Buddhist sites. Sculptures on the Vahalkadas (front pieces) of the Jetavana and Abhayagiri stupas indicate similarities to those from South Indian sites, particularly Amaravati and Nagarjunakonda (Pillay 1963, 188). There are

examples of sculptures made of Amaravati marble, such as the one depicting the scene of the “Great Renunciation” of Prince Siddhartha, and these marbles were imported into the country. There are numerous Buddha statues on the island that belong to the Amaravati School. Pillay (1963, 188–189) argues that the 180cm tall Buddha statue carved out of South Indian marble, recovered from Mahailuppallama in Anuradhapura District was carved in Andhra Pradesh and brought to Sri Lanka. This is plausible considering the close Buddhist contacts that prevailed between the two regions.

Sigiriya paintings (Figure 2.7) from the 5th century AD are celebrated artistic representations in Sri Lanka (Bandaranayake 2006, De Silva 2009). These paintings have often been compared with those at Ajanta in India, and it is argued that the artists who executed these paintings come from the same tradition (ASCAR 1905; Coomaraswamy (1908) 1979). There are other arguments claiming that despite their superficial similarities, that the intricate painting styles show distinct differences in technique (Rowland 1938, 84; Rawson 1961, 56). Nevertheless, most women depicted in Ajanta paintings are adorned with similar ornaments as those of Sigiri paintings. The large ringlets in the ears, floral hair dressings, elaborate head dresses, armlets, and pearl necklaces are among these strikingly similar ornamentations we see in the paintings of both sites.

Figure 2.7: Painting of a Sigiri apsara (Source: Bandaranayake 2006, 47)

Towards the 7th century, Pallava influence can be noted in the art and architecture of Sri Lanka. According to Paranavitana (Ray and Paranavitana 1959, 401), by the 7th century wood was replaced with stone as the medium for constructing buildings in South India and this influence was extended to Sri Lanka. One such example is the Nalanda Gedige, the earliest building to be constructed with stone in Sri Lanka (Pillay 1963, 182). In addition, the *Dvarapala* figures discovered at Tiriyaya, assignable to the 8th century AD, are examples of Pallava influence.

There are also examples of Sri Lankan influence on the art and architecture of South India. The excavation at Buddha Chaitya at Site 06, Nagarjunakonda, revealed a semi-circular 'moonstone' with carvings of animals decorating it, contrary to the non-decorated ones discovered in the area (Ramachandran 1999, 13). This is an architectural parallel to moonstones in Sri Lanka which are widely decorated. As the Buddhist remains of Andhra are attributed to the Ikshavakus of Andhradesa they probably date from the 3rd century AD (Ramachandran 1999,

8), therefore, postdating the decorated moonstones in Sri Lanka. This is again strong evidence for claiming the close religious connections existed between Sri Lanka and Andhra, which probably received royal patronage from both regions, particularly during the reign of Ikshavakus.

In addition, Buddhist stupas and monasteries, as well as other Buddhist features, at Andhra would have had a strong influence from Sri Lanka, where by the 3rd century AD massive stupas were numerous. The Andhra coast, studded with ports, would have enabled constant trade connections between the two regions that also mediated religious contacts. Fa Hien travelled from Tamralipti to Sri Lanka on a trade vessel (Legge 1886, 100). Hence, it is very likely that Buddhist monks and lay pilgrims alike travelled back and forth between both regions to religious centres, carrying with them ideas, technologies and skills.

Epigraphy and numismatics

Inscriptions on stone, as well as copper plates, discovered from both South India and Sri Lanka, provide a corpus of information about South Indian contacts with Sri Lanka. The earliest of them were considered to be the *Brahmi* inscriptions of Asoka belonging to the 3rd century BC. Nonetheless, recent archaeological excavations have yielded *Brahmi* writings on pottery which belong to contexts dated as early as the 6th century BC (Deraniyagala 2004; Rajan 2015a). This discovery reinforces the discovery at the Anuradhapura Citadel excavation in Sri Lanka, which have also pointed to similar dates for *Brahmi* script (Deraniyagala 2004, 745) pushing the dates of *Brahmi* scripts back about three centuries earlier than they were thought to be.

Sri Lankan inscriptions referring to South India are numerous. Probably the earliest inscriptions bearing reference to "*Dameda*" are dated to the 2nd century BC (Paranavitana 1970, xc). *Dameda* is equal to the Sanskrit *Dramida* or *Dravida*, meaning Tamil, i.e. people from the Southern part of India. Interestingly, references are made to Tamil mariners or merchants. The first reference of *Damila*s arriving on Sri Lanka is that of Sena and Guttika (*Mv*:XXI.10–12). Four inscriptions bearing the term *Dameda* have been discovered on the island and the longest and the most important of them is found Northwest of the *Abhayagiriya* stupa, in Anuradhapura (Paranavitana 1970, xc). It is an early *Brahmi* inscription, engraved on a vertical rock face behind a terrace carved on a boulder, which records that the terrace belonged to the Tamil householders and was made by *Samana*, the Tamil of *Ilubarata*. Two inscriptions discovered at Periya Puliyankulama, Sri Lanka, refer to a Tamil merchant named Visaka, a householder (*gahapatikana*) (Paranavitana 1970, 28). This is an indication that South Indians had by that time inhabited Sri Lanka, perhaps to maintain commercial contacts. In the fourth inscription, a Tamil lady named Tisa is mentioned, who was probably the wife of a merchant in Dighavapi, Southeastern Sri Lanka (Paranavithana 1970, xc).

By the 7th century AD, Prakrit *Brahmi* script took the form of modern Sinhala script. It is accepted that this change took place as a result of Pallava influences (Paranavitana and Codrington 1934, 153). Hence, the strong influence and connection with Pallavas by that time is evident and it coincides with King Manavamma's Pallava association.

The second and thirteenth rock-edicts of Asoka mention the independent states in the South, together with Sri Lanka. The names include, *Choda* (Chola)*, Pandya, Satiyaputra, Keralaputra* and *Tambapanni* and they were specifically mentioned as lands outside Asoka's territory. Scholars (Paranavitana 1970; Subbarayalu 2001) have brought to light an array of inscriptions written in *Brahmi,* either Tamil or Sinhala scripts, dealing with shipping communities in South India, particularly on the South Indian shores. Mahadevan has published ten inscribed potsherds from ancient South Indian trade centres and ports including Arikamedu, Alagankulam, and Kodumanal, bearing Sinhala *Brahmi* script (Mahadevan 1996a; 1996b). The following are examples of inscribed pot sherds bearing Sinhala *Brahmi* script discovered from South Indian sites; "*ku bi ra ha*" from Arikamedu, "*pu sa la khi ta*" from Kanchipuram, "*sa mu* …" (probably samuda), "*sa mu ta ha*" and "*sa ga*" from Alagankulam (Bopearachchi 2008, 15–16).

At Kodumanal, a pot sherd inscribed with the *Brahmi* word "*Visaki*" was discovered. An inscription at Periya Puliyankulama in Sri Lanka, refers to a Tamil merchant named Visaka, a *gapati*—householder (Paranavitana 1970, 28). This provides possible clues to connections between the two regions. In addition, the discovery of proper names such as Kannan, Atan, Campan, Pannan, as well as north Indian names, such as Varuni, Kuviran, further attest to these connections (Rajan 2015a, 11).

The excavations at Alagankulam in 1992 yielded potsherds with Sinhala *Brahmi* script. Instead of the Asokan *Brahmi* letters *Ga, Ja, Ba, Ra, Sa, Ha* common to Tamil *Brahmi*, a couple of inscribed sherds carry *Sa, Ga* and *Sha*, as in the

Brahmi inscriptions of Sri Lanka (Majeed *et al.* 1992, 1). Alagankulam, being a trade port just across the Palk Strait from Mantai in Sri Lanka, it is not too surprising that pottery inscribed with Sinhala *Brahmi* was discovered on South Indian shores. The discovery of sherds with graffiti of ships reinforces the naval trading connections at Alagankulam (Sridhar 2005, 67–73).

An inscription in South India refers to an "*Ila Kutumbikan*" which has been interpreted as a husbandman from Sri Lanka, *Ila* referring to Sri Lanka (Sastri 2014, 82). The word *Kutumbikan* could very well mean dweller, as *Kutumba* is the word for dwelling, home or family institution. The inscription may have referred to a person living in Sri Lanka. There is inscriptional evidence to support Manavamma's alliance with the Pallava king, Narasinghavarman. Though this is a comparatively later inscription to those mentioned above, it certainly reinforces the record in *Mahavamsa* (South Indian Inscriptions Vol. II). Further, the Vakkaleri Plates of Chalukyas also refer to Sri Lanka among other south Indian kingdoms that paid tribute to the Chalukya king, Vinayaditya Satyasraya (Rice 1879, 28).

Coins are another main archaeological source of Sri Lanka South India relations. Coins belonging to various South Indian dynasties are strong evidence of interaction between the two regions (Bopearachchi 1993). The earliest coin types in Sri Lanka were inspired by the Pandyans and the designs are derived from their coins dating from *c.* 210–175 BC, bearing a group of symbols including that of the elephant. Anuradhapura Salgahawatta 2 (ASW 2) excavation has yielded coins dating from the 2nd century BC which are Sri Lankan issues with borrowed Pandyan fish symbols (Bopearachchi 2006, 18).

Interesting evidence of South Indian traders in Sri Lanka is further attested through locally issued inscribed coins. These coins have confirmed the existence of Tamil merchants in the Southern part of Sri Lanka and date from the 2nd century BC/AD (Bopearachchi *et al.* 2000). Among the 44 coins deciphered, two bear Tamil names and Mahadevan has confirmed the accuracy of the deciphering of the inscriptions on the coins (Bopearachchi 2008, 18). However, this hoard was discovered in Akurugoda, in the south of Sri Lanka, but no similar coins were found in Anuradhapura, suggesting possible local production of these coins (Bopearachchi 2008, 18). Krishnamurthy and Wickramasinghe (2005) have published a catalogue of *Sangam* Age coins in Sri Lanka and this reinforces the long-term connections between the two regions.

Some coins of Sri Lankan origin have been discovered at South Indian sites. The Lakshmi plaque coins, the type of coin with the goddess of Lakshmi on it, were struck on the island (Bopearachchi 1998, 17). Finding these coins in coastal South India is strong evidence of South India-Sri Lanka relations. A Lakshmi plaque has been discovered from the river bed at Amaravati, near Karur, the Chera capital (Bopearachchi 1998, 17). In a later period, during the time of the Chola Kingdom, a type of coin termed “Ilakkasu” was discovered in South India, probably issued to pay the Sri Lankan traders in the Chola kingdom on the mainland during their reign (10th century AD) in Sri Lanka.

While coins are more of an indication of economic and trade connections, through them it is also possible to identify the agents involved in interactions between the two regions.

2.4 Cultural periodization and historical background

2.4.1 Sri Lanka

Significant research on the island's cultural periodization has been carried out by a number of scholars in Sri Lanka. The written records of the continuous history of the island (Chapter 2.4) have been greatly useful in establishing a chronology.

Cultural periodization

Mendis (1935) was one of the first to attempt the cultural periodization of the country. Subsequently, there have been a number of scholars, such as Liyanagamage and Gunawardana (1961), Bandaranayake (1974), De Silva (1981) and Perera (2001; 2003; 2005), who have proposed outlines for the cultural periodization of Sri Lanka. These have all been more or less similar and are based on Sri Lankan chronicles (discussed below). Bandaranayake based his periodization on the art and architecture of the Anuradhapura and Polonnaruwa periods, the so called 'classic era of Sinhalese civilization'.

What is most striking about these studies is that the Indian influence on Sri Lankan history is strongly highlighted by all of them. Mendis (1935) in particular, divides the cultural periods of Sri Lanka before the arrival of the Portuguese in 1505, as the North Indian (up to the Chola invasion in 1017) and the South Indian (from 1017 to 1505) periods. While other scholars, such as Liyanagamage and Gunawardana (1961), have been critical of the North-South Indian division of cultural periodization, the influence of India is also present in their periodization. They claim that the cultural and political influence of India on Sri Lanka was inevitable and undeniable considering their geographical proximity. Dividing the history of Sri Lanka into periods based on the foreign power that demonstrated

the strongest impact during a particular time in the history of the island, would provide a misreading of the true nature of the historical development of the island (Liyanagamage and Gunawardana 1961, xxv–xxxii).

While all these studies are primarily based on historical evidence, Deraniyagala's (2004, 709–714) cultural periodization of the island is based on extensive archaeological investigations, radiocarbon dates and broad pan-South-Asian comparisons. He lays out the periodization of the Proto and Early Historic Periods of the island across eight periods that are listed below:

Period I: Mesolithic (*c.* 1800BC)

Period II: Mesolithic/Iron Age Transition (Undated)

Period III: Proto-historic Iron Age (*c.* 900–600 BC)

Period IV: Basal Early Historic (*c.* 600–500 BC)

Period V: Lower Early Historic (*c.* 500–250 BC)

Period VI: Mid-Early Historic (*c.* 250 BC–AD 100)

Period VII: Upper Early Historic (*c.* AD 100–300)

Period VIII: Middle Historic (*c.* AD 300–1250)

For the present study, being an archaeological work, the cultural periodization laid out by Deraniyagala has greater relevance. My work spans a time period between the 6th century BC and the 10th century AD. Therefore, this time period falls within the Basal Early Historic period (600–500 BC) to the Middle Historic period (AD 300–1250) of Deraniyagala's periodization. The upper limit of the present study extends only up to the decline of the first kingdom of the island, i.e.

Anuradhapura. Deraniyagala's periodization is based on his works on Prehistoric cave sites and important extensive excavation in the Anuradhapura Citadel.

Anuradhapura is, situated in the North-central province of Sri Lanka, and was the first capital of the island. It is one of the eight UNESCO World Heritage sites in Sri Lanka with several large stupas and other Buddhist monuments, as well as large-scale irrigation schemes, spread over the city. While the historical record describes its development from *c.* 5th century BC (*Mv*:X.73–106), the archaeological record demonstrates a longer chronology and wider picture of its development into a city over the period of time (Deraniyagala 2004, 709–714). The central mound of the city is the citadel area which provides evidence of human settlement for over two millennia and indications of the pre-Buddhist period of the region. Deraniyagala excavated 13 sondages in an area of around 100 ha. and each excavated trench yielded a cultural deposit as deep as almost 10 metres. The citadel is the main secular habitation area from which evidence of human settlement has been recovered from as early as 900BC. By the next few centuries Anuradhapura had developed into a town and continued to grow to become a city, parallel to the cities of the Gangetic Valley Civilization in India by the 6th century BC (Allchin and Allchin 1997, 256–258).

The Anuradhapura Citadel contains secular buildings where the elite, their retinue, merchants and probably artisans resided. This area was enclosed by a rampart, remnants of which are still visible (Ueyama and Nozaki 1993). With the formal introduction of Buddhism to the island in the 3rd century BC, monastic complexes were established in the area surrounding the citadel area. The Mahavihara complex, which was the first Buddhist monastic complex to be

established, was located southwest of the citadel and contain the main Buddhist monuments of Anuradhapura, namely Thuparama, the first stupa built in the city, the Sri Maha Bodhi, and Ruwanweliseya. Several centuries after the Mahavihara, the Abhayagiriya monastic complex was built, to the north of the citadel. According to the chronicles, Abhayagiriya was built at the location of a Jain temple, suggesting religious buildings other than Buddhist monuments already existed around the central citadel. Jetavanarama, the third large monastic complex was built partly on the Mahavihara premises and the stupa built there was the tallest brick building in the contemporary world. In addition, several other religious monuments such as the Western Monastery extended over the area of settlement. This distinction of secular and religious areas of the city has been maintained throughout time, with the modern lay town of Anuradhapura lying beyond the 'Sacred City'.

Irrigation tanks were built in Anuradhapura as early as *c.* 5th century BC. The first tanks, including Basawakkulama, were small in size but by the 1st century AD, the irrigation tanks were large scale, for example, Nuwara wewa and Tisa wewa (Brohier 1934–35; Gunawardana 1971; Bohingamuwa 2009; 2010). These irrigated tanks provided the required water sources for the agriculture of the region that strongly supported the economy of the kingdom. Some of the features of these tanks, such as the sluices (*bisokotuwa*), stand out as uniquely Sri Lankan in their advanced technology (Gunawardana 1983; Bohingamuwa 2010, 173–189).

While the excavations at the Anuradhapura citadel remain prominent in the archaeological history of the country, studies carried out in Kantarodai, Mantai

and Tissamaharama have helped to understand the cultural periodization of the island. The Protohistoric Iron Age in Sri Lanka, as it is termed by Deraniyagala, is dated to 900–600 BC and its characteristic features are the use of iron technology, a Sri Lankan variant of Proto-historic Black and Red Ware (BRW), the introduction of the horse, Megalithic burial practice and swidden agriculture (Deraniyagala 2004, 709). This period demonstrates marked resemblance to the Protohistoric Iron Age/ Megalithic Period of peninsular India which has led to the argument of an initial South Indian migration into the island at that period (Karunaratne 2010, 37–38).

Anuradhapura was already a town by 700–600 BC and Deraniyagala (2004, 709–710) argues that, being equidistant to the Northwestern and Northeastern coasts and being defended from attackers by the buffer of forest makes it evident that the location of Anuradhapura was chosen as the “capital”, rather than a gradual growth from village-level. Karunaratne challenges this view stating that such strategic location was possibly planned by the 3rd century BC. But Anuradhapura still yielded evidence of the inhabitants depending on pastoral economy supported by floodplain agriculture and seasonal hunter-gathering during 700BC (Karunaratne, 2010, 37–40).

The next cultural period is the Basal Early Historic period, dating to *c.* 600–500BC. It marks the transition from the Early Iron Age to the Lower Early Historic period. The recovery of evidence of writing in the Basal Early Historic period (*c.* 600–500 BC), pushed back the date of *Brahmi* script in the sub-continent for the first time (Deraniyagala 2004, 745–746). The unexpected early Anuradhapura dating of writing has been hotly debated, but with the recognition of similar

evidence from Arikamedu (Casal 1949a) and Kodumanal (Rajan 1990; 2015) and rigorous cross-examination by radiocarbon and thermo-luminescence dating, this claim is now gaining wider recognition (Kodithuwakku 2015, 251–254). During succeeding periods Anuradhapura grew into a cosmopolitan city. The increased number of ceramic varieties, burnt bricks as building material and coinage, all support the evolution of state in the country and accordingly the periodization has been set.

Historical narrative

As is frequently the case, the history of the first colonization of Sri Lanka as told in the chronicles of the island (Chapter 2.3.1) does not fully align with the archaeological record, although there are strong resonances. The Mahavamsa records that the first colonization of the island took place with the arrival of a North Indian prince, Vijaya (483–445 BC), along with his followers in Tambapanni—an ancient name for Sri Lanka (see *Mv*:VI–VII for complete legend and Basham (1952) and Coningham and Lewer (2000) for a critical evaluation). According to Mahavamsa, the sands of the land where the wearied men arrived turned the palms of their hands a copper colour and thus they called this area, their first established kingdom and the whole country, Tambapanni, the name derives from the Sanskrit word Tamraparni (tamra meaning copper) (*Mv:*VII.40–42). Even at the time of Buddha's first visit to Sri Lanka, nine months after his enlightenment (*Mv:*I.19–20), two groups of inhabitants lived in the country, namely the *Yaksha* and the *Naga*, who were presumably the indigenous people of the island.

Vijaya married Kuveni, a woman of the *Yaksha* group and, with her help, annihilated a large group of *Yakshas* who were gathered at their capital (*Mv:*VII.31–39). He established himself as the ruler of the island. His men also

established settlements nearby, for example Anuradhagama, Uruwelagama, and Upatissagama. To reinforce his status, he cast away Kuveni, who had borne him two children, and married the daughter of the Pandyan king of Madura, South India. Along with the Princess, it is said that families from 18 craft guilds arrived in Sri Lanka. This action of Vijaya could be perceived as securing support from the mainland against any possible uprising of indigenous groups of the island. The *Mahavamsa* records that Vijaya sent an annual remuneration of cartloads of pearl to his father-in-law (*Mv:*VII.48–74). This further strengthens his motives in marital alliance and also hints on the value attached to the pearls of Sri Lanka.

Vijaya died without an heir, leaving the country in the hands of his nephew Panduvasdev (444–414 BC) who arrived on the island from Vijaya's native land. Panduvasdev married Bhaddakachchayana, a *Sakya* princess from India, the same clan into which Gautama Buddha was born. Her brothers, who followed her to the island, also established settlements in various places (*Mv:*IX.6–11). Panduvasdev's grandson, Pandukabhaya (377–307 BC) is considered the first Sri Lankan king in the royal lineage of the country because he received the support of the local indigenous people. He chose Anuradhagama as his capital which then became the city Anuradhapura. The *Mahavamsa* (*Mv:*X. 90) describes his town planning, where he segregated the city for different groups of people: the potters, the iron smelters, the *Yavanas*, who are probably the Greek or Arab traders (Deraniyagala 2004, 711; 1952:192), as well as for the hospitals and cemeteries. Anuradhapura remained the capital of the country for 13 centuries till its fall in the 10th century AD (De Silva, 1981).

According to the results from the Anuradhapura Citadel excavations in particular, it is evident that the archaeological record demonstrates a different picture to that of historical evidence. According to the historical records, Anuradhapura grew as town and then a city only in *c*. 4th century BC. Further, it was after the arrival of Mahinda that *Brahmi* writing was introduced to the country. However, Deraniyagala claims that by 700–600 BC, Anuradhapura was already a town (Deraniyagala 2004, 710) and evidence for *Brahmi* script was prevalent by the 6th century BC (Deraniyagala 2004, 745–746).

2.4.2 South India

Cultural periodization

The earliest human contact between Sri Lanka and South India is likely to go beyond 7000 years back in time, a time when the final separation between the two regions took place (Deraniyagala 2004, 167–168). The present section describes the cultural periods of Protohistoric Early Iron Age, generally referred to as the Iron Age in Indian archaeology and Early Historic periods.

The period preceding the Iron Age of South India was the Neolithic period, dated *c.*3000BC–1200BC. The southern Neolithic period was mainly spread across a major part of Karnataka and Andhra Pradesh, and northern districts of Tamil Nadu. Some of the significant excavations carried out at these Neolithic sites are those at Budihal, Sanganakallu and Piklihal (Allchin 1960; 1963; Padayya, 1973; 1991; 1998; Boivin *et al.* 2002; Shanmugam 2014, 12–13). Characteristic features of this period were the domestication of plants, cattle-keeping, construction of ash-mounds and a mixed agro-pastoral economy (Allchin and Allchin 1997, 100–104; Johansen 2004, 309–330; Shanmugam 2014, 13–15).

Among the plants domesticated during this period include varieties of millet, cereal and pulses (Johansen 2004, 317). The Neolithic period of northern India pre-dates that of the southern.

The Iron Age in South India is currently dated to between 1200 BC and 400 BC (Nagaraja Rao 1971; Possehl 1988). Use of iron is a predominant feature of this period. Black and Red Ware (BRW) ceramics, produced using an inverted firing technique, are identified with this period. Megalithic burial practices are iconic to this period. The use of large stones—'mega-liths', to construct burial monuments is a generalization of the practice, but not all Megalithic burials are constructed using large stones (Leshnik 1974; Moorti 1994; Haricharan 2010). There are Megalithic burials such as cairn circles, urn burials, and terracotta sarcophagi that do not involve large stones. Among the other common varieties of Megalithic burials are cist burials, menhirs, Dolmens and Kudakkal (umbrella stones) (Subbarayalu 2014, 16–18).

Megalithic burial practice is not exclusive to South India, but the general concentration is in this area and about 2000 sites recorded across Tamil Nadu, Kerala, Karnataka and Andhra Pradesh (Moorti 1994). Similar practices also extended to Sri Lanka, indicating close contact between the two regions during the Iron Age (Seneviratne 1984; Karunaratne 2010). Megalithic burials are associated with grave goods, which include beads, usually made of exotic materials. These provide strong evidence of trade and exchange with distant regions, as well as the social status, power and/or wealth of the deceased. However, it is argued that the construction of a commemorative monument for the deceased alone was a display of their social ranking.

It was earlier believed that Megalithic burial practices were exclusive to the Iron Age, but recent studies have indicated that they were continued into the Early Historic Period. The Early Historic Period in South India is identified with the beginnings of written records. The earliest dates of *Brahmi* scripts is a debated subject, but the findings from Anuradhapura in Sri Lanka by Deraniyagala (2004, 745–746), reinforced by the evidence recovered by Rajan (2015a), has pushed the dates of *Brahmi* script to *c.* 6th century BC (Chapter 2.4.1). There is archaeological evidence of the existence of independent kingdoms in South India, i.e. Chola, Chera and Pandya, as mentioned in Asokan inscriptions (Chapter 2.3.2) and therefore, the Early Historic Period of South India roughly begins around the 4th/3rd centuries BC. Kelly considers 400BC–AD400 as the Early Historic Period, for her research, though admitting the difficulty in assigning an exact time period.

The Early Historic Period marks the emergence of the independent kingdoms (Champakalakshmi 1996; Abraham 2003a; 2003b; Sastri 1955). Sites assigned to the Early Historic Period have been widely studied in South India and these include Alagankulam (Majeed *et al.* 1992; Sridhar 2005), Arikamedu (Wheeler *et al.* 1946; Begley 1983; Begley *et al.* 1996; 2004), Karaikadu (Raman 1975;), Pattanam (Cherian 2015; Cherian *et al.* 2016), Korkai (Nagaswamy 1970), Kaveripattinam (Soundara Rajan 1994), Karur (Majeed 1987), and Uraiyur (Raman 1988). These sites have yielded strong evidence of external interaction, both international trade and inter-regional exchanges. Sites, such as Arikamedu and Pattanam, have been established as trade ports with strong Roman contact. Uraiyur, Karur and Madurai were urban centres that were also the capital cities of the South Indian kingdoms of the period. Sangam literary works have also been

assigned to this time period, which have provided a vast amount of information regarding the historical setting of South India during this period (Chapter 2.3.1). The recovery of Roman coins, foreign ceramics, evidence of craft production and trade, including beads, as well as references in foreign sources, indicate the widespread interaction with South India during this period. The South Indian sites studied for this research belong to the Early Historic Period and the following section provides an understanding of the historical setting of South India during the Early Historic Period.

Historical narrative

One of the earliest references to South India is found in the Asokan edicts (Sastri 2014, 76–77). Emperor Asoka (268–232 BC) was one of the greatest Mauryan kings who extended the empire all over India upto southern Karnataka (Thapar 2002, 184). After being involved in extensive warfare he became a patron of Buddhism and sent ambassadors to neighbouring lands, including Sri Lanka, spreading the Buddhist philosophy. He erected numerous edicts, both pillar and slab, ordering a righteous (*dharmic)* lifestyle within his empire. In his second minor edict, Asoka mentions four South Indian kingdoms, namely Satyaputra, Keralaputra, Chola and Pandya, as those lying outside his empire. These kingdoms are those of the Cholas, Pandyas, and Cheras, while the identification of Satyaputra has been controversial (Sastri 1955; Burrow 1947; Sesha Aiyar 1937). According to the early *Sangam* literary references (discussed below), the region was divided in three kingdoms, Chola, Pandya and Chera which were continuously warring states. During the early centuries before and after the Common Era, these were probably small political entities and regional states (Sastri 2014, 109).

During the 2nd century BC, Mauryan rule in the Deccan was succeeded by the Satavahanas whose reign continued for nearly 450 years. By the beginning of the 3rd century AD, the Satavahana Empire declined and fragmented into the Abhiras in the Northwest, the Chutus in the South, the Ikshavakus in Andhradesa, the descendants of Satavahanas in Madhya Pradesh and the Pallavas rising in the south-east (Sastri 2014, 88–89).

Contemporary with the Satavahanas, the three entities, Cholas, Cheras and Pandyas, ruled further south, their capitals being Uraiyur, Karur and Madurai respectively. These kingdoms were involved in constant battles amongst themselves. The Chera capital, Vanji, is now identified as modern Karur, with the help of archaeological finds, inscriptional records and Ptolemy's account that the Chera capital was the inland city Korura (Sastri 2014, 112).

According to the Sri Lankan chronicle, the *Mahavamsa*, the Pandyan Kingdom at Madurai existed in the 5th century BC (*Mv:*VII.48–58). Early references to Madurai note its fame for pearls, particularly at Korkai (Maturaikkāñchi. 130–135). The Pandyans patronized the *Sangam* poets some of whom were Pandyan royals. The early rulers were part of the Pandyan confederacy which later grew into a strong kingdom towards the 6th century AD. Cholas are also referred to in *Sangam* literature, with Karikalan mentioned as one of the earliest prominent kings of the kingdom. The Cholas are referred to in the *Mahavamsa* as *Damilas*. Two *Damila* attacks on Sri Lanka are mentioned in the first two centuries BC (Chapter 2.5). It suggests that either the Cholas were a strong kingdom at the time or Sri Lanka had better relations with Pandyans and Cheras which attracted the animosity of the Cholas. The reference in Sangam literature to Karikalan

throws further light on the naval power possessed by the Cholas (Sastri 2014, 112).

These three powers, however, also declined by the 3rd century AD with the ascendancy of the Kalabharas of whom very little is known (Sastri 2014, 130–131). In the mid-6th century AD, the Chalukyas of Badami, Pallavas of Kanchipuram and Pandyas of Madurai rose to power and defeated the Kalabhara supremacy in the peninsula. Scholars believe that during the period, Buddhism and Jainism revived, along with Tamil literary advancement. The *Silappadikaram* and the *Manimekhalai*, (Chapter 2.4.1) among other works, were written during this period (Sastri 2014, 131).

These three kingdoms continued to have a strong hold over the politics of South India, constantly fighting each other for power. The Chalukyas of Badami were succeeded by the Rashtrakutas of Manyakheta, perhaps a century before the decline of the Pandyas and the Pallavas (Sastri 2014, 132). With the decline of these three powers, from around AD 850, the Cholas rose to imperial status from obscurity to extend their reign beyond the limits of the peninsula over the next three centuries. Sri Lanka was constantly involved in these power struggles in South India, post 6th century AD (Chapter 2.5.2 and 2.5.3). As a result, the Sri Lankan capital ultimately came under Chola control by the end of 10th century. The strength of Chola naval power is evident from their annexation of northern Sri Lanka and the Sri Vijaya Empire in Southeast Asia. The extension of Chola power in the region marks the end of the time period under present discussion.

2.5 Dominant themes in Sri Lanka–South India relations

Having outlined the historical setting of Sri Lanka and South India, the following section will summarize Sri Lanka-South India relations on key themes in order to provide necessary basis for the larger discussions that follow in the succeeding chapters.

2.5.1 Migration and Royal marriages

Historical sources refer to several migrations from South India to Sri Lanka and, to a lesser extent, vice versa. The first historically recorded South Indian migration to the island was the arrival of the Pandyan Princess who became the consort of King Vijaya in the 5th century BC. According to *Mahavamsa*, 18 crafts families also arrived and settled down in various parts of the country along with the princess and her maids. If this record is accepted, they presumably integrated with the indigenous people and disseminated the knowledge of their crafts. *Mahavamsa* (*Mv*:XXXIV.19–26) mentions *Damilas* (Vatuka and Niliya) among the consorts of Queen Anula (47–42 BC), which is suggestive that they were either those who arrived on the island during the *Damila* invasions (further discussed in the section below) and stayed behind, or those who independently arrived on the island and were residing in the capital, in close contact with Royalty. King Chandramukha Siva (AD 44–52) even had a queen referred to as Damiladevi (*Mv*:XXXV.48–49), probably indicating she was of South Indian origin. King Mahanama's (AD 410–432) son, Sottisena, is said to have been born of a *Damila* woman (*Mv*:XXXVIII.1–2). She may have been a descendant of the migrant South Indians or migrated to the island as a consort to the king. Either way, marital connections are evidence of close relations between the two regions. King Mahinda IV (AD 956–972) also married a princess from Kalinga, the modern

Orissa (*Mv*:LIV.9–10), again an indication of close cultural relations between South India and Sri Lanka.

While there are many historical references to state-mandated migrations, there have also been migrations of the non-elite, which are not always recorded in historical sources. The modern Bharatas in Sri Lanka are descendants of the historically identified *Paratava* community of South India (Croos 2017, 247–269; Bohingamuwa 2017, 466). *Paratavas* were also referred to as *Paravar* and *Paratar* in Sangam literature and were similar to the *Barata* referred to in *Brahmi* inscriptions of Sri Lanka (Maloney 1969, 224–240). Seneviratne (1985b) and Pushparatnam (2001a) have carried out detailed studies on the Paratavas and they are referred to by Maloney (1969) and Paranavitana (1970). There are about 21 post-1st century BC *Brahmi* inscriptions in Sri Lanka that refer to the Baratas (Pushparatnam 2001a). According to Sangam literature, the Paratavas, often referred to as Paratavar or Paravara, were inhabitants of the coastal areas, covering an area from the Kaveri Delta to the Tamraparni River in South India. It is mentioned that their main occupations were Chank diving, pearl fishing and sea fishing, as well as trade (Pushparatnam 2001a, 120–121). The reference to Baratas in *Brahmi* inscriptions of Sri Lanka indicate that they maintained close contact with the island. Seneviratne (1985b, 49–55) observed the proximity of inscriptions referring to Baratas to archaeological sites that yielded Black and Red Ware ceramics and argues that the Baratas had contact with the island probably as early as the Proto-historic period. This community probably carried out pearl and chank fishing in the Gulf of Mannar, both along South Indian and Sri Lankan coasts and were also engaged in trade activities with Sri Lanka. The presence of their descendants in present day Sri Lanka, along the western coast

from Mannar to Panadura (Croos 2017, 247), is an interesting indication of the migrations of the general populace between the two regions.

Evidence for migration from Sri Lanka to South India is sparse, particularly during the period under discussion. However, there is a legend around the Ezhava community of Kerala saying they were descendants of Sri Lankan migrants. They are also called Ilavas, a name denoting they are people from Ilam, another name for Sri Lanka. According to the Travencore State Manual (Nagam Aiya 1906, Ch. VI: 369) Ilavas and Shanaras are "believed to have migrated from Ceylon". There are several legends associated with the origin of the Ezhavas, one of the most common being that the Ezhavas are descendants of four Sri Lankan men who migrated to Kerala for coconut cultivation, during *c.* the 1st century AD (Nagam Aiya 1906, Ch. XII: 844–845). Legends of the origin of the Ezhavas is detailed by both Thurston (1909, 392–393) and Day (1863, 319). Nonetheless, from my visit to Kerala and observations on the Ezhava community, such traces of Sri Lankan origin could not be established nor could historical or inscriptional records confirm the legends. The Ezhavas, who were originally Buddhists and therefore, with the dominance of the Hindu caste system occupying a lower stratum in the caste system, indicates a clue to their Sri Lankan origin but not particularly strong one.

2.5.2 Invasions

South Indian invasions directed towards Sri Lanka were quite numerous. The first is recorded in the 2nd century BC, during the time of King Suratissa (187–177 BC), a brother of King Devanampiyatissa (250–210 BC). Sena and Guttika (177–155 BC), the sons of a horse trader, who were also probably horse traders, seized the throne and ruled in Anuradhapura for 22 years (*Mv*:XXI.10–12). The next

invasion was that of Elara (145–101 BC), a *Damila* nobleman (*Mv*:XXI.12–14), who ruled the island for 44 long years. Elara was a Chola prince and South Indian literature such as the *Silappadikaram* and *Periya puranam* also refers to him as a just king who ruled Sri Lanka. It was after defeating Elara, that King Dutugamunu (161–137 BC), the hero of the *Mahavamsa*, united the whole island under one flag for the first time in history. However, soon after Elara fell at the battle, his nephew Bhalluka, another Chola prince, led an army into the island but was soon defeated (*Mv*:XXV.76–93).

The first phase of King Valagamba's reign (103–102 BC) was brought to a halt by a group led by seven attackers from South India (*Mv*:XXXIII.39–43), two of whom returned to their homeland, one with the sacred alms-bowl of the Buddha and the other with the king's wife, Somadevi (*Mv:*XXXIII.54–55). The remaining five ruled for 14 long years (*Mv:*XXXIII: 56–61) before King Valagamba reclaimed his throne. King Dhatusena (AD 460–478) is said to have ascended to the throne after uprooting a group of seven invaders from South India (*Mv:*XXXVIII.11–12). The earliest attacks may not have been organized invasions but incidential at times of political instability. All these South Indian attackers, interestingly, were patrons or well-wishers of Buddhism. Some even carried out religious activities while others did no harm. It is therefore possible to argue that some of these South Indians were Buddhists or at least were familiar with the religion.

Subsequent invasions were destructive as the main intention of the attackers seem to have been pillaging the country, while extending their alliance to the local elite waging war against the throne. Dhatasiva, alias Dathopatissa II's (AD 659–661), allied South Indian troops plundered Buddhist sites in the country

(*Mv:*XLIV.134–135). Srimara Srivallabha's attack (*Mv:*L.12–33), Chola Paranthaka's attack (*Mv:*LIII.39–47), Vallabha king's attack on Northern Sri Lanka (*Mv:*LIV. 12–16) and the final Chola invasion (*Mv:*LV.13–33) during King Mahinda V's reign (AD 982–1029) that brought the Anuradhapura Kingdom to an end were the other main invasions from South India during which the country was ravaged by the attackers. Most of these attacks were led for political supremacy and economic interest.

Sri Lankan invasions of South India have been scanty, probably because South India is a larger region which would have been quite challenging to wage war against. Nevertheless, two invasions from the Sri Lankan end have been historically recorded. The first of these was the invasion by King Gajabahu I (AD 174–196). Interestingly, while the *Mahavamsa* is completely silent about this incident, the *Rajavaliya* gives a comprehensive description of the attack. To revenge a South Indian attack, King Gajabahu I, with his commander, Nila, directed a war against South India and returned with 12,000 Sri Lankans who were previously taken to South India as prisoners, along with a same number of South Indians (*Raj.* 34–35). Legendarily, it was on the return from this invasion that the Pattini cult was introduced to the island (Adikaram 1946, 90).

The other significant Sri Lankan invasion recorded is that of King Sena II (AD 853–887) against the Pandyan kingdom of Srimara Srivallabha, who plundered the island during the reign of the former's predecessor and uncle, King Sena I (AD 833–853). Srimara Srivallabha's son, upon his father's decision to choose the son of another queen as his successor, requested help from King Sena II, who sent an army which vanquished Srimara Srivallabha, pillaged the Pandyan

capital Madurai and consecrated the Prince on the throne (*Mv:*LI.27–44). This event is significant as is demonstrates the prosperity and the military strength of King Sena II's regime that was probably known even in South India. This is indicative of close regional contact and that both regions were aware of the political and diplomatic conditions of each other.

2.5.3 Military alliances

Military alliances with South India are recorded from the time of King Ilanaga (AD 35–44) who ruled in the 1st century AD (*Mv:*XXXV.25–28). Abhayanaga (AD 236–244) led an attack on his brother and predecessor King Voharika Tissa (AD 214–236), over a family dispute, with the aid of *Damila* troops (*Mv:*XXXVI.49–50). Abhayanaga being able to have *Damilas* at hand to form an army, suggests that South Indian troops were readily available to the Sri Lankan elite whenever required. It is even possible that they were already living in Sri Lanka, perhaps in the northern part, exclusively to be of military service to the local elite.

During the reign of King Kassapa I (AD 477–495), son of King Dhatusena (AD 459–477), Sigiriya was chosen as the capital. The former committed a patricidal act in order to prevent his brother, Moggallana, the rightful heir to the throne, from becoming king. Moggallana fled the country when his father was killed by Kassapa, and returned to wage war against Kassapa, along with a South Indian army. The Sri Lankan kings sought military assistance from South India during times of internal turmoil and some of them even had *Damila* officials at their courts. According to the chronicles, there appears to be a marked intervention of South Indian powers in the political system of Sri Lanka after the 5th century AD. From this time to the end of Anuradhapura kingdom, a number of South Indian

invasions, military alliances and a few important Sri Lankan invasions of South India are recorded.

While South Indian military alliances during internal conflicts in the island had been frequent, particularly after the 5th century AD, instances of Sri Lankan military alliances in South Indian power struggles were not lacking. The most celebrated of these alliances was that of Prince Manavamma allying with the Pallava King, Narasimhavarman, to defeat Chalukya Pulakesin II, who was expanding his strong empire in the peninsula (*Mv:*XLVII). At the time Prince Manavamma, who had fled the island due to political instability, was taking refuge at the Pallava court. In return, Narasimhavarman aided Manavamma to regain power on the island and return him back to the throne. During this period, Pallava-Sri Lanka connections grew strong.

During the time of King Kassapa V of Sri Lanka, the Pandya king, Maravarman Rajasimha II, requested a military alliance from Sri Lanka against the rising power of the Cholas in South India (*Mv:*LII.70–78). The Sri Lankan king sent troops to aid the Pandyan king in the battle against Chola Parantaka, but the alliance was defeated at the battle of Vellur (Sastri 2014, 160). In the hands of defeat, Rajasimha II sought refuge in the island and then left for Kerala, having left behind the royal regalia with the Sri Lankan king (*Mv:*LIII.5–10). Sri Lanka's alliance with the Pandyas led to hostility from the Cholas towards the island.

2.5.4 Religious connections

Religious ties between South India and Sri Lanka have been strong. While South India is often considered a place of Hindu influence, sources show that Buddhism

and Jainism also flourished in the area. Though Sri Lanka's Buddhist affiliations with North India are often highlighted, South India grew to be a strong centre of Buddhism and there is ample evidence to show the existence of Sri Lanka-South India religious ties. If Hieun-Tsang's description of the Buddha frequenting Kanchipuram (Watters 1905, 226; Pillay 1963, 51 n.1 for criticism) during his life time is plausible, there would have been people with knowledge of Buddhism and this knowledge would have transmitted to and from Sri Lanka during continuous interactions.

The Buddha himself is said to have visited the island three times during his life time. During these three visits he apparently visited almost the entire island (*Mv:*I). Buddhist stupas were built in Sri Lanka, at Thiriyaya near Trincomalee, Eastern Province (Girihadu Seya by Tapassu Bhalluka), Mahiyangana, Uva Province, (by God Sumana Saman), and Kelaniya, Western Province (by King Maniakkhita), prior to the arrival of *Arhant* Mahinda, the son of the Mauryan Emperor Asoka, who is considered to have made the formal introduction of Buddhism to Sri Lanka. Princess Bhaddakachchayana, grandmother of Pandukabhaya, belonged to the *Sakya* clan, the same as the Buddha. Hence, it is most probable that she was acquainted with the philosophy, even if she was not personally a Buddhist. The *Mahavamsa* describes that they arrived on the island dressed as nuns (probably Buddhist nuns owing to the family connections). These examples provide evidence to suggest that Buddhism was not a completely new teaching by the time of *Arahat* Mahinda's arrival (Adikaram 1946, 45–48). It is probable that South Indians would have also been aware of the teachings, the knowledge coming from both North India and neighbouring Sri Lanka.

There were several Buddhist monks, of both the Theravada and Mahayana sects, who arrived in Sri Lanka from South India and Sri Lankan monks who went to the peninsula on pilgrimage. Theravada, also known as Heenayana or the little vehicle, is considered the original sect of Buddhism. The Theravadins worshipped Dhamma in the absence of Buddha and the sect was, and still is mainly spread in Sri Lanka, India and Thailand. In Sri Lanka, Theravadins were centred at *Mahavihara*, a monastery built by King Devanampiyatissa for Mahinda thero and his followers. Mahayana, or the Great Vehicle, was a later developed sect. This sect is mainly spread in the Southeast and the Far-east. Buddhadatta, a monk from South India was ordained at the *Mahavihara* at Anuradhapura, Sri Lanka (Malalasekera 1971, 395). He authored the *Abhidhammavatara, Ruparupavibhaga, Vinaya-vinicchaya, Uttara-vinicchaya* and *Madhuratthavilasini*, all being Buddhist documents and commentaries. He wrote the *Abhidhammavatara* and *Madhuratthavilasini* when residing at Kaveripattinam, the former, most probably, at *Pallavarama* monastery (Soundara Rajan 1994, 29). However, it is probable that the *Uttara-vinicchaya* was written in Sri Lanka at the request of Sanghapala *Mahathera* of *Mahavihara* (Malalasekara 1971, 395).

It was from South India, probably Kanchipuram, where monks with Mahayana ideals arrived on the island. Most of the masters of the Mahayana were South Indian by birth. The *Dharmaruchi* monks at Anuradhapura, belonging to the *Vajjiputta* sect, arrived on the island and resided at *Abhayagiriya,* a monastery built by King Valagamba (89–77 BC), having demolished a Jain monastery, and they arrived there from *Pallavarama* monastery in Kaveripattinam (Sasanarathana 1962, 63). While the *Dharmaruchis* had different views than the

Mahaviharika Theravadins, it was the *Vaitulyas* who arrived later, that held strong opposing views to the Theravadins. They were constantly suppressed under many kings and King Gothabhaya (AD 309–322) even banished a group of *Vaitulya* monks to Kaveripattinam (*Mv:*XXXVI.111–112). Following this event, a South Indian monk named Sanghamitta, well versed in Mahayana teachings, arrived on the island in the hope of taking revenge against Mahaviharika monks for banishing his teacher (*Mv:*XXXVI.112–117). He managed to influence King Mahasena (AD 276–303), who prohibited all offerings to *Mahavihara*, forcing the monks there to abandon the monastery. Once the king was made to see the reality, he built *Jetavanarama* monastery at Anuradhapura, but a rift in Buddhism occurred during this time (*Mv:*XXXVII).

The inscription by *Bodhisiri* at Nagarjunakonda, records a *Sihala Vihara* in Andhra, India. It was probably a monastery that provided accommodation for Sri Lankan monks who came on pilgrimage. In addition, it mentions the dedication of a *chetiya-ghara* to the fraternities of Sri Lanka (Sastri 2014, 90; Ramachandran (1953) 1999, 5). Buddhism acted as a mediating factor between the two regions and these ties would have grown strong, particularly due to the fact that Buddhism has often received royal patronage. Hence, both interactions at a diplomatic and personal level between South India and Sri Lanka were inevitable. Hieun-tsang records of a group of Buddhist monks arriving in Kanchipuram in South India on pilgrimage (Watters 1905, 227), suggesting there were constant religious contacts between the two regions. During the time of King Samudragupta, the Sri Lankan king Keerthi Sri Meghavanna (AD 362–390), requested permission to build accommodation for the monks on pilgrimage. This strengthens the evidence

that there were constant pilgrims from Sri Lanka (Geigher-*Mv:*Introduction, xxxix; (Codrington 1926).

The early South Indian invaders of Sri Lanka were pro-Buddhist. Rahula (1956) 2014, 65) argues that Sena and Guttika were Buddhists as the *Mahavamsa* records that their rule in Anuradhapura was a *Dhammena*—righteous one (*Mv:*XXI.11) and only Buddhists could have ruled righteously. Khudda Parinda and the other invaders who ruled the island during the 5th century AD are also considered to be Buddhists. Paranavitana states that they were Buddhists due to the inscriptional evidence revealing their donations to the religion (EZ IV 1934, 114). In Aggabodhi IV's (AD 658–674) court there were Tamil officers, like Pottakuta, who made offerings to Buddhist temples (*Mv:*XLVI.39–46). It is probable these South Indians may have adopted and remained amicable to Buddhism due to its stronghold in Sri Lanka. However, we cannot completely rule out that some of them could have originally been Buddhists as there is strong evidence of Buddhists and Buddhist philosophy existing in South India from early periods.

Religious connections with South India were not solely restricted to Buddhism. There is evidence of Jainism being on existence in the island even before *Arhant* Mahinda's arrival. The Mahavamsa records that during the time of King Pandukabhaya, there were three *Nighanthas*, namely, Giri, Jothiya and Kumbanda for whom he built monasteries (*Mv:*X.96–100). Jains are referred to as *Nighanthas* in Buddhist literature. These Jain monasteries were still functioning during the time of King Devanampiyatissa (Rahula 2014, 44) and it was during King Valagamba's reign (29–17 BC) that the monastery of Giri

Nighantha was demolished and the Abhayagiri Stupa was built (*Mv:*XXXIII.83). Jainism was a popular religion in South India and there are references to Jain monasteries being established in different centres in South India.

2.5.5 Trade

Trade contacts between Sri Lanka and South India, have a long history. According to Pieris (1919), even at a time when maritime travel was rudimentary, traders would have traversed between the two regions. Megasthenes in the 4th century BC talks about India's trade connections with the island (Mc Crindle 1877, 169–172). Sri Lanka's trade contacts with South India go further back in time, according to the material record in particular.

Sri Lanka's central location in the Indian Ocean has made it a thriving trade centre since the early centuries BC/AD, not only with India but with both West and East Asia (Silva 2006; Bohingamuwa 2017). Mantai has been a major trade entrepot in Sri Lanka since *c.* the 2nd century BC (Bohingamuwa 2017) and its situation across the Palk Strait further attested the strong trade connections with South India. In addition, Mantai was unavoidable for traders travelling from the western coast of India to the eastern, using a maritime route.

Among the Sri Lankan goods that were traded with the west, sometimes via South India, were pearls, gems, ivory, muslins, spices, tortoise shells and elephants (Perera 1952; Prickett 2003, Bohingamuwa 2017, 465–475). While its accuracy is questionable, Megasthenes records that the elephants of Sri Lanka were larger than those of India (Mc Crindle 1877, 62–63). Sri Lankan elephants were exported to the King of Kalinga on boats constructed using the wood from the

interior forests of the island (Mc Crindle 1877, 169–172). This record is attested by the Hasthigumpha Inscription by Kharavela which states that ‘elephant ships’ were among the king’s trophies (Pillay 1963).

There are inscriptional records of South Indian Tamil merchants and corporations of traders in Sri Lanka from the 3rd/2nd centuries BC (Sastri 1960; Paranavitana 1970; Pathmanathan 1974; 1990; Indrapala 2003). The discovery of South Indian coins on the island and the occasional discoveries of Sri Lankan coins on the peninsula attest to the strong trade connections between the two regions (Chapter 2.3.2). Scholars argue that it was the South Indian traders who acted as mediators for Sri Lanka’s western and eastern trade (Bopearachchi 1995; 2008; Somadeva 2012). On the contrary, both historical (Mc Crindle 1901, 102–106) and recent archaeological evidence (Bohingamuwa 2017, 513–518) suggest that Sri Lankans themselves were involved in trade with South India and the western Indian Ocean.

According to the historical records, South Indians seem to have mediated in the horse trade from Oman and Sind to Sri Lanka (Bohingamuwa 2017, 477). According to the *Mahavamsa,* Sena and Guttika, who took over the Sri Lankan throne during the 2nd century BC, were sons of a horse trader (*Mv:*XXI.10–12). Further, a *Damila* horse trader is said to have carried the news of political turmoil on the island to the Cholas prior to their attack that brought about the decline of the Anuradhapura Kingdom (*Mv:*LV.13–33). Hence, South Indians, probably the Cholas, were mediators in the horse trade with Sri Lanka.

Strong historical evidence of trade between the two regions is found in *Sangam* literature. In the poem, Pattinappalai (185–195), there is a reference to food stuff being imported to Kaveripattinam from Sri Lanka (Pillay 1963, 31). According to Cosmas Indicopleustus, written in the 6th century AD, at the ports east of Cape Comorin, the goods imported from and exported to Sri Lanka were traded (Pillay 1963, 29). Kautilya in *Arthashastra* talks of two kinds of pearls, namely '*pandyakavata*' and '*tamraparnika*', the latter probably being those from Sri Lanka. Further, constant reference to pearls being an export item from Sri Lanka and Sri Lankan kings sending pearls as gifts (*Mv:*VII.48–58; *Mv:*VII.72–74; *Mv:*XI.22–23) suggests a high demand for Sri Lankan pearls. It is very likely that they were exported to South India also, despite them having their own pearls. There is evidence of maritime trade carried out between Sri Lanka and the port of Kantakasela in Andhra, which was a trade emporium on the Krishna estuary (Ramachandra 1999, 5). This maritime trade connection no doubt helped Andhra-Sri Lankan Buddhist relations to flourish.

There is much evidence to suggest and prove the strong historical connections between Sri Lanka and South India. This research attempts to critically examine these historically evident relations through the use of items of personal adornment.

2.6 Summary

The geographical setting of Sri Lanka and South India is such that it has enabled constant contact between the two regions. Sri Lanka's strategically central location in the Indian Ocean has attracted outsiders from the East and the West throughout history. The shallow strip of ocean that separates South India and Sri

Lanka at its shortest distance is less than 50 km and has been no hindrance to the frequent movement of people as well as ideas.

Sri Lanka possesses a continuous written record of its history since the 6th century BC in the form of its religious chronicles. These texts, despite including exaggerated descriptions, have greatly aided the reconstruction of Sri Lankan history, as well as its exterior relations, especially with India, both north and south. While India lacks such a continuous record of its history, it too has several literary sources that assist in historical reconstruction. The *Sangam* literature is one such major literary source of South Indian history that provides a comprehensive record of South India during the early years of the Common Era.

The archaeological record, which includes excavated material, art and architectural remains, epigraphic and numismatic evidence, not only reinforces some of the historical evidence but often provides further information that is unavailable in historical sources. Likewise, regarding South India-Sri Lanka relations, the archaeological record has reinforced the evidence from historical sources and provided further information that was historically unknown or had been overlooked. Thus, the archaeological sources are of great importance to understanding the close contacts between South India and Sri Lanka.

Sri Lanka's contacts with South India were diverse. They ranged from marital to religious, invasions to military alliance and, of course, trade. These relations are evident through both historical narratives as well as archaeological sources. These interactions are far beyond the general perception of discordant relations between Sri Lanka and South India. While the relations discussed in this chapter

are mainly state-level contacts, underlying these it is probable that stronger ties would have existed between the general populace of the two neighbouring regions. Everyday meetings between the fishermen of the two countries, as suggested by Pieris (1919, 65), could have created stronger and regular contacts at a personal-level than the state-level interactions. Unfortunately, neither texts nor artefacts readily reveal such interactions. The analysis of objects of personal adornment from the two regions is an attempt to venture into such uncharted territory. It is envisaged that this historical/archaeological background will provide the necessary first steps to undertake this challenge.

CHAPTER 3:

THEORETICAL AND METHODOLOGICAL PERSPECTIVES

This chapter outlines the theoretical perspectives related to the main themes of the thesis and the methodology adopted in the research. The first section deals with theories related to material culture studies which demonstrate the importance of studying artefacts of personal adornment in order to understand the interactions at a personal-level between the people of Sri Lanka and South India. After this the methodology used in this research to analyse archaeological evidence is discussed. The methodology followed in the ethnographic study is described in Chapter 7.2.3.

3.1 Material culture theoretical approach

This thesis endeavours to explore how the interaction between Sri Lanka and South India in the early and middle historic periods could be illustrated through the material culture of personal adornment. The material culture of personal adornment represents an intimate association with the wearer, and would thus provide a clearer picture of the interactions between the peoples of Sri Lanka and South India, counter to the state-mandated, large-scale interaction that is often in the limelight. In so doing, theoretical discussions on human and object agency, identity, and object biographies will be touched upon to set the theoretical basis of this thesis.

Social and individual identity is of great importance to humans both to be a part of a group or a community, as well as to distinguish one's self from others. In

Fowler's view "identities … consist of relationships, which show up similarities and differences through social interaction" (Fowler 2010, 353). Identity and its scope in archaeology, is considered as "part of a perilous, but necessary, search for the things that bind and divide human groups locally and globally" (Gosden 1994, 166). At least since the early 20th century, a wide range of discussions has taken place on identity and its representation in archaeology. Childe was among the first to contribute to this discussion and in his view, cultural identities were traditional and stable and changes were gradual unless in the case of a socio-economic crisis or population replacement which established a new cultural identity (Childe 1926). In the 1960s, sociologist Ward Goodenough (1965) developed the concept of 'social persona', arguing that this is a combination of the social roles played by a person, determined by one's relationship with another. This concept was taken up by processual archaeologists such as Binford (1971). He utilized it to interpret mortuary practices and hypothesized that the number of roles composing one's 'social persona' was proportional to the importance of the person in society, hence the more elaborate a burial was, the higher the social status of deceased (Binford 1971, 17). According to Binford, grave goods were a representation of social status. Nonetheless, Shanks and Tilley (1982) argue that this may not always be the case as mortuary practices may sometimes hide or alter the real identity and social status of the deceased. The essence of these discussions is that the material culture that people associate with embodies their social and individual identity and thus the material culture that people produce and interact with in turn creates identities for people. Fowler (2010, 359) sums up that "…the process of objectification is also a process of personification. Identities are produced out of the ongoing interactions between people and things, not just different groups of people".

The book *The Archaeology of Identities* edited by Timothy Insoll (2007) contains a wide range of theoretical discussions on identity, including ethnicity and nationalism, gender and sex, class, caste, ideology and religion and the body. Such identities can be expressed through objects of personal adornment and the traditions of personal adornment that vary from community to community. This reflects the individuality of the wearer and/or maker of adornments as well as the society they lived in and their social circumstances. The use of the body as a medium of expression is a widely discussed subject. Meskell and Joyce in their book *Embodied lives* (2003) broadly discuss, with examples from their studies in Egypt (Meskell 1999; 2002; 2007) and Central America (Joyce 1998; 1999; 2000; 2002), the human body embodying social identities and how jewellery has been used to make modifications to the body in order to create different expressions. They discuss how, through bodily processes, the body becomes an object, “an artefact in and of itself” (Meskell and Joyce 2003, 128).

Symbolism and associated values are also expressed through body beautification. For example, Stine *et al.*’s work (1996) on blue glass beads from African-American burials of South Carolina and Georgia presents interesting information on the values, identity and symbolism associated with personal ornamentation of particular communities. Steiner demonstrates how adorning the body with tattoos, body painting, masks and crowns, is used as an expression of political leadership among communities in Polynesia, Melanesia and West Africa, drawing from several ethnographic studies (Steiner 1990, 431–445).

Likewise, Bvocho (2005), through his work on ornaments in the archaeological record of Southern Zimbabwe, demonstrates how glass beads, which constitute

the majority of ornamentation retrieved from archaeological sites, are ‘chronological markers and communication devises’. In this study it was observed that the occurrence of patterns of beads demonstrates changes over time and could express social messages through symbolism. Ţurcanu’s study of Cucutenian body ornamentation in Eastern Europe deals with the different raw materials used in the production of these ornaments. He concludes that ornaments had little utilitarian value but “they protected, identified and kept the place of an individual in society and in the surrounding environment” (Ţurcanu 2013, 76). These are a few examples of the studies carried out on the role of personal adornment as expressions of identity and symbolism within different communities.

In addition, the volume edited by Sciama and Eicher (1998) contains a number of articles that discuss different expressions through beads across different cultures and countries. Carey (1998, 83–93) presenting a discourse on gender roles expressed through their use of beads, Meisch (1998, 147–175) discussing how different coloured beads represent ethnicity, gender wealth and even religion within communities of Ecuador and Janowski (1998, 213–246) describing how beads are prestige markers among the Kelabit community in East Malaysia, are some examples of the use of beads as expressions of individual and social identity.

In processual archaeology, the material culture recovered from archaeological sites is studied without shedding light on the associated individuals. Hodder, who presented views on the concept of the “Indian behind the artefact” (Braidwood 1958), argues that contrary to the view that the aim of archaeology is to discover

the system in which the Indian and the artefact is found (Flannery 1967), material culture is created by individuals and thus it does not merely reflect society but also actively forms society “through the actions of individuals” (Hodder 1986, 6). Thus, archaeologically recovered objects of personal adornment reflect the individuals who made, traded, wore and/or offered them. Although the individual and his thought process may not always be reflected in the archaeological record, by observing the patterns of material culture, inferences about practices of adornment can be made, even though the reasons behind such practices may not be so evident (Hodder 1986,5-6). Human agency is an important factor in understanding cross-cultural and cross-regional interaction.

Development of the theoretical debates on material culture, have challenged the subject-object dichotomy and it has been argued that objects are not inert and passive. In fact, scholars such as Gell (1998), Gosden (2005), and Hodder (2012; 2011) argue that objects have the power and ability to act independently and influence human lives. Hodder, in his recent work *Entangled* (2012), discusses how humans and objects depend on each other. For example, without human agency, objects of personal adornment cannot come into existence. Artisans produce objects of adornment for those who wear them. Some of these personal adornments bear talismanic qualities. Thus, the wearers rely upon their amuletic adornment to safeguard them from evil. Object agency is involved here, where objects have meaning that affects the humans using them. Understanding the importance of object agency just as much as the human, sheds light on the associated values embedded in objects of adornment.

Tilley discusses objectification in detail and sums up stating “things change their meanings through their life cycles and according to the way they are used and appropriated and in the manner in which individuals and groups identify themselves with them” (Tilley 2006, 69). As Tilley rightly describes, these objects have been seen to have lives of their own. Appadurai, in his volume *The Social life of things* (1986) describes how, similar to humans, objects too have social lives. He explains his view by taking examples of commodities that increase or change their value as they are exchanged, as they move about in different contexts. The concept of object biographies was discussed by Kopytoff (1986), in the same volume edited by Appadurai. Kopytoff relates how a full understanding of an object can be gained only by following its entire life process and object identities are not static but evolving. Furthermore, he explains how these biographies would be affected by the cultural setting in which they occur.

Both of these scholars present the view that objects change from commodity to possession to heirloom. For example, the beads that I studied for this research, have passed through stages: firstly, in the hands of the artisans from raw material to individual bead form and then strung, individually or together with other beads, to make an ornament of adornment. This ornament then becomes a commodity that is marketed by traders, leading on to it becoming a gift or possession of the person wearing them. The ornament would become part of the wearer’s identity, either individual or social, and so it no longer is a mere object of personal adornment but an object of identification. It may be handed down from generation to generation and may lose the identity it bore with the original owner but would acquire new ones and become an heirloom object. The ornament may change its role as a ritualistic object, if the string of beads is deposited in a grave that

displays the identity of the wearer in a different way or is offered in a religious context, when it assumes the role of a religious offering rather than an object of personal adornment. Thus, it is clear that objects of personal adornment have their own life processes, in which they are entangled with humans.

Objects are capable of creating individual and social identities for people. Objects of adornment, whether permanent or temporary applications (tattoos, cosmetics) or external attachments (jewellery, flowers) express identity. A number of studies have been carried out on the different expressions displayed through objects of personal adornment throughout the world and how they create identity (Steiner 1990; Stine *et al.* 1996; Kassam and Megersa 1989; Meskell 2004; Bvocho 2005; Ţurcanu 2013). Nonetheless, it is difficult to always accurately identify the individual that made or used the object and the meanings he or she ascribed to the objects on the basis of artefacts alone. In this context, historical records are of great value in comprehending the possible meanings of personal adornment in the past societies. Ethno-archaeological studies could also be useful to make analogies with practices of past societies (Hodder 1982, 11–27; Binford 1967; David and Kramer 2001, 33–62; Wylie 1982; 1985). The archaeological findings relating to personal adornment from South India and Sri Lanka, in the period studied, have little historical evidence that reinforce the information on adornment practices during the said period. Thus, it is only possible for us to observe patterns of artefacts in archaeological contexts and make inferences based on them which may perhaps be at variance with the actuality of meaning that they carried in the past.

Human and object agency is entangled and while the objects that humans create, in turn create the identities of people. objects, like humans, have a life process—biographies—which add value to them. This understanding of the human-object relationship enables us to observe associated values embedded in objects of personal adornment, to identify the individuality and social relations of people and how these reflect the person to person interactions between Sri Lanka and South India.

3.2 Methodology

A detailed description of the methodology used in research is important to provide evidence of the procedures followed to produce the datasets that enable final interpretations. As part of the current research I have analysed artefacts of personal adornment recovered from seven different sites in Sri Lanka and South India and carried out an ethnographic study in order to observe and understand the nature of the interaction between the two regions through patterns pertaining to objects and practices of personal adornment. This data is compared to the published data from selected sites in Sri Lanka and South India, further information on which is given in Chapters 4 and 5. The procedures followed in analysing and recording the archaeological data are described in detail in the following sections, while the methodology followed in the ethnographic study is detailed in Chapter 7.

3.2.1 Analysis of archaeological data

Sample assemblages of objects of personal adornment from five different sites in Sri Lanka and two in South India were examined. All of these assemblages were excavated by different excavators and had been analysed following their own

methodologies (see chapters 4 & 5 for details). Nevertheless, I re-analysed these assemblages to gather datasets to enable interpretations for my research. Background descriptions of the sites and the reasons for choosing them are discussed in Chapters 4 and 5.

Bead assemblage analysis

As beads form the largest component of objects of personal adornment from the excavated sites, the classification of those beads was carried out drawing on the existing works of Beck (1928), Sleen (1973), Karklins (1985), Dubin (1995), Deo (2000), Hannibal-Deraniyagala (2001), Francis (2002; 2013a), Somadeva (2006), Wood (2009, 2011) as well as Bohingamuwa (2017) and developing my own classification method. Similar to many of the previous bead classifications, the main basis of mine is Beck's seminal work of bead classification (1928). He classified beads mainly according to their form but stated that occasionally their decoration may define them better than the form (Beck 1928, 2). He also mentioned the importance of recording colour, perforation, and raw materials used to make beads (Beck 1928, 51 – 59). He devoted the majority of his paper to defining the different shapes of beads by classifying them under five categories; namely, 'Division', 'Group', Sub-group', 'Family' and 'Class'. But the complicated nature of his classification of bead form required simplification for the present typology. Sleen's *A handbook on beads* (1973) provides a broad understanding of beads, their history and distribution as well as nomenclature and typology. In addition, it provides a glossary of terms used to describe glass beads. His typology, however, is mostly based on Beck's and is too vast. Dubin's work (1995) is helpful in understanding the worldwide distribution of beads made of various materials. The illustrated bead chart which gives the timeline of beads

across the globe provides a broad understanding of different types of beads and their origin. In addition, the illustrated bead shape table makes his typology clear. All these works have identified and described a wide range of beads, that are absent in the assemblages I looked at and, do not contain descriptions of certain beads specific to South and Southeast Asia.

Different bead types recovered from Indian sites and the symbolic meanings behind them are described by Deo (2000) and have been helpful in the broader discussion of this thesis. However, his typological classification is not very helpful because he lists a vast number of shapes in which beads can be found but does not describe the shapes in detail nor provide illustrations. This makes his typological classification of little use to my work. Hannibal-Deraniyagala (2001), Francis (2002; 2004; 2013a), Somadeva (2006) and Bohingamuwa (2017) have all drawn from Beck but have tried to simplify the bead typology. All of these scholars have included bead types that are specific to South Asia in their typologies, such as Stupa beads. However, none of them have distinguished Red Disc Beads from regular Disc beads. Hannibal-Deraniyagala (2001) has considered only bead shape in her classification, arguing that classification of beads, based on their materials and colours, is less useful, because only 4% of her assemblage was made of non-glass material and 97% of beads were monochrome (Hannibal-Deraniyagala 2001, 204). Therefore, her classification lacks identification of Indo-Pacific Beads (IPBs) and Red Disc Beads (RDBs). Somadeva has mostly based his typology on Hannibal-Deraniyagala but has issues with material identification. The illustrations provided in both of these works are instrumental in understanding the typological classifications they have made.

Francis (2002, 19–26; 2004, 450–466; 2013a, 362–364) was the pioneer in identifying IPBs as a distinct bead variety, and he considered raw material, colour, size and manufacturing technique for this identification. He also discussed RDBs and traced their origin back to Sri Lanka but did not classify them as a separate bead type (Francis 2002, 136). He has classified his beads under material, colour, method of manufacture, form, diaphaneity, size, decoration and perforation (Francis 2002, 13–15). In addition, he recorded the roundness of IPBs (Francis 2002, 25). Bohingamuwa's bead classification (2017, Vol. II 16–25) includes all of Francis' criteria except the 'roundness'. However, Bohingamuwa also recorded both eye colour and munsell colour, length, diameter, weight, media, type (similar to "structure" in Wood's classification), finishing, surface lustre and end treatment of beads as well as their probable origins. However, his typology considers Beck's 'Division' and 'Class' categories and makes typological comparisons difficult. Marilee Wood (2011, 68–70) follows a similar classification where she records, method of manufacture, end treatment, structure, shape, size, length ratio, diaphaneity, colour, lustre, uniformity in bead-shape, glass quality, patination and perforation. However, the variables within each criterion differ from those I recorded. The criteria recorded in these last three studies in particular, have been used in my classification. Where it is distinct from all these is its typology, which has been simplified to suit the assemblages I looked at.

During this research, the methodology of classification had to be adjusted to suit the availability of data and details of excavations as well as excavation methods followed at each site. Therefore, the general methodology will be detailed here and in chapters 4 and 5, where the sites and assemblages are discussed, the

variations carried out to suit the available data will be explained. Bead data was recorded under the attributes listed in Table 3.1.

Every single bead from each assemblage was examined and separated according to the context in which it was recovered. Each bead was given a unique identification number and placed in a small zip-lock bag. Beads found in the same context that were similar in colour, size, production method, diaphaneity and surface lustre were given a single number, but such occurrences were rare. Fragments bearing the same features were grouped together and recorded under a single unique identification number. In doing so, it was not possible to avoid RDB fragments of slightly different shades of munsell colour and surface lustre being classified together. The unique identification number contains three parts, site code, context number from which the bead was recovered and a serial number starting with 'B' to indicate bead (eg.: MA/24/B950). The site code of each site is given next to its name in Chapters 4 and 5. The data from the analysis was recorded in a database and this is presented in the appendices A to G. The data records are sorted in ascending order of the context number. All beads analysed were quantified. They have also been photographed individually and in groups.

Bead shapes

The bead typology recorded in this database, is self-developed, drawing from the previous classifications of, particularly, Beck (1928), Hannibal-Deraniyagala (2001), Francis (2013a), Wood (2011) and Bohingamuwa (2017). My typology is mainly based on the transverse and longitudinal profiles of the bead, as described by Beck (Figure 3.1). Any bead that falls into the category of special bead type/pendant according to Beck, was categorized directly by its specific name,

such as collar bead, cornerless cube bead or melon bead. Shapes which cannot be described in geometrical forms are classified as irregular shaped beads. In addition, Red Disc Beads (RDB) are classified as a separate type different from the disc beads, due to their distinct nature, material, colour and size, unlike in previous research where they were not distinguished from disc beads based on these criteria. RDBs are a unique and significant type of bead (Chapter 6.2.1), thus categorizing them as disc beads would not enable them to be properly assessed. Similarly, cornaline d'Allepo and longitudinally striped beads are classed as different types from the general beads due to their multiple coloured layers.

Raw material

Raw materials used in bead production are indicative of their accessibility, the preferences of the wearers, as well as the symbolism associated with them. Raw materials are also sources for understanding external interactions. By recording the raw materials used, their sources and patterns were observed. The recording of raw materials was done using two variables, medium and material. Medium is a broader category into which several raw materials fall (Appendix A.1–G.1). The media used for bead production across the assemblages that I analysed are limited to the following,

- synthetic—material which has undergone a chemically altering process
- stone—precious and semi-precious stones
- organic—floral or faunal material
- metal
- unknown—medium could not be identified.

Following the recording of media, the raw material was recorded. Glass, clay/terracotta, faience and material suspected the be any of the former (noted with a "?", e.g.: ?glass) are raw material in the synthetic group (Appendix A.1–G.1). The stone varieties commonly recorded under stone medium are carnelian, quartz, garnet and amethyst and occasionally those such as agate and lapis lazuli. Previous training courses (Indian Ocean trade and the archaeology of technology: Personal Adornment from Pattanam and beyond—organized by Kerala Centre for Historical Research, India and the British Museum in 2013, and Short Term Course cum Workshop on History, Science & Technology of Stone Beads—Organized by IIT Gandhinagar, India in 2015), guides to precious and semi-precious stones (Pellant 2002; Hall (1994) 2002; Pough (1953) 1996) as well as identifications made by previous analysts of the assemblages (for e.g.: Bohingamuwa 2017) were helpful in identifying the raw materials used. However, the raw materials used in some beads remain unidentified and are thus recorded so that they may be identified in future studies (Appendix A.1–G.1).

Bead colour

Colours often carry meanings that go beyond aesthetic values (Stine *et al.* 1996; Young 2006). The choice of colours used across sites over time is an important aspect in this research. Therefore, bead colours were recorded, and this was done using two approaches. The colour perceived by the naked eye of the author during analysis was recorded under broad colour group. Red, green, blue, yellow, purple, black, white and clear are the broad colour groups. Brown, orange, pink and maroon colours were grouped under red colour in order to minimise the variety of colours. Also, because identification of colours is subjective, classification was done under these broader colours. However, for more accurate

and detailed identification of colour, Munsell colour readings of each bead were also taken using the Munsell bead colour book (2012) as the second approach. This was done to indicate the variability within each broad colour group (Appendices A1–G1).

Table 3.1: Bead attributes recorded

Variables recorded	**Explanation**
Shape	Typology was based on the transverse and longitudinal profiles of the beads
Broad colour group	Colour as perceived by the analyst
Munsell colour	Reading from Munsell Bead Colour Book (2012)
Decoration	Grooving lines, carvings, paintings, tampering coloured stripes or externally attached decorative pieces
Diameter	Length between the widest points perpendicular to the perforation, in millimetres
Length	Length between the points parallel to the perforation in millimetres
Weight	Measured in grams
Medium	Broader category into which materials fall (eg.: synthetic, stone, organic, metal)
Material	Raw material used to produce the bead
Method	Production technique used
Perforated	Whether or not the bead is perforated
Fragmented	Whether or not the bead is fragmented
Indo-Pacific Beads (IPB)	Whether or not the bead is an IPB
Finishing	Condition of the bead's completion, i.e.: finished, half processed, waster or natural
Diaphaneity	Amount of light that passes through a bead
Surface lustre	The shininess of the bead surface

Decorations

Occasionally, decorations are made on beads which may be indicative of provenance and/or technical skills, as well as the interests of the wearers (Bohingamuwa 2017). Any intentional patterns made on beads are decorations

and if any such patterns were present they were recorded with a brief description. These decorations include grooved lines, carvings or painted decorations on the bead. They also include beads with different coloured stripes. Sometimes there can be beads with externally attached decorations, although none were present in the assemblages I studied.

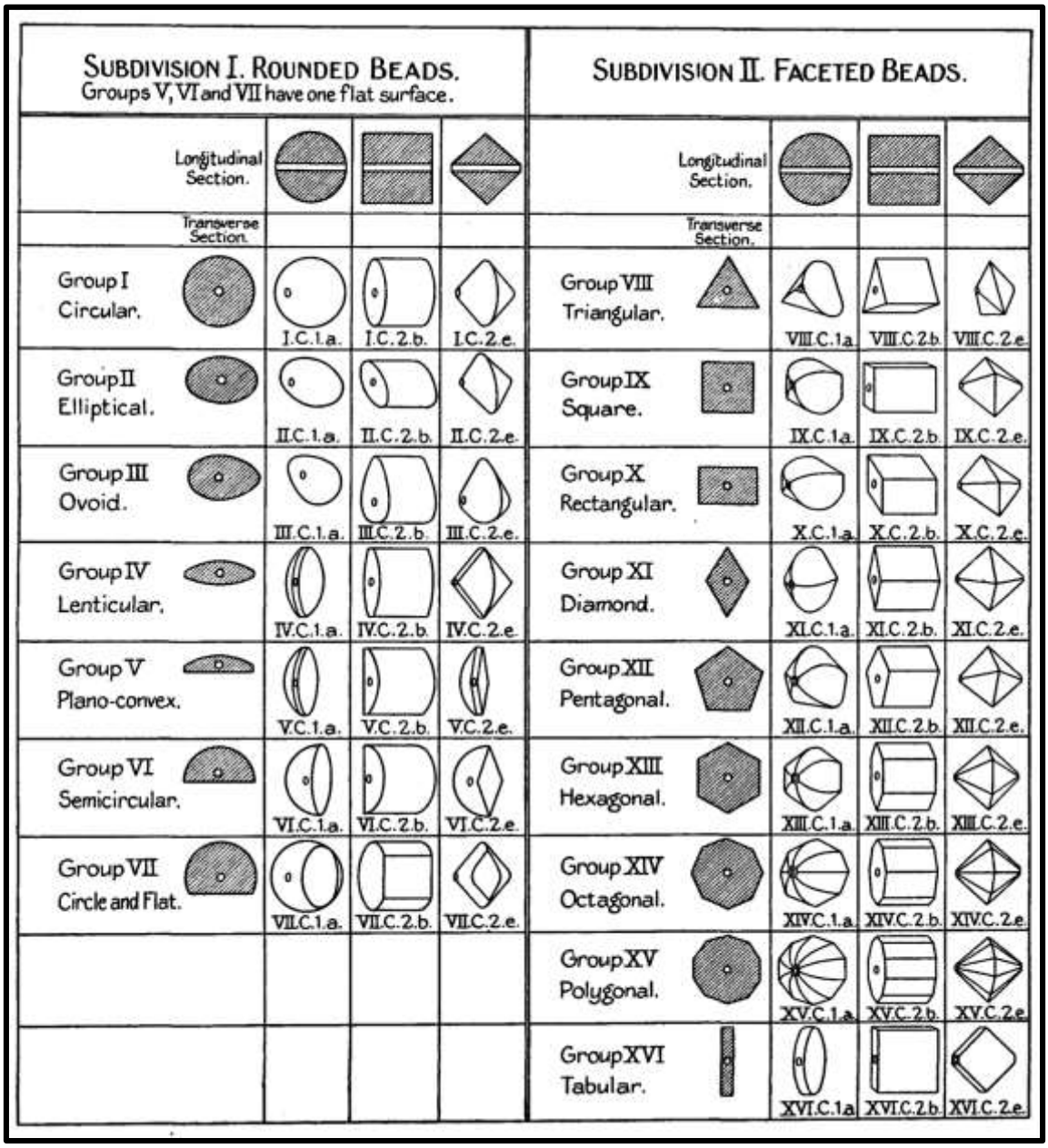

Figure 3.1: Transverse and longitudinal profiles (Beck 1928, Plate I)

Measurements

The diameter of a bead is measured along the widest point, perpendicular to its perforation. The length is the distance between the two ends, along the axis (Beck 1928, 2; Figure 3.2). All these measurements were taken in millimeters using a digital Vernier caliper (Silverline professional digital Vernier caliper – 150mm/6”-380244). The weight of each bead was also recorded, in grams, using a jewellers digital scale (Mini digital scale- Item no.:YHS-01).

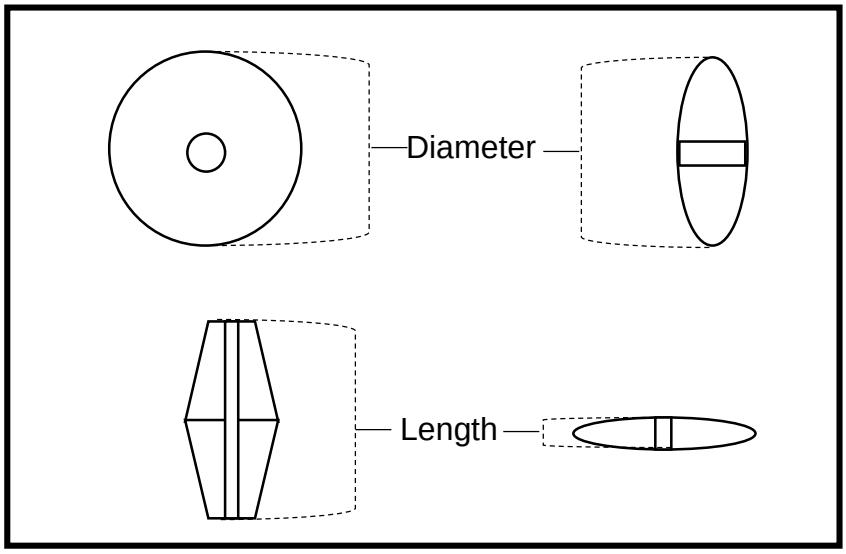

Figure 3.2: Diameter and length of beads

Method of manufacture

Method of manufacture is also an important feature in bead classification, especially for beads such as Indo-Pacific Beads (IPB) which are identified by their method of manufacture. In addition, it can indicate provenance and the transfer of technology. Glass beads are mainly manufactured using four methods; drawing, winding, folding and moulding (Francis 2002, 11; Sleen 1973, 22–27). There are other manufacturing techniques involved in producing beads made of other non-glass raw material. Bohingamuwa (2017, Vol. II 380–382) describes these methods which include, cutting, grinding, chipping and pressure flaking.

These methods have also been described in the works of Francis (2002), Kenoyer (1986; 1992; 2005), Kenoyer *et al.* (1991; 1994), and Kelly (2013).

Bead finishing

The finishing of a bead gives us information about the production processes and provides insights to on site production. Bohingamuwa, in the catalogue to his thesis (Bohingamuwa 2017, Vol.II), discusses the importance of bead finishing in identifying the provenance as well as 'onsite production' using foreign raw material, which may indicate the exchange of both finished products and raw materials. In addition, he provides explanations to the terms used to describe the bead finishing (Bohingamuwa 2017, catalogue vol. 1.1.4.2, 22; 383). Following Bohingamuwa, bead finishing was recorded under criteria of 'finished', 'half-processed', 'waster', 'natural' and 'unidentified'. Half-processed beads are those that were abandoned halfway through production, therefore, may lack drilling of perforation, polishing or heat treatment to round the edges. Some of the stone beads recovered as rough-outs or bead blanks fall into this category.

Production debris of beads fall into the waster category. For example, knotted tube ends, clusters of beads stuck during reheating, *gedda paru* flakes, beads with rough edges lacking heat treatment are wasters of IPB production (Francis 2002, 21–23; 2004; Kanungo 2016, 28–63). Stone debitage and beads deformed during manufacturing are also categorized as wasters. Finished beads have all the necessary processes completed. Occasionally, beads such as those made of fish vertebrae are turned into beads without altering their original form and therefore, are classified as Natural. Such beads, however, are rare. Fragmented

beads fall into the category of unidentified because fragmentation often prevents accurate identification of the finishing.

Diaphaneity and surface lustre

Diaphaneity and surface lustre are criteria that are especially important for glass beads (Grillo and Aultman 2014, 11–12) but readings for these properties were recorded for all beads examined in this study. These attributes demonstrate the technological advancements of the craftsmen at different sites. Diaphaneity defines the amount of light that travels through a bead. Light does not travel through opaque beads while beads through which light diffuses are translucent. See-through beads are recorded as transparent. The diaphaneity was determined by projecting a light beam through the beads and this translucency was observed by the naked eye. Similarly, the surface lustre of beads was recorded as mainly dull, shiny and very shiny with some other beads being recorded as dull with traces of shiny or very shiny surfaces. Some dull beads have traces of shininess which indicate weathering of the bead but not all dull beads are as a result of weathering. These variables were recorded through visual examination.

Other variables

Other variables that were recorded include whether or not a bead was perforated, fragmented or an IPB (Chapter 6.4). Occasionally, incomplete beads are left unperforated as the production process was not complete. In the case of fragments recording typology and dimensional measurements can be impossible or misleading in most cases. Except for RDB and Collar bead fragments, the exact type of the fragments is less likely to be identified. Moreover, whether or

not some fragments are IPBs is also doubtful because their finished dimensions are not availbale.

Non-bead assemblage analysis

Apart from the beads, I also analysed non-bead objects of adornment such as bangles and rings. Most of these objects were recovered in fragmentary form. A similar methodology to that of bead analysis was carried out in the analysis of non-bead assemblages, with some changes based on the nature of objects. These artefacts were also sorted context-wise and given unique identification numbers containing the site code, context number and a serial number, for example KR3/16/NB020. The serial number begins with NB, the acronym for non-bead to distinguish these from beads. The attributes of non-bead objects recorded during the analysis are given in Appendices A.2–G.2. Photographic records of these objects have also been made. The criteria under which data was gathered are given below in Table 3.2. Because most of the attributes are similar to those recorded for beads, only those specific to non-bead object analysis will be described here.

Measurements

All non-bead objects were also quantified and their thickness, width (Figure 3.3) and weight measured. The former two measurements are recorded in millimetres using the digital Vernier caliper (Silverline professional digital Vernier caliper – 150mm/6”-380244), while the latter measurement was taken in grams using the jeweller’s digital scale (Mini digital scale- Item no.:YHS-01).

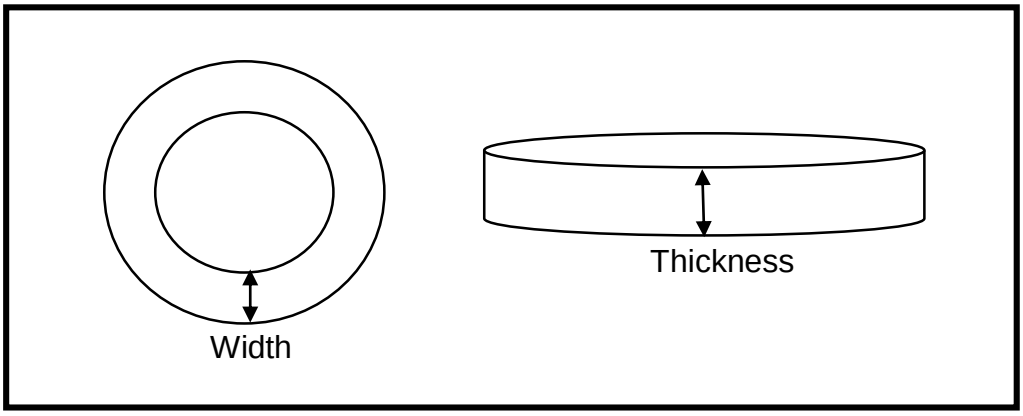

Figure 3.3: Width and thickness of bangles and rings

Table 3.2: Attributes of non-bead objects recorded

Variable recorded	**Explanation**
Object type	Whether the object is a bangle, earring, finger ring etc.
Broad colour group	Colour as perceived by the analyst
Munsell colour	Reading from Munsell Bead Colour Book (2012)
Decoration	Grooving lines, carvings, paintings, tampering coloured stripes or externally attached decorative pieces
Thickness	As displayed in Figure 3.3
Width	As displayed in Figure 3.3
Weight	Measured in grams
Medium	Broader category into which materials fall (eg.: synthetic, stone, organic, metal)
Material	Raw materials used to produce the bead
Cross section	The transverse section suggested by Beck (1928, Plate I)

Section

Most of the non-bead objects are fragments of bangles and rings. They are generally circular, semi-circular, plano-convex or rectangular in cross section (Beck 1928, Plate I). Cross sections are visible on the broken ends, most of them having a smooth breakage while some have rough breaks that distort the section profile.

Data recording and organisation

Both bead and non-bead data was recorded on a Microsoft Access 2016 database under the criteria described in the sections above. Having entered the analysed data, it was possible to ‘make queries’ using MS Access based on the gathered data to produce tables to observe patterns that display similarities and variations across sites and over time. The raw data from all the sites studied is given in Appendices A to G. The bead databases from each site are presented in Appendices A.1 to G.1 while the non-bead data is provided in Appendices A.2 to G.2. In Appendices A.3–G.3, data tabulated from the databases is provided. Appendix J contains photographic records of the beads studied.

The integration of archaeological data with ethno-archaeological studies and references to artistic representations and historical recordings, is expected to shed light on the close interaction between the general public of the two regions, though not without certain limitations.

CHAPTER 4:

SRI LANKA: SITES AND ASSEMBLAGES ANALYZED

4.1 Introduction

Objects of adornment in the archaeological record represent practices of personal adornment contemporary to the period. By observing and analyzing these objects, it may be possible to infer societal and individual choices. In this chapter, therefore, the Sri Lankan sites from which primary data was gathered are introduced, and an overview of the composition and distribution of the assemblages of material evidence recovered from these sites is presented. In the following chapter, South Indian sites and assemblages studied are presented. A comparison of data from Chapters 4 and 5 and in-depth discussions based on that data, is given in Chapter 6. The data supporting Chapters 4 and 5 is given in appendices A–G.

Five sites, including urban settlements, port and burial sites were selected from Sri Lanka for this study. These are the Anuradhapura Citadel (Gedige trench—AG), Kantarodai (KTD), Mantai (MA), Kirinda (KR3) and Ibbankatuwa (IBB) (Figure 4.1). The Anuradhapura Citadel and Kantarodai are both urban settlement sites, while Mantai is a coastal trading site with evidence of craft production. Kirinda is also a coastal site, but much smaller in scale compared to Mantai. Ibbankatuwa is the only burial site studied for this research, and is one of the important Megalithic burial sites in Sri Lanka. These sites, which will be described in detail in the following section, are located from north to south of the island, covering the major areas of early settlements. By choosing sites of different natures it is possible to compare the patterns occurring across

assemblages over time. In addition, barring Ibbankatuwa, the sites have clear stratigraphy and have been satisfactorily dated. After describing the sites and their excavation histories, I will discuss the material evidence recovered from each site and the assemblages analyzed in this study. This will then provide the foundation for discussion of the patterns emerging from the different categories of objects, namely beads, bangles, rings, and pendants. Assemblages will be compared, based on their morphological features across time, to observe emerging patterns. This assemblage overview will provide the means to detect and interpret interaction between South India and Sri Lanka through the vehicle of personal adornment practices.

4.2 The sites

4.2.1 Anuradhapura Citadel urban settlement site (AG)

The background to Anuradhapura was introduced in Chapter 2. Anuradhapura is an important city in the history and archaeology of Sri Lanka. In the early decades of Sri Lankan archaeology, the focus was on recovering and restoring the great monuments that supported the historical narratives of the chronicles. However, it was important to understand the habitation of the island in the Proto- and Early Historic periods through archaeological investigations, particularly as the descriptions in the chronicles are murky (Deraniyagala 2004, 707–709). An area of about 100ha. with 8–10m deep habitation deposits was identified as the Citadel of Anuradhapura, which was central to the human habitation that later expanded to the peripheral areas, where the large scale monuments can be found (Deraniyagala 2004, 715).

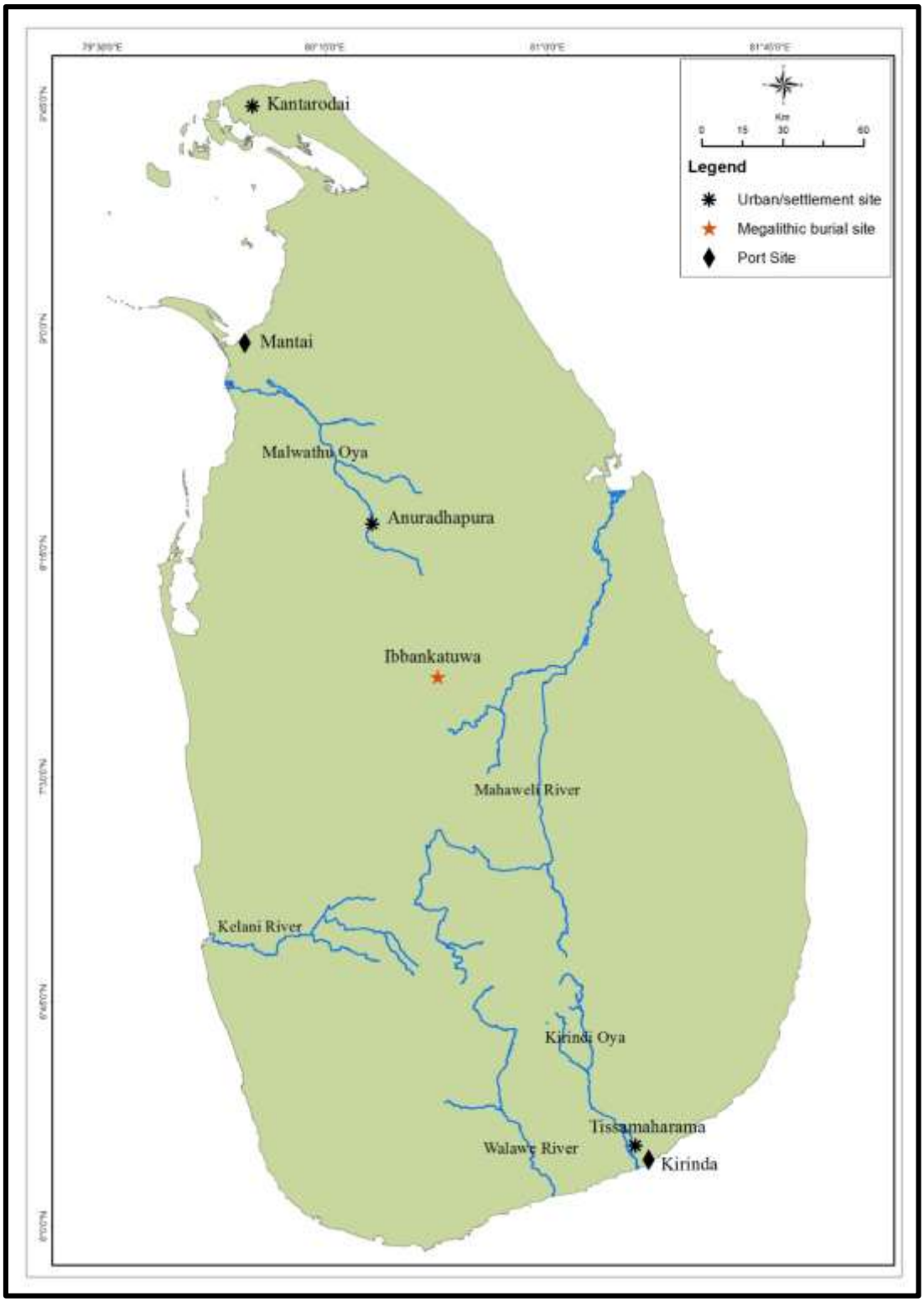

Figure 4.1: Important sites in Sri Lanka in the Early Historic Period, including the sites under discussion

According to Deraniyagala, the Anuradhapura Citadel area (Figures 4.2 and 4.5) was the best site to study the cultural sequence of Sri Lanka, as it represented the Protohistoric period onwards. Prior to Deraniyagala, several other

archaeologists, such as Ayrton (Hocart 1924, 48–54), Paranavitana (1936), P. E. P. Deraniyagala (1958, G20–23), P. C. Sestieri (Deraniyagala 1960, G-26–31) and Godakumbura (1961, G69–71) had carried out excavations at the site.

The excavations at the site carried out by S. U. Deraniyagala (2004, 707–738) in particular, have revealed important information about the island's periodization, site formation and settlement patterns. With its deep stratigraphy, this settlement site has yielded information about the inhabitants at the site right back to the Mesolithic period. Deraniyagala (2004, 707–714) provides extensive details of the excavations carried out, the findings and the periodization established through the dating obtained from the excavated sondages. Thirteen sondages were excavated, each of which yielded an average 10m deep cultural deposit and 45 reliable radiocarbon dates were secured from sealed habitational contexts. According to the dates, the contexts were separated into seven different periods, ranging from 3900BC in the Mesolithic period to AD100–300 in the Upper Early Historic period. The dates assigned for these seven periods by Deraniyagala (2004, 740–741) is as follows:

i. Mesolithic (*c.* 3900BC)
ii. Postulated Mesolithic/Iron Age transition (Undated)
iii. Proto-historic Iron Age (*c.* 900–600BC)
iv. Basal Early Historic (*c.* 600–500BC)
v. Lower Early Historic (*c.* 500–250BC)
vi. Mid- Early Historic (*c.* 250BC–AD 100)
vii. Upper Early Historic (*c.* AD 100–300)

It has been shown that by 800BC, the Protohistoric settlement of Anuradhapura was spread across an area of 10ha, and by 700–600BC, this area extended to 50ha and Deraniyagala claims the settlement could be designated as a town

(Deraniyagala 2004, 709–710). While the excavations at the Anuradhapura Citadel remain prominent in the archaeological history of the country, it also provides the best chronological sequence applicable to the whole island. Further, the recovery of evidence of writing in the Basal Early Historic period (c. 600–500 BC), pushed back the date of *Brahmi* writing in the sub-continent for the first time (Deraniyagala 2004, 745–746).

Figure 4.2: Excavation at Anuradhapura Citadel - ASW trench (source: W. Bohingamuwa)

Anuradhapura Gedige is one of these 13 sondages (Figure 4.5), and was excavated in 1969 and then again in 1984/85 (Deraniyagala 2004, 715). Gedige was the first sondage to have been excavated in the Citadel with a 10m deep habitation deposit. Nineteen radiocarbon dates were secured from Anuradhapura Gedige (Deraniyagala 2004, 740–741). Artefacts ranging from ceramics, coins, iron slag, beads and bangles were recovered during both seasons. Anuradhapura Citadel is the core settlement area of the city and therefore, has been selected in order to study the assemblages of personal adornment objects so as to understand the practices of adornment of the inhabitants and possible

comparisons with the other sites studied in this research. The beads and non-bead objects of adornment recovered from the Anuradhapura Gedige excavation in 1984/85 were studied for the present research. Deraniyagala's periodization has been utilized for this site.

Figure 4.3: Ruined buildings within the Citadel

Figure 4.4: Ruins of Anuradhapura Gedige located in the Citadel

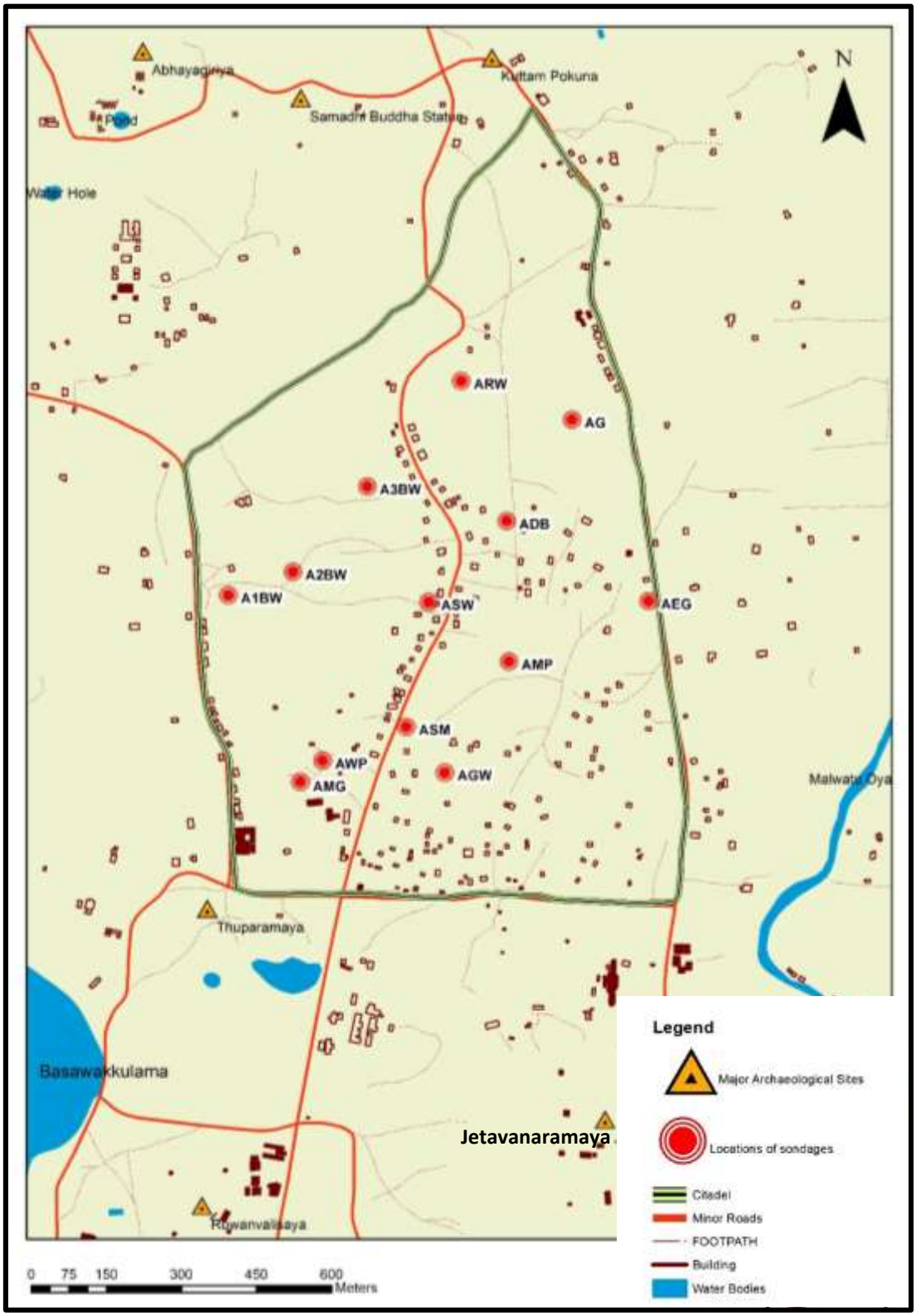

Figure 4.5: Map of Anuradhapura Citadel displaying the 13 sondages (modified after Deraniyagala 2004, 716)

4.2.2 Kantarodai settlement site (KTD)

Kantarodai is a village located in the Jaffna peninsula, in northern Sri Lanka (Figure 4.1). It is located in between the towns of Jaffna and Kankesanturai, adjoining Uduvil (Figure 4.6). The site is located approximately 10km from the shore. Historically, Jambukolapattana was reputed to be the port at which *Bhikkhuni* Sanghamitta arrived with the sacred Bodhi sapling in 3rd century BC (*Mv*:XIX.23–42). While the exact location of Jambukolapattana has not yet been identified, Pieris has argued that it was at Kankesanturai (Pieris 1917, 19). The historical evidence, supported by archaeological findings, suggests Kantarodai was in contact with the external world from a very early time. In addition, it was also connected to the capital Anuradhapura, with which it was contemporary, via the ancient northern highway (Vidanapatirana 2012; Nicholas 1961).

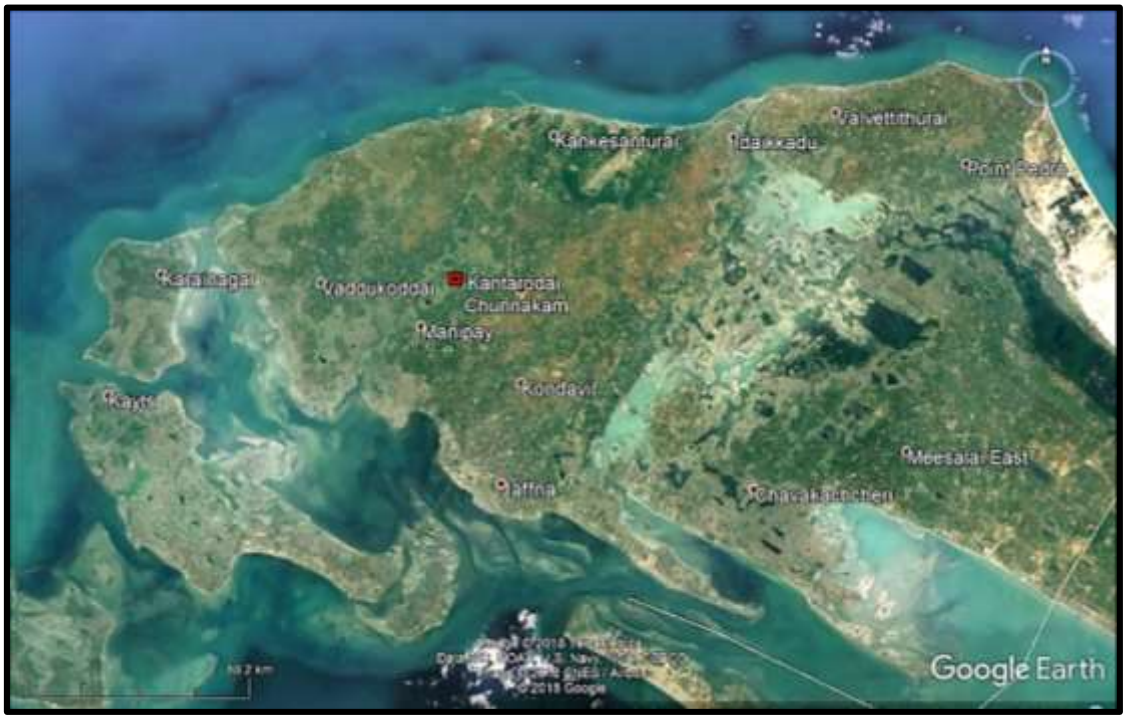

Figure 4.6: Kantarodai located in between Kankesanturai and Jaffna towns

Today, the site consists of two parts, the village proper and a palmyrah grove, within which Pieris first observed a series of mounds, which he identified to be stupas (Figure 4.7) and the area to be a Buddhist complex (Pieris 1917, 19–30;

Begley 1967, 23). The abundance of evidence of Buddhist monuments led Pieris to state that “Kantarodai appears to me to be a miniature Anuradhapura buried in the Tamil country” (Pieris 1917, 29). According to Begley, the habitation site was located few hundred yards from the Buddhist stupas, at the same place as the modern habitation area (Begley 1967, 24).

Figure 4.7: Restored stupas of Kantarodai, evidence of once flourishing Buddhism in Jaffna Peninsula

Research related to Kantarodai began almost a century ago, with scholars such as Paul E. Pieris, recording findings from the site from as early as 1917. During his explorations, he discovered large quantities of red disc beads (Figure 4.38; discussed further in Chapter 6.2.1) at the site, and glass beads both finished and half-processed (Pieris 1919, 65). In addition, he recorded finding kohl sticks (Figure 4.8), which he claims are of Egyptian origin (Pieris 1919, 61). Some of the very interesting discoveries he made were those of coins. He discovered *puranas*, a type of coin from ancient India (Pieris 1919, 46–47) and also punch-mark coins, which are recorded to have been discovered in villages along the Vaigai River in South India (Pieris 1919, 48). While he stated that some of these

coins appear to have been produced locally, the resemblance of coin types between the two regions is significant in understanding their interaction.

Also, he recorded, that according to McDowell, Assistant Superintendent of the Madras Museum, these ‘tree and swastika’ coins recovered from Kantarodai and South India are Buddhist coins belonging to the 2nd–3rd centuries BC. This indicates not only interaction between the regions, but also the early dates of these interactions, as well as religious networks. Vimala Begley’s exploration in northern Sri Lanka in 1967 (Begley 1967) recorded more recent information about the findings from Kantarodai. C. E. Godakumbura carried out an archaeological excavation of this site in 1967 (Godakumbura 1968) recovering artefacts similar to those found by Pieris.

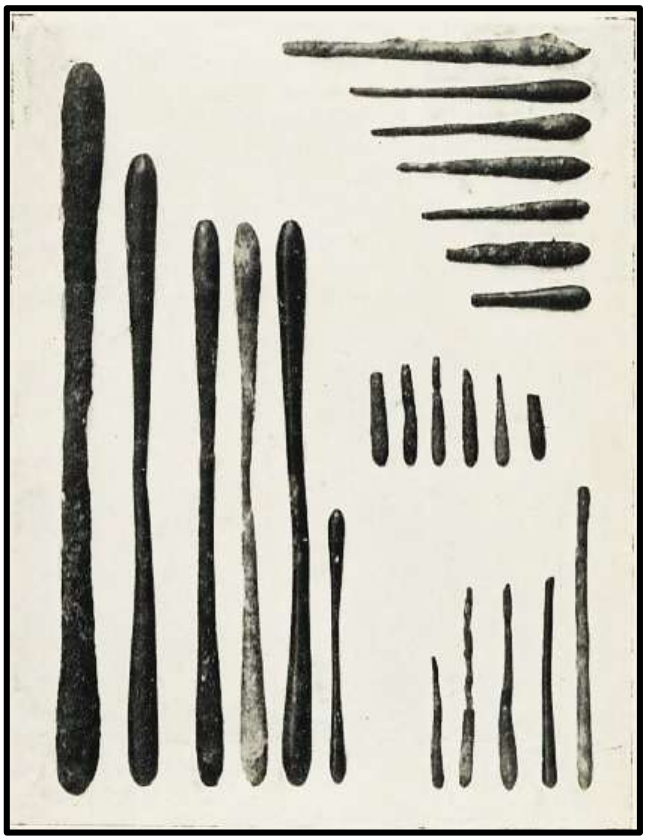

Figure 4.8: Kohl sticks recovered from Kantarodai by Pieris (Pieris 1919, plate VIII)

The most recent excavations at Kantarodai were carried out by the Department of Archaeology, Sri Lanka in 2011 (N. H. Perera 2013). Flotation sampling was carried out by Bohingamuwa for the Oxford University-based SEALINKS project, as part of their Sri Lanka project. The excavation took place about 500m east of the stupas, and the two trenches excavated were placed about 100m apart (Figure 4.9). By amalgamating the dates indicated by the two trenches, the occupational phase of the site has been dated to between the 5th and 1st century BC (Bohingamuwa 2017, 90). The present dating confirms that this site was contemporaneous with Anuradhapura, as well as Tissamaharama in the South of the island and the northwest coast site of Mantai. The array of artefacts recovered from this site, during the present and previous excavations and explorations, it is evident that the site was an urban settlement with important religious associations.

Figure 4.9: One of the two trenches excavated at Kantarodai in 2011 (Source: W. Bohingamuwa)

4.2.3 Mantai trading port (MA)

Mantai is located on the northwestern coast of Sri Lanka, on the mainland directly across from the island of Talai Mannar, 18km north of the Aravi Aru River, the lower reach of Malwatu Oya (Figure 4.1). The site is situated overlooking the Palk Strait and is located on the opposite coast from Alagankulam on the Coromandel coast of Peninsular India. Mantai was the main sea port connected to the capital, Anuradhapura, which was located 80km southeast of the site. Its geographical setting, as well as historical and other archaeological evidence, have established Mantai as a port that was a centre of east-west trade of the Indian Ocean, particularly in the Common Era (Carswell and Prickett 1984; Silva 1985; Carswell et at. 2013; Bohingamuwa 2017; 2018, 23–50). The site has been referred to as *Mahatittha, Mahatirtha, Matota, Mantottam*, in Pali, Sanskrit, Sinhala and Tamil respectively, all of which mean the ‘great port’. Mantai has been mentioned in foreign literature, both western and eastern (Chapter 2.4.1; Francis 2013b, 53–60; McCrindle 1885). Due to its importance as a trading port, Silva wrote about the site under the title “Mantai, a second Arikamedu?” (Silva 1985).

Figure 4.10: Aerial view of Mantai excavation site (2009/10) and the Mannar lagoon in the distance (Source W. Bohingamuwa)

Figure 4.11: Ariel view of the horseshoe-shaped Mantai site enclosed by the double moat (Carswell *et al.* 2013, 88)

The site at Mantai extends over an area of about 50 hectares and is enclosed by a double moat— raised earthen 'ramparts', giving the site an unusual horse-shoe shape (Carswell and Prickett 1984; Graham 2013, 92–93; Bohingamuwa 2017, 30–31) (Figure 4.11). This settlement mound is made up of a deep habitation deposit which is 10m thick (Bohingamuwa 2017, 31). The site is located adjacent to the pearl and chank banks of the Gulf of Mannar (Figure 2.4). The celebrated Tiruketeeswaram Temple is located inside the double moat. This Shiva temple has been referred to in a song by Suntaramurrti Nayana, who is believed to have

lived in the 6th century AD, which was translated by Boake (Carswell *et al.* 2013, 37–38). The material evidence recovered from the site, as well as historical records, demonstrate that it was not only a port site but also a settlement site where centres of craft production were situated (Kiribamune 2013, 46–47; Bohingamuwa 2017, 223–293).

The explorations in Mantai commenced as early as the 16th century (Carswell 2013a, 25–36). But a more serious approach towards investigating the site was adopted by W. J. S. Boake in 1886 (Boake 1887). The next such investigation was carried out by John Still, the Assistant Archaeological Commissioner, in 1907 (Still in Bell 1911). Hocart explored the area in the 1920s and carried out an excavation in 1927 (Hocart 1927). After this excavation was abandoned, due to arduous conditions, it was only in the 1950's that S. Sanmuganathan initiated another excavation (1951), followed by Raja De Silva in 1970's. During all these investigations, large quantities of local and foreign ceramics, chanks, beads both glass and stone, bangles of glass and chank, glass lumps, and semi-precious stones were discovered, further reinforcing the historical evidence for Mantai's external contacts.

The most extensive excavation carried out at Mantai was that of Carswell in 1983–84 and this attracted a lot of attention to Mantai internationally. An array of material was discovered and studied by specialists. The findings have provided valuable information about the far-flung trade contacts of Mantai. While this excavation also unearthed evidence of east-west trade links with Mantai, for example through the variety of ceramics from the Middle-East, India and China (Carswell 2013b; Mohanty 2013), this study also provided strong evidence for

bead production at Mantai and conclusive evidence that Mantai was a leading Indo-Pacific bead production site, contemporary to Arikamedu, Karaikadu (India), Oc-Eo (Vietnam) and Khlong Thom (Thailand) (Francis 2013). However, the excavation came to a halt due to political tensions on the island that occurred at the period. While the excavation covered a relatively large area of the site, the abrupt stop to the research and issues related to storage of artefacts, as well as the delay in publishing the findings, hindered the full potential of the project. Nonetheless, its ultimate publication in 2013 presented a wealth of information regarding the site, for future scholars to build upon.

The Oxford University based SEALINKS project, in collaboration with the Department of Archaeology Sri Lanka, University of Ruhuna and the Post Graduate Institute of Archeology, Sri Lanka, carried out a fresh excavation in 2009/10 as part of the SEALINKS Sri Lanka project (Figure 4.10). While this excavation was much smaller (a trench of 3x3m) as compared to that of Carswell, its importance lies in the establishment of a long chronology for Mantai and quantification of the entire assemblages of ceramic and beads in order to understand internal networks and external trade (Bohingamuwa 2017; 2018, 28). According to Bohingamuwa, the earliest date for the site is recorded as *c*. 1600BC and, after a probable occupational hiatus, the site sequence spans a time period between the 2nd century BC and 12th/13th centuries AD (Bohingamuwa 2017, 68–72; 2018, 23–50). Discoveries from the excavation have led Bohingamuwa to refute Carswell's claim (Carswell 2013b, 12) that Mantai's fall coincided with the Chola attack in the 10th century but rather that it continued for several centuries afterwards (Bohingamuwa 2017, 75–76; 2018, 28–29).

Its location, which led to constant contact with South India and interior sites within Sri Lanka, as well as the fact that it was an established production and trading site for Indo-Pacific Beads, makes Mantai a good choice to study objects of adornment. With the recent establishment of clear stratigraphic details and a well-dated site sequence, the comparison of Mantai assemblage to other sites studied enabled me to observe patterns and preferences related to adornment practices.

4.2.4 Kirinda port site (KR3)

Kirinda today is a small fishing harbour village and a tourist destination on the southern coast of Sri Lanka, about 10km south of Tissamaharama, in Hambantota district (Figure 4.1). Modern Tissamaharama has been identified as 'Magama', the capital city of the Rohana Kingdom founded by King Mahanaga in the 3rd century BC. According to the chronicles, Mahanaga was one of the ten brothers of King Devanampiyatissa (250–210BC), who escaped the capital Anuradhapura to evade death threats from the Queen who wished Mahanaga dead to ensure the heir to the throne was her own son (*Mv*:XXII.3–6). The Rohana Kingdom that was bordered by the River Walawe on the west and the River Mahaweli on the east was a strong regional kingdom within the island. Extensive archaeological investigations have been carried out at the site of Tissamaharama and the site has a long chronological sequence from *c*. 4th century BC to the 9th/10th centuries AD (Weisshaar *et al.* 2001, 12; Schenk 2001, 61). A wealth of artefacts were discovered that indicate the site's urban nature and wide-spread interaction with the outer world, indicated by Roman coins, amphorae and Torpedo Jars and beads (Shenk 2014, 96). The site was contemporary to the capital Anuradhapura.

Figure 4.12: Kirinda excavation site and the jetty in the distance (Source: Wijerathne Bohingamuwa)

Kirinda, on the other hand, is a port site of much smaller scale, especially in comparison with Mantai. The original mound at the site was disturbed during the construction of the new fisheries harbour (Somadeva 2006, 143). The site is located west of the present day harbour and there is an elevation of rock boulders further west from the site, atop of which the ancient temple, *Kirinda Rajamaha Viharaya*, is located (Figure 4.12 Figure 4.13). The site is located about 500m east of the temple. According to the chronicles, Princess Devi, who was later called Viharamaha Devi, due to her strong affiliation to Buddhism, came ashore at this location, having been sacrificed to the ocean at the time of a Tsunami (*Mv*:XXII.13–22).

Figure 4.13: Kirinda Rajamaha Viharaya located west of the KR2 and KR3 trenches of 2013 Kirinda Excavation and the present day fisheries harbour (Source: Google Earth)

Somadeva, who excavated several sites in the Lower Kirindi Oya Basin (LKB), excavated the trench at the Kirinda port and recovered a 2.70m soil deposit containing four cultural layers. He dated the earliest occupational levels at the site to 260–30BC and the latest level to AD 1400–1500 (Somadeva 2006, 156, 172–174). He further claims that the basal gravel level suggests prehistoric hunter-gatherer occupation (Somadeva 2006, 174). The assemblage of personal adornment objects studied for the current research are from the recent excavation in 2013, carried out under the Southern Sri Lanka Ports Project, a sub project of the Oxford University based SEALINKS-Sri Lanka Project, in collaboration with the Central Cultural Fund, Sri Lanka. While two trenches were excavated at this site, the current research will only focus on one trench, KR3, where the occupational sequence dates from the late 3rd/ 4th centuries to early/mid-8th–9th centuries AD (Bohingamuwa 2017, 99–100). The KR3 trench is located about 100m away from the ocean. The site sequence runs across three cultural phases, the first of which is sub-divided into three periods (Table 4.1). The cultural phasing

and site chronology were determined by radiocarbon dates and the cultural material recovered.

Table 4.1: Dates of Kirinda cultural sequence (Bohingamuwa 2017, 99–100)

Phase	**IA**	**IB**	**IC**	**II**	**III**
Date	Late 3rd–Mid-7th C. AD	Late 4th–Mid-7th C. AD	Mid/late 7th to early 8th C. AD	Early/mid-8th C. AD	Early/mid-8th to 9th C. AD

The importance of this site is that it represents a small non-urban, harbour site that would probably reveal objects of personal adornment chosen by a non-elite population and therefore provides an interesting comparison with other urban settlements and international port sites studied in this research.

4.2.5 Ibbankatuwa Megalithic cemetery (IBB)

Ibbankatuwa is one of the best studied Megalithic burial sites in Sri Lanka. Unfortunately, the excavation reports remain unpublished and the data gathered has not been fully utilized (Karunaratne 2010, 181). The site is located 5km from Dambulla in Matale district in the Central Province (Figure 4.1). Megalithic burials are a significant feature of the Protohistoric Iron Age culture of both South India and Sri Lanka. The Protohistoric period in the Sri Lanka has been studied since the 1960s (Deraniyagala 2004, 708) and more extensively since the 1980s (Bandaranayake and Somadeva n.d.; Seneviratne 1984; Karunaratne 2010). While the main feature of the Protohistoric Iron Age is the appearance of iron technology, among other significant characteristics are swidden agriculture, Black and Red Ware (BRW) pottery, horse, domestication of cattle and Megalithic burials (Deraniyagala 2004, 709). Megalithic burials have received strong recognition in the research studies on this period. The importance commanded by Megalithic burials has led to the occasional use of the term ‘Megalithic Period’ in place of Protohistoric Iron Age period. The use of large stones—the ‘megaliths’,

to construct their burials, either using them to make cists or as large capstones for urn burials or large menhirs, has been identified, particularly in South India (Nagaraja Rao 1971; Seneviratne 1984b; Rajan 1990b; Selvakumar 1996; Mushrif-Tripathy, Rajan, and Walimbe 2011; Poyil 2013). These burials are limited in variety in Sri Lanka but their occurrence is wide-spread, particularly, but not exclusively, in the dry zone (Seneviratne 1984b; Bandaranayake and Somadeva n.d.; Somadeva 2009).

Figure 4.14: Cist burial structures at Ibbankatuwa Megalithic burial site (Source: Amalka Wijesuriya)

The Ibbankatuwa burial site (Figure 4.14) is not only one of the largest Protohistoric cist burial sites discovered in the country, but it is also the only site where the corresponding settlement site has also been excavated (Karunaratne 2010, 179–180). The burial site is located about 200m west of the western edge of the settlement site overlooking the floodplain of the Dambulu Oya. The site is located across a slightly higher area and spread over 700x400m (Karunaratne 2010, 180). The site has 42 clusters of cist burials, with about ten burials per cluster (Bandaranayake and Somadeva n.d.).

The Ibbankatuwa burial site was first identified in 1970 and Raja De Silva, the then Director General of Archaeology in Sri Lanka carried out the initial investigations. Subsequently, in 1982 there was a preliminary exploration and then in the following two years excavations commenced as part of the Sigiriya and Dambulla Cultural Triangle project (Bandaranayake and Somadeva n.d.). Towards the late 80s, under a collaborative project partnering the Central Cultural Fund (CCF), Postgraduate Institute of Archaeology, Sri Lanka (PGIAR) and the KAVA (Kommission fur Allgemeine und Vergleichende Archaologie) new excavations began and cluster 21, one of the largest burial clusters at the site was investigated. By the end of the excavations, 24 cist chambers within this cluster were excavated and another 26 free standing urns were recovered and taken to laboratories for further investigation. None of the burial chambers contained any complete or partial skeletal remains. A cremation pit was also discovered on the northern edge of cluster 21 (Karunaratne 2010, 182–184).

The Ibbankatuwa settlement site is located 150m southwest of the Dambulu Oya and to the east of the burial grounds (Karunaratne 2010, 110–111; Figure 4.15). The settlement area is also located on higher ground. Several seasons of research has been carried out at the settlement site as well, initiated by the PGIAR-CCF-KAVA project and then in the 90s the investigations were carried out under the SAREC project (Swedish Agency for Research Cooperation with Developing Countries) with the Settlement Archaeology Research Collaboration Project (SARCP).

According to Karunaratne, who in his thesis discusses the site formation and settlement pattern of Protohistoric sites, there are “several hundred cist tombs

made of granite slabs" spread across "more or less 42 burial clusters" (Karunaratne 2010, 110–111). The present research has included the study of an assemblage recovered from cluster 21. The radiocarbon dates from cluster 21, shows that the burials were in use at least from 600BC. The dating from the settlement site suggests its occupation "at least from the Protohistoric/Early Historic (PH/EH) transition phase [cal. 4th–3rd century BC] to the Middle Historic period" (Karunaratne 2010, 123–124). However, Karunaratne discusses the findings from only the PH/EH and the Early Historic (*c*.200BC–AD 100) phases.

Thus, Ibbankatuwa is contemporary to Anuradhapura Gedige and Kantarodai. Furthermore, being a burial site, information directly related to individuals can be inferred through the recovered objects of personal adornment. However, one of the drawbacks of this site is the lack of contextual details for the artefacts studied, which hinders the possibility of observing changes across time. Instead the broad time span of the site's occupation will be considered as the date of the entire assemblage.

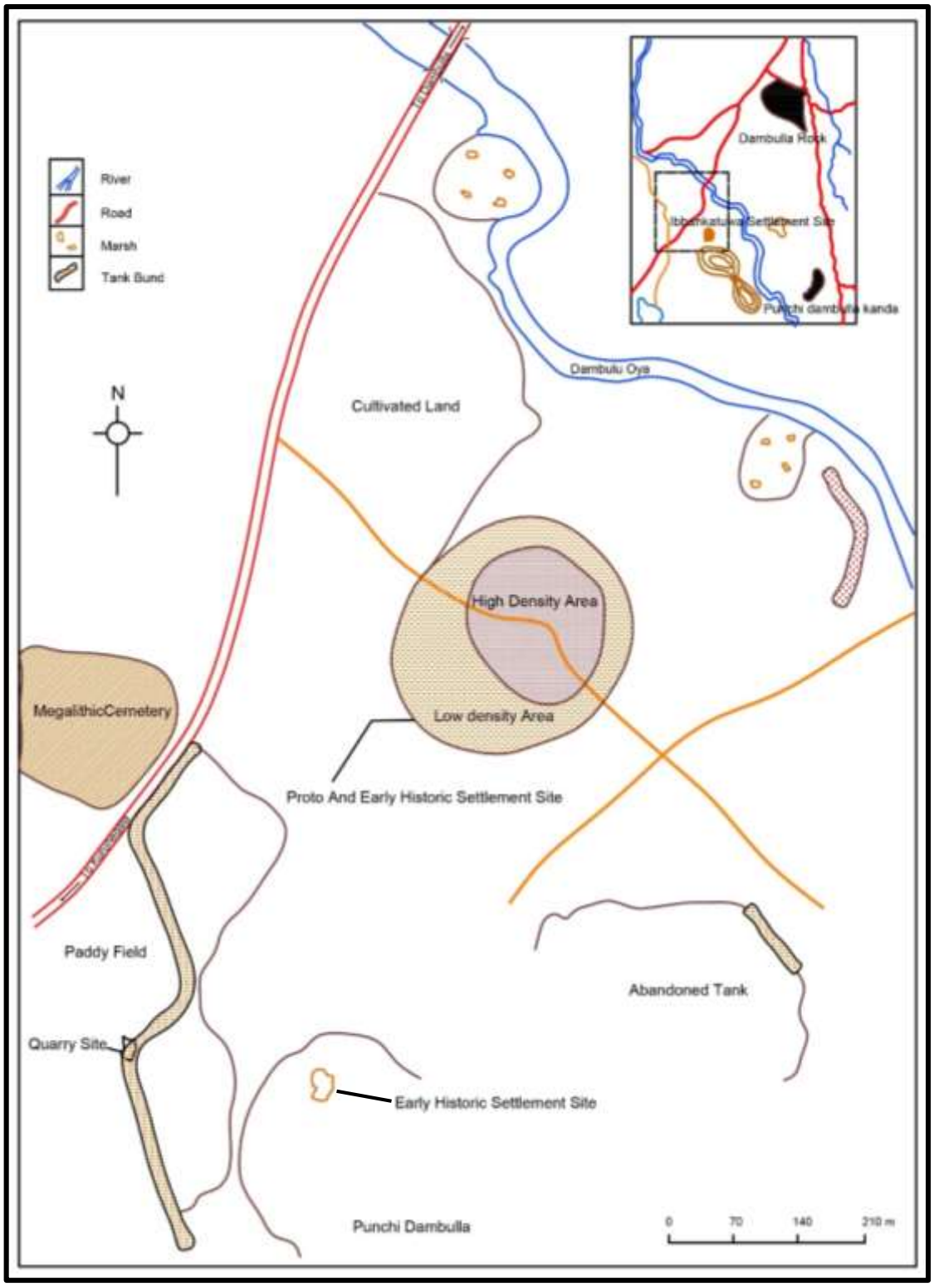

Figure 4.15: : Ibbankatuwa site plan: Megalithic burial and settlement sites (modified after Karunaratne 1994, 106)

4.3 The site assemblages

Having described each site, this section describes the assemblages of objects of personal adornment recovered from them and particularly the assemblages that I was able to study. The composition of each site assemblage analyzed is presented in this section in order to give an overview of the assemblage size and the range of materials within it. A total of 6,945 beads and 91 non-bead objects of personal adornment, which includes bangles and finger and earrings, mostly in fragments, were analyzed from the five sites. These artefacts were mainly classified on the basis of their morphological features. All of the data arising from the analyses of these assemblages is presented in the appendices.

4.3.1 Anuradhapura Gedige (AG)

Bead and non-bead objects of adornment recovered from the Anuradhapura Gedige excavation, located in the Anuradhapura Citadel, carried out in the 1984/85 season were analyzed for this research. A preliminary report has been published on the Gedige excavation of 1984 (Deraniyagala 1986, 39–47) but detailed classification and analysis of the bead and non-bead objects of adornment have not been carried out until this study. The bead assemblage from the Anuradhapura Gedige site accounts for 2,925 beads.

Bead distribution by phase

The site sequence at the Citadel runs across seven phases (Chapter 2.31). There are four beads from Phase I, which is dated to 3900–1800 BC. These include three quartz fragments and a single garnet and their finishing shows they are all wasters. Phase II is undated and the only two beads recovered from this phase are also wasters (Appendix A1). The material from Phases I and II was excluded

in subsequent analysis because it is unlikely to provide any significant information relating to this study. Therefore, the bead total recovered from Phases III–VII is 2,919, and their distribution across the site sequence is shown in table 4.2 and Figure 4.16.

Table 4.2: Bead distribution across phases at Anuradhapura Gedige site

Phase	**III**	**IV**	**V**	**VI**	**VII**	**Total**
Dates	900–600 BC	600–500BC	500–250BC	250BC–AD100	AD100–300	
Quantity	**88**	**1670**	**163**	**540**	**458**	**2919**
%	*3.0*	*57.2*	*5.6*	*18.5*	*15.7*	*100*

The number of beads recovered from Phase III is small probably because it was a period when the Citadel was growing as a settlement. However, the number of beads increases significantly by Phase IV, which is dated to 600–500BC (Figure 4.16). This period is the Basal Early Historic, which also marks the discovery of early *Brahmi* characters inscribed on potsherds recovered from sondages AG, AMP and ASW at the Citadel (Deraniyagala 2004, 740–741). It appears that during Phase IV there was an established settlement where the inhabitants were seeking cultural and technological advancements. In the following phases, the demand for beads appears to decrease. The stark drop in Phase V may be the result of deposit volume, as the phase comprises only three contexts. Nonetheless, though larger in quantity than that of Phase V, the number of beads in Phases VI and VII indicates a declining trend.

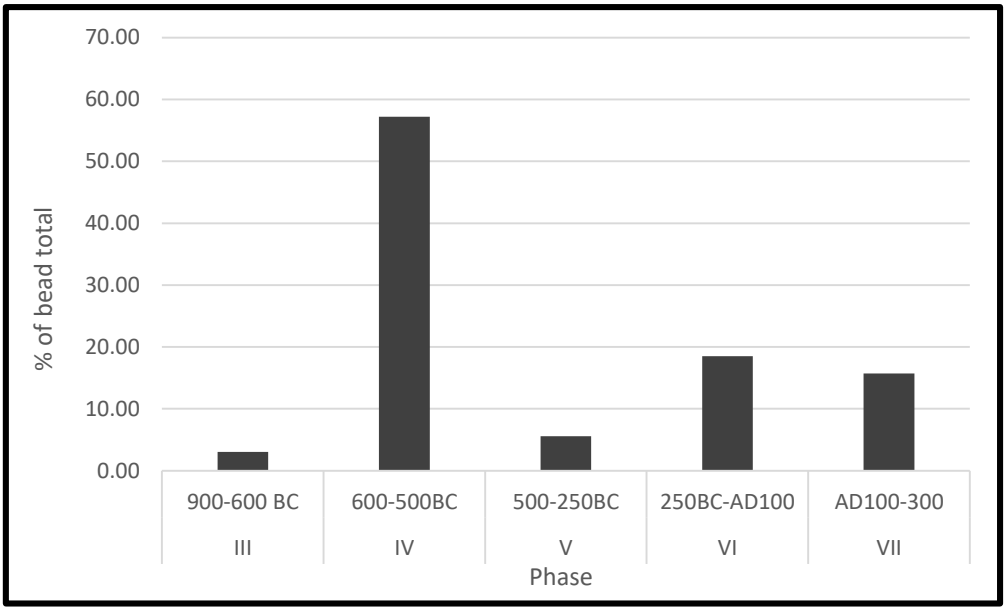

Figure 4.16: Distribution of beads across phases at Anuradhapura Gedige

Use of raw materials

This assemblage contains beads of various raw materials, including glass, types of stone, organic material and metal. Organic material used for bead-making is often scarce in the archaeological record due to its non-durable nature. In addition, there are beads for which the raw materials are unknown (Appendix A3.1 and A3.2).

The raw materials used for the production of objects of personal adornment are categorized into a number of media, primarily synthetic—raw materials altered through a chemical or physical process, for e.g.: glass; stone—varieties of naturally occurring minerals; organic—floral and faunal material such as shell; and metal. The distribution of beads illustrates that synthetic beads were recovered in large proportions, 85.2% and 74.2% respectively for phases III and IV (Table 4.3 and Figure 4.17). The synthetic assemblage from phases III to VI is entirely glass. In the final phase, 229 glass beads, 2 clay beads, a faience bead, a possible clay bead and a possible glass bead were recovered. In Phase V,

there is a sharp drop in the proportion of synthetic beads while the proportion of stone beads increases abruptly despite experiencing a decrease numerically in comparison to the previous phase. In the last two phases, stone and synthetic beads appear to be in nearly equal proportions. The other groups of bead media contain only few number of beads as compared to synthetic and stone.

Table 4.3: Distribution of bead media across phases

Phase / Medium	III	%	IV	%	V	%	VI	%	VII	%	Total	%
Synthetic	75	*85.2*	1239	*74.2*	19	*11.7*	224	*41.5*	230	*50.2*	1787	*61.2*
Stone	12	*13.6*	423	*25.3*	144	*88.3*	287	*53.2*	210	*45.9*	1076	*36.9*
Unknown	1	*1.1*	6	*0.4*			26	*4.8*	5	*1.1*	38	*1.3*
Organic			1	*0.1*					10	*2.2*	11	*0.4*
?Organic			1	*0.1*							1	*0.03*
?Stone							2	*0.4*	1	*0.2*	3	*0.1*
?Synthetic							1	*0.2*	1	*0.2*	2	*0.1*
Metal									1	*0.2*	1	*0.03*
Total	88	*100*	1670	*100*	163	*100*	540	*100*	458	*100*	2919	*100*

The stone bead assemblage from AG contains carnelian (Figure 4.18) (27.7%), amethyst (58.6%), garnet (3.5%), quartz (7.5%), and jasper (0.1%). Apart from these, there are also small quantities of beads which are suspected to be lapis lazuli (Figure 4.19), feldspar, quartz, amethyst, and carnelian but these could not be definitively identified. Also, another 1.6% of the beads are of stone types that could not be identified (Appendix A3.3). The assemblage demonstrates that there is a large proportion of carnelian beads, a raw material which does not occur in Sri Lanka.

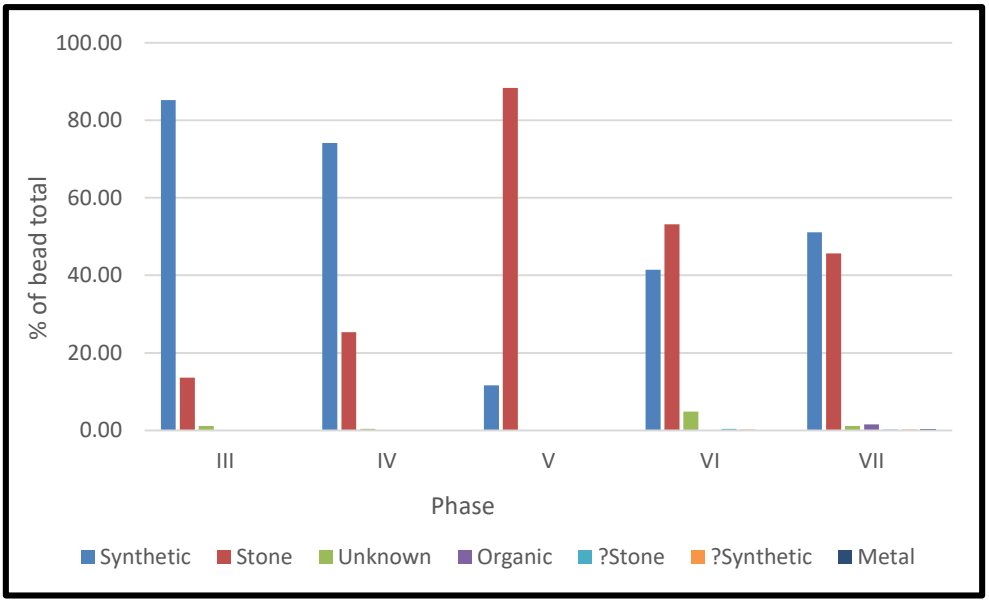

Figure 4.17: Distribution of bead medium across phases at Anuradhapura Gedige

There are 1,786 glass beads from AG and within these two main varieties can be identified. These are Indo-Pacific Beads (IPB) and Red Disc Beads (RDB), both of which are considered to be produced in Sri Lanka (Figure 4.20Figure 4.21). Discussion of the origin and distribution of these bead varieties and their importance in Sri Lanka's close interaction with South India is given in Chapter 6. While IPBs at AG form just above 9% of the total bead assemblage (Appendix A3.4), RDBs account for nearly 44% (Appendix A3.6). In the AG assemblage, only just over 4% are complete RDBs and the remaining 40% are RDB fragments.

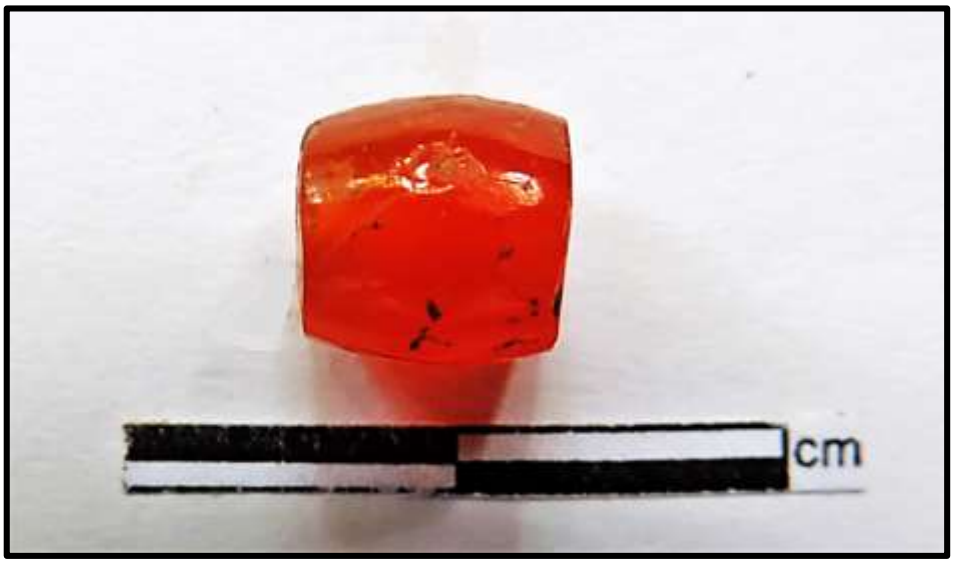

Figure 4.18: A Carnelian bead from Anuradhapura Gedige

Figure 4.19: Possible lapis lazuli fragment from Anuradhapura Gedige

Figure 4.20: Examples of Indo-Pacific Beads (IPBs) of various colours from Anuradhapura Gedige

Figure 4.21: Examples of Red Disc Beads (RDBs) from Anuradhapura Gedige

The organic beads in the assemblage are few, just 8 in total (Appendix A3.1), probably due to their poor preservation. The first organic bead of the assemblage was recovered from Phase IV, and is a seed of *Coix lacryma-jobi*, locally known as *Kirindi*. The remainder of the organic beads are found in Phase VII and include beads made of shell, fish tooth and vertebrae as well as unidentified material (Appendix A3.5). This assemblage also contains a single bead made of an unidentified metal (Appendix A3.1).

Figure 4.22: Fragmented collar bead from Anuradhapura Gedige

Figure 4.23: Segmented bead with longitudinal stripes from Anuradhapura Gedige

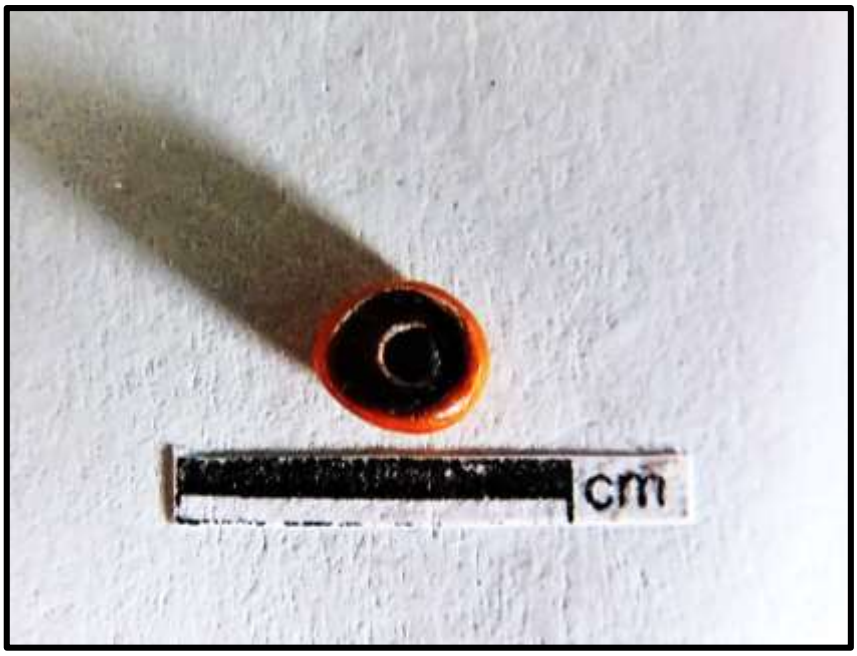

Figure 4.24: Cornaline d'Aleppo bead from Anuradhapura Gedige

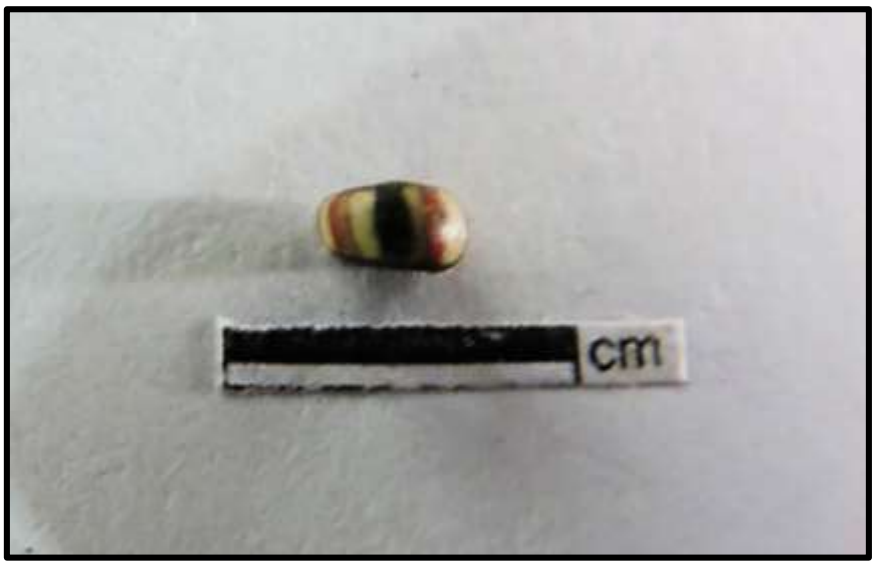

Figure 4.25: Longitudinally striped bead from Anuradhapura Gedige

Bead types

The assemblage has a range of bead types (Appendix A3.6). The most common are the RDBs, followed by the circular oblates, discs, and circular cylinders (Figure 4.26). Other bead types are very limited. The high proportion of RDBs during the early phases decreases towards the Common Era with a

corresponding increase in circular oblates and circular cylinders (Appendix A3.4). Further discussion on the bead types is in Chapter 6.2.

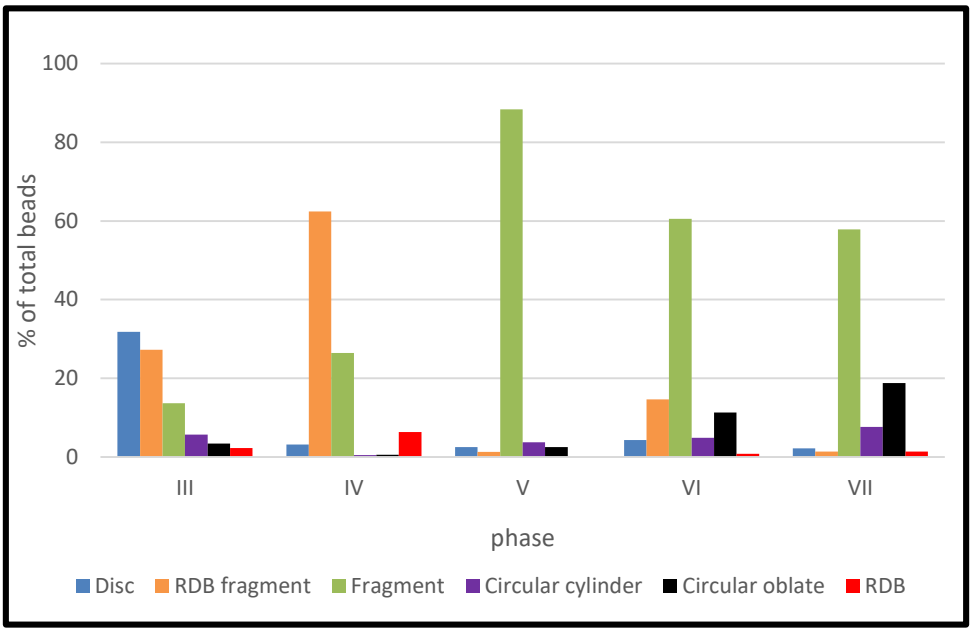

Figure 4.26: Distribution of selected bead shapes across phases (Only the shapes totaling over 1% were selected for the graph)

The assemblage also includes a number of special beads and pendants, such as collar, segmented, cornaline d'Aleppo and longitudinally striped beads (Figure 4.22–Figure 4.25; Appendix A3.6). These special bead types are illustrated in Appendix J and will be further discussed in Chapter 6.2.3.

Non-bead objects of adornment

A total of 42 other objects of personal adornment were recovered from the site but only 31 of these have been considered for the present discussion due to the clarity of their contextual details (Appendix A2). These include bangles, finger rings and a possible earring, all of which are fragments. Another 13 fragments are too small to determine object type (Appendix A3.10). The assemblage includes a single fragment of a bangle made of possible lapis lazuli, recovered from Phase III (Figure 4.27). There are two carnelian, (Figure 4.28) and four glass

ring fragments. The glass assemblage also contains eight bangle fragments (Figure 4.29), two possible bangle fragments and one possible earring fragment (Figure 4.30). The object type of 12 of the glass fragments and one stone fragment could not be analyzed due to their small size (Appendix A3.11). Interestingly, the Anuradhapura Gedige assemblage does not contain any shell bangles. It is possible that this may be a result of sampling strategies applied, or storage conditions, but Coningham who excavated ASW2, another sondage within the Citadel, does not record any shell bangles either. The location of Anuradhapura being interior in the island, situated far from the coast could be the reason for this, however, further discussion and comparisons with other sites has been undertaken in Chapter 6.

Figure 4.27: Lapis lazuli (probable) bangle fragment from Anuradhapura Gedige

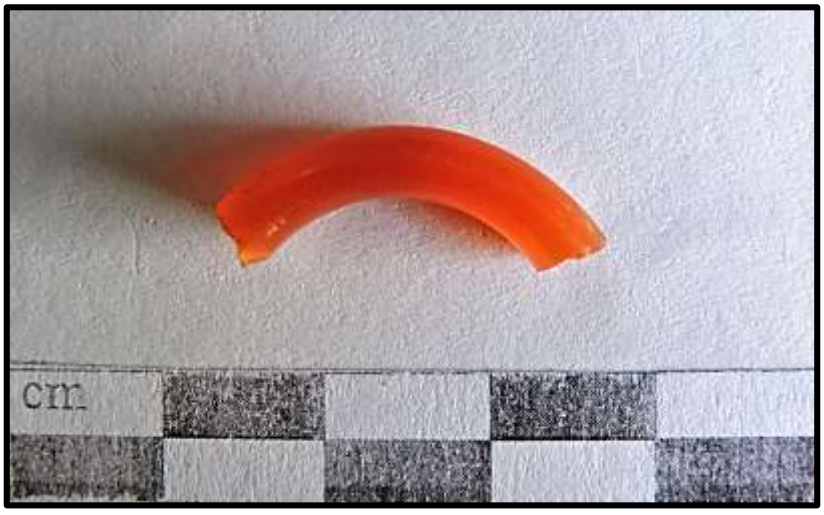

Figure 4.28: Fragment of a carnelian ring from Anuradhapura Gedige

Figure 4.29: Example of a glass bangle fragment recovered from Anuradhapura Gedige

Figure 4.30: A possible glass earring fragment recovered from Anuradhapura Gedige

Colours

The colour of each bead was recorded, but for the purposes of the present study, only the colours of glass beads are considered. For uniformity in comparisons the discussion will focus on IPB colours.

Of the IPBs, 38.3% are red, 29.3% are blue and 19.9% are green (Figure 4.31; Appendix A3.7). It is interesting to note that yellow and black occur in larger proportions in the IPB group. Up to phase VI, blue IPBs dominate the

assemblage. Green is the second largest in Phase IV and is the same quantity as red in phase V. The number of red beads is higher than that of green in Phase VI and by the final phase increases sharply to become the most prevalent bead colour in the group (Figure 4.32).

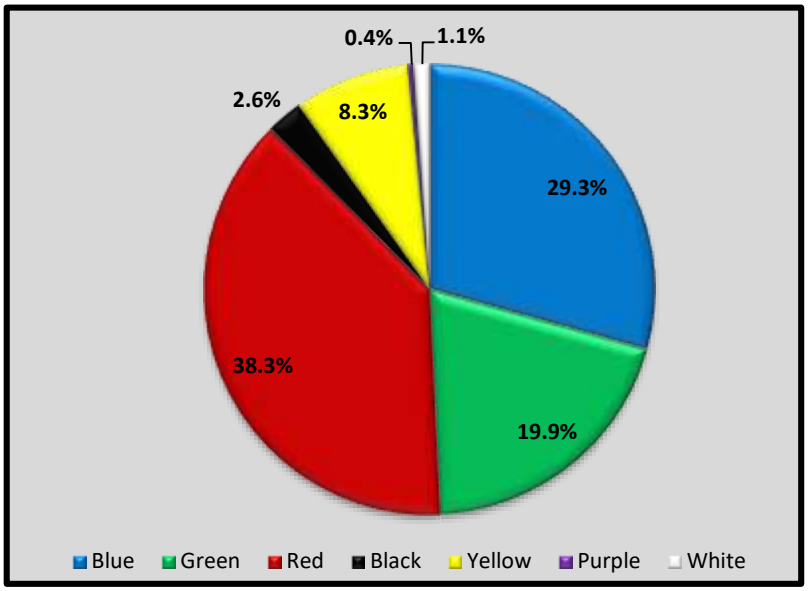

Figure 4.31: Distribution of colours among IPBs at Anuradhapura Gedige

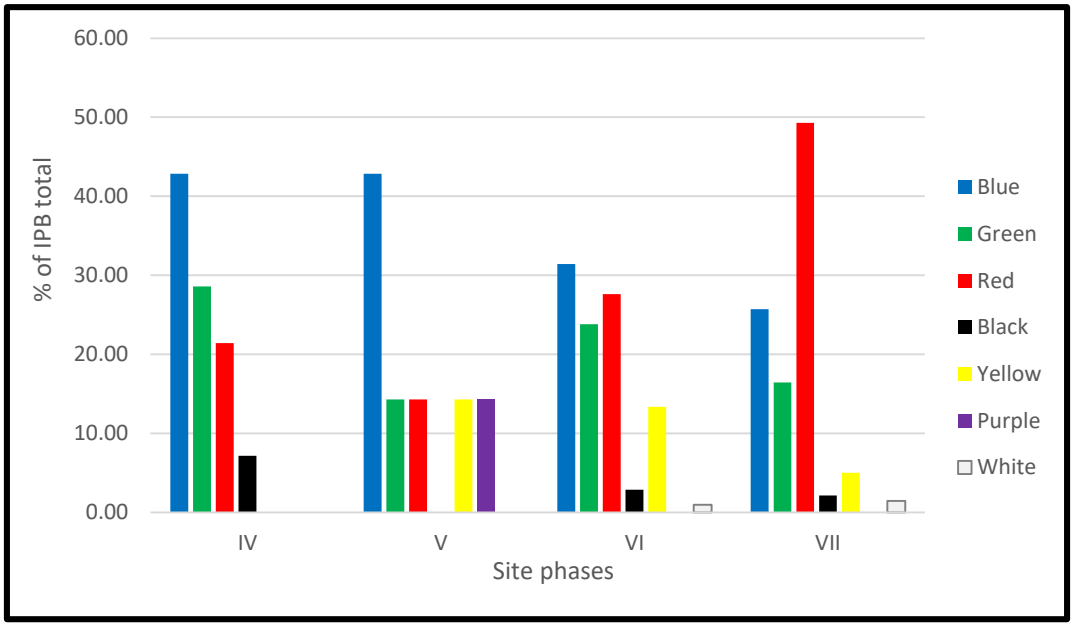

Figure 4.32: Distribution of IPB colours across phases from Anuradhapura Gedige

Of the non-bead assemblage, the total of glass ornaments is 27 and these occur only in phases IV and VII. The majority of these are blue (59.3%), followed by

black (14.8%) and green (11.1%). Two red fragments and one yellow and one clear fragment of ornaments were also present in the collection (Appendix A3.12; Figure 4.33).

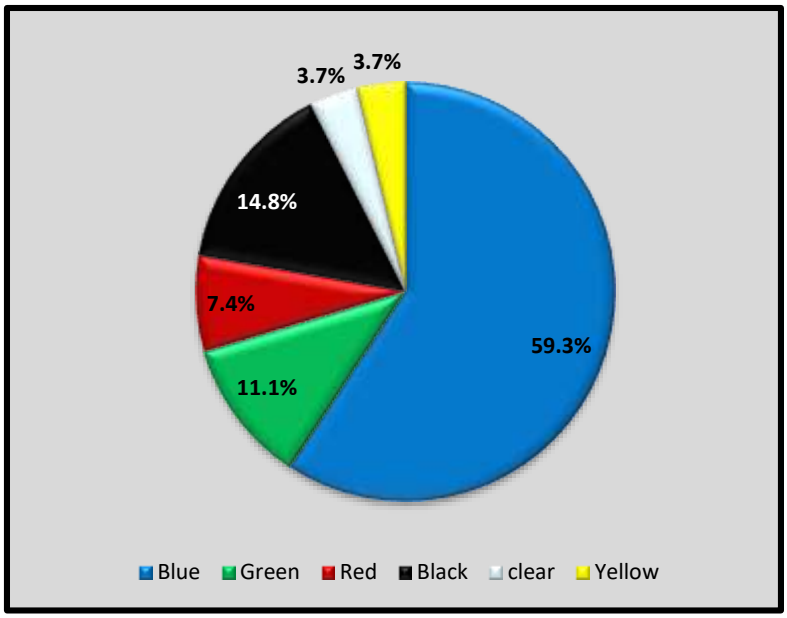

Figure 4.33: Distribution of colour among non-bead objects of adornment at AG

Diaphaneity and surface lustre

Similar to colour, the diaphaneity and surface lustre of the IPBs will be discussed in detail for uniformity, in comparison across sites. Among the IPBs from AG, 57.9% are translucent beads while 41.4% are opaque. Only 2 beads are transparent (Figure 4.34; Appendix A3.8). The surface lustre of the vast majority of the IPBs is shiny (42.9%) or very shiny (20.3%). Only a little over 1/3rd of the IPBs (36.8%) have a dull surface lustre (Figure 4.35; Appendix A3.9).

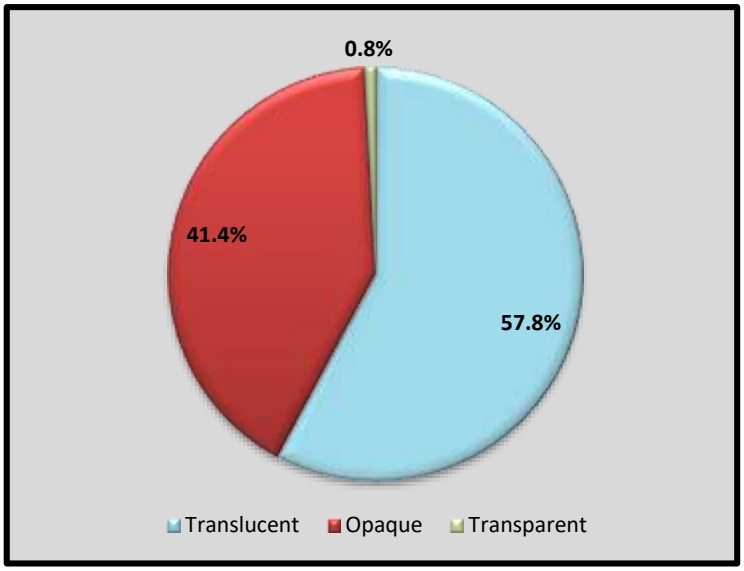

Figure 4.34: Diaphaneity of IPBs at Anuradhapura Gedige

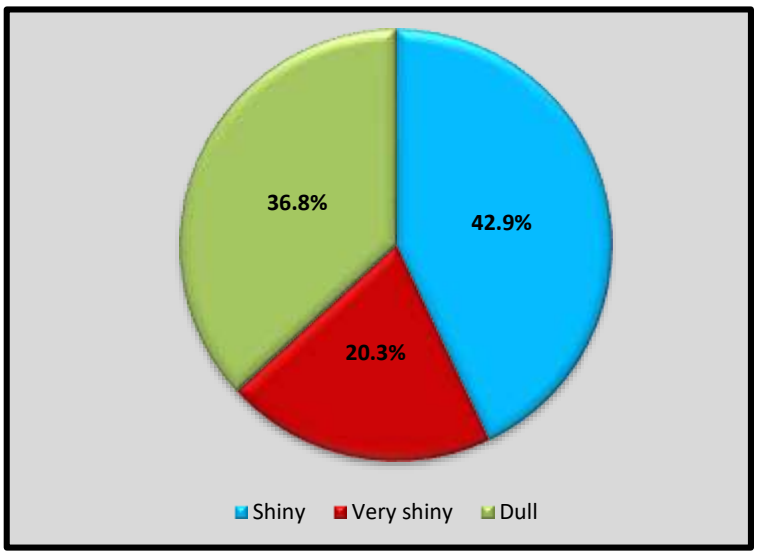

Figure 4.35: Surface lustre of IPBs at Anuradhapura Gedige

Both the bead and non-bead assemblages are produced out of different materials including, glass, carnelian, amethyst and shell. They span a variety of shapes and colours that display interesting patterns. These patterns are discussed in Chapter 6 in comparison to those from other assemblages.

4.3.2 4.3.2 Kantarodai (KTD)

For this research I re-analyzed the assemblage of personal adornment recovered from the 2011 excavations at Kantarodai. The complete material culture recovered of this excavation has been previously analyzed by Bohingamuwa (2017). Apart from the new typology I applied, most of the data gathered (Appendix B), concurs with that of Bohingamuwa (2017, Catalogue 7.1.2). Of the five sites studied for this research, Kantarodai has the smallest bead assemblage. Two adjoining pits were excavated during the 2011 excavation, and based on radiocarbon dates from both pits, Bohingamuwa, who analyzed the artefacts from both trenches amalgamated the dates to finalize the site sequence that runs between *c*. the 5th century and mid-1st century BC (Bohingamuwa 2017, 87–91).

Distribution by phase

The distribution of Kantarodai beads across the site sequence has been illustrated in Table 4.4 and Figure 4.36. It is notable that 95% of the beads were recovered from Phase VII.

Table 4.4: Kantarodai bead distribution across phases

Phase	**IV**	**V**	**VII**	**Total**
Date	Mid-4th to Late 3rd C. BC	Late 3rd to Mid-2nd C. BC	Early 1st to Mid-1st C. BC	
Qty	**10**	**1**	**209**	**220**
%	*4.5*	*0.5*	*95*	*100*

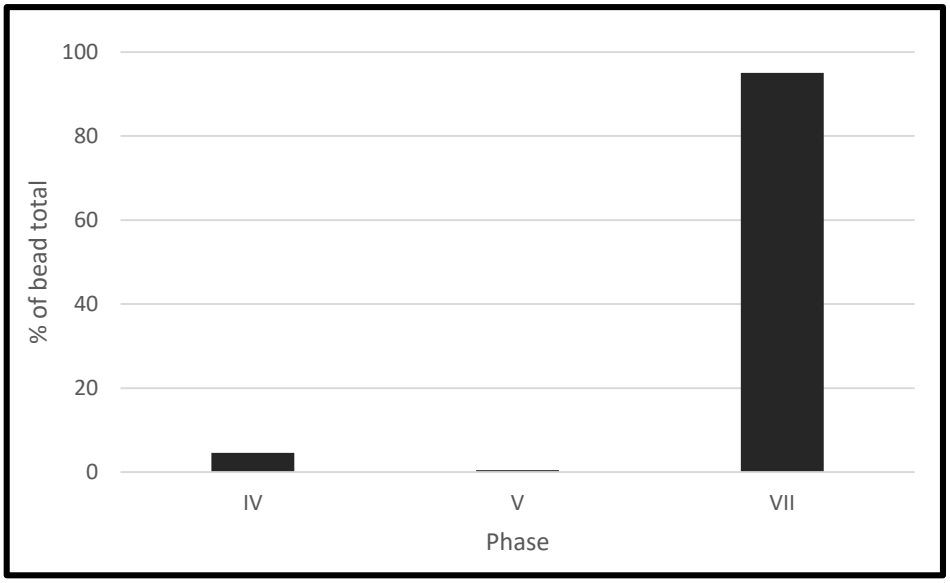

Figure 4.36: Distribution of beads across phases in Kantarodai

Use of raw materials

Of the Kantarodai beads, 81% are synthetic while 13% are stone. The assemblage contains 1 organic bead, but there are also 12 beads for which the raw material is unidentified (Appendix B3.1). It is notable that the assemblage contains only a single shell bead, despite the site being located close to the coast. Apart from the single synthetic bead, Phase V is devoid of beads (Figure 4.37).

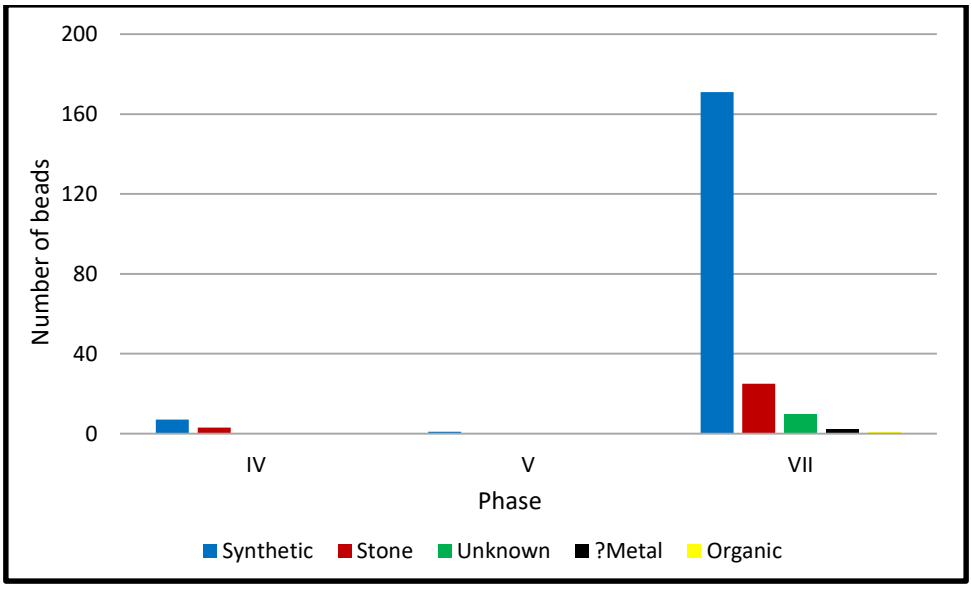

Figure 4.37: Distribution of bead medium within each phases at Kantarodai

The entire synthetic bead assemblage at Kantarodai is glass. There is a single IPB out of the 179 glass beads (Appendix B1) recovered from Phase VII. Kantarodai has the least quantity of IPBs among the assemblages analyzed, which could be an indication that IPBs were not in vogue in the region. Interestingly though, as at AG, the RDB assemblage at Kantarodai is large, accounting for nearly 80% of the glass beads (Appendix B3.2). All the RDBs (Figure 4.38) in the assemblage are finished products, some in a fragmented form, but there is no evidence of on-site production. These points are discussed further in Chapter 6.2.1 and 6.4.

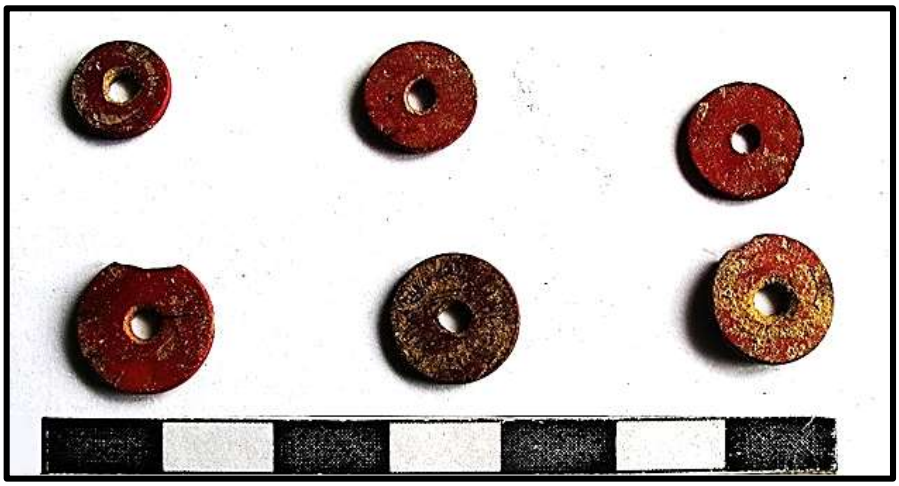

Figure 4.38: RDBs from Kantarodai

The stone bead assemblage at Kantarodai comprises agate, amethyst, carnelian, garnet, hornblende and quartz (Appendix B3.3; Figure 4.39). Of these, agate, carnelian and hornblende do not occur locally and were imported, probably from India. The earliest occurring beads in the sequence are finished agates and carnelians (Appendix B3.4).

Figure 4.39: Stone beads from the Kantarodai assemblage—examples of banded agate, quartz, carnelian and amethyst beads

Bead types

In terms of type, the assemblage includes discs, RDBs, circular oblates, circular cylinders and elliptical spheres as well as collar beads (Figure 4.40; Appendix B3.6). Except for a single bead for which the raw material is uncertain, all the other collar beads are made of stone, using amethyst, carnelian, hornblende and quartz (Appendix B3.5). All these beads occur in Phase VII, thus between the early and mid-1st century BC.

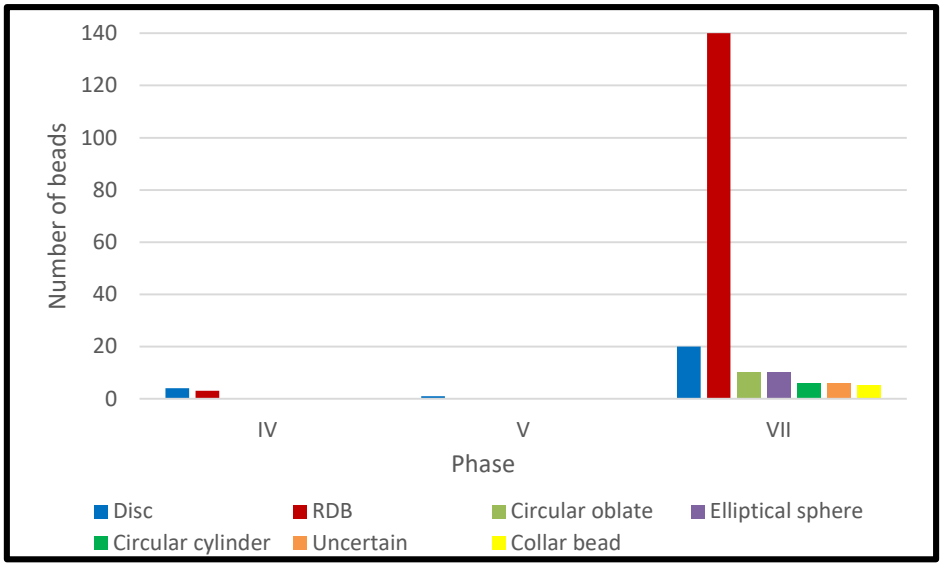

Figure 4.40: Distribution of selected bead types within each phase (the graph represents only the types that have 5 or more beads in total)

Non bead objects of adornment

The non-bead assemblage of adornment is minimal, and contains a probable earring fragment and a piece of gold (Appendix B2). It is difficult to say anything further about these objects because of their fragmentary nature. Finding pieces of gold could also mean that they were production wasters, although further evidence is required to come to such conclusions.

Colour, diaphaneity and surface lustre

The assemblage contains a single IPB, which is a shiny translucent blue bead. The glass bead collection, however, contain red (95.5%), green (5), yellow (2) and blue (1). The majority of red beads are RDBs. All RDBs are opaque and have a dull surface (Appendices B3.7 and B1).

Despite being the smallest bead assemblage among those studied for this research, the objects of adornment from Kantarodai provide valuable data that indicate interaction between Sri Lanka and South India.

4.3.3 Mantai (MA)

During this research, I re-analyzed the assemblage of personal adornment recovered from the 2009/10 excavation at Mantai, which was previously analyzed by Bohingamuwa for his doctoral thesis (2017). I applied a new typology to the beads in the assemblage and have identified non-bead objects that were previously identified as beads. The re-analyzed Mantai bead assemblage accounts for 1,578 beads. However, most of the data gathered from this assemblage concurs with those of Bohingamuwa and the site chronology used here was published by Bohingamuwa (2017).

Distribution by phase

This assemblage is distributed across a time period between *c*. 2nd century BC and the 12th/13th centuries AD (Bohingamuwa 2017, 65–74). Table 4.5 and Figure 4.41 illustrate the distribution of beads across the site sequence. Disregarding phases V and VI, there is an increase in the number of beads across the phases up to the surface.

Table 4.5: Mantai bead distribution across phases

Phase	II	III	IV	V	VI	VII	Disturbed ('D')	Surface ('S')	Total
Date	2nd C. BC–mid-1st C. AD	Late 1st–late 2nd/Early 3rd C. AD	Mid-3rd–early 7th C. AD	Early 7th–early/mid-8th C. AD	Early/mid-8th C. AD	Early/mid-8th–late 9th C. AD	Post 8th/9th–12th/13th C. AD	Post 8th/9th–12th/13th C. AD	
Qty	**18**	**120**	**255**	**24**	**29**	**345**	**741**	**46**	**1578**
%	*1.1*	*7.6*	*16.2*	*1.5*	*1.8*	*21.9*	*47.0*	*2.9*	*100*

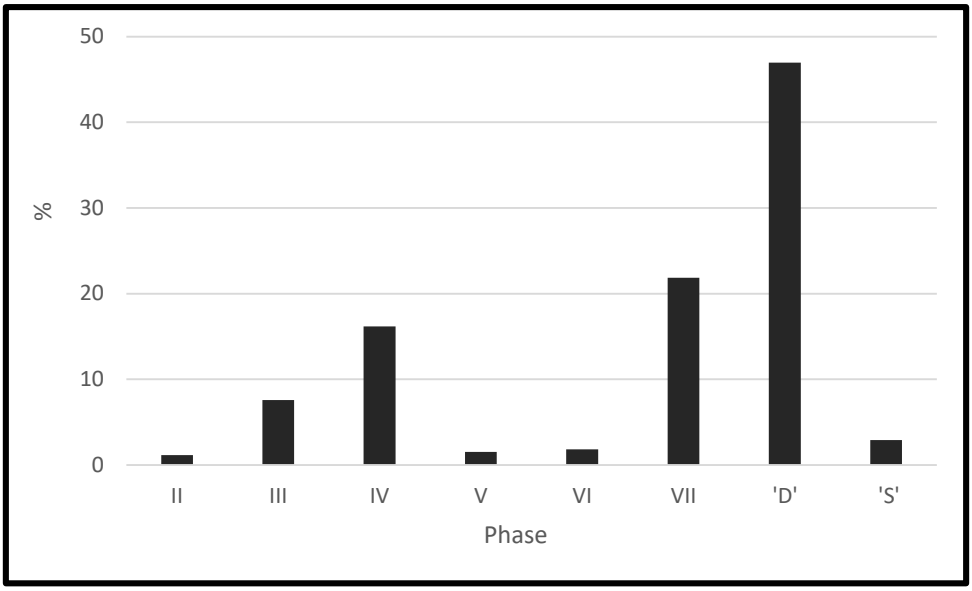

Figure 4.41: Distribution of beads across phases at Mantai

Use of raw materials

The bead assemblage is mainly synthetic (80.7%) with 15.1% stone, 3.7% organic and 0.1% metal. It also contains 0.5% beads of an unidentified production medium (Appendix C3.1; Figure 4.42). Throughout the site sequence, the beads are predominantly synthetic.

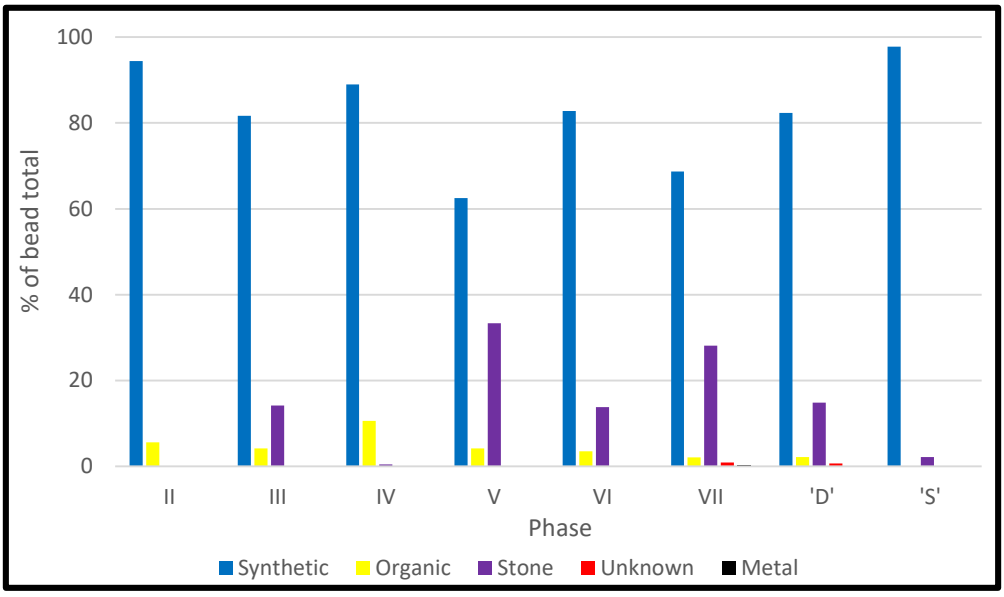

Figure 4.42: Distribution of bead media across phases

Of the 1,273 synthetic beads, nearly 97.0% are glass (Appendix C3.2). The majority of the glass beads at Mantai are IPBs (Figure 4.43 Figure 4.44). Francis's

(2002) extensive bead studies, carried out across the globe, identified other sites in the region where IPBs were produced and Mantai has been identified as one of the leading sites in the early production of IPBs. The works by scholars such as Abraham (2013) and Bohingamuwa (2017) strongly support this point. The Mantai assemblage that I re-analyzed comprises 936 IPBs. The distribution of IPBs across the Mantai site sequence is tabulated in Table 4.6 and Appendix C3.3.

Table 4.6: Distribution of IPBs across phases at Mantai

Phases	**II**	**III**	**IV**	**V**	**VI**	**VII**	**'D'**	**'S'**	**Total**
IPB	**11**	**72**	**194**	**10**	**22**	**162**	**444**	**21**	**936**
% from GBA^{+}	*84.6*	*75.8*	*87.4*	*66.7*	*91.7*	*72.3*	*74.5*	*46.7*	*75.9*
% from TBA*	*61.1*	*60.0*	*76.1*	*41.7*	*75.9*	*47.0*	*59.9*	*45.7*	*59.3*

$^{+}$Glass Bead Assemblage; *Total Bead Assemblage

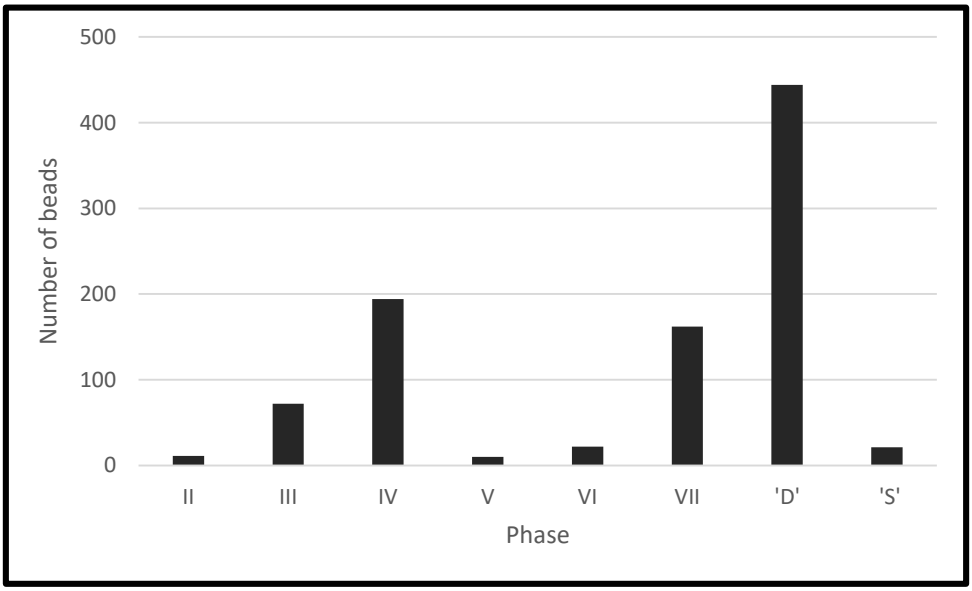

Figure 4.43: Distribution of IPBs across phases

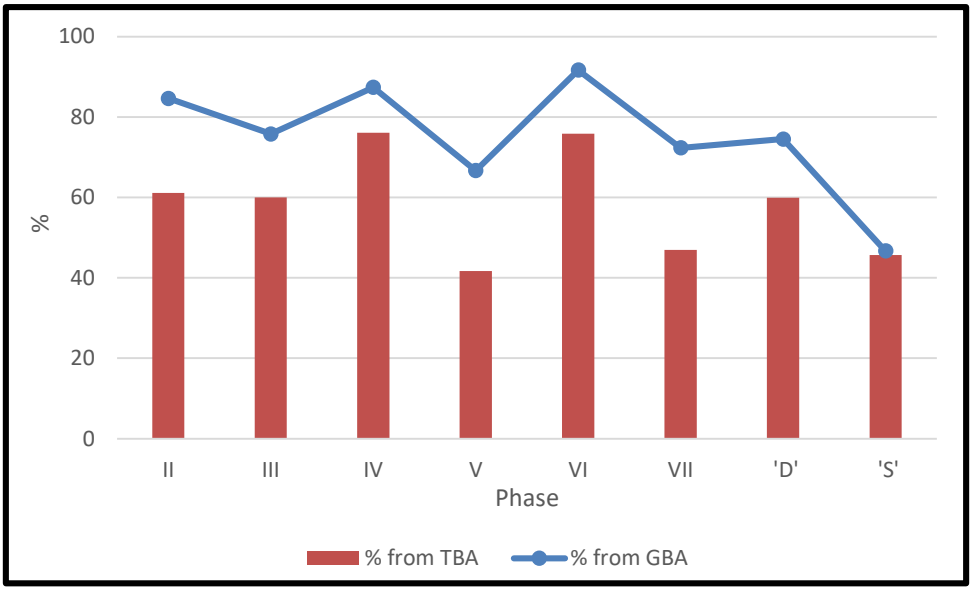

Figure 4.44: Proportional distribution of IPBs across phases—percentages from Total Bead Assemblage and Glass Bead Assemblage

At 59.3% of the total bead assemblage, IPBs form by far the largest single category of beads (Figure 4.45). Also, they form nearly 76.0% of the Mantai glass bead assemblage. Barring the low quantities in Phases V and VI, the number of IPBs increase across the phases, with a slight dip in Phase VII (Table 4.6; Figure 4.43). The excavator states that the low quantity of beads in Phases V and VI is a consequence of the amount of archaeological deposit removed and the presence of a coral wall respectively (Bohingamuwa 2017, 256). Yet, such an increase is not apparent from the percentages. Towards the later phases, IPBs become proportionately less (Figure 4.44). However, in general IPBs across the Mantai sequence represents around 60% of the entire assemblage.

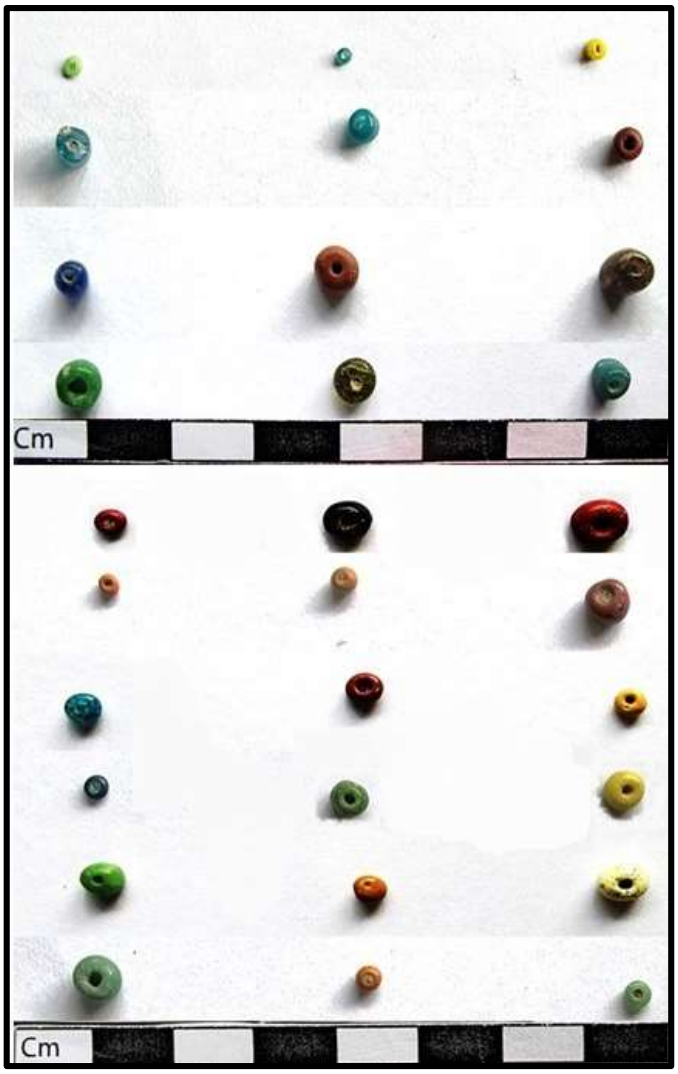

Figure 4.45: Selected group of IPBs from the Mantai assemblage

Compared to Anuradhapura, the capital to which Mantai port was connected, the stone bead assemblage is smaller. Yet, 15% of the entire Mantai bead assemblage is made of stone. The assemblage contains foreign stone varieties such as carnelian (Figure 4.46), onyx and lapis lazuli, as well as local ones, such as quartz and garnet (Appendix C3.5). The proportion of actual beads, both in complete or fragmented form, is nearly 6% as opposed to slightly more than 94% wasters, and this indicates that the site was a production site that retained very few finished beads (Appendix C3.6 and Chapter 6.1.2).

The organic bead assemblage at Mantai comprises nearly 4% of the bead assemblage analyzed. It includes shell, pearls, ivory, fish tooth and vertebrae, as well as unconfirmed shells (Appendix C3.7). It is not surprising that Mantai has a larger collection of beads made out of marine raw materials, in comparison to Anuradhapura, due to it being a coastal site as well as located adjacent to pearl and chank banks. However, the preservation of organic beads is less likely compared to other materials and could explain the smaller quantity of organic beads. The only metal bead in the assemblage is made of gold (Appendix C3.1), and is fragmented in such a way that its shape is unidentifiable. Gold ornaments are generally rare in the archaeological record but it doesn't necessarily indicate lack of interest in the metal. The wearers or owners of gold ornaments would preserve them with care and would recycle and reuse them, unlike glass beads which are of lower value than gold.

Figure 4.46: A carnelian bead from Mantai. Carnelian is not found locally in Sri Lanka

Bead types

There are disc, oblate, cylinder and spherical beads, as well as hexagon bicones and circular truncated bicones in the Mantai bead assemblage. Of these, 31.8% are circular oblates while 27.4% are circular cylinders, 4.8% are elliptical oblates

and 3.4% are disc beads (Figure 4.47). The remaining types of beads are found in insignificant quantities. There are also a number of special beads, such as collar, cornaline d'Aleppo, longitudinally striped, segmented, melon, cornerless cube and stupa beads, recovered from Mantai (Figure 4.48Figure 4.50). The entire range of bead types is given in Appendix C3.4. It is interesting to see that unlike the Anuradhapura and Kantarodai assemblages, the Mantai assemblage has no RDBs, except for a single suspected bead. The origin and distribution of RDBs is discussed in Chapter 6.2.1 where probable reasons for such a lacuna will be discussed.

Figure 4.47: Examples of disc beads at Mantai

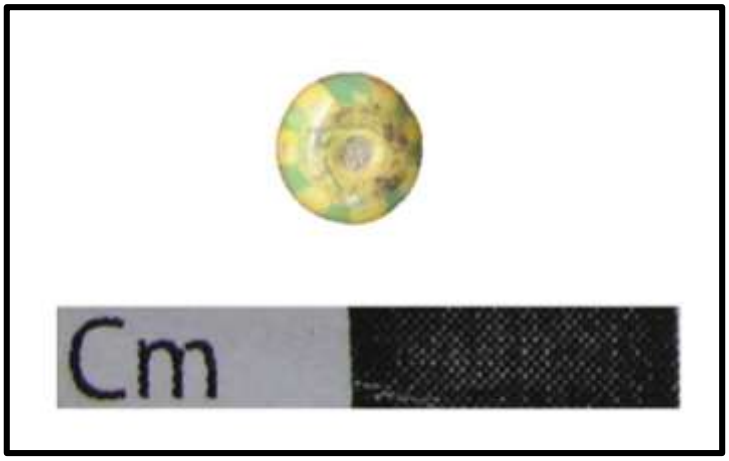

Figure 4.48: A longitudinally striped bead from Mantai

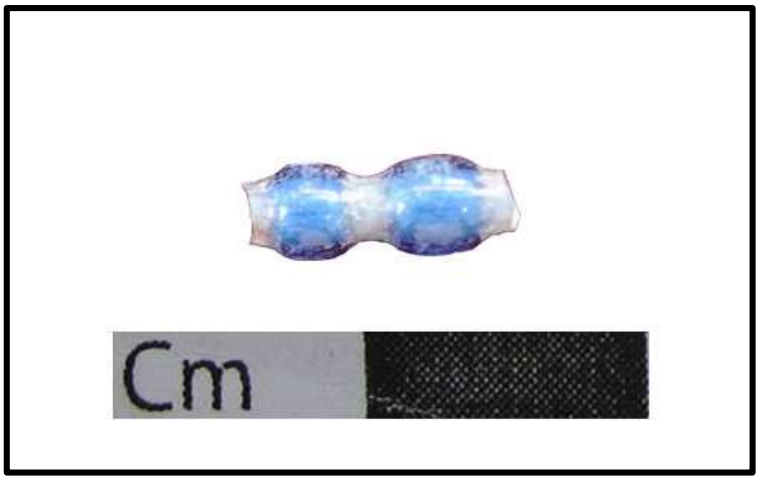

Figure 4.49: Segmented glass bead from the Mantai assemblage. Their origin is attributed to the Islamic world

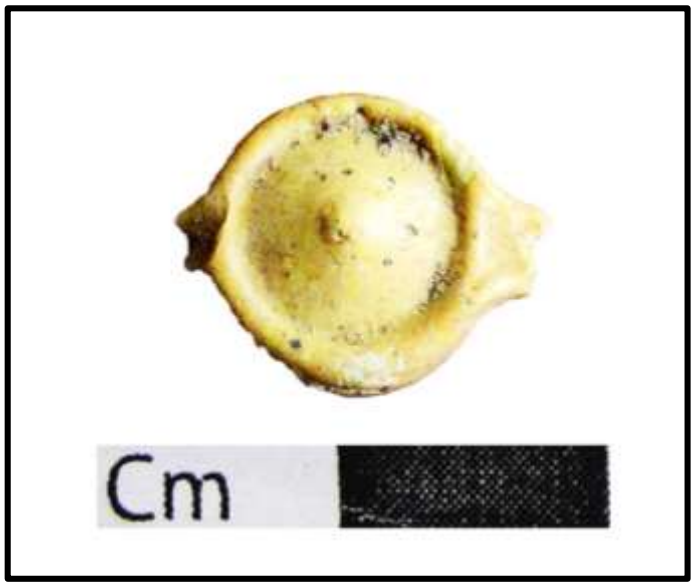

Figure 4.50: Stupa bead from Mantai. Stupa beads are considered to have originated in Sri Lanka

Non-bead objects of adornment

In comparison to the beads, the assemblage of other personal adornment at Mantai is quite small, yet it is the largest among the Sri Lankan sites I studied. Interestingly, unlike AG, the Mantai non-bead assemblage contains no stone objects, instead it contains shell and possible ivory. The majority of the non-bead objects are made of glass, forming 66.7% of the total non-bead objects. Almost 8% is shell and possible ivory while there are 9 objects (17.7%), which are made

of possible shell (Appendix C3.12; Figure 4.51). Having discovered cores of saw-cut *turbinella pyrum* shells at the site, it is clear that shells have been used to produce other objects of personal adornment. The entirety of the non-bead assemblage from Mantai appears to be bangles. Of the 13 shell and possible shell bangles, 30.8% are decorated. Of the glass bangles, 41.2% are also decorated with grooved lines and paint-infused decorations (Appendices C3.14 and C3.15; Figure 4.52 Figure 4.53).

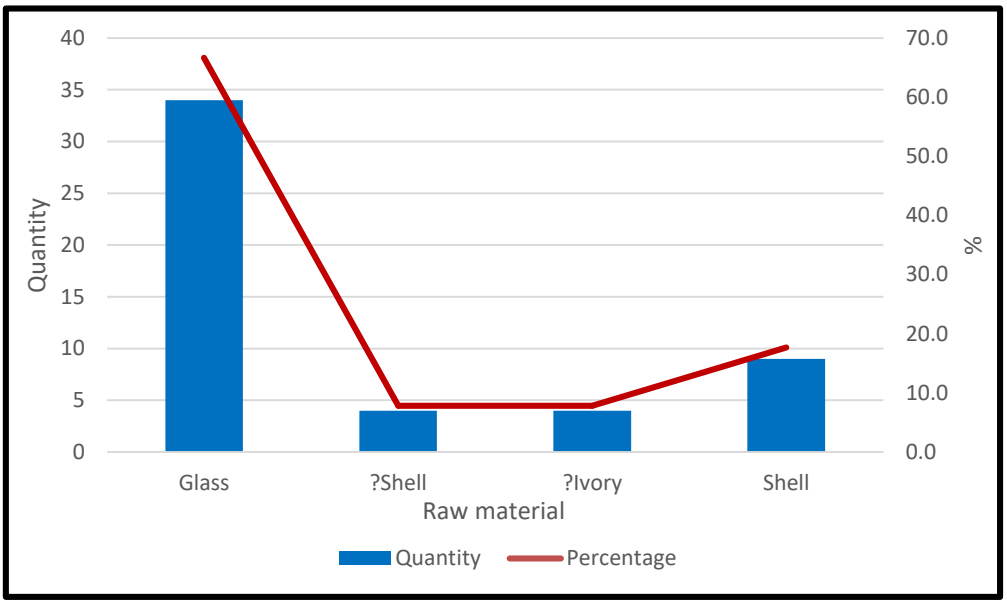

Figure 4.51: Use of raw materials in Mantai non-bead object assemblage

Figure 4.52: A fragmented glass bangle with paint-infused decorations

Figure 4.53: Black glass bangle fragment with inlaid yellow lines (Source: SEALINKS)

Figure 4.54: Fragments of black glass bangles from Mantai. Black glass bangles appear to be common to all sites and there may be some symbolic significance

Colours

The Mantai IPB assemblage is dominated by red beads (33.9%), followed by blue (28.2%), green (21.8%), yellow (13.0%) and black (2.9%) colours (Figure 4.56; Appendix C3.8). The assemblage also includes white and clear IPBs, one of each colour. Red is the dominant colour in the early phases but decreases towards the later phases. The demand for blue beads seems to surpass that of red from

Phase VII (Figure 4.55). The quantity of yellow IPBs at Mantai is comparatively large. Though numerically fewer, the presence of black beads may indicate that they were made for a special purpose. Further discussion is carried out in Chapter 6.

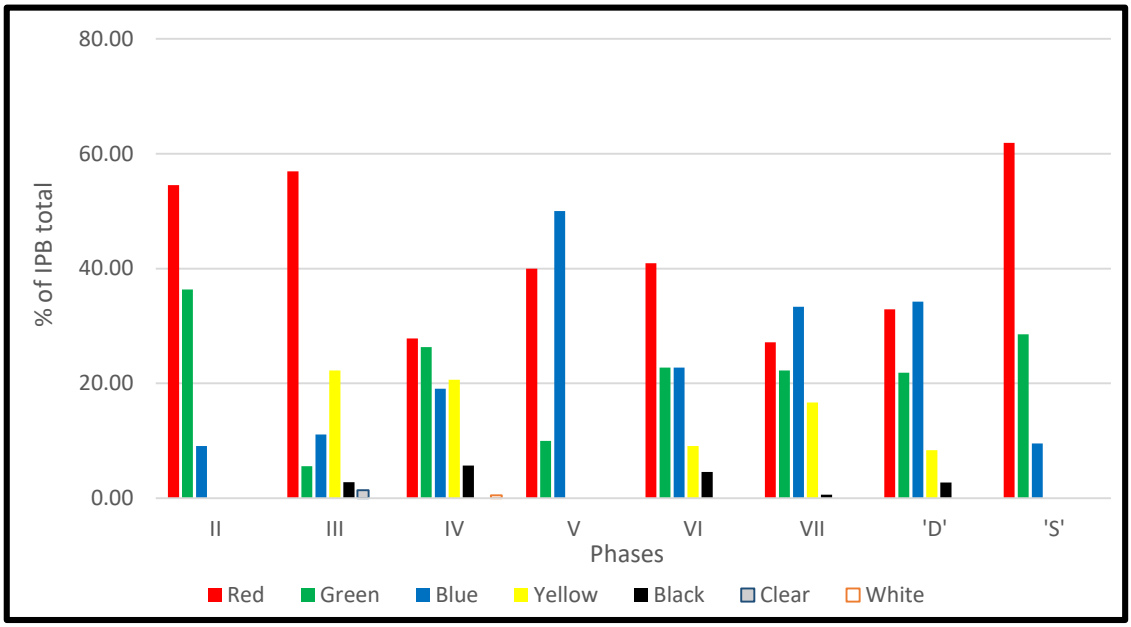

Figure 4.55: Colour distribution of Mantai IPBs across phases

Unlike the beads, the majority of the non-bead glass objects are black (47.1%) in colour (Figure 4.54), followed by blue (29.4%), green (17.6%) and yellow (5.9%) (Appendix C3.16; Figure 4.57) and, interestingly, there are no red non-bead objects, which was the colour in demand in the bead assemblage. The large quantity of black bangles is also notable and these colour patterns are discussed further, in comparison with those of other sites in chapter 6.3.2.

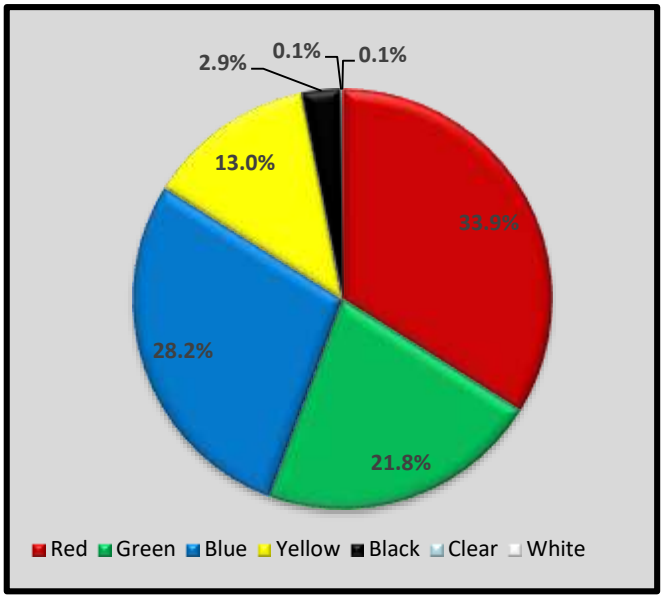

Figure 4.56: Colour distribution of IPBs

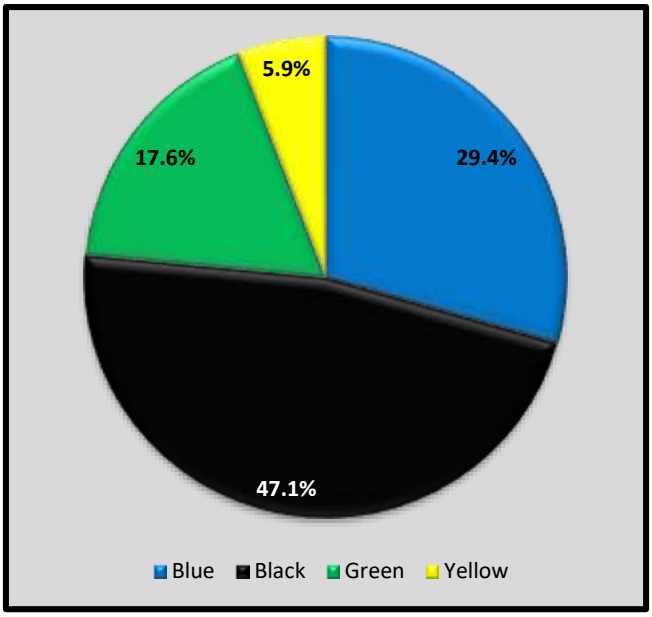

Figure 4.57: Colour distribution of non-bead objects

Diaphaneity and surface lustre

Over half of the Mantai IPBs are translucent beads (58.0%) while 40.5% are opaque and 1.5% are transparent. The dominance of translucent beads occurs only from Phase IV onwards, disregarding phase VI and the surface (Appendix C3.10). Over 80% of the IPBs have a shiny surface lustre and another 2.4% have a very shiny surface. A dull surface was recorded on 13.5% beads (Appendix C3.11). The large quantity of shiny surface lustre of Mantai IPBs is noteworthy.

The Mantai assemblage provides important data which can be compared with inter- and intra-regional sites across time. IPBs are strongly represented in the assemblage, further affirming that the site was a main centre of IPB production in the Indian Ocean region.

4.3.4 Kirinda (KR3)

The Kirinda KR3 assemblage analyzed here was recovered from the excavation carried out in 2013, and the material culture recovered has been previously analyzed by Bohingamuwa (2017, Catalogue 7.2.1 and 7.2.2). The majority of the results from my re-analysis concur with his. According to the dating of the site, the sequence stretches from the 3rd century and early/mid-8th to 9th centuries AD (Bohingamuwa 2017, 98–99). A total of 447 beads were recovered from this site, of which 9 objects were later identified as net sinkers and were excluded from my bead analysis. Hence, the assemblage I discuss amounts to 438 beads.

Distribution by phase

The distribution of these beads across the site sequence is presented in table 4.7 and Figure 4.58. The number of beads increase over time, but experience an ebb in the final phase.

Table 4.7: KR3 bead distribution across phases

Phase	IA	IB	IC	II	III	Total
Date	Late 3rd–Mid-7th C. AD	Late 4th–Mid-7th C. AD	Mid/late 7th to early 8th C. AD	Early/mid-8th C. AD	Early/mid-8th to 9th C. AD	
Quantity	**8**	**38**	**38**	**222**	**132**	**438**
%	*1.8*	*8.7*	*8.7*	*50.7*	*30.1*	*100*

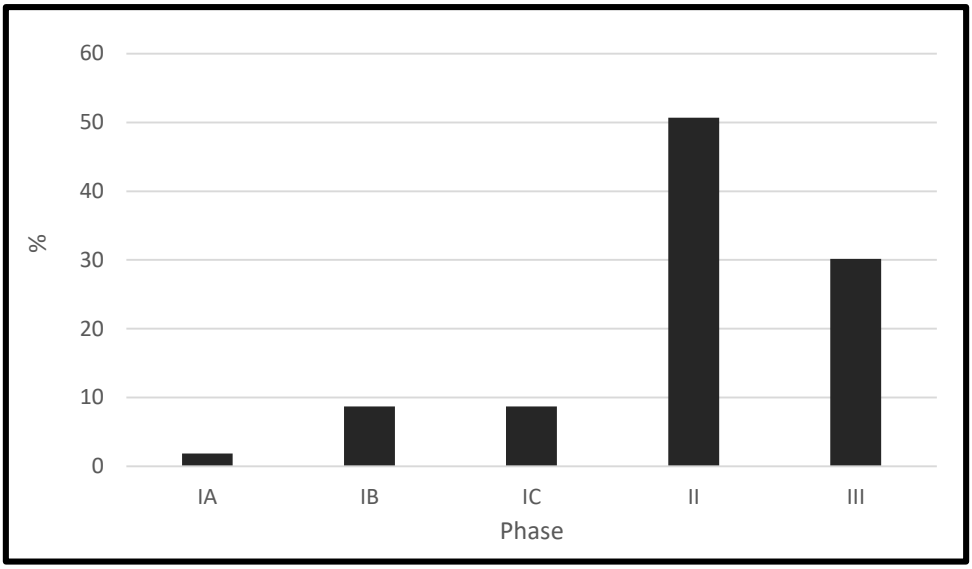

Figure 4.58: Distribution of beads across phases at Kirinda

Use of raw materials

This assemblage comprises 84.3% synthetic beads, followed by 13.0% organic beads, and only 4 are made of stone. A single metal bead was also found in the assemblage (Appendix D3.1). Of the sites studied in this research, KR3 has the largest organic bead assemblage. The KR3 trench is located only about 100m from the sea and this probably explains the large proportion of organic beads, which are mainly made from marine raw materials, such as shell and coral. Stone beads, on the other hand, are few at Kirinda which is the smallest stone bead assemblage of all the sites studied. The stone beads in this assemblage include amethyst, carnelian (Figure 4.59) and quartz (Appendix D3.2).

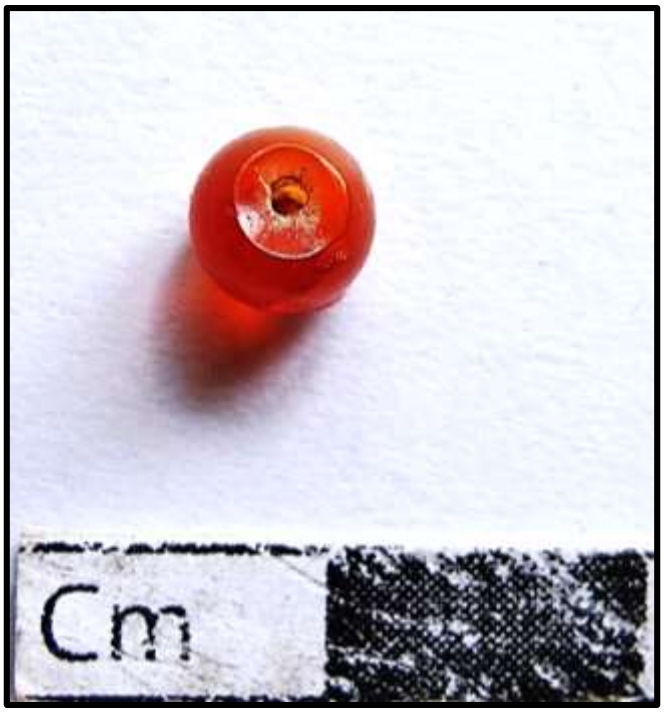

Figure 4.59: A carnelian bead from KR3. The bead is dimpled before drilling

A large majority of the synthetic beads from KR3 are glass, totaling 360 beads. Of these, 77.5% are IPBs. Proportionately, there are more IPBs at KR3 than at any other site studied, although numerically they account for only around 1/3rd of the Mantai IPB assemblage. The IPBs at KR3 comprise over 70.0% of the glass beads in each phase, indicating that IPBs have been in vogue throughout the site sequence, (Table 4.8, Figure 4.60 and Appendix D3.6). Of the IPBs, 63.4% are half-processed or wasters, which indicates that they were being produced on site (Appendix D3.7). Similarly to Mantai, the RDB count at KR3 is low, accounting for only 4 beads out of the 438 total. It is possible that sites which have large IPB assemblages had little interest in RDBs.

Table 4.8: Distribution of IPBs across phases at Kirinda

Phases	**IA**	**IB**	**IC**	**II**	**III**	**Total**
IPB	7	26	25	151	70	279
% from GBA	*100*	*86.7*	*71.4*	*76.3*	*77.8*	*77.5*
% from TBA	*87.5*	*68.4*	*65.8*	*68.0*	*53.0*	*63.7*

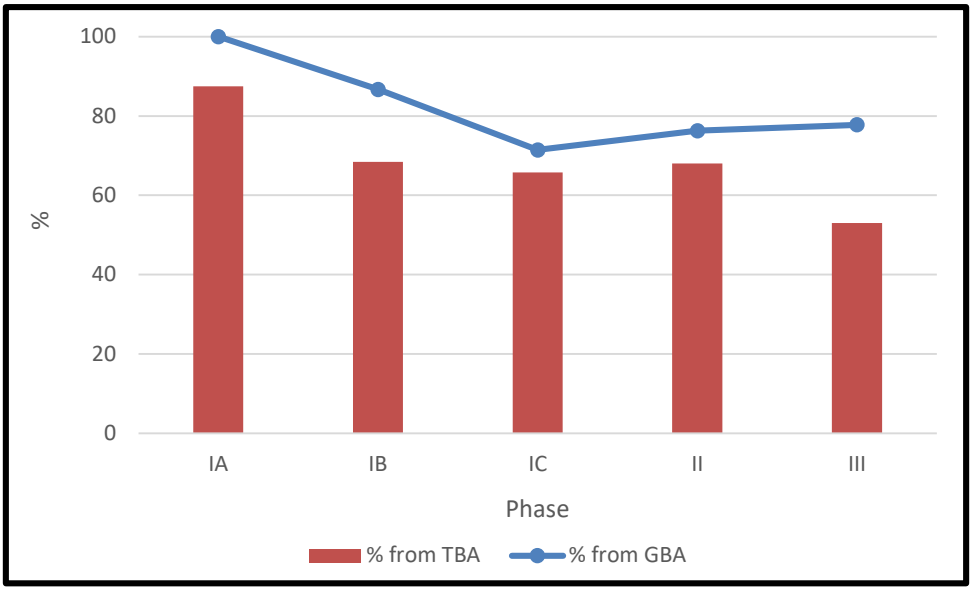

Figure 4.60: Distribution of IPBs across phases at Kirinda

The organic bead assemblage at KR3 consists of shell, coral and fish vertebrae beads, all of which are ocean products (Appendix D3.4). Over half of the organic assemblage (56.1%) is made of shell (Figure 4.61). There are two possible shell beads that need confirmation and four fish vertebrae as well as 14 coral beads.

Figure 4.61: Shell beads and pendants recovered from Kirinda. KR3 assemblage suggests demand for marine raw materials

Bead types

The KR3 bead assemblage also has a wide range of shapes that are similar to the other sites. The dominant bead shape at KR3 is circular cylinder (37.7%), followed by circular oblate (23.5%). There are also 5.3% disc, 4.9% elliptical cylinders, 4.6% elliptical oblates, while all the other shapes are found in very small quantities (Appendix D3.5). The assemblage demonstrates a production specialization in specific types of shapes, it is interesting to note that the quantity of circular cylinders is higher than circular oblates, which is the opposite at both Mantai and Anuradhapura (Chapter 6.2.2).

Non-bead objects of adornment

The other objects of personal adornment discovered at KR3 are limited in number. The assemblage contains two glass and four shell bangles (Appendices D2 and D3.11). Shell seems to be the main raw material used for bangle production, probably as a result of the location of the site in proximity to the ocean. All the glass bangles recovered from KR3 are black in colour. The preference for black colour glass bangles at most sites is significant (Chapter 6.3.2).

Colours

Red is predominant in the IPB assemblage, accounting for 82.1% of the IPB total. Throughout the site sequence, red accounts for more than 50% of each phase, in phases IB, II and III, this proportion increases to over 80% (Appendix D3.8 and Figure 4.62). Green and blue beads were recovered in similar quantities (20 each) and in addition 6 yellow beads and 4 black beads were recovered. The occurrence of yellow IPBs does not take place until Phase IC. Only red and green beads occur throughout the sequence.

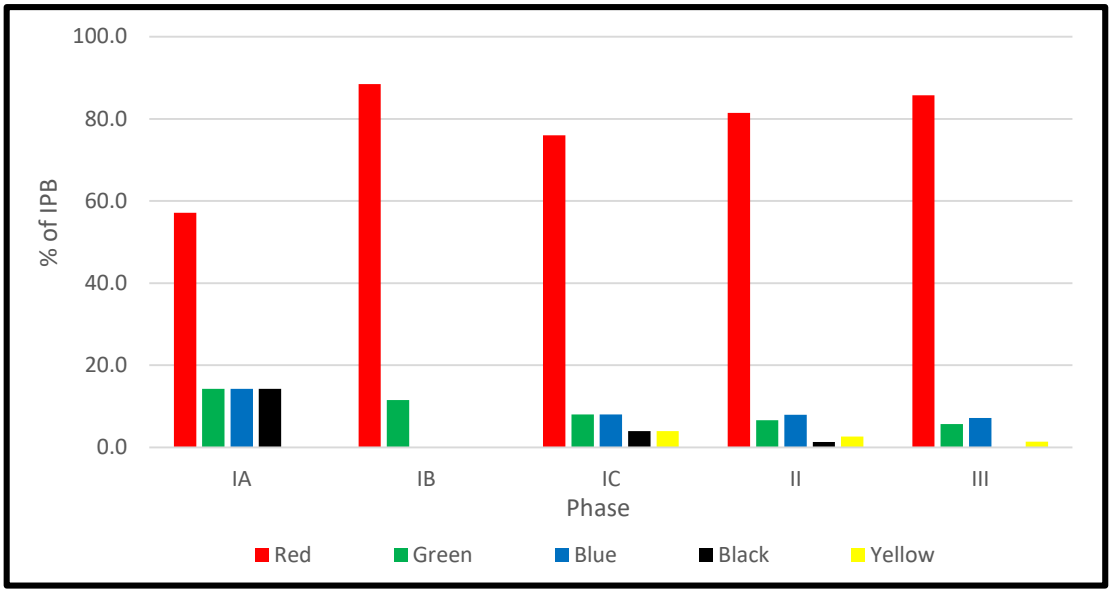

Figure 4.62: Distribution of colour across phases at Kirinda (KR3)

Only two fragments of non-bead objects of adornment made from glass were recovered from Kirinda and both of them are black in colour (Appendix D2). The occurrence of black glass bangles is noteworthy. Further discussion is undertaken in Chapter 6.3.2.

Diaphaneity and surface lustre

There are no transparent IPBs from Kirinda while translucent beads are restricted to 15.1%. The vast majority is Opaque and they account for 84.9% of the IPB total (Appendix D3.9). The majority of IPBs recovered from Kirinda have a shiny surface lustre (75.6%) but those with a very shiny surface are rare (1). Dull beads account for 22.2% (Appendix D3.10).

4.3.5 Ibbankatuwa (IBB)

The bead assemblage from Ibbankatuwa that I studied is on display at the Department of Archaeology at the University of Kelaniya. The material culture from the site was previously studied by Karunaratne (2010). Only 11 strands of beads of different quantities are on display at the university museum (Figure

4.63). These strands have been made for display based on raw materials from the beads recovered from different burials of cluster 21. Due to the constraints imposed by the Department, I could only analyze a total of 1790 beads (Appendix E1). I was not permitted to unstring any of these bead strands and therefore, the measurements of the beads are approximate. Similarly, information about the drilling and finishing of the beads could not be gathered.

Figure 4.63: Beads from Ibbankatuwa Megalithic burial excavation, the necklace was found intact and 10 other strands strung for display

4.3.6 Ibbankatuwa necklace or waistband

Of the 1,790 beads studied, 1,646 form an original necklace or waistband (Figure 4.64), which was recovered from a cremation pit on the northern edge of cluster 21 of the Ibbankatuwa burial site (Karunaratne 2010, 184–185). Only a broad time period has been assigned to the Ibbankatuwa burial site (600BC–4th/3rd centuries BC), therefore, the findings can only be placed within this period. This makes it difficult to place them in an accurate chronological framework and to make meaningful comparisons with other assemblages. Nonetheless, an

understanding of the composition of the assemblage is beneficial for the broader discussions later in the thesis.

Figure 4.64: Necklace/waistband recovered from Ibbankatuwa burial site, currently on display at the Department of Archaeology, University of Kelaniya, Sri Lanka

This necklace was discovered partially intact, enabling the excavators to reconstruct the necklace (Figure 4.65). This is the only object of personal adornment made of beads in the assemblages I studied that was recovered in a manner that would shed light on its original form. The necklace consists of a combination of stone and glass beads. It is made of four separate strands held in place by five spacer beads made of carnelian. These spacer beads are sub-obloid pieces that contain four drill holes to hold the four strands of the necklace (Figure 4.71). The two on either end are white in colour, probably as a result of burning (Figure 4.72), just like the 20 and 16 barrel-shaped (Appendix E2.4) carnelian beads strung next to them (FiguresFigure 4.66Figure 4.68). There are 216 carnelian beads altogether, in addition to the spacer beads. On either side of the middle three non-burnt spacer beads are 24 banded agate beads (Figure

4.68). The original report (Karunaratne 2010, 185) records the necklace as containing some gold beads which are no longer a part of the reconstructed necklace.

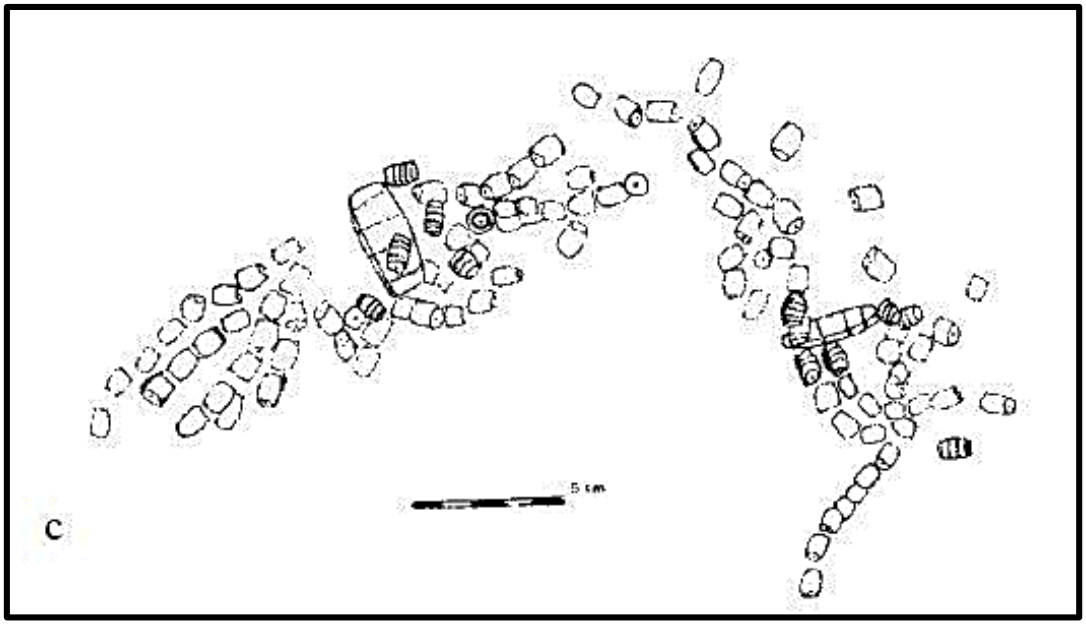

Figure 4.65: Drawing of the necklace/waistband as found inside the cremation pit (Karunaratne 2010, 288)

Figure 4.66: Barrel shaped banded agate beads on either side of the carnelian spacer beads. The necklace contains five such spacer beads, the two on either corner are burnt

.

All the carnelian and banded agate beads are short barrel-shaped. The ends of the necklace consist of small disc-shaped glass beads. While an initial report identifies these as burnt terracotta beads (Bandaranayake, n.d. unpublished), Karunaratne identifies them as ‘glass paste’ beads (Karunaratne 2010, 315). These ‘glass paste’ beads total 1408 in number (Figure 4.67).

Figure 4.67: Glass ‘paste’ beads in the necklace recovered from Ibbankatuwa. The present analysis identifies them simply as glass beads

.

Use of raw materials

Apart from the necklace, the assemblage on display contains another 144 beads which are strung for display separately, according to the material from which they are made. They contain 22 banded agates (Figure 4.68), 74 carnelians, 37 glass, six gold or gold coated (Figure 4.69) and five quartz beads (Figure 4.70) (Appendices E2.1 and E2.2). While the exact locus of discovery is unknown, the entire bead assemblage studied was recovered from cist burial cluster 21 (Karunaratne 2010, 182). The six gold/gold plated beads may be those that formed part of the necklace when it was discovered, as mentioned by Karunaratne (2010, 185), but there is presently no evidence to conclude this.

Figure 4.68: The banded agate beads from Ibbankatuwa, strung separately on the display at the Department of Archaeology, University of Kelaniya

Figure 4.69: Gold/gold-coated beads from Ibbankatuwa, which may have been part of the necklace, but no records verify this

Figure 4.70: Quartz beads of different shapes recovered from Ibbankatuwa

Figure 4.71: Carnelian spacer beads recovered from Ibbankatuwa

Figure 4.72: Examples of burnt carnelian beads from Ibbankatuwa

While the assemblage studied is not the entire bead assemblage recovered from Ibbankatuwa and does not have all the comparable data, due to the limitations encountered during the analysis, the bead composition demonstrates the choices and practices related to objects of personal adornment during the time span of the site.

4.4 Summary

This chapter provides an introduction to the five sites selected for the analysis of beads in the present research. These five sites, namely Anuradhapura Citadel—Gedige, Kantarodai, Mantai, Kirinda, and Ibbankatuwa, are situated across the island of Sri Lanka, as well as across a time span of mid-1st millennium BC to the end of the 1st millennium AD. By selecting sites of different natures, it has helped to identify patterns which may be site specific. A total of 6,945 beads and 91 non-bead objects of personal adornment were analyzed from these five sites. The composition, use of raw materials and main features of each assemblage have been discussed in this chapter. The data patterns that have emerged from this chapter will be elaborated on and discussed in Chapter 6, in comparison with those from South India that are similarly introduced in the following chapter.

CHAPTER 5:

SOUTH INDIA: SITES AND ASSEMBLAGES ANALYZED

5.1 Introduction

In order to understand the true nature of interaction between Sri Lanka and South India, it is important to analyse the artefacts of adornment recovered from archaeological sites in South India, to compare them with those from Sri Lanka. Therefore, during this research, I studied assemblages from two South Indian sites, Alagankulam and Kodumanal (Figure 5.1). In order to make a comprehensive comparison with Sri Lankan material evidence, the assemblages from these two sites were supplemented with published data from Arikamedu (Tamil Nadu), Pattanam (Kerala) and Nagarjunakonda (Andhra Pradesh) (Figure 5.1). In this chapter, the sites at Alagankulam and Kodumanal are described in order to provide the reader with an understanding of their context, followed by a description of the assemblages studied from each site. In the third section, the three supplementary sites and their assemblages are described according to the published material available. The data from the two sites I studied will be compared with those I studied in Sri Lanka, incorporating published data where necessary (Chapter 6), in order to understand the nature and patterns of interaction between the two regions. All datasets gathered from Alagankulam and Kodumanal are given in Appendices F and G respectively.

5.2 The sites

In this section, the two sites from which I have gathered data will be described. These site descriptions are expected to provide the reader with a general

understanding of the sites from which objects of personal adornment were analysed.

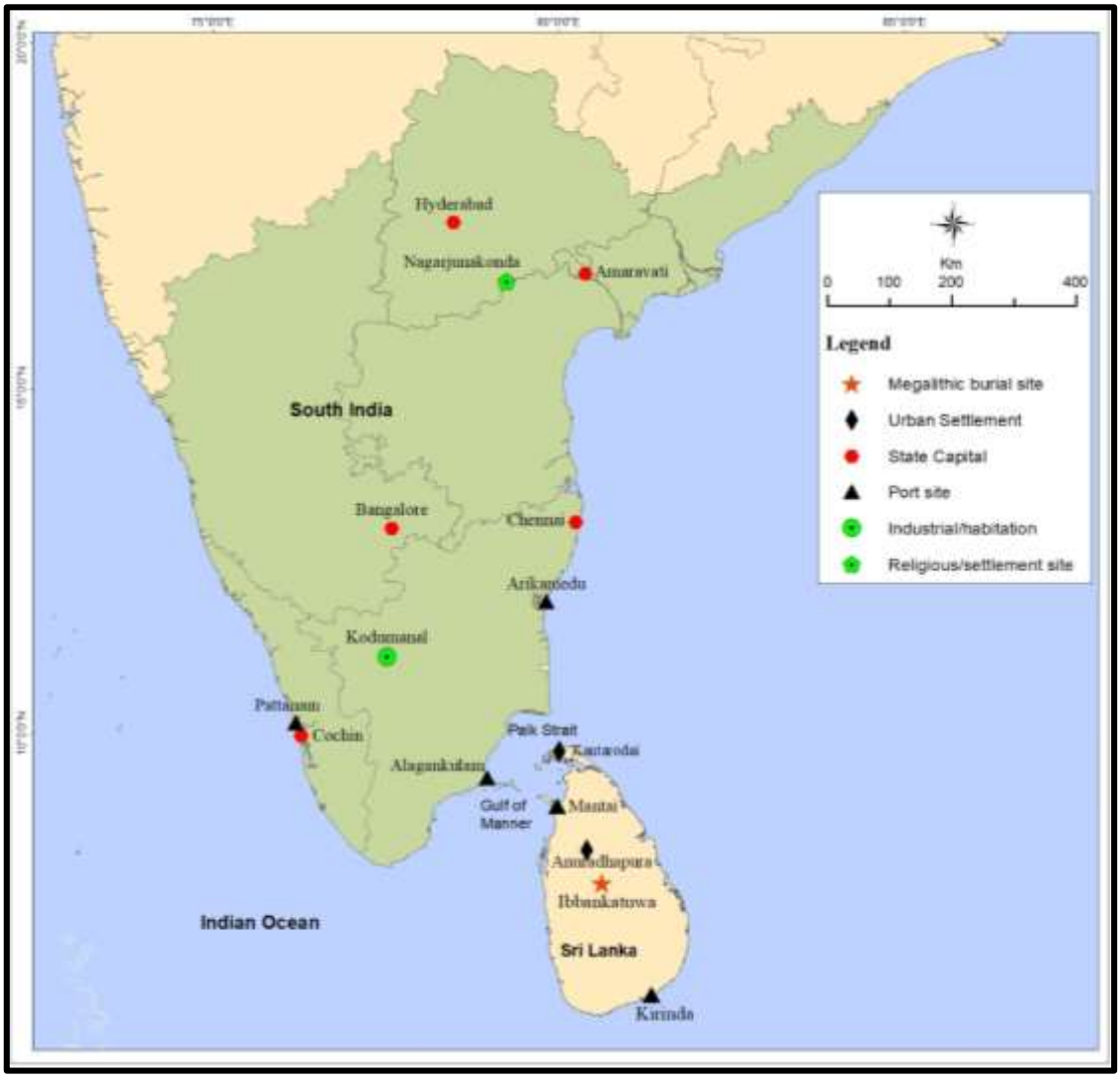

Figure 5.1: The South Indian sites studied, indicating their location in comparison to some of the Sri Lanka sites studied

5.2.1 Alagankulam port site (AGM)

Alagankulam (9º21'17"N 78º58'9"E) is a small village on the Coromandel coast in the Ramanathapuram District of Tamil Nadu (Figure 5.1). The site is located on the northern bank of the Vaigai River, about 24km east of Ramanathapuram. The site is located close to the seashore, and 2km west of Atrangarai, the place where the Vaigai River falls into the Bay of Bengal (Figure 5.2). Although not as celebrated as the contemporary port site Arikamedu (Chapter 5.3.2),

Alagankulam has yielded evidence that has established it as an important port site on the Coromandel coast. The archaeological evidence show that trade with the Roman world as well as Sri Lanka and Southeast Asia took place at this port (Sridhar 2005; Tomber 2007; 972–988; 2009, 42–57).

Figure 5.2: Alagankulam is located on the Coromandel Coast of South India, on the northern bank of the Vaigai River

After the discovery of a punch-marked coin, a few semi-precious stone beads and foreign ceramics from the area, the State Archaeology Department of Tamil Nadu commenced systematic archaeological investigations, and several seasons of excavations at the site have been carried out to date. The first season of excavation took place in 1986/87, followed by seasons in 1990/91, 1993/94, 1994/95, 1996/97 and 1997/98. Eighteen trenches have been laid on a mound named Kottaimedu, which means ‘mound of fort’, extending over an area of 15–20 acres towards the western side of the site. This mound is divided into two parts by a road that leads to the modern village and a government high school is located on the northern part (Figure 5.3). The first trench laid was on the top-most point of the Kottaimedu mound, north of the school, and had cultural deposits of 6.35m across nine layers. The ceramic evidence as well as radiocarbon dates

recovered from these trenches placed the site across three cultural periods, dated between 500BC and AD500 (Sridhar 2005, 11).

The 19th trench was excavated on another mound called Pudukudiyirruppu (Amman Kudiyirruppu), located about 1km northeast of Kottaimedu and 0.5km from the sea. With a cultural deposit of 3.25m, this is the only trench that yielded evidence of a fourth period of habitation, datable to AD 500–AD 1200. Hence, based on the entire excavation, the Alagankulam site has been dated to between 500 BC and AD 1200 (Sridhar 2005, 11). The dates assigned to each period are as follows:

- Period I: 500 BC–300BC (recovered mainly BRW ceramics and also Northern Black Polished Ware (NBPW), Red Ware and Grey Ware)
- Period II: 300BC–AD 100 (BRW, Rouletted Ware, Amphorae and inscribed pottery)
- Period III: AD 100–AD 500 (BRW, Red Ware, Grey Ware, Rouletted Ware, Amphorae, and predominantly a Rouletted Ware variety identified by the excavators as Alagankulam Red Rouletted Ware)
- Period IV: AD 500–AD 1200 (Coarse Red Ware and Chinese ceramics)

Based on its importance as revealed by the recovered artefacts, the State Archaeology Department of Tamil Nadu carried out an excavation in 2014/15. During this excavation, five trenches were laid out, four at Kottaimedu within a modern habitation area and another in Pauthikadu area, which is located close to the sea. The trench at Pauthikadu had a cultural deposit of 3.25m and has yielded Chinese ceramics and represents only the cultural period dated from AD 500–AD 1200. The four trenches laid out on Kottaimedu mound, on the rear side of the school, yielded cultural deposits as deep as 6m. Based on the similarity in

cultural material recovered with that from previous seasons, the same cultural sequence and chronology has been assigned to the findings of the 2014/15 season (Unpublished report 2014/15). Another excavation at Alagankulam took place as recently as 2017, details of which could not be gathered for this research.

Artefacts recovered from the site include Roman coins and ceramics such as Amphorae and Arretine ware (Majeed *et al.* 1992, 10–13, 14–15; Sridhar 2005, 23–27, 83–86; Tomber 2007; 972–988; 2009, 42–57) as well as pot sherds inscribed with Sinhala *Brahmi* script (Mahadevan 1996a, 55–67; Sridhar 2005, 42; Figure 5.44). The artefacts also include glass and semi-precious stone beads and shell ornaments. Alagankulam is located near Dhanushkodi, the closest point in India to Sri Lanka. Having been the main port of the Pandyan Kingdom where flourishing trade contacts with the Roman world and the East existed, the study of objects of adornment recovered from Alagankulam is expected to provide interesting comparisons with those from Mantai in Sri Lanka, a port located on opposite coast to Alagankulam.

Figure 5.3: Commencing excavations at Alagankulam, on the Kottaimedu mound, in the grounds of a Government High School (Source: The Hindu)

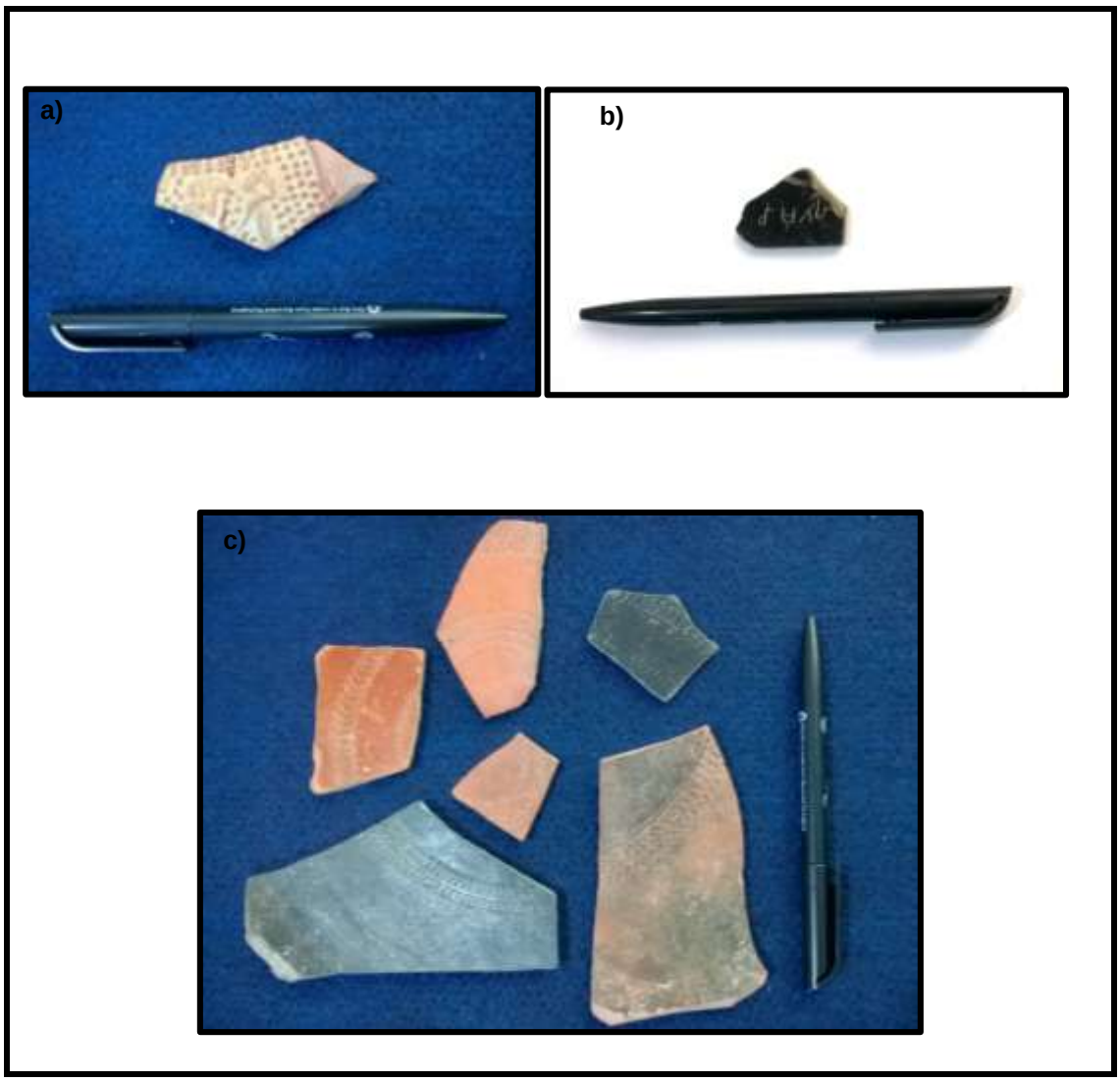

Figure 5.4: Examples of ceramics recovered from the Alagankulam excavations a) Pot sherd with female figures influenced by Egyptian art b) pot sherd with Sinhala *brahmi* writing c) Rouletted Ware with chattering marks

5.2.2 Kodumanal habitation/industrial and burial site (KDL)

Kodumanal (11°6'42"N 77°30'51"E) is a habitation and burial site belonging to the Early Historic Period and has yielded evidence of several flourishing industries including that of stone bead manufacture. The site is located in the semi-arid zone, on the northern bank of the Noyyal River, a tributary of the River Kaveri, in the Erode District, western Tamil Nadu (Rajan 2015a, 1) (Figures 5.1 and Figure 5.5). Today, it is a small village where non-irrigated cultivation, dependant on seasonal monsoon rains, is the main form of livelihood for the

inhabitants. The earliest known reference to the name ‘Kodumanal’ is found in an inscription belonging to the 15th century and it gives information regarding the site location. However, the name closely resembles “*Kotumanam*”, a place referred to in the Sangam literary work *Patirruppattu*, dated between the first and third centuries, which was renowned for its precious stones and was a stone bead production centre (Rajan 2015a, 2–3; Rajan 2015b, 65–67).

V.N. Srinivasa Desikan of the Archaeological Survey of India (ASI) first reported the site but its true archaeological potential was recognized by Dr. S. Raju, a former Professor of Epigraphy at Tamil University, Thanjavur. A trial excavation was carried out at the site by the State Archaeology Department of Tamil Nadu in the early 80s and the results were briefly published by the then Director of the department, R. Nagasamy. Having understood the potential of the site, seven seasons of excavations have been carried out to date. The first four seasons took place in 1985, 1986, 1989 and 1990 by Y. Subbarayalu (Thanjavur University at the time, now at the French Institute, Pondicherry) and K. Rajan (Thanjavur University at the time, now part of the University of Pondicherry) in collaboration with Madras University and the State Archaeology Department of Tamil Nadu. In 1997 and 1998, the State Archaeology Department, Tamil Nadu conducted two further excavations. K. Rajan, who was involved in excavating the site from the beginning, carried out another excavation in 2012–2013, which is the recent most excavation at the site. It is a selected sample of objects of adornment recovered from this last season that was studied for the present research.

Figure 5.5: Location of the Kodumanal excavation site, on the northern bank of the Noyyal River in relation to Kangayam and the dam

During the seven excavation seasons, 62 trenches in the habitation area and 17 megalithic burial sites have been excavated. The ancient site of Kodumanal is situated about 1km east of the modern settlement and its southern boundary is about 100m from the river. It gradually rises northwards, forming a mound that is distributed across an area of about 15ha. The associated burial complex is located north, northwest and east of the mound over an area of about 40ha. The burial sites belong to the Megalithic burial type, cairn-circles and are mostly intact despite modern agricultural activities. However, some of them have been submerged or partially disturbed due to the construction of a dam across the Noyyal River (Rajan 2015b, 67). The mound is exposed on the eastern side as a result of a cart-track that cuts through a cultural deposit that is about 1m in thickness. Otherwise, the mound remains undisturbed by human activity.

Figure 5.6: A trench exposing evidence of stone bead industry at Kodumanal

The maximum cultural deposit of the oldest part of the habitation is about 2m in depth while the remaining area has only a meter-thick deposit. Only two cultural periods were identified until the most recent excavations, the Megalithic Period (400BC–AD100) and the Early Historical period (AD100–300). Three cultural phases within the Early Historic Period have now been identified based on radiocarbon dates, cultural material and ceramics, particularly inscribed potsherds. Thus, the earliest date of the site has been pushed back as far as the 6th century BC, and the site has been identified as an Early Historic site that continued megalithic practices (Rajan 2015a, 5). The inhabitants of the first two cultural phases, I-A and I-B appear to have been artisans, who carried out iron-making and stone bead production. In the last phase they appear to have moved on to an agrarian lifestyle.

The evidence from early levels at the site provide strong evidence of a flourishing stone bead industry (Figure 5.6). Padiyur, a famous beryl mine and Sivamalai, a

hillock bearing sapphires are located 15km south and southeast of Kodumanal, respectively. In addition, Vengamedu and Arasampalayam, two quartz-bearing sites are also located as close as 5km north and south of the site. Resources required for stone bead production being easily accessible led to the development of the industry at the site. The tradition of quartz bead and object production is still preserved at Kangayam, a town located close by (Figure 5.5) and the ethnographic studies carried out by Rajan (2015a, 9; 2015b, 71) have demonstrated that the artisans of Kangayam still follow the traditional production methods observed from the artefacts of Kodumanal. Moreover, the site is situated on an ancient trade route that connected the Sangam Age Chera capital Karur with Muziris, the famous port on the western coast, identified with present day Pattanam (Chapter 5.3.2), along the historically identified main routes *Koṅka-p-peruvali and Rājakēśari-p-peruvali* (Rajan 2015b, 65) (Figure 5.7). This trade route fell through the Palghat gap, the main break in the Western Ghats that connects the Malabar coast with rest of peninsular India. The location of Kodumanal on a main trade route would have aided the importing and exporting of goods from the industries.

The location of the site certainly led to it flourishing as a production site, and its industrial nature is the reason for selecting it for this study, apart from being dated contemporaneously to the other sites and assemblages investigated. It appears from the patterns on the assemblages of bead and non-bead objects recovered from this site would provide interesting insights into the practices of adornment.

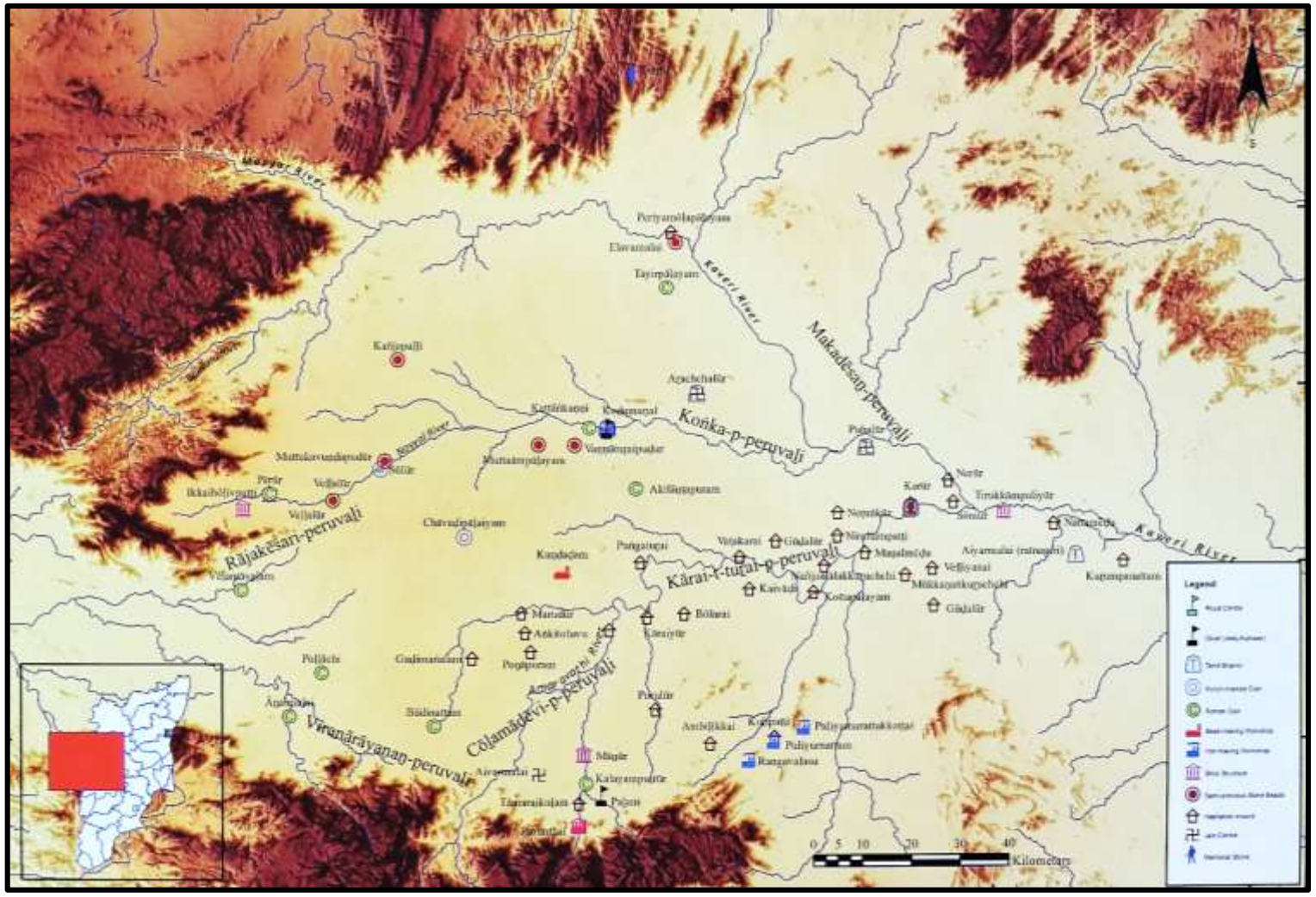

Figure 5.7: Ancient trade routes, Kodumanal was located on the historic main routes, Konka-p-peruvali and Rajakesari-peruvali that connected Karur to Muziris (Rajan 2015, 26)

5.3 Site assemblages

A total of 1086 beads and 187 non-bead objects of adornment from Alagankulam and Kodumanal combined, were analysed for this research. The complete datasets of Alagankulam and Kodumanal assemblages are given in appendices F and G, respectively.

5.3.1 Alagankulam

This section describes the Alagankulam assemblage and its stratigraphic context. The analysed assemblage contains two collections of material, one from the 2014/15 excavation and the other from the excavation seasons from 1986 to 1998. The latter will be referred to as 'previous seasons'. The 2014/15 excavation was the latest archaeological investigation carried out at the site by the time of my fieldwork. The complete collection of objects of personal adornment recovered from the excavation was therefore available at the Ramnad Museum, Ramanathapuram; a museum managed under the State Archaeology Department of Tamil Nadu. However, due to recording problems, the contextual details of individual artefacts have unfortunately been lost and were not available for my study. Therefore, the artefacts from the 2014/15 collection could not be placed in a chronological sequence in order to compare with artefacts from other sites.

The collection examined from 'previous seasons' has been stored at the Tamil Nadu State Archaeology Department building. However, because the present study was carried out nearly two decades after the final excavation, the recovered assemblage was not available in its entirety. In addition, most of the artefacts lacked necessary stratigraphic context details. Therefore, only the artefacts with

sufficient stratigraphic context data have been considered for comparative analysis. These artefacts are limited to periods II and III, which are dated 300BC–AD100 and AD100–500, respectively (Sridhar 2005, 11). Therefore, during the analysis of artefacts from the Alagankulam excavations, the 2014/15 collection was studied separately, in order to understand the composition of objects of adornment and the 'previous seasons' collection was helpful to observe its distribution across the time periods.

The entire bead assemblage analysed comprises 908 beads, 226 from the 2014/15 excavation, and 682 from 'previous seasons'. Of the 682 from 'previous seasons', 137 do not have data to determine the time period to which they have been assigned, so, they are excluded from further discussions here. When stating statistical data in the text, percentages are given, except for instances when the percentage does not accurately represent the occurrence.

Use of raw materials: 2014/15 excavation

The 2014/15 bead collection comprises 85.4% synthetic, 6.2% stone, 2.6% organic and 0.9% probable synthetic beads (Appendix F3.1; Figure 5.8). In addition, 4.9% of the beads could not be definitively categorized. The entire synthetic assemblage apart from one object, comprises glass beads. Of the glass beads, 81.8% are IPBs (Figure 5.9).

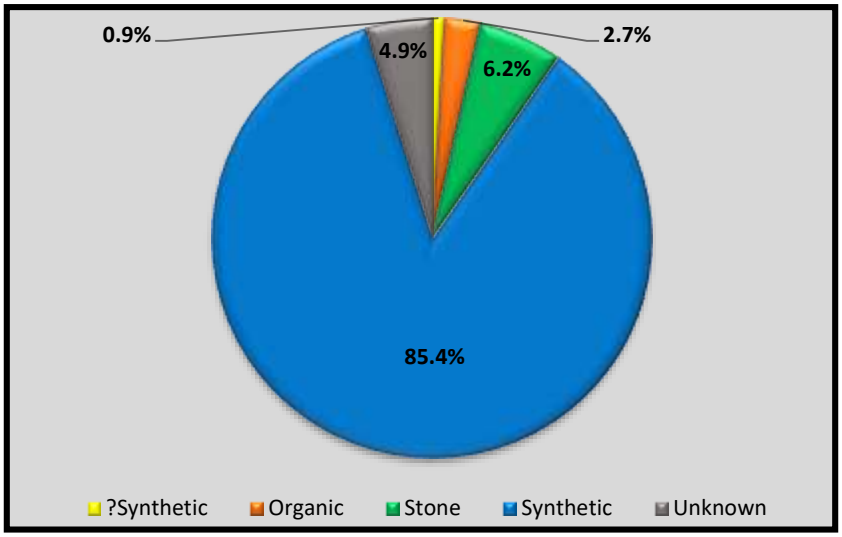

Figure 5.8: Composition of beads from the 2014/15 collection of Alagankulam

Figure 5.9: IPBs of different colours recovered from Alagankulam

Figure 5.10: Examples of carnelian beads recovered from Alagankulam

Figure 5.11: Example of a shell bead from Alagankulam

The stone bead assemblage is small, the largest quantity being 5 quartz beads. The assemblage also contains beads of carnelian (3) (Figure 5.10), onyx, amethyst and soapstone (1 each) and three for which the type of stone used could not be identified (Appendix F3.6; Figure 5.12). The organic assemblage is also unimpressive, containing only 6 beads, of which only 1 is made of shell, and the remainder are made of fish bone (Appendix F3.3; Figure 5.11).

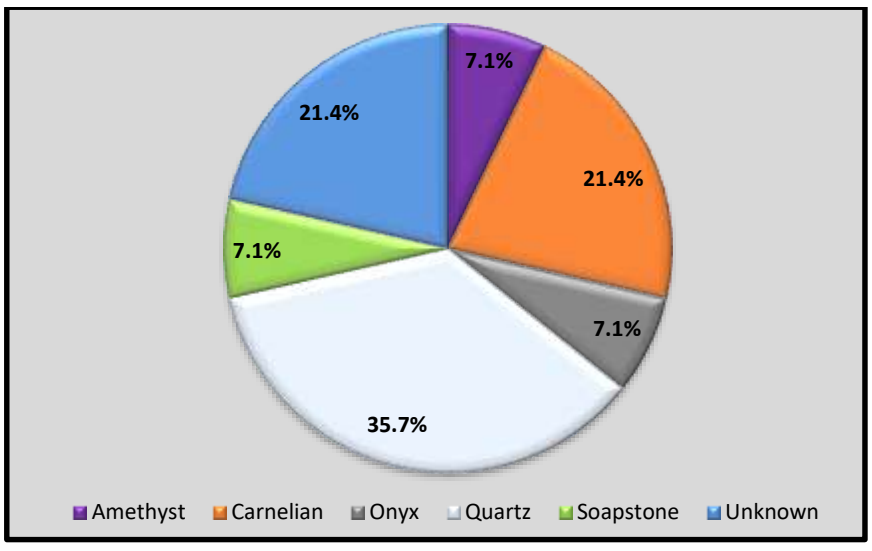

Figure 5.12: Distribution of stone beads in the 2014/15 collection of Alagankulam

Use of raw materials: 'previous seasons'

The collection from 'previous seasons' spans periods II and III and comprises 87.3% synthetic, 9.7% stone, 1.8% organic and 0.2% metal beads. In addition, 3 beads could not be categorised. Also, there is a bead which is probably made of metal and another probably of stone (Table 5.1; Figure 5.13; Appendix F3.2). Synthetic beads dominate the collection and increase in the Common Era, whereas beads made of stone proportionately decrease, despite the increase in number, in period III. Of synthetic beads, 99.2% are glass and 84.3% of these glass beads are IPBs, indicating their dominance at the site.

Table 5.1: Distribution of bead media across periods

Period		**II**		**III**		**Total**	*%*
Bead media	**Date**	300BC–AD100	*%*	AD100–500	*%*		
Synthetic		116	*77.9*	360	*90.9*	476	*87.3*
Stone		24	*16.1*	29	*7.3*	53	*9.7*
Organic		7	*4.7*	3	*0.8*	10	*1.8*
Unknown		1	*0.7*	2	*0.5*	3	*0.6*
Metal		1	*0.7*	-		1	*0.2*
?Metal		-		1	*0.3*	1	*0.2*
?Stone		-		1	*0.3*	1	*0.2*
Total		**149**	*100*	**396**	*100*	**545**	*100*

The stone bead component of the 'previous seasons' collection is limited to 53 beads, and comprises quartz (20.8%), carnelian (26.4%), amethyst and garnet (7.6% each), banded agate and beryl (3.8% each). The stone type of 3 beads is unknown. The assemblage also contains beads which are probably made of beryl (8), aquamarine (3), garnet and soap stone (1 item each) but require confirmation. Carnelian dominates the assemblage, despite not being locally available (Appendix F3.7, Table 5.2 and Figure 5.14).

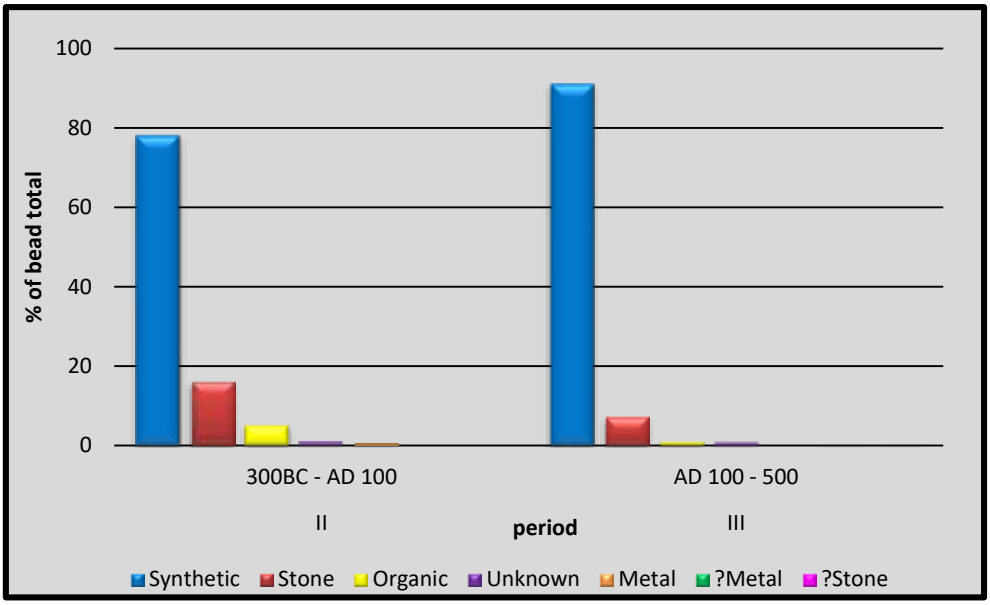

Figure 5.13: Distribution of bead media across periods of 'previous seasons' of Alagankulam

Table 5.2: Distribution of stone varieties used for bead-making at Alagankulam

Period / Stone variety	II	%	III	%	Total	%
Quartz	6	*25.0*	5	*17.2*	11	*20.8*
Carnelian	4	*16.7*	10	*34.5*	14	*26.4*
Amethyst	4	*16.7*	-		4	*7.5*
?Beryl	3	*12.5*	5	*17.2*	8	*15.1*
?Aquamarine	3	*12.5*	-		3	*5.7*
Garnet	2	*8.3*	2	*6.9*	4	*7.5*
?Garnet	1	*4.2*	-		1	*1.9*
?Soapstone	1	*4.2*	-		1	*1.9*
Unknown	-		3	*10.3*	3	*5.7*
Banded Agate	-		2	*6.9*	2	*3.8*
Beryl	-		2	*6.9*	2	*3.8*
Total	**24**	*100*	**29**	*100*	**53**	*100*

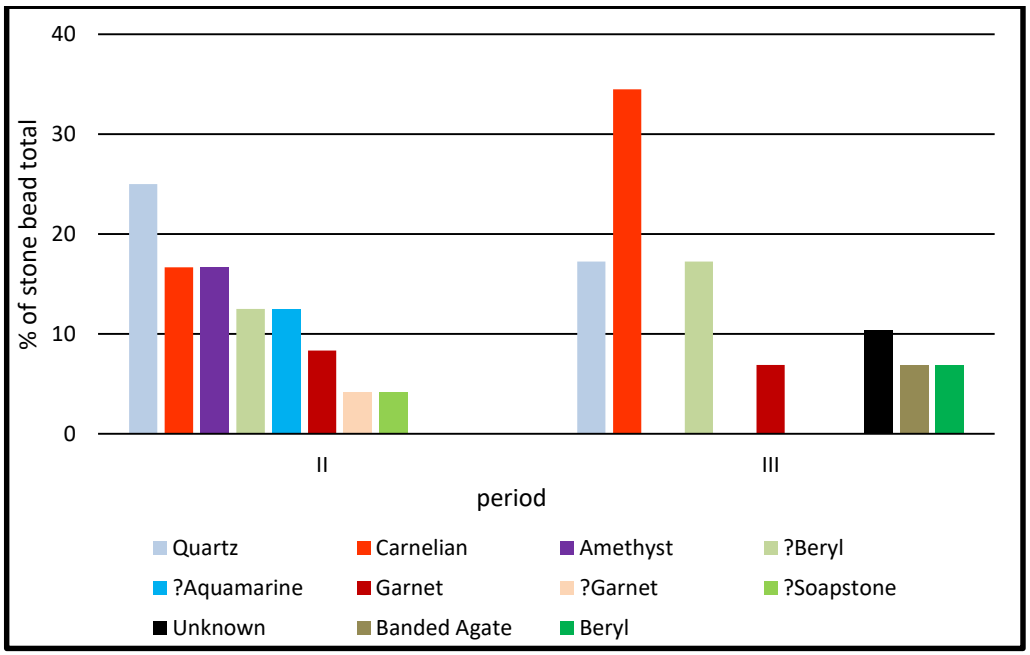

Figure 5.14: Distribution of stone beads across periods from 'previous seasons' found at Alagankulam

The organic bead collection is small at just 10 items. The most common organic material is shell (7), and interestingly, the assemblage also contains one pearl and two coral beads (Appendix F3.4). These may reflect the proximity to the pearl banks of the Gulf of Mannar. Mantai is the only other assemblage that I studied that contained pearl, and Bohingamuwa (2017, 448) also recorded three pieces of coral. These findings suggest similarities between the sites.

Bead type: 2014/15 excavation

The assemblage runs across a wide range of types. The majority of beads from the 2014/15 excavation are circular oblates (55.3%), followed by circular cylinders (12.8%). There are 6 elliptical oblates, which may have been originally intended to be circular oblates but the shape changed during reheating. In addition, 4% irregular shaped beads and just over 13% of fragments are present in the collection. The remaining bead types range between 1–4 beads of each type (Appendix F3.8).

Bead type: 'previous seasons'

The bead collection from 'previous seasons' at Alagankulam comprises 48.3% circular oblates, while 13.4% are circular cylinders. There are 4.6% elliptical oblates and 1.1% elliptical cylinders. Disc beads form 3.85% of the total. The assemblage also contains three RDBs, two of which are fragments (Appendix F3.9). The very small number of RDBs may suggest that they were imported to the site, and Sri Lanka could be a possible place of origin, considering Alagankulam's proximity to Sri Lanka (Chapter 6.2.1). There is a high percentage (19.8%) of fragmented beads at the site.

Non-bead objects of adornment

A total of 62 non-bead objects of personal adornment were analysed from Alagankulam, across all seasons. The 2014/15 collection is limited to 24 bangle fragments, 20 made of shell and 4 of glass (Appendix F3.12). Whereas the 'previous seasons' collection is more diverse, comprising glass (29), carnelian (2) (Figure 5.15), terracotta (1), banded agate (1), cowry (2) and conch shell (2) (Appendix F3.13). Apart from these, there was a copper-alloy signet ring without contextual details. In addition, a large quantity of conch shell bangle fragments, both in finished and half-processed state, were also present but with no contextual details. However, they may suggest that shell bangles were produced at the site and that there was demand for them. Further discussion on the use of raw materials in producing non-bead objects of personal adornment and their probable significance will be discussed in chapter 6.

Figure 5.15: A possible carnelian earring fragment

Colour: 2014/15 excavation

Of the 157 IPBs recovered, green is the most common colour (42.0%), followed by red (27.4%) and blue (23.6%). There are a few yellow beads (5) but they are proportionately higher than the other South Indian sites studied. In addition, 3 black beads have been recovered (Appendix F3.10; Figure 5.16). The glass non-bead assemblage is limited to 4 items, 3 of which are green in colour and 1 is yellow.

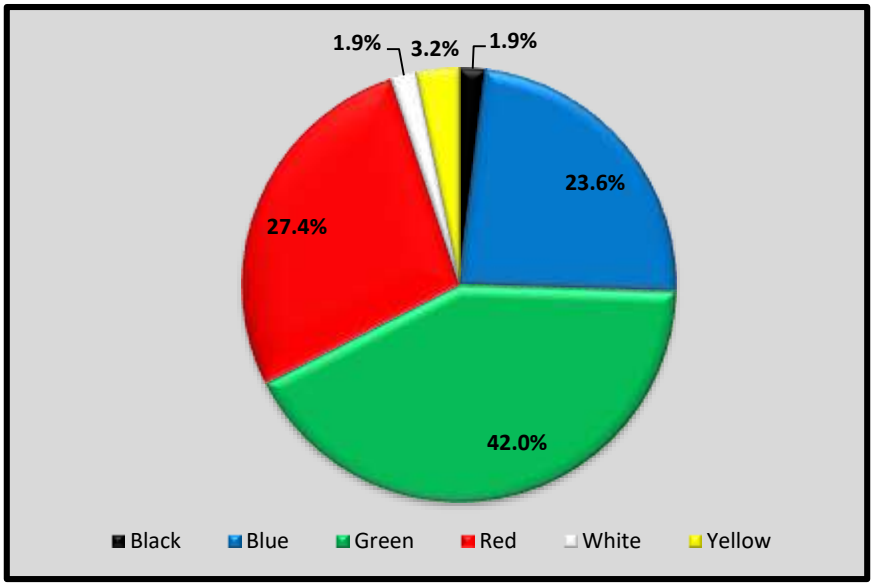

Figure 5.16: Composition by colour of the 2014/15 IPB collection from Alagankulam

Colour: 'previous seasons'

Of the glass beads analyzed from the 'previous seasons', 398 were identified as IPBs and of those 53.8% are green in colour. The second most numerous colour is blue (24.1%) followed by red (15.8%). Yellow and black are in small number, accounting for 3.3% and 2.5% respectively (Appendix F3.11; Figure 5.17). The non-bead object collection made of glass contains 29 items and were all recovered from period III. The objects are predominantly black (28) in colour and only a single fragment is green.

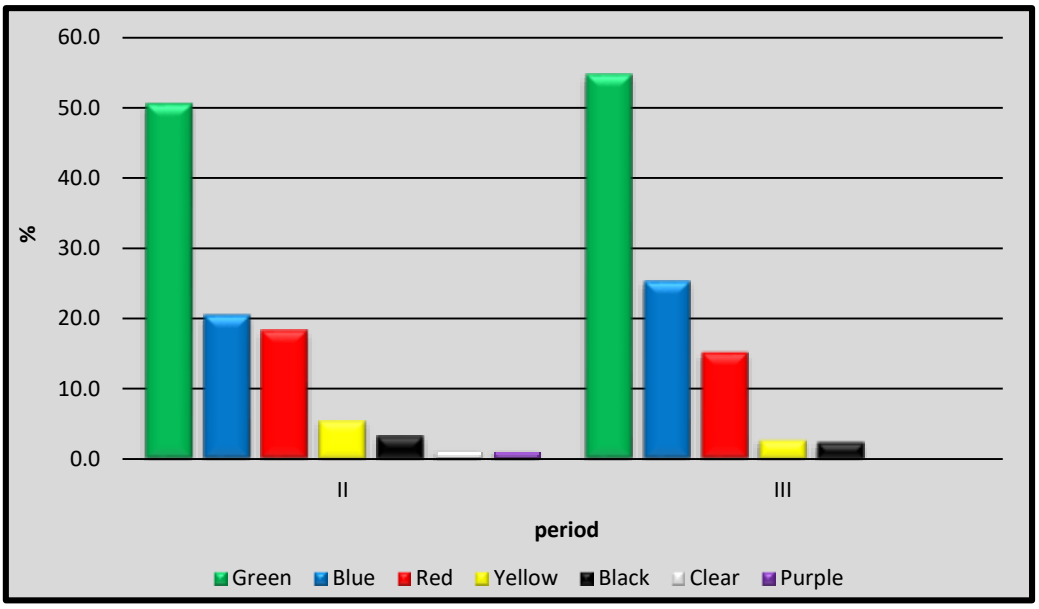

Figure 5.17: Distribution of IPB colours across periods of 'previous seasons' of Alagankulam

Diaphaneity and surface lustre: 2014/15 excavation

The diaphaneity of the IPBs recovered from 2014/15 excavation is restricted to translucent and opaque. Translucent beads make up 70.7% of the IPBs while 29.3% are opaque (Figure 5.18). The surface lustre of the IPBs is classified as dull, shiny, very shiny, dull with traces of shininess and very shiny–shiny. Dull beads make up 23.6% of the collection and a single bead is recorded as dull with traces of shininess. The majority of the beads have shiny surfaces (47.8%) while

6.4% have very shiny surfaces. Another 21.7% of the beads have surfaces that range between shiny and very shiny (Figure 5.19).

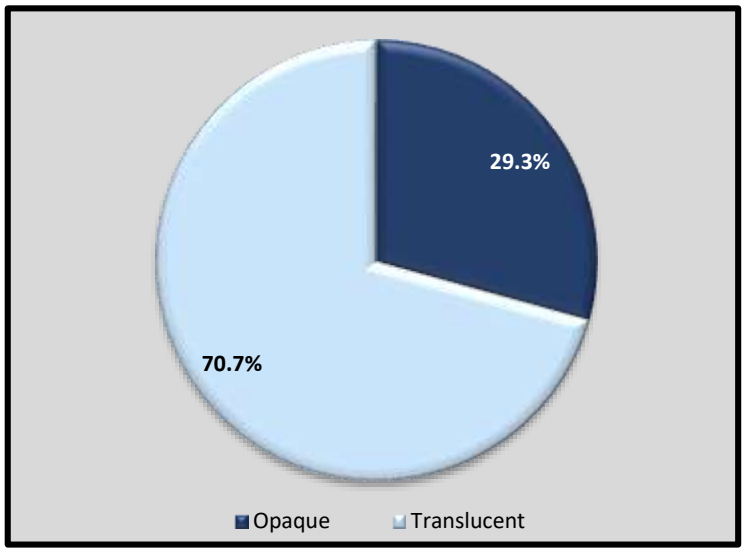

Figure 5.18: Diaphaneity of IPBs from the Alagankulam 2014/15 excavation

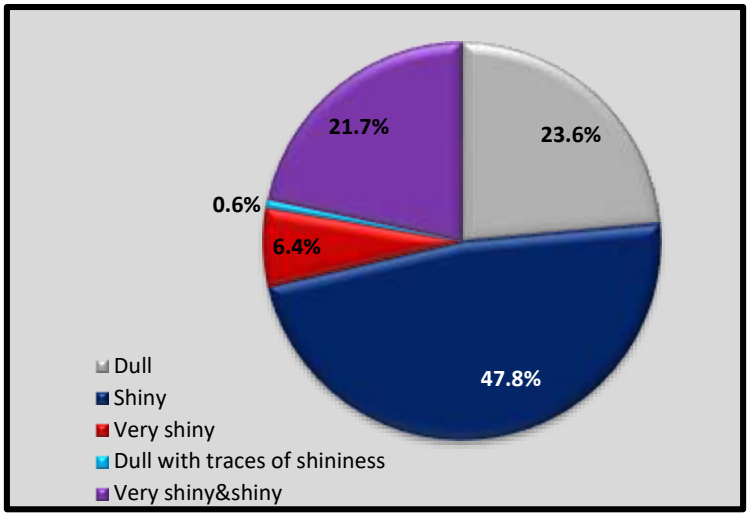

Figure 5.19: Surface lustre of IPBs from the Alagankulam 2014/15 excavation

Diaphaneity and surface lustre: 'previous seasons'

Of the IPBs from 'previous seasons', 80.9% are translucent while 18.8% are opaque (Figure 5.20). A single transparent bead was recorded from period III. The surface lustre of 53.3% beads is shiny. Interestingly, unlike the beads from the 2014/15 excavation, a comparatively large quantity (32.4%) of beads have a very shiny surface (Figure 5.21). However, because this collection does not contain the entire assemblage recovered from 'previous seasons', conclusive

interpretations cannot be made. In addition, the collection contains 13.3% dull beads as well as a single dull bead with traces of shininess. It was not possible to determine the surface lustre of 3 beads due to them being in tiny fragments.

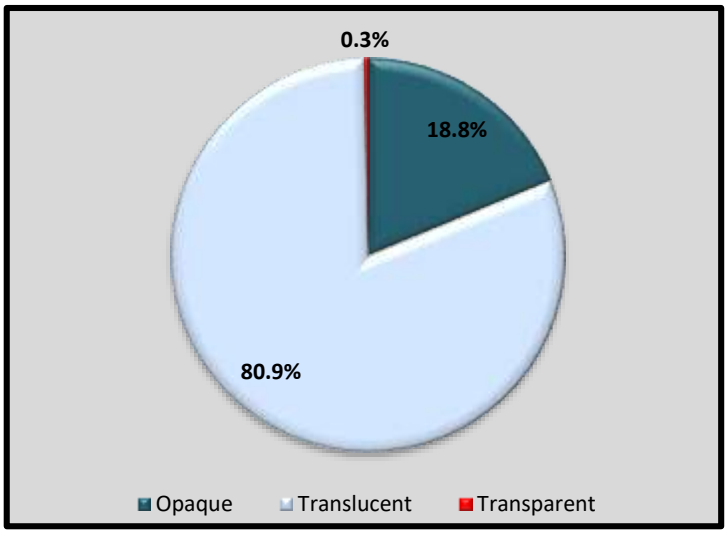

Figure 5.20: Diaphaneity of IPBs from Alagankulam 'previous seasons' excavations

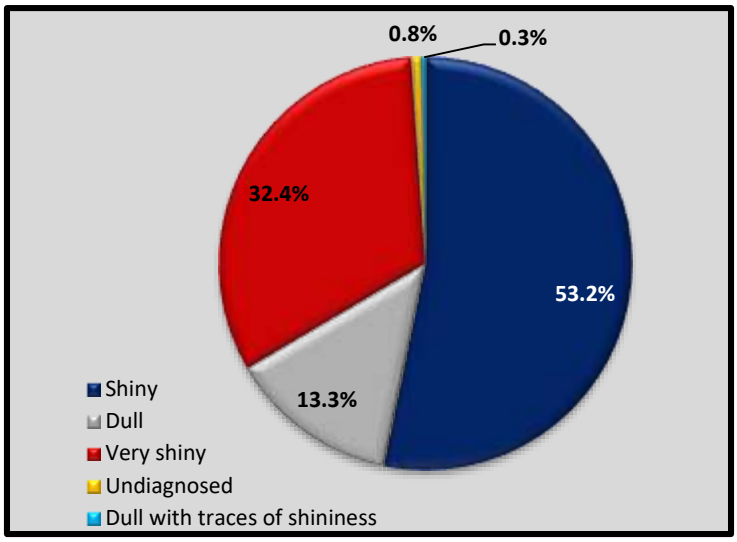

Figure 5.21: Surface lustre of IPBs from Alagankulam 'previous seasons' excavations

The lack of stratigraphic details for the 2014/15 collection makes it difficult to compare data across time with data from Sri Lanka. On the other hand, although broad time periods are available for the ‘previous seasons’ collection, the material analysed does not comprise the entirety of the excavated material. Therefore, accurate comparisons are difficult to make using this assemblage. However, the

data collected is useful in making broad intra- and inter- regional comparisons within the overall time period between 300 BC–AD500.

5.3.2 Kodumanal

Due to time constraints and the large quantity of artefacts, only the objects of adornment recovered from trenches ZD20, ZD21, ZE20, and ZE21, excavated in 2013 were analysed for this research. These trenches are located at the centre of the highest habitation mound on the site and are the deepest excavated (Rajan pers. comm. July 2016). Almost the entirety of the objects examined for this study are half-processed ornaments which indicates large-scale bead production was carried out at the site. Each trench was 5x5m in size and was excavated in five-centimetre arbitrary levels. Five radiocarbon dates have been secured from the 2012 and 2013 field seasons at Kodumanal. Based on these dates, the cultural deposit between 15cm and 120cm has been dated to 408–200BC. This date range has been applied for this level of deposit across the whole site. Based on this, Rajan (2015a, 405) claims that it can be hypothesized that it took an average of 2 years for the accumulation of 1cm of cultural deposit. Using this hypothesis, the excavators date each arbitrary layer of the excavation, and the artefacts recovered from each layer. However, on the basis that cultural deposition does not occur at an even rate, while I place the assemblage within the broad time period assigned to the site, I have not applied a finer chronological resolution. Therefore, the development of objects of adornment over time could not be observed, nor could the assemblage be compared to those from Sri Lanka in particular, across time. In addition, because the assemblage is restricted to production debris and half-processed beads, the potential for comparisons is limited.

Use of raw materials

A total of 178 beads (fragmentary and half-processed) were analysed. According to the excavator, finished beads were restricted to burial sites (Rajan pers. comm. July 2016). Out of these 178 beads, 66.9% of the beads are made from stone, while 24.7% are organic and 6.7% are synthetic beads. The bead medium of 3 beads could not be identified (Appendix G3.1, Table 5.3 and Figure 5.22). The findings indicate that the site had an industry specializing in stone beads.

Table 5.3: Media of bead production at Kodumanal

Medium	Quantity	*%*
Stone	119	*66.9*
Organic	44	*24.7*
Synthetic	12	*6.7*
Unidentified	3	*1.7*
Total	**178**	*100*

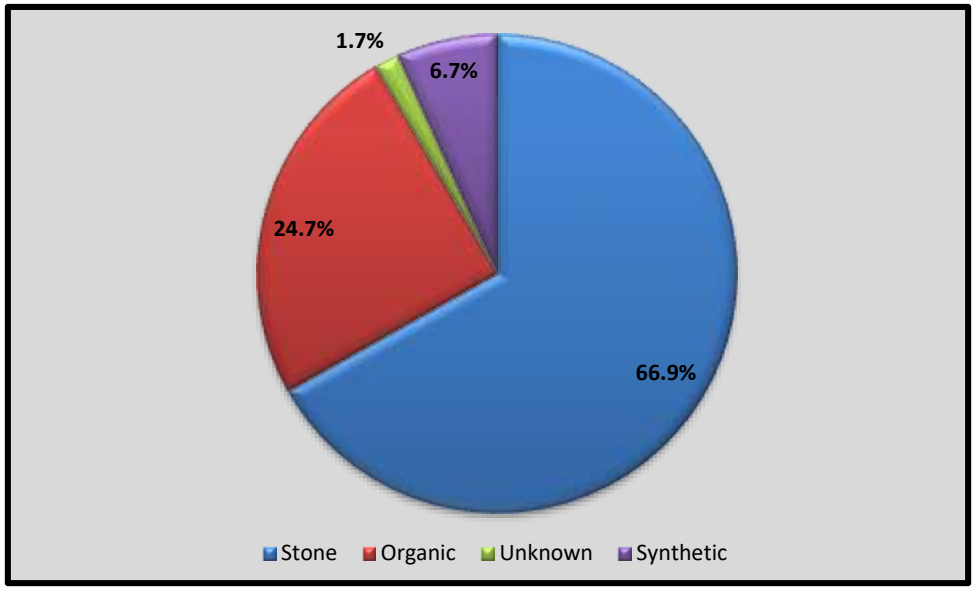

Figure 5.22: Composition of media of bead assemblage at Kodumanal

The 119 stone beads recovered from the site ranges across stone varieties such as amethyst, quartz, garnet, carnelian and beryl (Appendix G3.3 and Table 5.4). The assemblage contains 56.3% quartz (Figure 5.23) followed by 19.3% amethyst, 10.9% beryl and 6.7% probable beryl. The assemblage also includes

3 garnet, 2 probable amethyst, 2 probable feldspar beads and 1 carnelian bead. The majority of the bead assemblage is actually production debris, therefore, technically not beads, but referred to here as beads for convenience of presentation. The large quantity of quartz is the result of there being a quartz quarry in the vicinity of the site (Rajan 2015b, 70). Accessibility to raw material is probably the reason for the popularity of this variety of beads. Rajan and Athiyaman (2011, 108), as well as Kelly (2013, 91; 203; 207) state that despite the easy accessibility to quartz, the burial sites at Kodumanal rarely yielded quartz beads while the demand was for carnelian beads, which were imported to the site, either as raw material or completed beads. Similarly, my analysis indicates, that the trenches which cut through habitation deposits yielded a majority of quartz beads as against a single carnelian item.

Figure 5.23: Half-processed quartz beads from Kodumanal

Table 5.4: Stone varieties used for bead-making at Kodumanal

Stone variety	**Quantity**	*%*
Quartz	67	*56.3*
Amethyst	23	*19.3*
Beryl	13	*10.9*
?Beryl	8	*6.7*
Garnet	3	*2.5*
?Amethyst	2	*1.7*
?Feldspar	2	*1.7*
Carnelian	1	*0.8*
Total	**119**	*100*

Another interesting feature at Kodumanal appears within the organic bead group. This group contains beads made of *Kirindi* seed (23), shell (20) and a single cowry shell (Appendix G3.2). *Kirindi* seeds (Figure 5.24) appear to be a popular raw material for bead-making at the site. Anuradhapura Gedige and Alagankulam assemblages also yielded a single *Kirindi* bead each, indicating its use but the limited number could be the result of preservation conditions. Despite being an interior site, the demand for shells appears to be comparatively high. The evidence from the assemblage of non-bead objects of adornment (Appendix G3.6) indicate the existence of a shell industry at the site. The raw materials for this industry had to be imported from coastal areas, and this suggests that the accessibility of raw materials is not necessarily the most important factor, when there is strong demand for a product.

Figure 5.24: Kirindi seed beads recovered from Kodumanal

The 12 synthetic beads are predominantly glass beads (7) (Figure 5.25). These beads include circular oblate (1) and circular sphere (1) bead types, while the

remaining 5 beads are fragments. The circular oblate and probably the fragments appear to be IPBs and are all blue in colour (Appendix G1 and G3.2). Kelly (2013, 194) records 132 glass beads present in her assemblage from six seasons of excavation. The scarcity of glass beads at the site is interesting. As it was a specialized stone bead production site, no glass beads were produced at Kodumanal. A possible place of origin for these glass beads could be Porunthal, which is located south of Kodumanal. Porunthal is an Iron Age–Early Historic site that contains a habitation mound and Iron Age burials. Excavations carried out at Porunthal in 2009–2010 recovered a glass working furnace and large quantities of glass beads, constituting about 86% of the total artefacts recovered. The radiocarbon dates place the site to as early as 5th century BC, contemporary with Kodumanal (Rajan *et al.* 2013).

Figure 5.25: One of the few glass beads recovered from Kodumanal

Bead types

The majority of the assemblage is fragmented (59.6%). Of the remainder, 10.7% are irregular shaped beads. Only 3.4% circular spheres and 2.2% circular tablets are present in the assemblage. Other shapes occur in small numbers (Appendix G3.4). As most of the beads are half-processed beads or wasters, the typology

of the assemblage is restricted. The Kodumanal assemblage clearly demonstrates that there was an established stone bead production industry at the site, with 63.9% of the stone beads studied being wasters and 22.7% half-processed. None of the stone beads studied were found in finished form but 12 items were found unworked (Appendix G3.5, Table 5.5 and Figure 5.26). The assemblage provides an insight into the contemporary demand for objects of adornment through the bead production industry.

Table 5.5: Finishing of stone beads at Kodumanal

Finishing	Quantity	%
Waster	76	*63.9*
Half-processed	27	*22.7*
Natural	12	*10.1*
?Natural	3	*2.5*
Undiagnosed	1	*0.8*
Total	**119**	*100*

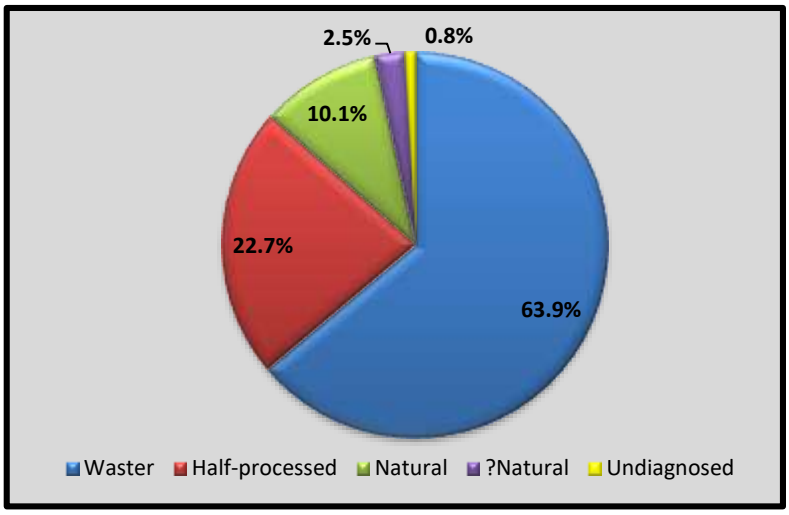

Figure 5.26: The stone assemblage from Kodumanal comprises predominantly wasters with a large number of half-processed beads. No finished beads were available

Non-bead objects of adornment

The assemblage of non-bead objects of adornment comprise mainly bangles, rings and ear spools. A large majority (92%) of these are made of organic material whereas objects made of synthetic, stone and metal are few. Just over 98% of

the organic material consists of shell. There are 111 examples of bangles made of shell, either as finished or half-processed bangle fragments (Figure 5.27). There is a ring fragment made out of glass and 3 made of quartz (Figure 5.28). The glass ring fragment is the only glass non-bead object present in the assemblage and is green in colour decorated with black, red and white glass layers on the outer surface (Figure 5.29). The assemblage also contains a terracotta earspool, as well as a shell object that is probably an unfinished earspool (Appendix G2). It would be interesting to understand why a shell bangle industry existed at an interior site, far from probable sources of raw material and this will be discussed further in chapter 6.

Figure 5.27: Shell bangle fragments decorated with grooved lines

Figure 5.28: A half-processed ring fragment made of quartz

Figure 5.29: Only a single ring fragment was made of glass. The translucent green glass is decorated with a black, red and white glass layers on the outer surface

5.4 Other selected South Indian sites

Three other sites in South India that have been widely studied and well published have been considered in this research in order to supplement the data gathered from the sites discussed above. By doing so, a wider area of South India will be taken into consideration and a broader picture of the objects of adornment from South India can be gained.

5.4.1 Arikamedu port site

Located in the modern state of Union Territory of Puducherry (formerly and popularly known as Pondicherry), Arikamedu is one of the most celebrated South Asian port sites of the early centuries BC/AD. Dated to between the 250BC and AD200 (Begley 1983, 466; Begley *et al.* 1996, 39) the site has been identified as the Roman emporium, Podukē, mentioned in the *Periplus Maris Erythraei* and this identification, as well as the findings during early surveying at the site, created great interest in the site among scholars. While several studies have been carried out at Arikamedu, Wheeler's (1946), Casal's (Casal 1949b; Wheeler *et al*., 1946; Begley 1994; 1983; 2005; Begley *et al.* 1996; 2004) and Begley's (1983; Begley

et al. 1996; 2004) work are the most detailed investigations of the site. Arikamedu is also one of the best published sites in South India.

The site of Arikamedu is also known as Virampatnam and is located on the eastern bank of the Ariyankuppam River, 3km south of Pondicherry, the capital of the Union Territory of Puducherry, on the Coromandal coast (Figure 5.1). The literal meaning of Arikamedu is 'Eroding Mound'. The location in a sheltered lagoon formed by the Ariyankuppam and Gingee Rivers made Arikamedu a natural harbour, suitable for a major port. The state of Pondicherry was under French rule until as recently as 1954, and therefore, among the first people to discover the Arikamedu site and its Mediterranean artefacts were French. The site consists of two separate but related sectors, the northern and the southern (Figure 5.31).

As revealed by the excavations, the northern sector of the site is towards the river mouth and was the port area, with remnants of a 'warehouse' building (Figure 5.30). The southern sector was the industrial area and large quantities of glass and IPB production debris were recovered from the area (Francis 2004, 467). The southern sector of the mound is higher than the northern and its lower levels are better preserved. According to the information from Casal's excavations, the site extended over an area of 420m north-south along the river during its peak. However, the site may have occupied a larger area, and a major part of the western side of the settlement was destroyed by the sea. Nearby the site, at Souttoukeny, a Megalithic burial complex was discovered by Casal and these burial sites are contemporary to the early phases of the Arikamedu settlement (Begley 1983, 464). Francis argues that the Pandukals, who were the owners of

these burials, may have occupied the southern sector of the Arikamedu site, and were connected to the glass bead industry at the site (Francis 2004, 467). ‘Pandukal’ is a term introduced by Leshnik (1974, 1–2) to identify the people who are associated with megalithic burial practice. The word means ‘old stones’ in Tamil and Francis argues that it is a more appropriate term to identify them than “Megalithians”. Francis (2002, 113–116) also attributes the production of stone beads in South India including Arikamedu mainly to the Pandukals.

Figure 5.30: Ruined structures at Arikamedu site

Among the important findings from Arikamedu are ceramics imported from the Mediterranean, namely Terra Sigillata and Amphorae. Rouletted Ware, was a significant finding from Arikamedu, which Wheeler identified as a Mediterranean ware because he believed that the concentric bands of rouletted pattern on the flat interior base of ceramics were “not an Indian feature and may be regarded as an importation from the Mediterranean region” (Wheeler *et al*. 1946, 45). However, Begley claims that though the rouletted decorations may have been inspired by the Mediterranean region, the Rouletted Ware recovered from

Arikamedu was locally produced, based on their wide distribution in eastern India (Begley 1983, 470).

The most significant finding of all for this research is the recovery of Indo-Pacific Beads (IPBs). Peter Francis studied the bead assemblage recovered from Begley's excavations between 1989 and 1992, and made comparisons with the collections from previous excavations and surveys available at the Pondicherry Museum, the Bangalore Museum and the Musée Guimet in Paris. It was his studies at Arikamedu that led him to identify the unique, small, monochrome drawn glass beads, and name them Indo-Pacific beads. He also recorded their production procedure with the ethnographic studies he carried out at Papanaidupet, Andhra Pradesh, having noticed the similarity between the bead wasters at the two sites. The section on beads in Begley *et al.* (2004, 447–604) as well as other publications (Francis 1990; 1991; 2002), help to make comparisons with the assemblages from the sites studied for the present research.

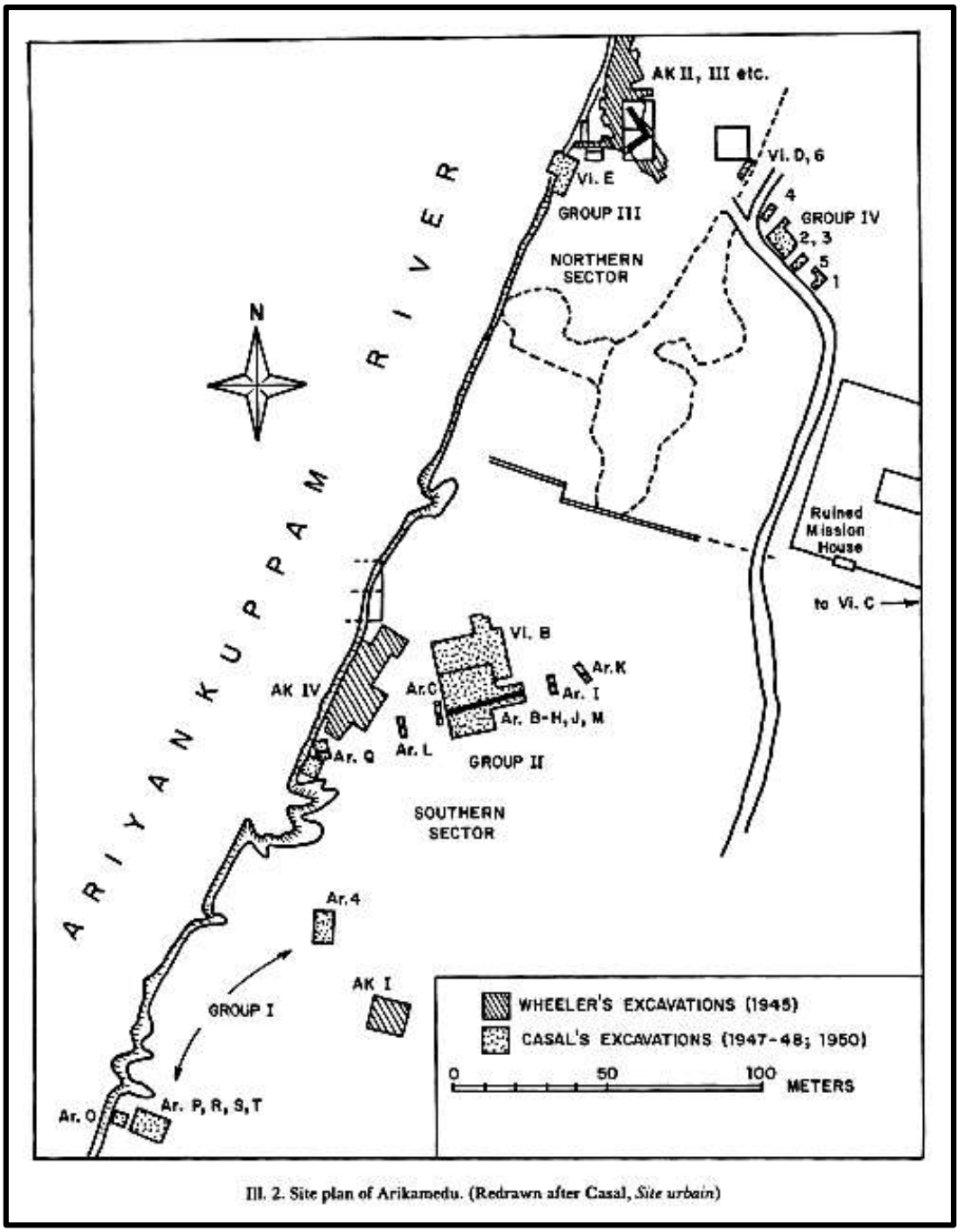

Figure 5.31: Site plan of Arikamedu (Begley 1983, 465)

Collection of objects of adornment

Bead-making at Arikamedu, as explored by Francis (2004, 447), played a major role in the socio-economic life of the site and it was one the major industries there. This interpretation alone emphasizes the importance, as well as the large size, of the assemblage recovered from Arikamedu which exceeded 50,000 beads. The present study will draw on Francis's assemblage published in 2004. Francis

analysed the beads recovered from the Begley's excavations (Francis 2004, 447–530) that included both glass and stone beads.

Francis catalogued them in detail, tabulating different features of the beads including: colour, size, shape and material. The total number of beads he analysed is not quite clear from his catalogue but he reports that the IPBs and IPB production debris from north and south sectors, as well as those at the Pondicherry Museum, total 28,474, nearly 24% of which are complete beads. In addition, he records a total of 952 of what he describes as IPB by-products from these three sites (Francis 2004, 459). From a sample of 4,706 IPBs, Francis records that the majority were dark blue (41.1%) while red accounted for only 31.9%. However, when considering all glass from the site, where a larger sample of 27, 635 was analysed, red was far more common than blue, 45.6% and 24.5% respectively. The black beads are few in comparison to red and blue but in comparison to the number of black beads from other main IPB production sites such as Mantai, Oc-Eo, Kuala Selinsing, and Pengkalan Bujang, the black IPBs from Arikamedu are proportionally high (11.9%). The number of yellow IPBs is small (2.0%) at Arikamedu (Francis 2013a, 357), suggesting that yellow beads were probably not made at the site and there was little demand for them.

The status of Arikamedu as a main industrial site of IPB production and a leading port site in peninsular India, that maintained trade contacts with foreign countries, makes its bead assemblage an ideal comparator with those from other sites studied, particularly Mantai, which has a similar location and function as a trading port and production site.

5.4.2 Pattanam port site

Pattanam is a small present day village on the Malabar coast of peninsular India, located south of the Periyar River and about 4km east of the Arabian sea coast (Figures 5.1 and Figure 5.32). It has now been identified as the once flourishing historical international port of Muziris, mentioned in both the *Periplus Maris Erythraei* and the Sangam work *Aknanuru* (Shajan *et al.* 2004, 313; Cherian and Menon 2014, 28–31). It could be regarded as the western coast counterpart of Arikamedu on the east. This historically known Roman emporium was long lost till it was identified by K. P. Shajan in the 1990s, during a survey of the area (Shajan *et al.* 2004; 2005).

The Centre for Heritage Studies of Kerala initiated several trial excavations (Selvakumar *et al.* 2005) and surface surveys (Cherian 2015) in the area during 2005–2006. The Kerala Council for Historical Research then undertook a series of extensive excavations from 2007 onwards and a wealth of evidence that would establish the site as historical Muziris was recovered. The habitation mound of Pattanam has a cultural deposit 3–4m deep and is spread over an area of 70ha. (Cherian and Menon 2014, 13; Cherian *et al.* 2016, 37). The site Pattanam is over 100 acres in size and after excavating 61 trenches across nine seasons, the excavated area is about 1% of the size of the site. The cultural sequence of the site is divided into four different periods; Iron Age (1000 BC), Iron Age/Early Historic transition (c. 5th–3rd/2nd century BC), Early Historic (c. 3rd/2nd century BC–4th/5th century AD) and Early/Late Medieval (5th century AD–c. AD1500).

Several imported ceramic types including Amphorae, Torpedo jars and Terra Sigillata have been recovered from this site, in addition to local ceramics such as

Black and Red Ware (BRW), coarse Red Ware and fine Rouletted Ware. Roman glass, iron artefacts, glass and stone beads and gold jewellery are among the large quantity of artefacts recovered from this site (Cherian 2015; Cherian and Menon 2014; Tomber 2015, 381–394). The present study will draw from the site reports published by the KCHR, Cherian *et al.* (2016), Abraham (2009, 14–28; 2013, 239–261) and Kelly (2013) in order to make comparisons.

Figure 5.32: Pattanam excavation site (Source: The Hindu)

Collection of objects of adornment

Large quantities of objects of personal adornment have been collected from Pattanam. These include synthetic, stone and metal ornaments (Table 5.6). Glass is the most common raw material used in the production of objects of adornment, and a total of 98,207 glass beads were recovered across the nine excavation seasons. Interestingly, the final tabulation of artefacts recovered from all the seasons do not record any organic objects of personal adornment. In several seasons there are records of shell beads, but the number is small. Being a major port site located near the coast, the lack of shell objects is an interesting feature.

Table 5.6: Composition of objects of personal adornment from Pattanam (2007–2015 excavations) (based on Cherian *et al.* 2016, 36)

Glass		**Terracotta**		**Stone**		**Gold**		**Copper**	
Beads	98,207	Beads	35	Beads	1,134	Beads	3	Rings	10
Bead fragments	9,425	Bead fragments	18	Bead fragments	168	Ornament fragments	49		
Pendants	1			Rings	1	Pendants	1		
Bangle fragments	51			Intaglios	2	Rings	8		
				Cameo blanks	71	Filament	8		
				Inlays	28	Bits	76		
				Pendants	2	Other artefacts	33		
Total	**107,684**		**53**		**1406**		**178**		**10**

Of the glass beads, 8100 have been examined individually so far and 75–80% of them are IPBs. They are found in a limited range of colours: opaque black, opaque red, translucent blue and translucent green being the most common (Cherian *et al.* 2016, 38). It is notable that yellow is not mentioned among them. Apart from IPBs, glass beads also include longitudinally striped, gold glass, ‘false beryl’ and faceted/bicone beads, each of which account for 3% of the analysed sample of beads. In addition, flat tabular, long cylinder, large globular, barrel, collar, melon, stupa and terracotta coloured disc beads are recorded in small quantities (Cherian *et al.* 2016, 40–41). The bead shapes mentioned here are listed according to the typology used by those who analysed these beads. The terracotta coloured disc beads are probably RDBs according to my typology. The recovery of RDBs from Pattanam is interesting, particularly because of their small numbers, which may suggest they were imported to the site.

Cherian (*et al.* 2016, 41) records that evidence of glass bead production is limited, especially in comparison to that of Arikamedu, an established bead production

site, to substantiate the claim glass beads or even IPBs were made at the site. The stone objects recovered, on the other hand, show evidence of the production of beads and other ornaments at the site. Interestingly, stone bead production at Pattanam is distinct from the contemporary sites of Kodumanal and Arikamedu because, unlike the latter two sites, Pattanam bead-makers produced larger quantities of microcrystalline beads such as carnelian and agate as opposed to macro-crystalline beads such as quartz. The ratios of macro-crystalline to microcrystalline usage at Kodumanal and Arikamedu are 2000:1 and 2:1 respectively, whereas the ratio at Pattanam is 1:6 (Cherian *et al.* 2016, 42–43).

Not only does the assemblage from Pattanam represent the west of the peninsula, but its nature as an important trade centre and the fact that it has yielded large quantities of objects of adornment, as well as being a site that provides evidence of bead production, makes it a good choice for comparison with the other sites discussed in this research.

5.4.3 Nagarjunakonda religious and habitation site

The site is located in the Nalgaoda District of Andhra Pradesh, on the right bank of the Krishna River, now surrounded and mostly submerged by Nagarjunasagar, a reservoir built damming the Krishna River. The name of the site means “the hill of Nagarjuna”, after the celebrated Mahayana Buddhist teacher Nagarjuna, who is said to have resided at a temple on the site. Nagarjunakonda lies in a valley surrounded by hills which are off-shoots of the Nallamalai hills. It is situated 125km west of Amaravati, another important Buddhist monastic site in the Early Historic Period and the modern capital of Andhra Pradesh. At the centre of the valley, is the citadel where the remnants of a palace have been recovered and

both Buddhist and Brahmanical buildings have also been uncovered in the surrounding area. About 18 Brahmanical temples were found, mostly located around the citadel where the remains of the palace were found while around 30 Buddhist monuments were exposed spread across the valley (Figure 5.33 Figure 5.34).

The site was mainly the capital of the Ikshavakus, a dynasty in Andhra Pradesh who were the successors of the Satavahanas (Chapter 2.3.2) and the site was called Vijayapuri by the Ikshavakus. The inscriptional evidence reveals that the Buddhist establishments received royal patronage, especially from the royal ladies. In addition, merchants were strong patrons of Buddhism, and they were instrumental in raising large Buddhist monuments at the site. The site, which was spread across an area of 15km^2, has been excavated several times. The most extensive excavation was carried out between 1954 and 1960 by the Archaeological Survey of India, mainly as a result of the decision taken to build the dam. The excavations revealed seven periods of occupation at the site, the lowest being as early as the Lower Palaeolothic Period. For the present study, only the findings from the Early Historic Period of the site have been considered, which is dated between *c.* AD 210–310/325.

The site has strong Buddhist connections with other areas, particularly Sri Lanka. The existence of a *Sihala-Vihara* (*Sihala* is synonymous to Sinhala, a term occasionally used to refer to Sri Lanka) (Figure 5.33) at the site is a strong indication of such connections. An inscription mentions the *Sihala-Vihara* and “the dedication of a *Chetiya-ghara* to the fraternities of Tambapamni” (Ramachandran 1999, 2) (Tambapam[n]ni is another name used for Sri Lanka in

ancient times. Chapter 2.4.1). The setting of the Nagarjunakonda valley, with its centrally located citadel and the religious monuments surrounding it (Figure 5.35) which are spread across the valley, shows resemblance to Anuradhapura, which is the centre of Buddhism in Sri Lanka. Such parallels, as well as the probable trade contacts between Sri Lanka and Andhra Pradesh, enhanced by its Buddhist connections, makes the study of objects of adornment recovered from Nagarjunakonda a good comparator with material from Sri Lanka.

Figure 5.33: Ruins of Sihala-Vihara at Nagarjunakonda (Source: Google maps)

Figure 5.34: Remains of Mahastupa, Nagarjunakonda (Source: Google maps)

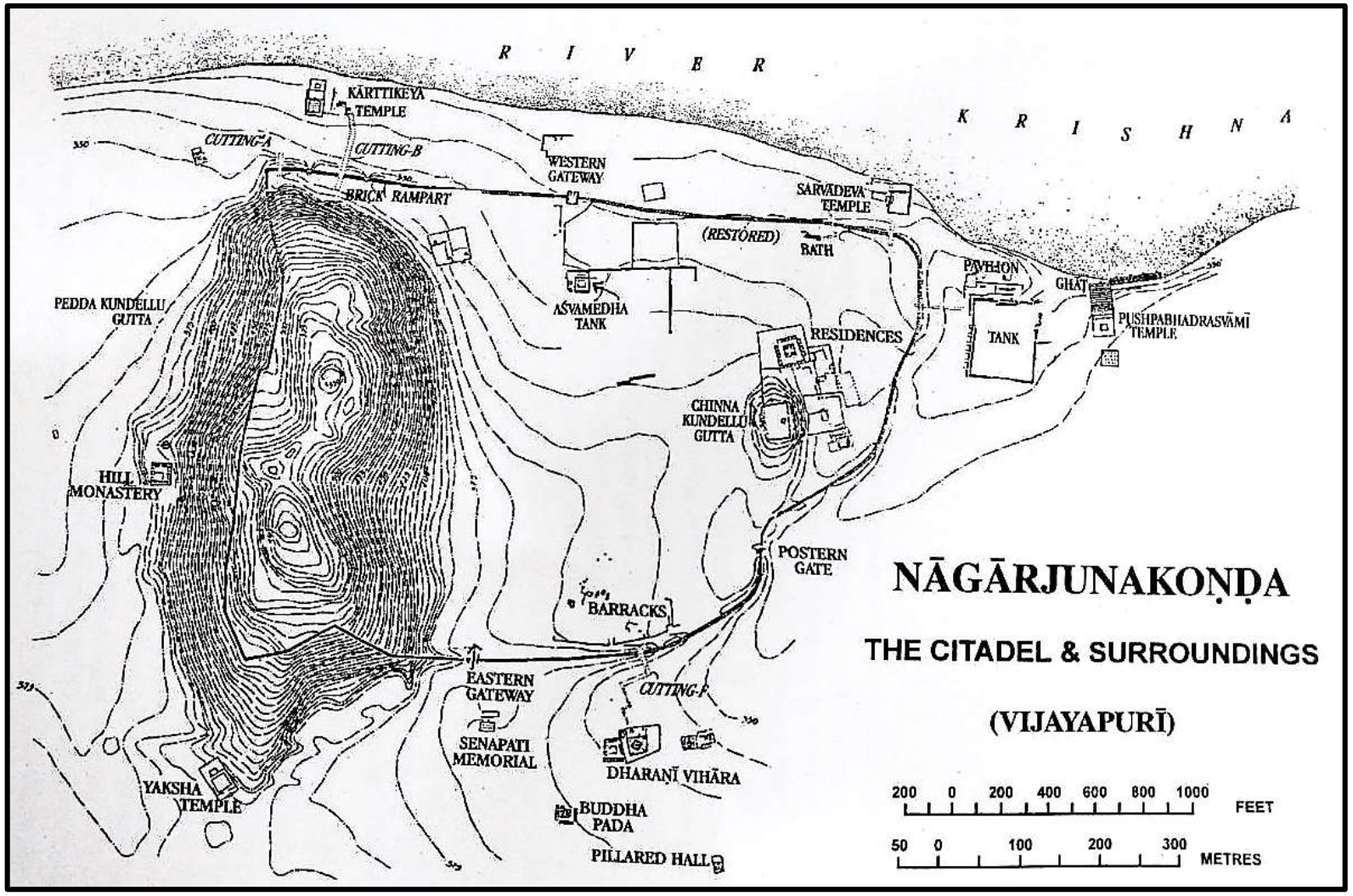

Figure 5.35: Site map of Nagarjunakonda citadel and surroundings (Soundara rajan 2006, 102)

Collection of objects of adornment

The assemblage discussed here is published in the Nagarjunakonda 1954–60 Vol. II (Soundara Rajan 2006) and will draw from it to make comparisons with other sites in South India and Sri Lanka. According to this publication, the excavations carried out between 1954 and 1960 yielded a total of 364 beads. These beads belong to a period between the 3rd and 4th centuries AD, and consist of 37.9% glass, 36.8% terracotta, 18.7% semiprecious stones, 9% each of shell and faience and 5% coral (Table 5.7 and Figure 5.36). The assemblage also includes a single ivory bead. According to the author, the dominant shape of the beads found in the assemblage is tubular, which make up 80.8% of the total assemblage.

Blue and green are the most common colours in the glass bead group. Yellow is a minor component in the group and interestingly, no red colour beads were found among the glass beads (Soundara Rajan 2006, 396). The publication records the beads recovered from reliquaries or relic caskets, separately from those from the excavation. Twenty relic caskets were recovered from nine religious sites at Nagarjunakonda. Relic caskets are generally containers or receptacles that contain the remains, ashes or belongings of the Buddha. They may also contain other votive gifts such as pearls, beads, gold ornaments, donated by devotees. These reliquaries are usually deposited inside stupas and venerated by pilgrims. According to the publication (Soundara Rajan 2006, 402), the reliquaries are devoid of terracotta or shell beads, while pearl and bone beads that are part of the reliquary assemblages are absent from the general excavations. This suggests an important difference in practices between everyday use of adornment and adornments in ritual performances.

Table 5.7: Composition of beads and raw materials recovered from Nagarjunakonda (Soundara Rajan 2006, 396)

Medium	Raw material	Quantity	Total
Synthetic	Glass	138	281
	Terracotta	134	
	Faience	9	
Stone	Semi-precious stone	68	68
Organic	Shell	9	15
	Coral	5	
	Ivory	1	
Total			364

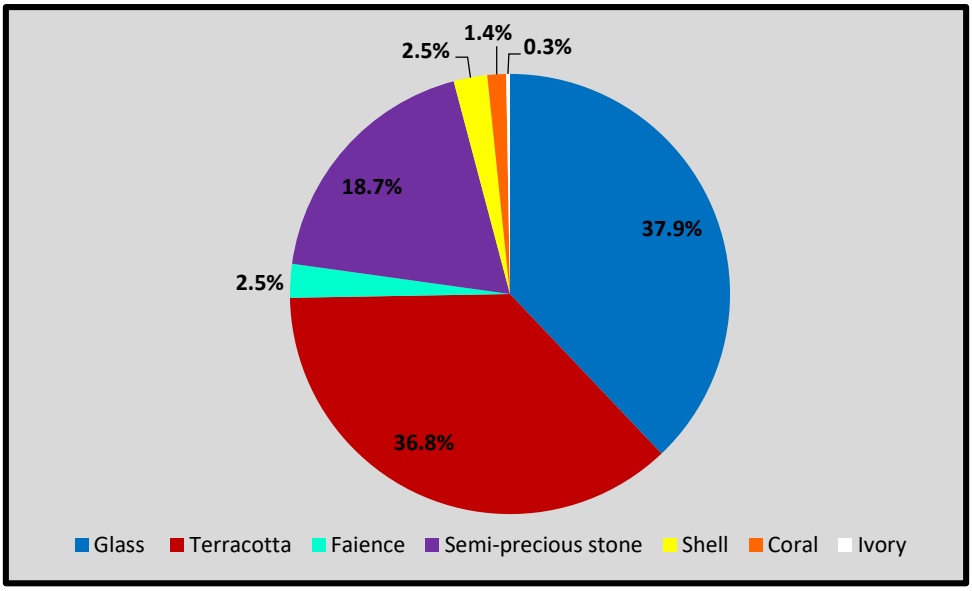

Figure 5.36: Composition of the raw materials of beads from Nagarjunakonda

A relatively large quantity of non-bead objects of adornment has been recovered from Nagarjunakonda. These objects are made from a wide variety of raw materials, including glass, shell, and terracotta as well as gold, copper, bronze and lead. The types of non-bead objects of adornment recovered include bangles, finger rings, ear ornaments and pendants as well as copper amulets and ivory combs, which are interesting features. A large quantity of shell bangles has been recovered, while the largest quantity of ear ornaments recovered appear to be made of terracotta. Among the discoveries from Nagarjunakonda is a gold necklace, found in several pieces which is interesting because the only other

instance in this research where a group of beads has been found in a way that can be interpreted as a complete necklace or waistband is at Ibbankatuwa, another ritual site.

The publications may not contain the same statistical and stratigraphic contextual details as the assemblages I studied for this research. However, with the available data enables comparison of the composition of the assemblage to those from other collections. It will be interesting to compare the personal adornment material from Nagarjunakonda and Sri Lanka with each other, particularly because evidence of strong Buddhist contact between the two regions have already been established through other sources.

5.5 Reflections

The two sites in South India from which I analysed objects of adornment, i.e., Alagankulam and Kodumanal, have been introduced in this chapter and the collections recovered from these sites have been described. A total of 1086 beads and 187 non-bead ornaments were analysed across the two sites and the data is given in Appendices F and G. To supplement this data, three other sites in South India and their assemblages of adornment have been described according to the information gathered from previously published data.

Unlike the assemblages studied from Sri Lanka, barring Ibbankatuwa, the assemblages I studied from South India lack stratigraphic context details which has hindered comparisons across time and between the regions. Therefore, the broad time period assigned to each site has been considered when making comparisons. The collection from ‘previous seasons’ at Alagankulam does have

stratigraphic details which enabled the observation of distribution patterns across the two broad time periods from which the ornaments were recovered. However, because this collection does not contain the entirety of the recovered ornaments, the patterns that appear may not represent the most accurate picture. The data from the published material does not contain the same type of data I have gathered from the assemblages I personally studied or the complete statistical data required for comprehensive comparisons. Nevertheless, the available data will be utilized to make comparisons as far as is reasonably possible.

CHAPTER 6:

PATTERNS AND PREFERENCES:

ADORNMENTS OF SRI LANKA AND SOUTH INDIA

The sites and assemblages from Sri Lanka and South India that were studied for this research have been described in detail in Chapters 4 and 5. The present chapter draws data from the previous two chapters in order to observe and interpret patterns and preferences related to adornment practices in Sri Lanka and South India. The chapter focuses on the morphological attributes of the beads that express choices made by those who wore them or used them in any other way. In addition, frequent interaction between Sri Lanka and South India is evident through these patterns. The following discussions reveal patterns to help understand changing trends over time and across sites of different natures. Patterns pertaining to the entire region of Sri Lanka and South India provide interesting insights into the connections between the island and the peninsula that have not always received attention.

The morphological attribute patterns that are discussed here include choices of raw materials, colours, shapes and types, diaphaneity and lustre. These attribute patterns will be examined to assess how they might reflect social behaviours within these ancient societies. It has been implied that these patterns occur due to the choices made by the people associated with these artefacts, whether they were wearers, makers or traders. Societies and individuals often attribute meanings and values to the adornments they wear. The choice of raw materials, colours and shapes are often associated with symbolic meanings. In addition, the

aesthetic tastes and fashion trends of individuals, as well as societies, are also displayed through these patterns.

Objects of adornment, especially those recovered from production sites may reveal patterns that shed light on the makers of the objects. Their technological capacities, access to raw materials, and the demand from society can be observed through these patterns. Traders could also create trends, based on which objects they could make the most profit from. Traders could increase demand for certain ornaments or raw materials, by trading items in large quantities and also by creating scarcity to increase demand. Patterns in assemblages recovered from port sites especially, could indicate not only social demand for ornaments but also the agency of traders in marketing these objects of adornment. Such information may not always be so evident in the archaeological record, but the patterns and preferences across a range of sites illustrate a wider picture of the actors involved in practices of adornment.

Of the sites and assemblages introduced in Chapters 4 and 5, the Ibbankatuwa assemblage has been previously analysed by Karunarathne (2010,179–228) and my analysis is restricted to the assemblage available on display at the department museum of the Archaeology Department at the University of Kelaniya. The Mantai, Kantarodai and Kirinda assemblages have previously been analysed by Bohingamuwa (2017,222–295; 389–460). During my re-analysis, I developed a new typology for beads (Chapter 3.2.1). Most of the statistical data concurs with that of Bohingamuwa (2017, Vol.II), however, the bead quantities, raw materials, and colours do differ occasionally. Furthermore, I use Bohingamuwa's site phasing and dating (Bohingamuwa 2017,59–74;90–92;98–100) for these three

sites. Similarly, the Anuradhapura Gedige assemblage was excavated and analysed by Deraniyagala, and the stratigraphy and dating I use in this research are those established by him (Deraniyagala 1972,55–59; 2004,740–741). The dates established by Sridhar (2005) for Alagankulam and by Rajan (2015a,5–6, 18, 399–407) for Kodumanal were utilized for the respective sites. Therefore, these authors are referenced frequently in this chapter. It is expected that the patterns and preferences discussed in this chapter will show direct evidence of interaction between the two regions, and display similarities in their choices, which could indirectly suggest these were shared cultural traits that appear to be pan-regional trends.

6.1 Choice of raw materials

The raw materials from which objects of adornment are made add value to them. They may imply associated talismanic properties, wealth, social status and also the aesthetic tastes of the wearer. Each site assemblage has been classified under a number of media, such as synthetic, stone, organic and metal (Chapter 3.2). Each medium has then been divided into a number of raw materials. For example, the raw materials used to make synthetic beads include glass, faience and clay or terracotta, while carnelian, agate, quartz, amethyst and garnet are some of the raw materials that fall into the medium of stone. By observing the choices of raw materials in the production of objects of personal adornment at an intra- and inter-site level, it is possible to make inferences on the behavioural patterns of the inhabitants of these sites.

6.1.1 The dominance of glass as a raw material

It has been universally accepted that glass has been and still remains one of the most sought after raw materials in the production of beads and other objects of personal adornment. Durability, ease of manipulation to produce multiple shapes, the possibility of imitating stone ornaments, the variety of colours and the capability of mass production are characteristic features of glass. Despite the advanced technology required for its production, the factors mentioned have led to glass being commonly used as a raw material for objects of personal adornment, particularly beads. These characteristics of glass have been recognized by other authors who have worked on beads, including, Sleen (1973, 19), Francis (1990, 1), Coningham (2006, 333), Kelly (2013, 200) and Bohingamuwa (2017, 391). Glass is the most dominant raw material recovered from the assemblages I studied, barring Kodumanal (Table 6.1 and Figure 6.1).

Table 6.1: Glass bead assemblages of the sites studied

Site	Glass beads	Total beads	% of total beads
Anuradhapura (AG)	1786	2919	61.2
Kantarodai (KTD)	179	220	81.4
Mantai (MA)	1234	1578	78.2
Kirinda (KR3)	360	438	82.2
Ibbankatuwa (IBB)	1445	1790	80.7
Alagankulam (AGM)	664	771	86.1
Kodumanal (KDL)	7	178	3.9

The bead analysis of Carswell's excavation at Mantai by Francis (2013a, 349–380) and Bohingamuwa's analysis (2017, 223–296; 390–461) of the 2009/10 assemblage also affirms it. At Tissamaharama 96.0% of the beads were made of glass (Hannibal-Deraniyagala 2001, 204). Coningham, describing his assemblage from Anuradhapura Salgahawatta 2 (ASW2), states that glass beads are "one of the largest categories of special finds at ASW2" (2006, 353). If the beads classified as paste in Somadeva's analysis (2006, 372) are also included,

glass beads are by far the most numerous in the assemblage from the Lower Kirindi Oya Basin (LKB), an area in southern Sri Lanka surrounding the Kirindi Oya, near the mouth of which the site of Kirinda is located.

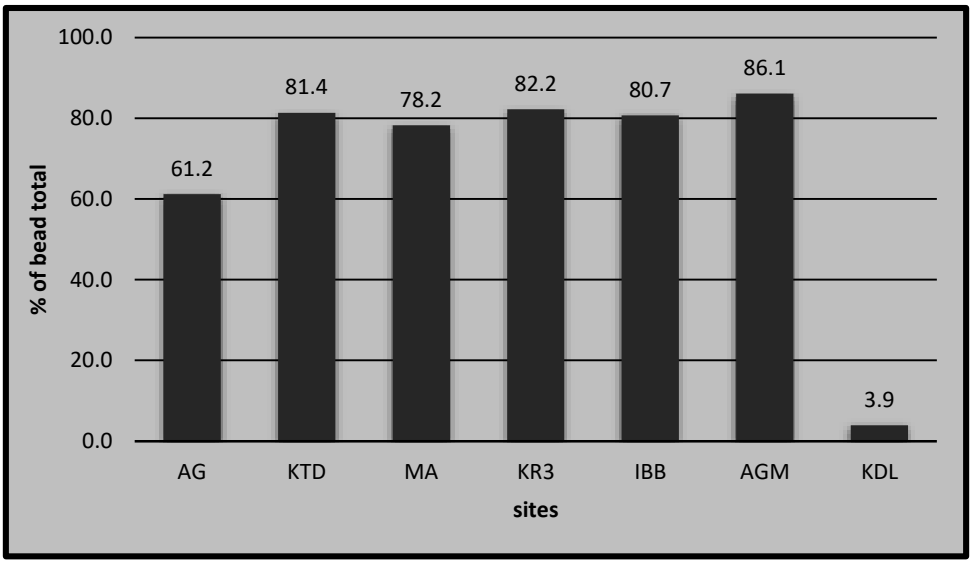

Figure 6.1: Occurrence of glass beads across sites indicate their dominance, with the exception of Kodumanal

The exact number of glass beads recovered from Arikamedu is difficult to state, but Francis records a total of 29,434 Indo-Pacific Beads (IPB) including IPB wasters and by-products (Francis 2004, 459). Pattanam, having been excavated for nine consecutive seasons, has a large assemblage of glass beads, numbering 107,633, including both beads and bead fragments (Cherian *et al.* 2016, 36). A total of 138 glass beads (37.91%) have been recovered from the Nagarjunakonda excavation (Soundara Rajan 2006, 383).

Yet, at Kodumanal, which has yielded evidence of being a stone bead production centre (Rajan 2015a; 2015b), the assemblage I analysed contained only 7 glass beads. Kelly (2013,193–194), who analysed artefacts from previous excavation seasons, states that glass beads were recovered from all the trenches except two. Among the finished beads from the habitation area of her assemblage, glass

was the dominant raw material (Kelly 2013, 180). As craft production at the site specialized in stone beads, no glass beads were produced. Kelly argues that towards the later centuries BC inhabitants would have aspired to glass beads, considering the distribution across time (Kelly 2013, 198). Therefore, glass beads would have been obtained through trade and exchange from sites, such as Porunthal, a site located nearby, that yielded a large assemblage of glass beads as well as evidence of glass bead production (Rajan 2013, 67; Kelly 2013, 199). It is not improbable that some of the beads came from sites, such as Arikamedu or even Mantai, both of which were bead production sites, as well as trading ports.

Sridhar (2005, 78) argued that glass was used by the common people, whose economic status precluded them from choosing semi-precious and precious stones or expensive metals. This situation could be observed in the ethnographic study detailed in Chapter 7. I was informed that some of the ornaments that are usually made of gold or silver were replaced with cheaper raw materials, depending on the wearer's economic status. For example, I observed that instead of wearing an anklet made of silver, one woman wore one made of plastic (Figure 6.2).

Figure 6.2: A woman of the plantation worker community at Badulla, wearing an anklet made of plastic beads instead of silver

The mass production of glass beads may have made them more accessible. At sites such as Anuradhapura, Kantarodai and Tissamaraharama, which are urban settlement sites where the elite lived, glass was still the dominant raw material for beads. Therefore, it is unlikely that glass ornaments were limited to the non-elite. It is more likely that glass ornaments were used as daily wear and were not taken care of as much as ornaments made of other materials and were more regularly discarded. Thus, glass is generally the dominant raw material of objects of personal adornment represented in the archaeological record.

6.1.2 Use of semi-precious stones as raw material

Rocks and minerals are generally termed as “stone” (Francis 2004, 479) and are popular raw materials for the production of objects of adornment. The use of precious and semi-precious stones in the production of beads and other objects of adornment goes far back in time and it is probable that their colours and translucency made them distinct in the eyes of humans (Untracht 2008, 74). These qualities led to the attribution of ‘magical’ powers to these stones, by associating them with natural phenomena, particularly celestial bodies. Talismanic qualities have been attributed to adornments made of stone and the humans who wear these ornaments depend on them to bring good fortune and good health.

For example, in South Asian communities in particular, if an individual possesses malefic conditions or experiences a delay in marriage or if a married woman is childless, astrologers prescribe them to wear a particular variety of stone, or a stone of a particular colour, to help overcome the negative conditions experienced. One of the most popular semi-precious stone amulets in South Asia

is the '*Navaratna*', meaning "nine gems". These gems have been associated with nine celestial bodies. They are generally set together in a ring or pendant. It is thought that by wearing the '*Navaratna*' (Figure 6.3) the wearer is bestowed with longevity, health, wealth and progeny and will be influenced to do good (Nandagopal and Iyengar 1997, 41). Thus, these qualities attributed to precious and semi-precious stones have made them more sought after and more valuable to humans. As pointed out by Srinivasan (2016a and 2016b), the '*Navaratna*' had broader auspicious significance and were also found, for example, to be incorporated in the casting of medieval South Indian Hindu Chola bronzes between the main figure and pedestal.

Table 6.2: The gems and associated celestial bodies of the 'Navaratna' amulet (based on Nandagopal and Iyengar 1997, 42 and Untracht 2008, 308)

Astrological name of celestial object	Celestial Object	Gem stone	Indian name for stone
Ravi/Surya	Sun	Ruby	Manikya
Chandra	Moon	Pearl	Mauktikam
Budha	Mercury	Emerald	Marakata
Sikuru/Shukra	Venus	Diamond	Vajra
Kuja/Mangala	Mars	Coral	Pravala
Guru/Brhaspati	Jupiter	Topaz	Pushparaga
Shani	Saturn	Sapphire	Indranila
Rahu	Ascending node	Zicron	Gomeda
Ketu	Descending node	Cat's eye	Vaidurya

Figure 6.3: The nine 'Navaratna' gems that include pearl, ruby, emerald and sapphire

Furthermore, their rarity and the time-consuming production process increased their value. Procuring these stones requires more labour and connoisseurship. Bead production centres were not always located close to sources of raw materials. For example, though there is evidence of bead production of all varieties of quartz and garnet at Arikamedu, there were no sources of these raw materials in the vicinity of the site. They had to be acquired from places, such as Kodumanal, Coimbatore, Thanjavur, Gujarat and from further afield, such as Sri Lanka, Afghanistan and Vietnam (Francis 2004,480–481). Stone bead production required a lot of human labour and was a time-consuming process because, firstly, the raw materials had to be procured, and then those raw materials had to be chipped, ground or pecked, drilled and polished to produce a finished bead. Traditional stone bead-making techniques are still followed by the bead-makers at Khambhat in Gujarat (Figures Figure 6.4Figure 6.6). Several ethnographic studies of their bead-making technology have been carried out (Kenoyer *et al.* 1991; 1994, Vidale *et al.* 1993; Bhan *et al.* 2017; Kanungo 2017). Francis (2002, 112–125; 2004,486–496) and Kelly (2013,126–132) have discussed in depth the stone bead-making technologies used at Arikamedu and other sites in South India. The stone beads acquired value due to the time and labour consuming processes required for their production. Therefore, the possession of such exotic objects was an expression of wealth and/or social status.

Across the sites studied during this research, both in Sri Lanka and South India, a large variety of stones have been used to make beads as well as non-bead objects of adornment. However, only a limited variety of stones have been commonly used across these sites. These include quartz, carnelian, garnet, amethyst, beryl and lapis lazuli. All of these stones are locally available in India,

except for hessonite garnets and lapis lazuli, but only quartz, garnet, amethyst and beryl are available in Sri Lanka (ngja.gov.lk). Lapis lazuli is foreign to both countries and is available from Afghanistan.

Figure 6.4: A traditional bead-maker from Khambhat chipping the stones to make bead roughouts, using a hammer made of buffalo horn

Figure 6.5: Traditional bead-maker from Khambhat setting up his equipment for drilling the beads. He informed me that his entire village specializes in drilling beads

Figure 6.6: A bead-maker drilling a bead using a bow drill that has diamond tips to drill the beads. He drills both polished and unpolished beads, the processes of drilling and polishing are done in either order

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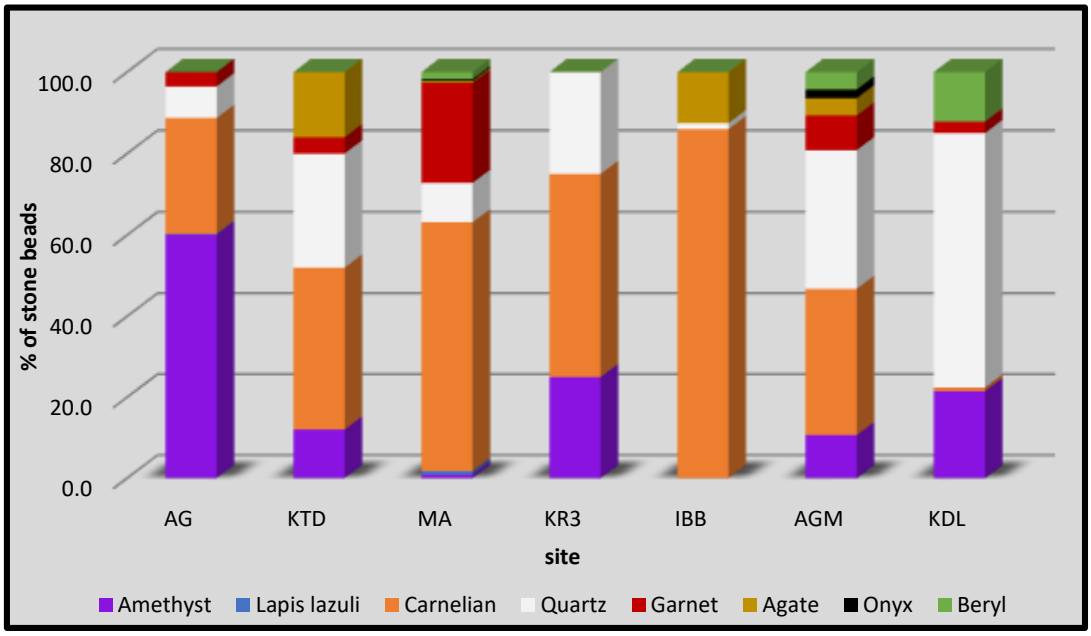

Figure 6.7: Distribution of selected stone varieties across sites

Quartz

Quartz has been commonly used in bead-making throughout the Sri Lanka-South India region (Figure 6.8–Figure 6.11). The majority of the quartz beads recovered

are clear quartz, while variants, such as milky quartz, smoky quartz and rose quartz were also recovered. In this study, all these varieties have been classified as quartz. The beads made of quartz have been recovered from all the assemblages studied (Figure 6.7) and Anuradhapura Gedige assemblage has the largest quantity (81) but proportionately, Kodumanal has the most (56.3% of the total stone bead assemblage studied). Other than at Kodumanal, the number of quartz beads in relation to the total stone bead assemblage is less at all the sites. It is highly likely that due to its abundance and common occurrence, quartz was not a sought after material for beads (Bohingamuwa 2017, 244). Burial structures at Kodumanal did not yield any quartz beads, which were produced in large quantities at the site, whereas imported carnelian beads were found in abundance in the burials (Kelly 2013, 216; Rajan and Athiyaman 2011, 108). The tendency was to deposit grave goods that expressed social status and wealth. Locally available materials were not used in burials, despite manufacturing quartz beads on a large scale for export (Rajan and Athiyaman 2011, 108). Although there were five quartz beads in the assemblage from Ibbankatuwa that I studied, Karunaratne records that only two quartz beads were recovered from the burial site, and the settlement site yielded evidence of lapidary work on quartz beads (Karunarathne 2010, 139; 190).

Figure 6.8: An example of a half-processed quartz bead from Kodumanal

Figure 6.9: Examples of quartz production wasters from Kodumanal

Figure 6.10: An example of a half-processed tabular quartz bead from Kodumanal

Figure 6.11: Quartz beads and wasters from Alagankulam

Quartz beads were generally found in abundance and were easily accessible. The patterns related to burial sites at Kodumanal and Ibbankatuwa indicate quartz beads were not commonly used as grave goods and instead beads made of more exotic raw materials were offered. Grave goods are often considered expressions of wealth, power and/or social status, therefore, it is probable that quartz was limited to making everyday ornaments. In addition, their abundance probably made ornaments of quartz accessible to less affluent groups of society.

Carnelian

Carnelian, on the other hand, is not local to any of the sites studied. The main source of carnelian is Gujarat in Northwest India, but the Deccan Trap is an alternative possible source (Wheeler *et al*. 1946, 123; Francis 2002, 117; Kelley 2013, 145; Carter 2013, 243–253). Barring Kodumanal, all the other assemblages have considerably large proportions of carnelian (Figure 6.7). In contrast to the burials, the habitation area of Kodumanal has yielded small quantities of carnelian (Kelly 2013, 91). In the assemblage I studied only a single carnelian bead was recovered from Kodumanal (Figure 6.12). Kelly also records that evidence of carnelian beads in habitation areas in Kodumanal are negligible (Kelly 2013, 88, 91). A similar pattern can be seen at the Ibbankatuwa burial and settlement site. The Ibbankatuwa assemblage I studied contained 289 carnelian beads (Figure 6.13) but Karunaratne records that over 500 beads were recovered from cluster 21 alone at the Ibbankatuwa burial site, whereas the settlement site yielded only 8 beads (Karunartne 2010, 127; 139). It is evident that at sites associated with Megalithic burials, carnelian beads were used as an expression of social status, power and/or wealth of the deceased and were not generally used in daily wear.

Figure 6.12: Half-processed carnelian bead recovered from habitation area of Kodumanal which could be a one-off test product

Figure 6.13: Carnelian beads from Ibbankatuwa burial site

The recovery of large quantities of carnelian from urban settlements further indicates that carnelians were used as expressions of social status and/or wealth. I analysed 298 (27.7%) beads and wasters from Anuradhapura Gedige and Coningham (2006, 380) reports 102 pieces (12.9%) of carnelian from Anuradhapura Salgahawatta 2 (ASW2). Although only 17 (36.2%) were recovered from Tissamaharama, Hannibal-Deraniyagala (2001, 207) states that carnelian was the most common variety of stone, of the 47 semi-precious stone pieces recovered from the site. Similarly, at Kantarodai, 10 out of 25 (40%) stone

beads were carnelian. Urban settlements are generally where the elite of the region lived. Therefore, the occurrence of larger proportions of beads made of non-local raw materials suggest social status, power and wealth. In comparison to Anuradhapura, which was the central urban centre of the country, the lower quantities of carnelian from Tissamaharama and Kantarodai could be due to these being regional urban centres.

Mantai and Alagankulam were probably the two main ports that maintained trade as well as migration contacts between Sri Lanka and South India. The carnelian beads and fragments from these sites form the largest quantity of stone beads recovered from each site. While both the assemblages contain finished beads, half-processed beads and production wasters make up the majority of the carnelian collection. The half-processed beads and wasters indicate the production of carnelian beads at the sites, but perhaps the stone bead production centres at both of these sites were mostly small-scale, probably using some of the raw material that arrived at the site for trade. Thus, it can be argued that some of the raw materials brought from either Gujarat or the Deccan Trap to Alagankulam, to be traded to Anuradhapura, via Mantai, were used at the two port sites, in small-scale workshops for stone bead production, probably catering to the local inhabitants of the sites.

Figure 6.14: A carnelian ring fragment from Anuradhapura Gedige

The earliest stone beads from Kantarodai are made of carnelian (2) and agate (1), two non-local stone varieties. These beads were recovered from phase IV dated mid-4th–late 3rd centuries BC, and all of them are finished beads. Considering the early dates of these beads, and the fact that they are finished beads made of raw materials that occur in India, Bohingamuwa (2017, 428) argues that these beads were probably imports from India. According to this argument, Arikamedu is a possible place of origin, considering the chronological overlap, but not enough detail is available to say if carnelian beads were produced from the earliest dates of the site (Francis 2013a, 350; 2004, 479–495). However, considering the close interaction between Kantarodai and South India during this period, as evident from the ceramics, such as Rouletted Ware (Bohingamuwa 2017, 380–383, 455), it is plausible to argue that these beads reached Sri Lanka via South India.

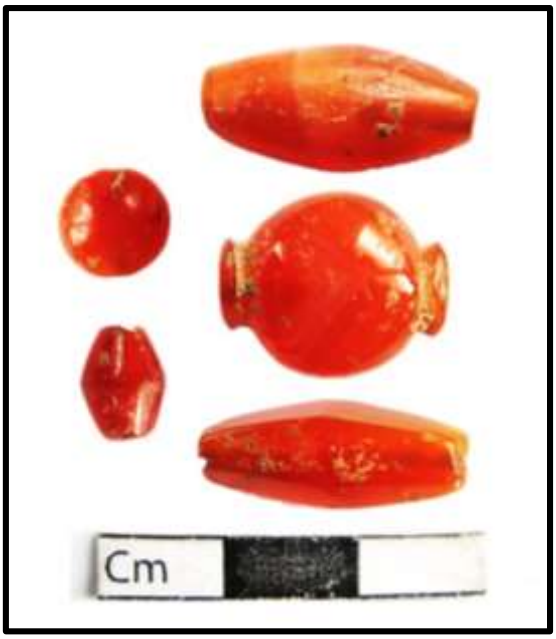

Figure 6.15: Examples of carnelian beads from Kantarodai

However, considering the quantity of carnelian beads and production wasters recovered from Anuradhapura Gedige, the beads recovered from Kantarodai could have been made in Sri Lanka (Figure 6.15). The Anuradhapura Gedige assemblage contains 27.7% carnelians in its stone assemblage (Figure 6.14Figure 6.16). Of the carnelians in the assemblage, 86.9% are wasters, and three items are half-processed beads suggesting carnelian bead production on site. Phase IV at Kantarodai overlaps with phase V at Anuradhapura Gedige, and all the carnelians from phase V in the latter assemblage are production debitage. This indicates the possibility of Kantarodai beads originating from Anuradhapura rather than from India, considering the proximity and the internal networks of the country. However, the Gedige assemblage is devoid of agate beads, yet, 12 agate beads were recovered from Anuradhapura Salgahawatta 2 (ASW2) dated to as early as 200 BC, and include bead blanks (Coningham 2006, 385) which is probable evidence of local production (Figure 6.17). There is, thus, reason to argue that the earliest finished beads from Kantarodai were locally made, most probably at Anuradhapura.

In addition to Kantarodai, the carnelian and agate beads recovered from Ibbankatuwa burial site may also have been produced locally. Karunaratne states that the abundance of beads made of non-locally available raw materials, such as carnelian, indicates Sri Lanka's close ties with India (Karunaratne 2010, 134). Considering the overlap of site chronologies, and the proximity to Anuradhapura, it is probable that these beads may have been acquired from Anuradhapura. The occurrence of beads made of non-local raw material indicates the awareness of international contacts and the importance of such goods to express social status. This may indicate that, though the inhabitants of Ibbankatuwa may not have had direct contacts with India, they were aware of such interaction. While the place of production of carnelian and agate beads from Kantarodai and Ibbankatuwa beads is debatable, it is likely that the raw material was from India. Therefore, these beads represent the close interaction between the two regions.

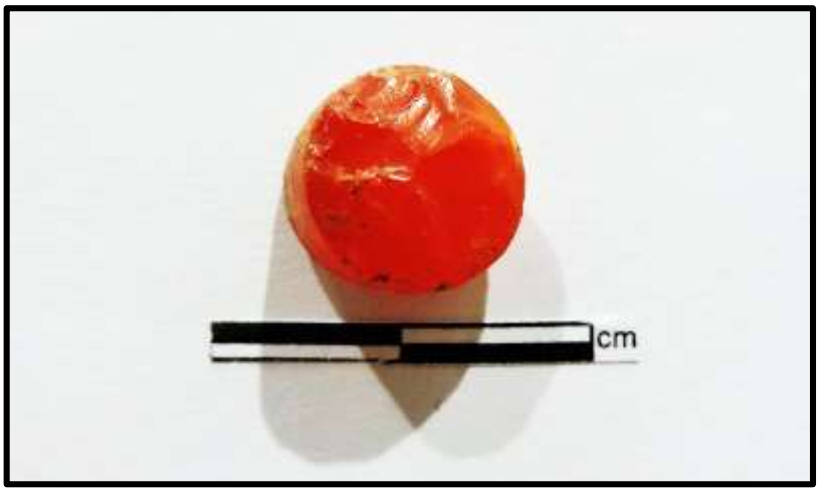

Figure 6.16: A half-processed carnelian bead from Anuradhapura Gedige

While the import of carnelian beads and/or raw material from India is obvious, a geochemical analysis of carnelian artefacts by Theunissen *et al.* (2000) revealed that there is a compositional difference between the Indian and Thai carnelians studied, though noting the need for caution due to the limited sample size. They studied 16 pieces of debitage from Anuradhapura and claim that the raw material

used for bead-making pre- and post- 1st century BC are two distinct sources. In addition, they argue that the raw material used for carnelian bead production post-1st century BC in Sri Lanka could be from Thailand (Theunissen *et al.* 2000, 100). Towards the 1st century AD, royalty and kingship was better established and clearly defined at Anuradhapura, and the construction of large-scale irrigation systems by this period indicate economic advancements in the island. Thus, importing carnelian from Thailand could indicate bespoke orders by the elite of the area.

It is likely that carnelian was still imported from the traditional source, India. Bellina (2003, 289–295; 2007) and Theunissan (2003) argue that the carnelian beads from latter periods in Southeast Asia were mostly lower in quality but higher in quantity, which indicates local mass production. But the recovery of limited numbers of high quality beads amidst these lower quality beads suggests that, while low quality carnelian beads were mass produced for the general population, the elite still acquired high quality items for themselves. A similar scenario may have taken place in Sri Lanka. In a recent study, Carter (2013) carried out geochemical analysis on carnelians and agates from 11 sites in Cambodia and Thailand. The results of this research contradict Theunissen's (*et al.* 2001) view that local raw material was used to produce carnelian beads locally in Thailand. According to the results of Carter's analysis, no local source of carnelian was used for bead production and most of the samples studied could be traced back to the Deccan Trap. This analysis contradicts Theunissen's suggestion of Thailand being a source of raw material for the post-1st century AD carnelian beads from Sri Lanka. But the possibility of bespoke goods imported for the elite is worth exploring.

There have been several studies carried out on the trade guilds, such as *Manigramam*, *Nanadesi*, *Puga*, *Nigama* and *Valanciyar*, that controlled the trade activities between Sri Lanka and India as well as with other countries (Paranavitana and Godakumbure 1963, 171; Paranavitana 1970; Pathmanathan 1990, 139–150; Indrapala 2003, 145–152; Bohingamuwa 2017, 481–488; 516–518). It is probable that some of the imported raw materials were acquired through them. The ethnographic study carried out among the plantation worker community in Sri Lanka (Chapter 7) revealed there were small-scale individual traders who travelled between Sri Lanka and South India. It is also possible that in the Early Historic Period, there were individuals who made personal level, small-scale exchanges that are not always represented in the archaeological record. Further investigation into such exchanges could reveal interesting evidence.

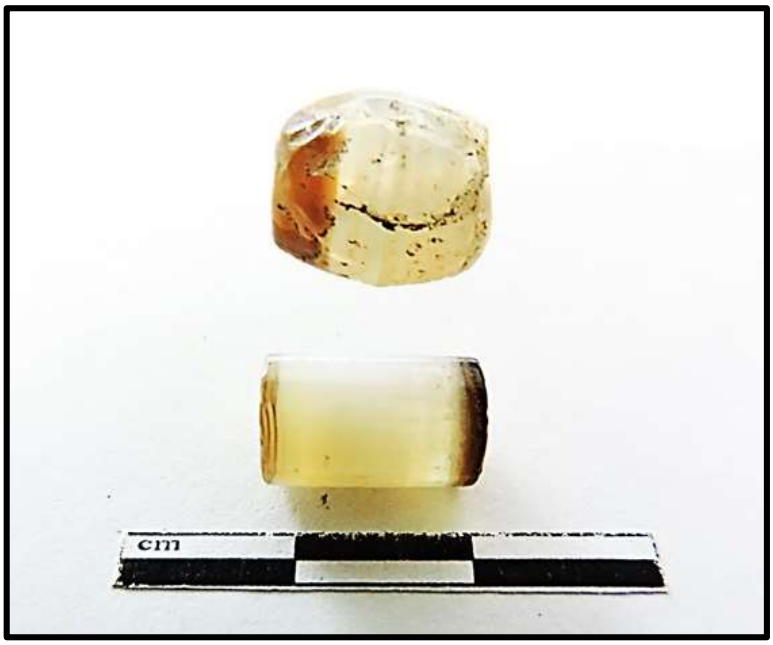

Figure 6.17: Examples of agate beads from Alagankulam

Lapis lazuli

Lapis lazuli is another non-local raw material used for bead-making. The only known source of this stone is Badakshan, Afghanistan (Dubin 1995, 66; Francis

2002, 149). Of the assemblages I studied, only Mantai yielded two lapis lazuli beads (Figure 6.18) from the upper disturbed phase and two probable lapis lazuli beads were recovered from the phase III at Anuradhapura Gedige. Francis (2002, 149; 2013a, 355) recovered four lapis lazuli beads from Mantai. Coningham (2006, 165, 377) records the discovery of five lapis lazuli beads at ASW2 and argues that it is evidence of Sri Lankan contacts with North India. Neither Hannibal-Deraniyagala (2001) nor Somadeva (2006) recovered any from their respective sites, Tissamaharama and Lower Kirindi Oya Basin (LKB).

While the assemblage from Kodumanal that I studied yielded no lapis lazuli, Kelly records 16 beads, two of them being blanks or rough outs (Kelly 2013, 89). Francis (2002, 149) states that they were recovered in different shapes at Arikamedu and were worked at Kodumanal. He gives a map of the trade route that exchanged lapis lazuli for etched carnelian beads (Francis 2002, 149-Figure 14.1). Considering the unprocessed pieces of lapis lazuli from Kodumanal, it is probable that lapis lazuli stones were traded for etched carnelian beads. The raw lapis lazuli was then worked at sites, such as Kodumanal. Despite Coningham's (2006, 165, 377) claim that the occurrence of lapis lazuli beads is an indication of North Indian connections, it is more likely that Sri Lankan sites procured them via South India. Francis (2002, 149) states that the occurrence of lapis lazuli beads in North Indian sites is sporadic and the numbers of these beads at South Indian sites is several times greater than at North Indian sites. Therefore, it is more logical that the lapis lazuli beads in Sri Lanka came via South India.

Bohingamuwa (2017, 434-Figure 6.20), modified Francis' map (2002, 149-Figure 14.1) to suggest two probable routes for lapis lazuli beads to Sri Lanka. While the

suggested route from Muziris (Pattanam) to Mantai, circumnavigating Cape Comorin, is the most likely, the terrestrial route he suggests from Muziris to Alagankulam and then to Mantai across the Gulf of Mannar is highly unlikely. The assemblages I studied from Alagankulam yielded no evidence of lapis lazuli, nor do Majeed *et al.* (1992) and Sridhar (2005) record the discovery of any. Furthermore, Francis (2002, 149-note 37) states that none were found at Alagankulam. If they were traded via Alagankulam, it is unlikely that there would be no evidence at the site. Those from the Mantai assemblage that I studied, as well as those from Francis's work (2002, 149) belong to the later centuries AD (post-8th/9th–12th/13th centuries AD and 5th–10th centuries AD, respectively). But those from Anuradhapura are from an earlier period, dated AD100-300. Coningham's findings are dated cal. 360 BC–AD 600. In addition to probable lapis lazuli beads, the assemblage from Anuradhapura Gedige I studied included a single bangle fragment, probably made of lapis lazuli which belongs to the period dated 800–600BC. It might be assumed that such exotic materials were bespoke ornaments imported strictly by the limited elite class or perhaps the royals. The complete absence of lapis lazuli ornaments at Alagankulam is interesting, as it may suggest a cultural/social choice. Acquisition of these beads was not impossible as they were traded with Kodumanal, where they were worked, Arikamedu, and Pattanam, all of which are sites with which Alagankulam had contacts. Furthermore, if lapis lazuli products could travel to Sri Lanka from Pattanam, it is improbable that none reached Alagankulam, unless this stone variety did not attract the interest of the inhabitants.

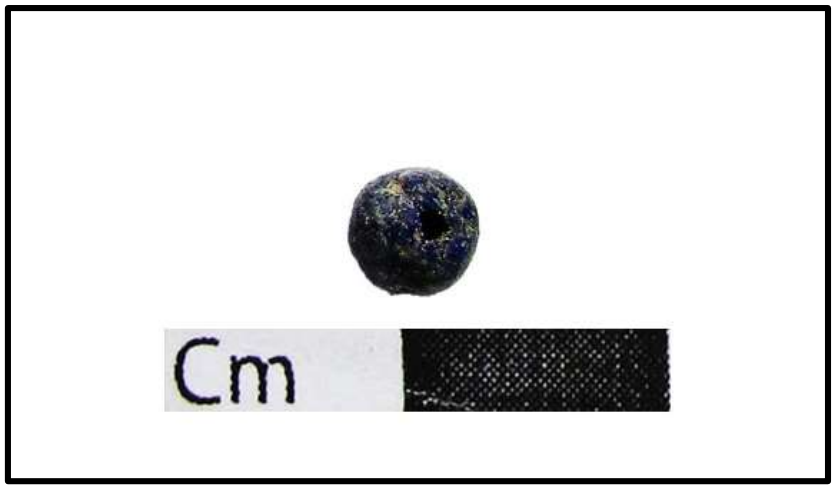

Figure 6.18: Lapis lazuli bead recovered from Mantai

Similarly, the lack of lapis lazuli in the southern sites of Sri Lanka, such as Tissamaharama, Kirinda and LKB too could indicate that lapis lazuli did not attract interest in the region. Francis (2002, 149, 245-n.37) suggests an association between lapis lazuli beads and Pandukal communities, considering the recovery of these beads in large numbers from Pandukal burial sites. Also, he states that these beads were not recovered from urban centres in South India, such as Uraiyur and Karur. While this suggestion is worth further exploration, the findings from Sri Lanka do not suggest similar patterns because there is no record of lapis lazuli beads being recovered from Megalithic burial sites on the island. On the contrary, the limited quantities of lapis lazuli beads and other ornaments recovered from Sri Lanka are from urban settlements and ports, such as the Anuradhapura Citadel (that contains the trenches AG and ASW2) and Mantai.

Garnet

Garnets are commonly used for bead production and indicate interaction between Sri Lanka and South India. This stone variety is found in Sri Lanka and India. Francis (2004, 480) records the discovery of two types of garnets at Arikamedu, almandine and hessonite. While almandine is commonly found in South India and

Sri Lanka, the only source of hessonite is reported to be Sri Lanka (Bauer 1968, 351; Warmington 1928, 253). But Francis (2002, 481) states that Vietnam could be another possible source for this variety.

All the assemblages I studied in both Sri Lanka and South India, except Kirinda, yielded garnets, both in the form of beads and production debitage (Figures Figure 6.19 Figure 6.20). Only the Mantai and Anuradhapura Gedige assemblages contain considerable numbers of garnets but still form only 1.3% and 3.5% respectively of the total bead assemblages. Of the 101 garnets recovered from these sites together, 90.1% are wasters while only 9 beads are in a finished form. All the garnets from Alagankulam and Kodumanal are wasters.

Figure 6.19: Garnet production debitage from Alagankulam

Similarly, ASW2 (Coningham 2006, 387–390) as well as Arikamedu (Francis 2004, 491–495) have yielded more garnet production wasters than finished beads. Even at Nagarjunakonda, where no production occurred, only a single garnet bead is recorded (Soundara Rajan 2006, 382–389). Somadeva's research in the Lower Kirindi oya Basin (LKB) recorded 5 garnet beads across 6 sites, only

one was recorded at Kirinda port site (Somadeva 2006, 372) which is near the KR3 site where I studied material. Tissamaharama, on the other hand records 13 garnet beads (Hannibal-Deraniyagala 2001, 207). She also records three production debitage pieces, but whether these are included in the number of beads or not is uncertain. The near-absence of garnet beads at Kirinda, despite its proximity to a source of raw material, may indicate that easy access to raw material made it less appealing to the inhabitants (Bohingamuwa 2017, 457).

Figure 6.20: Garnet beads from Anuradhapura Gedige

The limited number of finished garnet beads, as opposed to the quantity of production debris, suggests that garnets were primarily an export commodity (Bohingamuwa 2017, 245). Other than in major urban centres like Tissamaharama, the local inhabitants appear to have had little interest in the locally available raw material or the economic status to acquire them. Local consumption of garnet, both in Sri Lanka and South India, was limited because they were regarded as a commonplace raw material and most of the products were exported to foreign countries (Bohingamuwa 2017, 435, 457). The recovery of Sri Lankan garnets in Oman (Schüssler *et al.* 2001, 240–241), Angkor Borei in southern Cambodia (Carter 2013, 362–400) and Europe (Calligaro *et al.* 2002, 320–327) indicate the destinations that Sri Lankan garnets have reached.

Considering the studies confirming that Sri Lankan garnets reached Europe it is possible that even some of the garnets found among the Sutton Hoo treasure in Britain (The British Museum 2017) may have come from Sri Lanka. It is evident from the findings that both garnet beads and raw garnets were exported.

Apart from almandine garnets, hessonite was also used for bead-making at Arikamedu and the latter type is not available in India. It is most likely that the raw material was imported to the site from Sri Lanka, though Vietnam is also a possible source (Francis 2002, 118, 240-note 18; 2004, 481). Sri Lanka, being located close to South India, had established regular trade contacts and would have been the likely place of import. Sri Lanka is renowned as a high-quality gem-bearing country, therefore, it is likely that the hessonite garnets from Sri Lanka were also higher in quality. The possibility of acquiring better quality gems from a destination located a short distance away would not have been overlooked by bead-makers. Carter's findings (2013, 362–400) suggest that Sri Lanka was a likely place of origin for the garnet beads recovered from Angkor Borai. This suggests that, despite the availability of garnets in areas close to the site, such as Vietnam, garnets were imported all the way from Sri Lanka. Thus, the place of origin of the hessonite garnets recovered from Arikamedu was more likely to be Sri Lanka. This, however, indicates that the acquisition of raw material was not always from South India but also from Sri Lanka. Hence, the interaction was certainly not a one-way traffic.

The study of garnets alone is a subject of interest and therefore, further investigations on Sri Lankan garnet bead production and export is currently being undertaken by the present author in collaboration with Dr. W. Bohingamuwa.

Amethyst

Amethyst is common to all the assemblages in both Sri Lanka and South India (FiguresFigure 6.21–Figure 6.24). It is noteworthy that among the assemblages I studied, it is those which do not indicate the on-site production of amethyst beads that yield finished beads, i.e. Alagankulam, Kantarodai and Kirinda, while those with evidence of stone bead manufacturing comprise mainly wasters and a limited number of half processed beads. At Anuradhapura Gedige, amethyst appears in phase IV for the first time but accounts for 57.5% of the total stone beads in that phase. Amethyst, in fact, is the most common stone used in the assemblage, forming over 50% in each phase, and totalling 58.6% of the total stone assemblage. At ASW2, 91 amethyst objects were recovered, the majority of which are debitage and bead blanks (Coningham 2006, 390–394). It is certain that amethyst beads were produced in Anuradhapura. The Mantai assemblage contains only two amethyst wasters and Francis (2013a, 366) records finding only four (or less) amethyst beads from Mantai (Francis 2013a, 366). Based on this Bohingamuwa (2017, 245) argues that amethyst was most likely to have been exported as a raw material rather than being locally produced. While this argument cannot be completely ruled out, evidence from Anuradhapura shows that it was probably a centre that specialized in amethyst bead production, while Mantai was not.

Figure 6.21: Hexagonal truncated bi-cone bead made of amethyst recovered from KTD

No deposits of amethyst are located near Kodumanal (Francis 2002, 117), but there is evidence of working amethyst. According to Francis (2002, 117), six out of ten North Indian sites lacked amethysts and "never exceeded 4.7 percent" of the total stone bead assemblage, whereas in South India, they were more abundant: 46.7% of the total at Kondapur, Andhra Pradesh, was amethyst and 14.3% at Arikamedu. It appears, therefore, that amethyst has been a popular raw material in the southern parts of India by comparison with the north. Their frequent and abundant occurrence at Sri Lankan sites, particularly Anuradhapura Citadel, indicates patterns similar to South India, signalling the similarity in adornment practices in the two regions as well as trade connections.

Figure 6.22: Amethyst production debitage from Anuradhapura Gedige, indicating its specialization of amethyst bead production probably for sale rather than consumption

Figure 6.23: Amethyst beads from Alagankulam

Figure 6.24: Amethyst ornament that was probably a pendant from Anuradhapura Gedige

Historical knowledge leads us to understand that with the formal introduction of Buddhism by *Arhant* Mahinda, the son of Emperor Asoka in India, not only religion flourished, but also culture, polity and the economy of Sri Lanka. Anuradhapura was the capital of the country at the time and has been regarded as a centre that maintained close contacts with North India rather than with the South. Nevertheless, the evidence related to personal adornment from the Anuradhapura Gedige excavation may indicate a different picture. The evidence shows that the stone bead industry at Anuradhapura pre-dated that of Mantai and was more impressive. The beads produced at Anuradhapura were mainly

amethyst and carnelian, followed by quartz and to a lesser degree garnet. Though amethyst is a locally available material, carnelian does not naturally occur on the island. Therefore, it had to be imported from a foreign source, most likely, India. Strong evidence of bead production at Anuradhapura Gedige occurs from Phase IV (600–500 BC), which is over two centuries prior to *Arhant* Mahinda's arrival at Anuradhapura. This data shows that Anuradhapura maintained close contacts with South India, contrary to the generally accepted closer interactions with North India. It is evident that even though there may have been interaction with North India on diplomatic and religious levels, underlying that was an earlier and closer interaction with South India on the level of general communities, such as artisans and merchants. Such interaction was undoubtedly overshadowed by the large-scale elite interactions that gained attention.

6.1.3 Use of pearls and shells

Pearls

The Gulf of Mannar, along with the Persian Gulf, were famous in the ancient world as sources of pearls (Francis 2002; Dubin 1995, 102). Those from the Persian Gulf were considered inferior to the ones from the Gulf of Mannar (Francis 2002, 159). There are many historical references to trade and the exchange of pearls both in Sri Lanka and South India (Bohingamuwa 2017; Athiyaman 2000; Athiyaman and Rajan 2004). Pearl was a valuable commodity, more so because pearl fishing was a specialist and complex task (Athiyaman 2000; Bohingamuwa 2017, 240).

Only the Mantai and Alagankulam assemblages yielded pearls among those that I studied, though only in small quantities (Figure 6.25). Francis's (2013, 367–368)

assemblage from Mantai comprised seven pearl beads. These two sites, located on either shore of the pearl banks of Gulf of Mannar, were probably the main ports through which pearls were exported. The durability of organic material is limited, therefore it is understandable that the limited number of pearls recovered from the archaeological record is due to their non-durable nature. In addition, pearls were valuable commodities and therefore were curated with great care and probably passed down through generations.

According to the findings of the Nagarjunakonda excavation, no pearls were recovered from habitation areas (Soundara Rajan 2006, 402). They were, however, found in reliquaries and 95 pearls were recovered from inside a gold tube deposited between the feet of a Buddha statue at the *Buddha Chaitya* site (Ramachandran 1953, 14). The *Mahavamsa* describes the use of pearl to decorate Lovamahapaya and Ruwanweliseya monuments in Anuradhapura (*Mv*:XXVII; *Mv*:XXVIII; *Mv*:XXX). Neither were there any pearls in the Anuradhapura Gedige assemblage studied, nor does Coningham (2006) or Deraniyagala (1972) record any such findings. In addition, pearls are absent in the bead assemblages from the Tissamaharama settlement site (Hannibal-Deraniyagala 2001) and the Lower Kirindi Oya Basin (Somadeva 2006). Neither has Bohingamuwa (2017) recorded pearls in the Kantarodai and Kirinda assemblages. The absence of pearls at habitation sites, while being present in the religious areas suggests that pearls were used almost exclusively as religious offerings in South India and Sri Lanka, rather than objects of personal adornment.

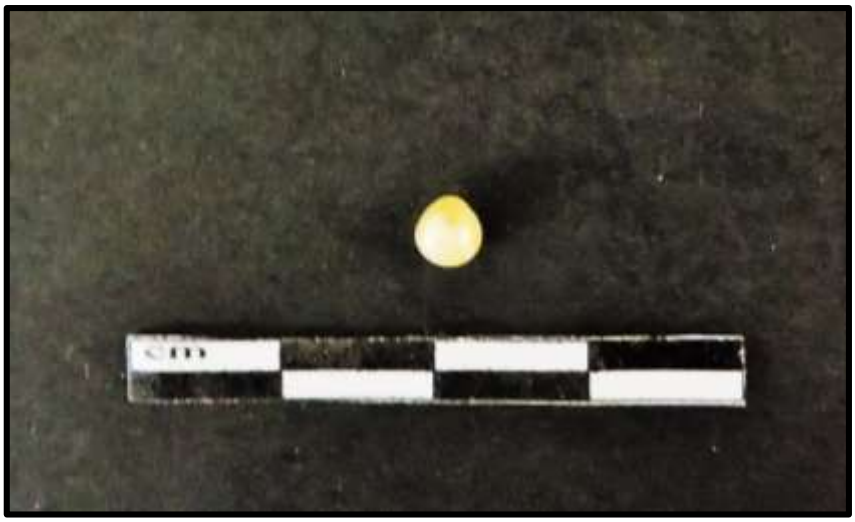

Figure 6.25: A pearl from Alagankulam. Pearls were rare in the archaeological record due to their non-durability.

However, historical references and artistic representations indicate a different picture. According to Mahavamsa, pearls were sent as royal gifts from Sri Lankan kings to those of India. For example, not only is Vijaya said to have sent pearls to the Pandyan king with a marriage proposal to his daughter (*Mv*:VII:48–58), he also sent an annual remuneration to his father-in-law, which included pearls, after marrying the Pandyan princess (*Mv*:VII:72–74). King Devanampiyatissa also sent pearls along with other valuables to Emperor Asoka, according to the chronicles (*Mv*:XI:22–23). Such examples of royal gifts indicate that the use of pearls was not restricted to religious offerings. Furthermore, artistic representations, particularly those from the Ajanta caves and Sigiriya, illustrate that women, most probably the elite, wore pearls to adorn themselves. Pearls have been attributed symbolic values and amuletic qualities by different communities (Donkin 1998, 176–180). In addition, they were also expressions of wealth and/or high social status of the wearer (Dubin 1995, 102; Donkin 1998, 168–171). Their absence at sites other than Mantai and Alagankulam could result from pearls being the exclusive possessions of limited elite groups and offerings to religious sites.

Archaeological representation of pearls in the interaction between South India and Sri Lanka may be negligible but historical references would provide us strong evidence. In addition, there is historical reference to the Partavara community, also known as the Baratas, being involved in pearl and chank fishing in the Gulf of Mannar (Seneviratne 1985b, 49–56; Pushparatnam 2001a; Bohingamuwa 2017, 466). They are historically even referred to in inscriptions (Paranavitana 1970; Pushparatnam 2001a). Descendants of this community still live in Sri Lanka, though in limited numbers and are still referred to as the Bharatas (Croos 2017, 247–269). Their migration from South India provides insights to the constant interaction between the two regions and the interpersonal relations between the regions were stronger than diplomatic relations.

Shell

The use of shell to produce objects of personal adornment, especially bangles, has a long history and is a tradition that has continued up to the present day (Dubin 1995, 66; Untracht 2008, 175). The majority of the assemblages I studied contain shell ornaments, particularly in the form of bangles. Shells, both marine and riverine have been used for ornament production. In this study, all the shells are categorized as a single group. Although different types of shell have been used for the production of beads, all the bangles have been made using *turbinella pyrum* L., commonly known as chank or conch shell.

Shell beads were recovered from all the sites studied, except Ibbankatuwa, but only the Mantai, Kirinda and Kodumanal assemblages contained considerable quantities of shell beads. Both the Kantarodai and Anuradhapura assemblages yielded single shell beads each, while 8 beads were recovered from

Alagankulam. The pattern on Sri Lankan sites indicates that there is a direct relationship between the shell beads and the site's proximity to the ocean. However, this pattern is not evident from the South Indian sites (Figure 6.26). Therefore, it is not a simple argument that the use of shell was directly influenced by the site's distance from the ocean.

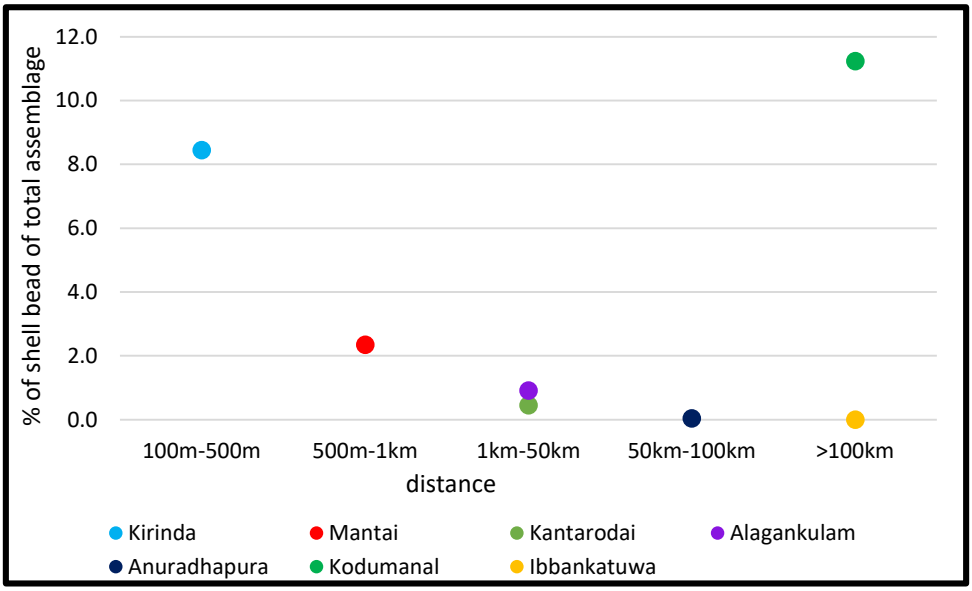

Figure 6.26: Occurrence of shell beads in relation to distance from the ocean

The graph illustrates how small the proportion of shell beads is generally in each bead assemblage. This indicates how the durability of raw materials affect their representation in the archaeological record. Kodumanal yielded evidence of shell ornament production. Such evidence is also available at Mantai. Thus, it is likely that, not just the distance to the source of the raw material, but also the nature of the site, as well as the interests of the inhabitants could affect the occurrence of beads and other ornaments made of certain raw material.

Bangles were important objects of adornment that were produced using shell. The assemblage I studied from Mantai comprised only four shell bangles and nine unconfirmed shell ones. But the assemblage from Carswell's excavation comprised 267 shell bangle fragments, 37.4% of which were production wasters.

These production wasters came from the northern edge of the site, trenches P and N (Waddington and Kenoyer 2013, 385–395), indicating the shell bangle production area was located on the northern part of the site. According to Francis (2013a, 366), it is probably at these shell production centres that the shell beads were also made. It has also been identified that the shells used for bangle production are *turbinella pyrum L*. and these are sourced from around the Palk Strait and Gulf of Mannar (Athiyaman and Rajan 2004; Bohingamuwa 2017, 240).

At Alagankulam, across the Gulf of Mannar from Mantai, and near the source of *turbinella pyrum L*. shells, only 22 bangle fragments with sufficient contextual detail were recorded. Of these, only two bangles are from the 'previous excavations' assemblage, one each from Periods II and III. The remaining 20 bangles are from the 2014/15 excavation. In addition, I came across a large quantity of shell bangle fragments, both finished and half-processed, along with a couple of chank cores belonging to the assemblage from 'previous seasons', lacking contextual detail (Figures Figure 6.27–Figure 6.29). Despite this, they are evidence of demand for shell ornaments and probably indicate bangle production at the site.

Figure 6.27: Fragments and wasters of shell bangles from Alagankulam without

Of the six bangle fragments recovered from Kirinda, four are made of shell. The location of the site, less than 100m from the sea may suggest the higher use of shell. But the insignificant quantity may be due to poor preservation conditions, rather than a representation of the preference of the inhabitants. Somadeva records (2006, 372), 7 shell beads from Kirinda and all the bangle fragments he recovered from the site are shell (Somadeva 2006, 399), though the exact number is not given. At Kantarodai, no shell bangle fragments were recovered, despite it being on a peninsula and close to the sea. This could indicate a cultural choice or even a lack of interest in ornaments produced using easily accessible raw material. However, Pieris (1917, 28) records that one of local landowners in Jaffna informed him that “a deposit of millions of the cores of chank shells which had been cut for purposes of ornament” was present at one of the hamlets but were being burnt for lime in large quantities. It is probable that there once existed a flourishing shell industry in the Jaffna peninsula, but modern day human activity, such as burning shells for lime, may have destroyed all evidence of shell ornament production. Bohingamuwa (pers.comm. 2017), who surveyed the area during the excavation at Kantarodai in 2011 also revealed that he did not come across a single piece of chank.

Figure 6.28: Fragmented shell bangle with decorations from Alagankulam

Figure 6.29: Chank cores that are production debitage of shell bangle production at Alagankulam

The assemblage from Anuradhapura Gedige also yielded no shell bangle fragments. The recovery of 120 shells has been recorded from ASW2 (Coningham 2006, 600) under the faunal material, but none appears to be in the form of an object of personal adornment (Coningham 2006, 583–587). Nevertheless, it is stated that the discovery of chank shell cores at the site is an indication that these shells were used to make jewellery (Coningham 2006, 583). It is quite likely that, due to the interior location of Anuradhapura, objects of personal adornment made of shells were rare, and perhaps not in demand. If there were a demand for these objects, it was possible to import them from places such as Mantai, which was not only well-connected to Anuradhapura, being its chief port site, but also a production site of shell bangles.

Further to the argument that the interior location at Anuradhapura was not the reason for the lack of shell bangles, is the evidence from Kodumanal. A large assemblage of non-bead objects made of shell was yielded from Kodumanal. These are 113 fragments of bangles and rings including production debitage (Appendix G3.6). The production debitage forms only 16.8% of the shell bangle/ring assemblage. This could indicate that, though shell ornament production took place at the site, it did not meet the entire demand. However, the assemblage I analysed was recovered from only four trenches at the site. It is possible that the main production centre was at a different area of the site, which would have yielded larger quantities of production debitage, similar to the northern part of Mantai. The assemblage Kelly analysed at Kodumanal also contained large quantities of shell ornaments, 60 beads and cowry shells (and an additional bead from a burial site) and 151 non-bead ornaments (Kelly 2013, 200). Despite the slight disparity in numbers in Kelly's tables 5-6 and 6-8 (2013, 200 and 259), she distinguished 12 (10 in table 6-8) shell waste. Kelly also argues that though the debitage indicates the production of shell bangles, it was small scale, considering the low quantity of debitage in comparison to the finished products, and the majority of the finished bangles were imported to the site (Kelly 2013, 265).

According to Kelly, who adopts the model of itinerant craftspeople proposed by Kenoyer (1983) and then expanded by Bhan and Gowda (2003), the shell bangles at Kodumanal were made by such a group who travelled between sites carrying raw material, tools and also some finished products (Kelly 2013, 266). Considering the similarity of the production techniques at Harappan sites and Kodumanal, she suggests these craftsmen were presumably from Gujarat (Kelly

2013, 265). She further reports that shell bangles appear later in the site sequence and towards these later periods more production debitage can be found. Such chronological observations are difficult to make about the assemblage I studied, as no significant increase of shell bangle occurrence can be observed towards the upper levels. However, the proposition of an itinerant craft community is worth considering.

Kodumanal is an inland site, and around 200km to the west and 300 km to the east coasts of peninsular India. The large quantity of shell ornaments found there, both in finished and half-processed or debitage form, is an indication of a strong demand for these ornaments at the site and adjacent areas. The supposed arrival of an itinerant group from as far as nearly 2000km away would be further indication of the high demand. However, one may question why an itinerant group should periodically visit the site to meet the demand, when actually the possibility of importing finished bangles is not far-fetched.

The data from Nagarjunakonda for shell use displays interesting patterns. No shell beads were recovered from the reliquaries but were recovered from both the habitation and religious areas of the site. The number of shell beads is low (9) as compared to that of non-bead objects which comprises over 1000 fragments. The evidence shows that shell was used to produce bangles, armlets, toe and finger rings (Soundara Rajan 2006, 431). At Nagarjunakonda, shell has been used for the production of ornaments from as early as the Neolithic period (Soundara Rajan 2006, 431), but only evidence from the Ikshavaku and Medieval periods of the site will be discussed. There is evidence of local production of shell ornaments at Nagarjunakonda and they were mostly found in the area close to

the Eastern Gateway of the Citadel (Soundara Rajan 2006, 431–432). The shell ornament makers would have imported raw material from either South Indian regions, such as Tinnelveli and Korkai or even Sri Lanka.

It is a common understanding in South Asia that shell ornaments are attributed with amuletic powers and are expected to ward off the evil eye or any other adverse effect on the wearer. Even today, Bengali married women invariably wear shell bangles and in Andhra Pradesh, women offer shell bangles to village goddesses requesting longevity of husbands and children. Soundara Rajan argues that the discovery of larger quantities of shell ornaments from the religious areas of Nagarjunakonda is indicative of “religious or magical belief” associated with shell (Soundara Rajan 2006, 433).

Bohingamuwa argues (2017, 278, 295) that bangles were produced at Mantai primarily for export. Considering the traditional use of shell bangles by Indian women, especially Bengalis, Sri Lankan shell bangles probably catered to their demand. Strong evidence of Sri Lankan trade in the Bay of Bengal region provides further support for this proposition (Bohingamuwa 2017, 337–338, 453). This argument may be strengthened by the absence of shell bangles at interior urban centres in Sri Lanka, such as Anuradhapura. It is probable that there was no market for Mantai shell bangles within the country and in fact both chank shell and shell bangles were mostly designed for export. But some of these may have been used locally as well, probably at Mantai. The products from Mantai may have been among the shell ornaments recovered from Nagarjunakonda.

Soundara Rajan notes a regional pattern in India in the use of shell bangles and, according to him, the lack of shell bangles from north Indian sites such as Vaishali, Sonepur, Kumarahar and Mahabirghat, as opposed to high number at the peninsular sites suggests a regional variation (Soundara Rajan 2006, 446). It is an interesting pattern, as despite the lack of shell bangles at the sites adjacent to Pataliputra, a north Indian seat with which Sri Lanka maintained close contacts with the establishment of Buddhism in the Island, the majority of sites in Sri Lanka display patterns more in line with peninsular region. The discovery of shell ornaments from religious sites, such as Jatavana and Abhayagiriya at Anuradhapura, indicate similarity with Nagarjunakonda where the majority of ornaments were recovered from religious sites.

6.2 Choice of shapes and types of beads

Having discussed the choices of raw materials, the patterns and preferences relating to bead shapes and types are now discussed. Geometric shapes in nature have always attracted human beings, who often attribute meanings to these shapes. Beads are in fact, generally perceived as human eyes, thus talismanic to ward off the evil eye (Erikson 1969). Among the most significant bead types in the assemblages studied are Red Disc Beads, disc, circular oblate, circular cylinder, collar, stupa and segmented beads. There are several other shaped beads in each of these assemblages but their limited numbers make discussion of them rather insignificant, unless they are a special type of bead that may require attention despite their numerical insignificance. Some of the special terms used for bead types are given in Table 6.3.

Table 6.3: Glossary of selected bead terminology

Terminology	Explanation
Cornaline d'Aleppo	The beads classified as Cornaline d'Aleppo in the present study are similar to that of Hannibal-Deraniyagala's Tissamaharama bead classification. They are compound beads (beads with more than one layer of glass) with a reddish exterior over a darker core (See Hannibal-Deraniyagala 2001, 206, 225; 2013, 372). Despite its name literally translating to 'Carnelians of Aleppo', the city seems to have no relevance to the bead type (Corning Museum of Glass 2002). These beads are either drawn or would and according the Dubin, it is assumed that they originated in order to "imitate banded carnelian, Onyx beads and stones popular in western Asian" (Dubin 1995, 128). Originally, they have a reddish exterior over a white, yellow or pink interior later. Therefore, Hannibal-Deraniyagala's classification of reddish beads over a darker core, may need to be reviewed.
Indo-Pacific Beads	Indo-Pacific beads (IPB) are small, monochrome, drawn, glass beads with a diameter not exceeding 6mm. These beads were first reported by Beck in 1930, from sites from Zanzibar in Africa to Perak in Malaysia (Francis 2002, 19). These beads were termed 'trade wind beads' by Sleen (1956; 1958, 208–212; 1973, 76–82) and '*mutisalah*' by Lamb (1965a and b). Francis, who extensively studied these beads, coined the term Indo-Pacific Beads, initially, considering their geographic distribution, from Africa to Japan (Francis 2002; Gupta and Lapteff 2017, 1–13). According to Francis, the distribution of IPBs is even wider than Indo-Pacific region, but the term suits the geographical location of the known manufacturers of this bead group (Francis 2002, 19–20).
Dzi beads	Dzi beads are a group of decorated stone beads specific to the Tibetan- Himalayan region. These are akin to etched beads, and are agate beads decorated with alkali paint. Tibetans attribute Dzi beads talismanic properties and believe these beads protect the wearers from evil (Glover and Bellina 2001; 2003; Ebbinghouse and Winsten 1988; Nebesky-Wojkowitz 1952).

6.2.1 Origin and distribution of Red Disc beads (RDB)

The Red Disc Beads (RDB) are a particular type of bead characterized by its combination of shape, size and colour. Just as with regular disc beads, the length of these beads is less than 1/3rd of their diameter and the diameter could sometimes be as great as 11–12mm for some beads. Disc beads with a diameter of 5.5mm and above are treated as RDBs in this analysis. Generally, the colour of these beads ranges between 10.0R 3/8 Barn Red, 10.0R 4/8 Redwood, 7.5R 3/10 Dark Lacquer Red, and 7.5R 3/8 Brick Red (Figures Figure 6.30–Figure 6.33). Due to the reddish-brown colour, they have often been misidentified as terracotta washer beads, but during a scientific analysis published by Peiris (1919, 64) it was confirmed that the raw material is glass.

The RDBs in my analysis are synonymous with Type 10b of Deraniyagala (1972), Type II.1 of Hannibal-Deraniyagala (2001, 214–215) and Disc of Coningham (2006, 679–680). Bohingamuwa (2017, 412–414) refers to RDBs in his work but categorises them as general disc beads. Therefore, when re-analysing his assemblages from Mantai, Kantarodai and Kirinda I have distinguished RDBs from other disc beads. Francis reaffirms that these beads are glass beads and infers that they are of Sri Lankan origin. According to Francis, RDBs are a by-product of Indo-Pacific Beads (Francis 2002, 136–137), but Bohingamuwa (2017, 414) argues that it is unlikely, considering the early occurrence of RDB at KTD, where the single IPB occurs only in the disturbed phase, much later than the first and numerous occurrences of RDBs. Similarly, at Anuradhapura Gedige, where the RDBs appear in the phase preceding IPBs, which occur only from phase IV.

Figure 6.30: A group of RDBs recovered from Anuradhapura Gedige

Figure 6.31: Examples of RDBs from Kantarodai

Figure 6.32: Fragmented RDBs from Anuradhapura Gedige

Figure 6.33: A fragment of RDB from Alagankulam

In this discussion, according to the available data, I agree with the claim that RDBs originated in Sri Lanka (Francis 2002, 136–137; 2013a, 364). Their consistent occurrence in large quantities at Anuradhapura and Kantarodai (Chapter 4.3.1 and 4.3.2), as well as possible evidence of their production from an early period (*c*. 600–500 BC onwards) are strong reasons for this argument. The occurrence of RDBs at South Indian sites appears to be later in date and their distribution is sparse, which suggests they were probably imported from Sri Lanka. There is also the possibility of technology transfer from Sri Lanka to South India, which also signals strong interaction between the two regions. It further indicates that the movement of objects occurred both ways between Sri Lanka and South India.

RDBs dominate the choice of shapes at Kantarodai, forming 65% of the total assemblage (Appendix B3.6). They first occur in phase IV in a limited quantity but proportionately they form 30% of the phase total. The number of RDBs proliferated to a substantial number in phase VII and comprises 97.9% of the total RDBs in the assemblage. The entirety of the RDBs at Kantarodai are finished

beads. Pieris (1919, 65) reports the finding of unfinished glass beads some of which were unperforated. It seems that he was referring to RDBs, which appear to have been perforated after the production of the beads (Francis 2002, 136). The Anuradhapura Gedige assemblage shows a strong demand for RDBs which comprise just over 70% of the glass beads. While most of these are fragments, they could still be convincingly identified as RDBs. Similarly to Kantarodai, the entire collection of RDBs from Anuradhapura Gedige are finished products, or fragments of finished beads. A single piece of waster discovered from the Anuradhapura Sanghamitta Mawatha (ASM) trench, located in the vicinity of Anuradhapura Gedige (Figure 6.34), was of strikingly similar texture to the RDBs. A single piece of waster cannot be regarded as evidence of bead production at the site, but it cannot be dismissed without consideration of possible RDB production at Anuradhapura. Further examination and scientific analysis of the waster sample and some RDBs could confirm this.

Figure 6.34: Probable RDB production debitage from Anuradhapura Sanghamitta Mawatha (ASM) trench that could suggest on-site production

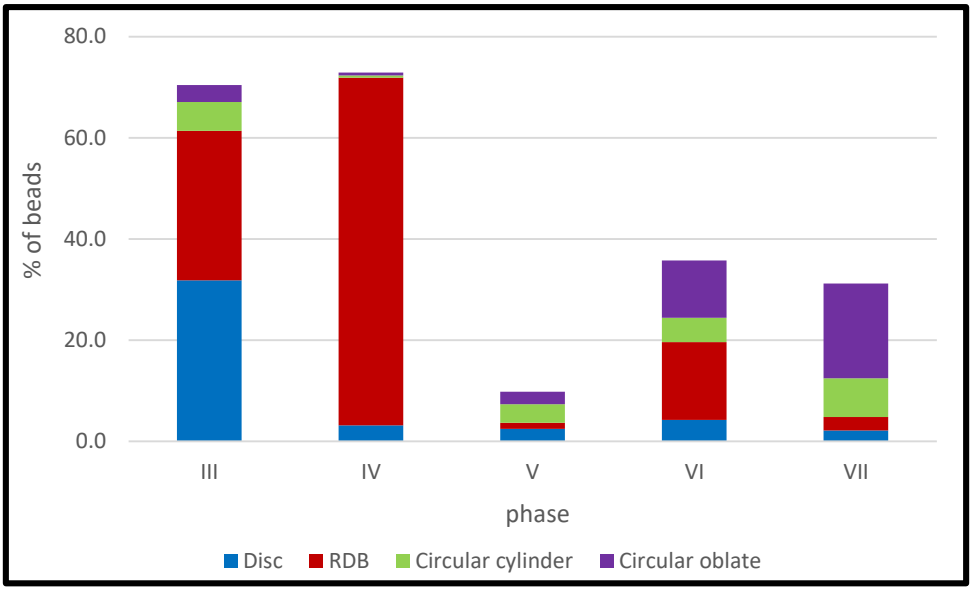

Figure 6.35: Distribution of Disc, RDB and Circular cylinder and oblate beads across phases at Anuradhapura Gedige

In the Anuradhapura Gedige assemblage, phase III includes a slightly greater number of disc beads than RDBs (Appendix 3.6). But in the following phase there is a substantial increase in RDBs, while the growth in the number of other shapes is not very significant. Post-phase IV, there is a stark drop in the number of RDBs (Figure 6.35). The number of RDBs in phase V, dropping to two fragments, is probably proportionate to the total bead count of the phase, but the succeeding two phases also indicate a decrease of RDBs, accounting for 83 and 12 in phases VI and VII respectively. It is, however, notable that with the decline of RDBs, the number of circular oblates and cylinders increases in larger proportions as compared to their quantities in previous phases (Figure 6.35).

On the other hand, apart from a single possible RDB recovered from the Disturbed phase, Mantai did not yield any RDBs. It is an interesting phenomenon, because there appeared to be a decline in the number of RDBs towards the last phases of the Anuradhapura and Kantarodai sequences towards the early/mid-1st century BC. The Mantai sequence begins in the 2nd century BC. This suggests

that these beads went out of vogue at the start of the Common Era. They may not have completely disappeared, but definitely decreased in number to become minor components. Francis' Mantai assemblage of 2,322 beads (Hannibal-Deraniyagala 2013, 370) contained only 26 RDBs, which Francis (2013a, 364) recognised as "large diameter orange discs", but their periods of occurrence is uncertain. However, Francis (2002, 137, 243-note 31) notes the scarcity of these beads at Mantai.

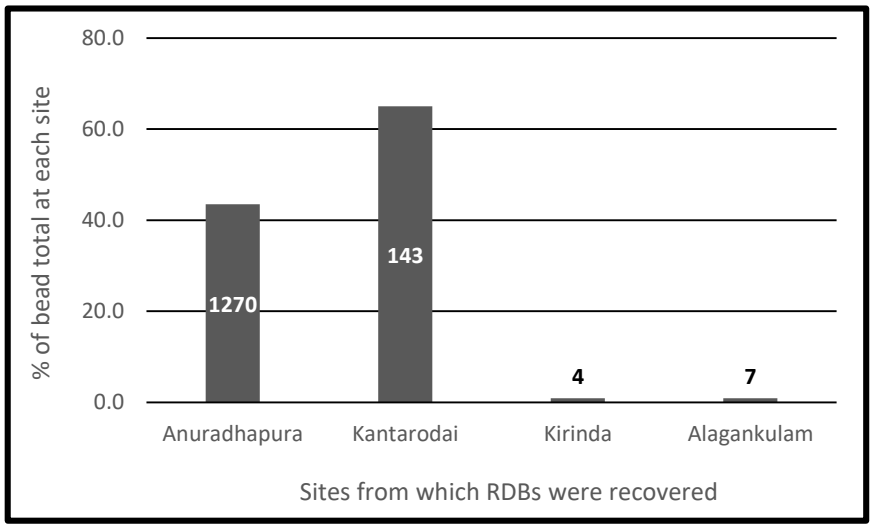

Figure 6.36: RDB proportions of total beads at each site which they were recovered. None were present in the assemblages from Mantai and Kodumanal

Table 6.4: Occurrence of RDBs across sites and time

Date / Site	900-600BC	600-500BC	500-250BC	250BC-AD100	AD100-500	AD500-800	AD800-1000
Anuradhapura	26	1147	2	83	12		
Kantarodai			3	140			
Alagankulam*				2	1		
Kirinda						2	2

* stratigraphic details were available for only 3 out of the 4 beads from Alagankulam

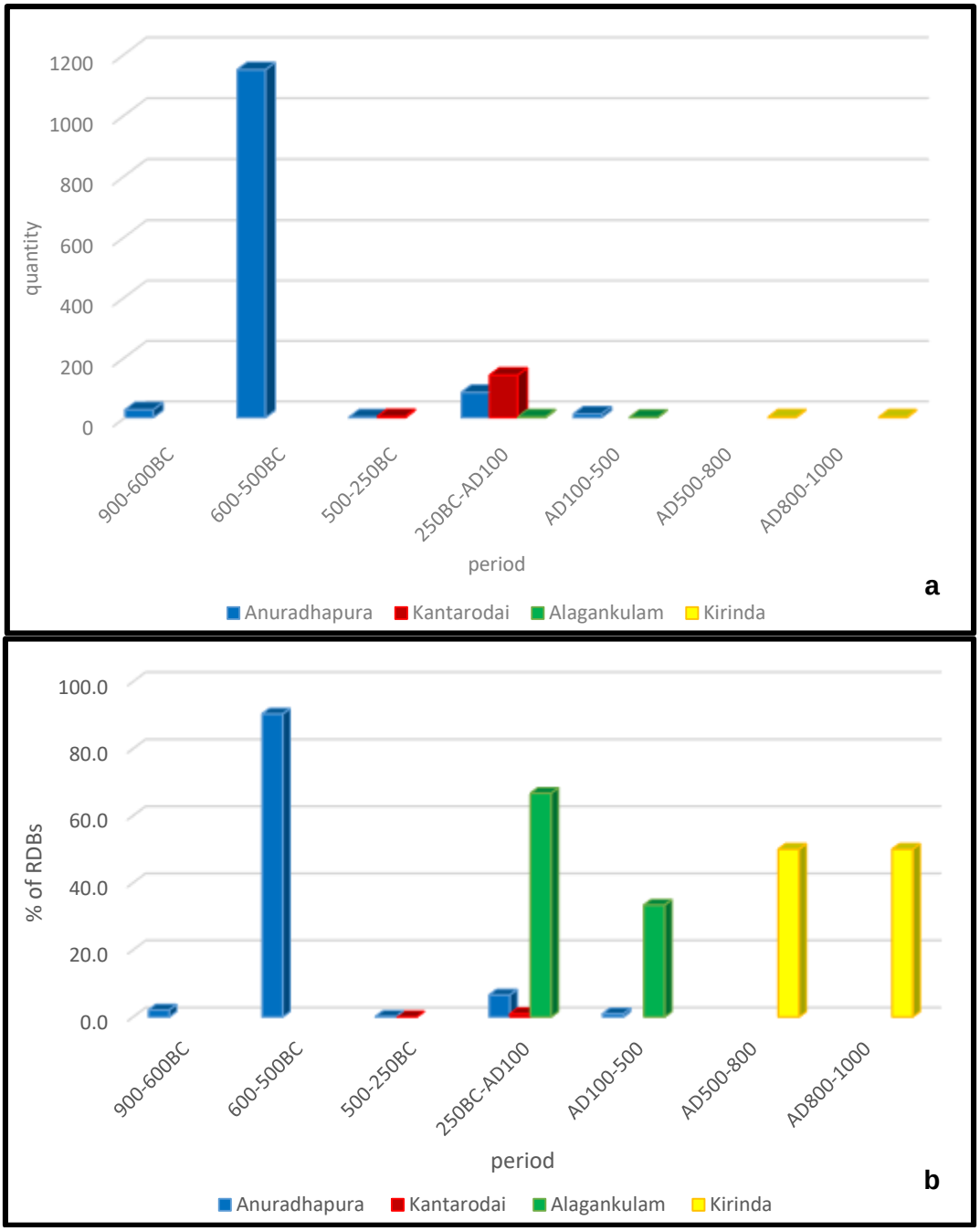

Figure 6.37: RDB occurrence at each site across time
a) RDB quantities from each site across periods b) % of RDBs from each site across periods

The Kirinda assemblage includes four RDBs, which occur in phases II and III and thus date between the early/mid-8th and 9th centuries AD. The date appears to be quite late for the occurrence of RDBs. However, it is possible that they are heirlooms from Tissamaharama, a site that is dated to between the 4th/3rd centuries BC–9th century AD. Hannibal-Deraniyagala's (2001, 215-216) Type II.1

has occurred in every phase at the site. RDBs appear to be subtype 1a of Somadeva's typology (2006, 195–196) which he calls barrel discs but identifies their raw material as clay (Somadeva 2006, 195–196) and they also occur throughout his site sequence. I would suggest that the later RDBs at Kirinda are heirlooms perhaps indicating a degree of cultural 'lag'. Since exact statistics relating to the phases are not available for Tissamaharama and Lower Kirindi Oya Basin (LKB), we have no understanding of the statistical distribution across the site sequence. It is possible to argue that, though the demand for RDBs died out in the northern part of the island in the Common Era, they were still in vogue across the southern sites. It is necessary to gather statistical data from well stratified sites in the southern region before confirming this argument. Presently, the argument that RDBs went out of vogue with a new preference for circular oblate and cylinder beads, towards the early centuries of AD appears to be plausible.

Such patterns are difficult to identify for the South Indian assemblages I studied. The Kodumanal assemblage I analysed was devoid of RDBs. Kelly (2013), who studied assemblages from previous excavation seasons at Kodumanal, doesn't report the occurrence of RDBs. Excavations at Alagankulam, on the other hand, have recovered RDBs, though numerically insignificant (Appendices F3.8 and F3.9; Table 6.3 and Figure 6.36Figure 6.37). There is no consistent occurrence of RDBs in the site sequence and they are found in negligible quantities, suggesting that they were imported to the site in an inconsistent manner. It is possible that they were not in vogue on the peninsula and were therefore not a regular trade item. They also occur in the assemblage from Pattanam, but in small quantities (Cherian *et al.* 2016, 40–41), the exact numbers of which are not

known. Francis (2002, 137) found a single bead from Karaikadu and notes that he found several at Arikamedu, Alagankulam and Kodumanal, which he originally identified as red jasper (Francis 2002, 243-note 31). Neither the assemblage I looked at, nor that Kelly studied from Kodumanal, yielded a single RDB, and those from Alagankulam are scarce. There are not enough details about those from Arikamedu, as Francis misidentified them as red jasper. Nevertheless, I observed large quantities of RDBs stored at the museum of the Department of Archaeology, Tamil Nadu, without any information about them. Although I was informed they are findings from Alagankulam, the lack of any further details makes it impossible to incorporate them into this study. The Nagarjunakonda excavation report does not describe any bead, identified as either glass or terracotta, that could be interpreted as RDB. However, what is clear from the available data from South India is that RDBs were occasional imports to the peninsula from Sri Lanka where they were likely to have been made.

The data analysed from the sites studied shows that RDBs were common at Anuradhapura and Kantarodai while numerically insignificant at Kirinda and Alagankulam and absent at Mantai and Kodumanal (Figure 6.36). Both the sites where they occur in large quantities belong to the early periods. The RDBs indicate a changing preference over time, as towards later periods at Anuradhapura, there are lesser numbers of RDBs. The current discussion suggests that RDBs are a bead type that occurred and spread in the northern region of Sri Lanka, and its influence probably reached across shores to South India and also to other parts of the island. Extensive investigation and clear recording at South Indian sites may provide much needed information for the better understanding of the origin and distribution of RDBs.

6.2.2 Disc, circular oblate and cylinder beads

Disc, circular oblate and circular cylinder beads are the most common shapes occurring across the sites studied. Of these, disc beads are one of the earliest bead shapes not only in the region studied but also across much of the ancient world (Sleen 1973, 61, 87; Dubin 1995, 47). Disc beads occur in all the assemblages I studied and are one of the earliest shapes present at each site. Circular oblates and circular cylinders are also common to all sites, except Ibbankatuwa, which contains only circular oblates (Table 6.4). At both Ibbankatuwa and Kodumanal, circular oblates and cylinders occur in very small numbers. The majority of objects from Kodumanal are production debitage, therefore the assemblage mostly contains fragments and irregular shaped beads. Both Ibbankatuwa and Kodumanal lack contextual detail to enable observation of the assemblage across time, therefore, these two assemblages are not a part of the discussion in this section.

Table 6.5: Occurrence of disc, circular oblate and circular cylinder beads across the sites

Site	Disc	Circular oblate	Circular cylinder
Anuradhapura Gedige	118 (*4.0%)*	163 (*5.6%*)	80 (*2.7%*)
Kantarodai	25 (*11.4%*)	10 (*4.5%*)	6 (*2.7%*)
Mantai	53 (*3.4%*)	502 (*31.8%*)	432 (*27.4%*)
Kirinda	23 (*5.3%*)	103 (*23.5%*)	165 (*37.7%*)
Ibbankatuwa	1444 (*80.7%*)	4 (*0.2%*)	-
Alagankulam	23 (*3.1%*)	388 (*52.4%*)	102 (*13.8%*)
Kodumanal	3 (*1.7%*)	1 (*0.6%*)	1 (*0.6%*)

According to the available data, disc beads were popular during the early periods and experienced a downward trend post-1st century AD (Figure 6.38). With the development of the production of beads, the variety of bead shapes increased and led to a change in preference patterns. In addition, it is likely that, with the spread of trade networks, beads of different shapes were arriving into the region, therefore, local traditional shapes would have lost their popularity. Both circular

oblates and cylinders increase from around the 2nd century BC (Figures Figure 6.39 and Figure 6.40). The trend is more obvious in circular oblates by comparison with circular cylinders. In essence there probably was an expanding fashion market and trade responded to changing fashion preferences, in order to develop market.

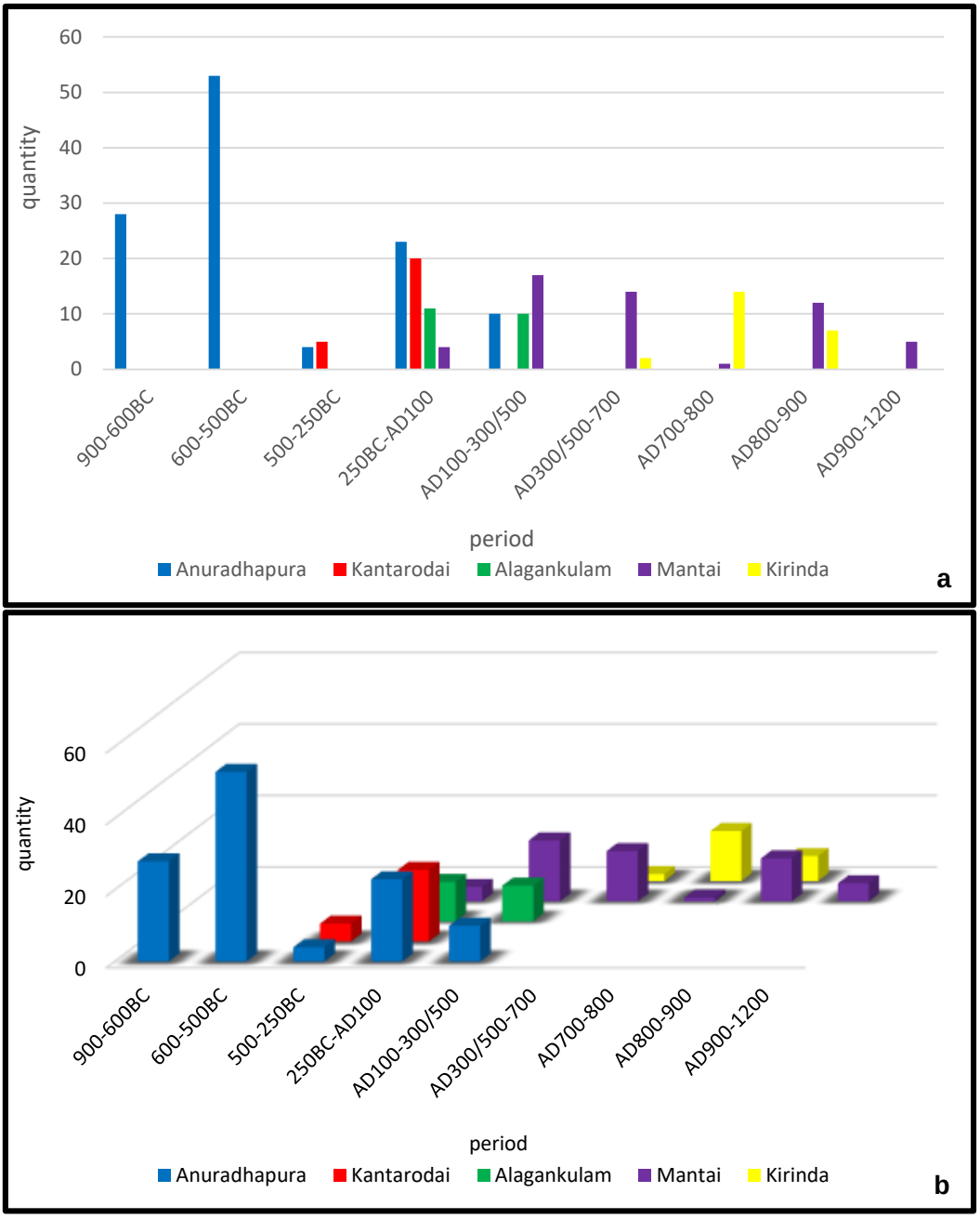

Figure 6.38: Distribution of disc beads across sites and time
a) data; b) visualization of data

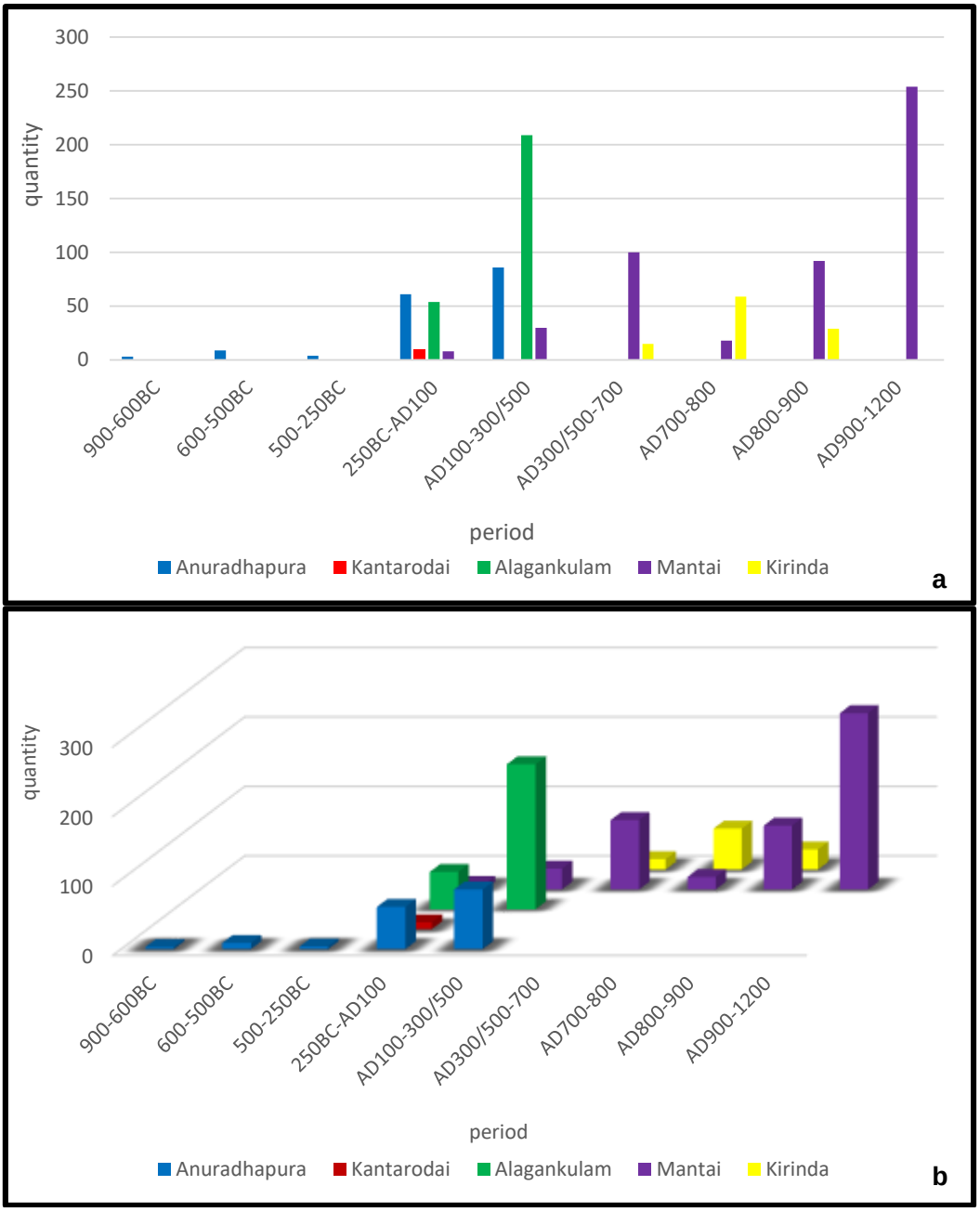

Figure 6.39: Distribution of circular oblate beads across sites and time
a) data; b) visualization of data

The graphs above indicate a decrease in the number of disc beads over time, while there was an increase in circular oblates and cylinders. The same chronological trend can be seen in the disc, circular oblate and circular cylinder bead totals across sites. Those with a pre-2nd century BC site sequences, contain more disc beads as opposed to those that occur after this period. While Anuradhapura Gedige continues, the Kantarodai site sequence comes to an end

soon after the 2nd century BC (Figure 6.41). Therefore, circular oblates and cylinders occur in comparatively smaller proportions at Kantarodai.

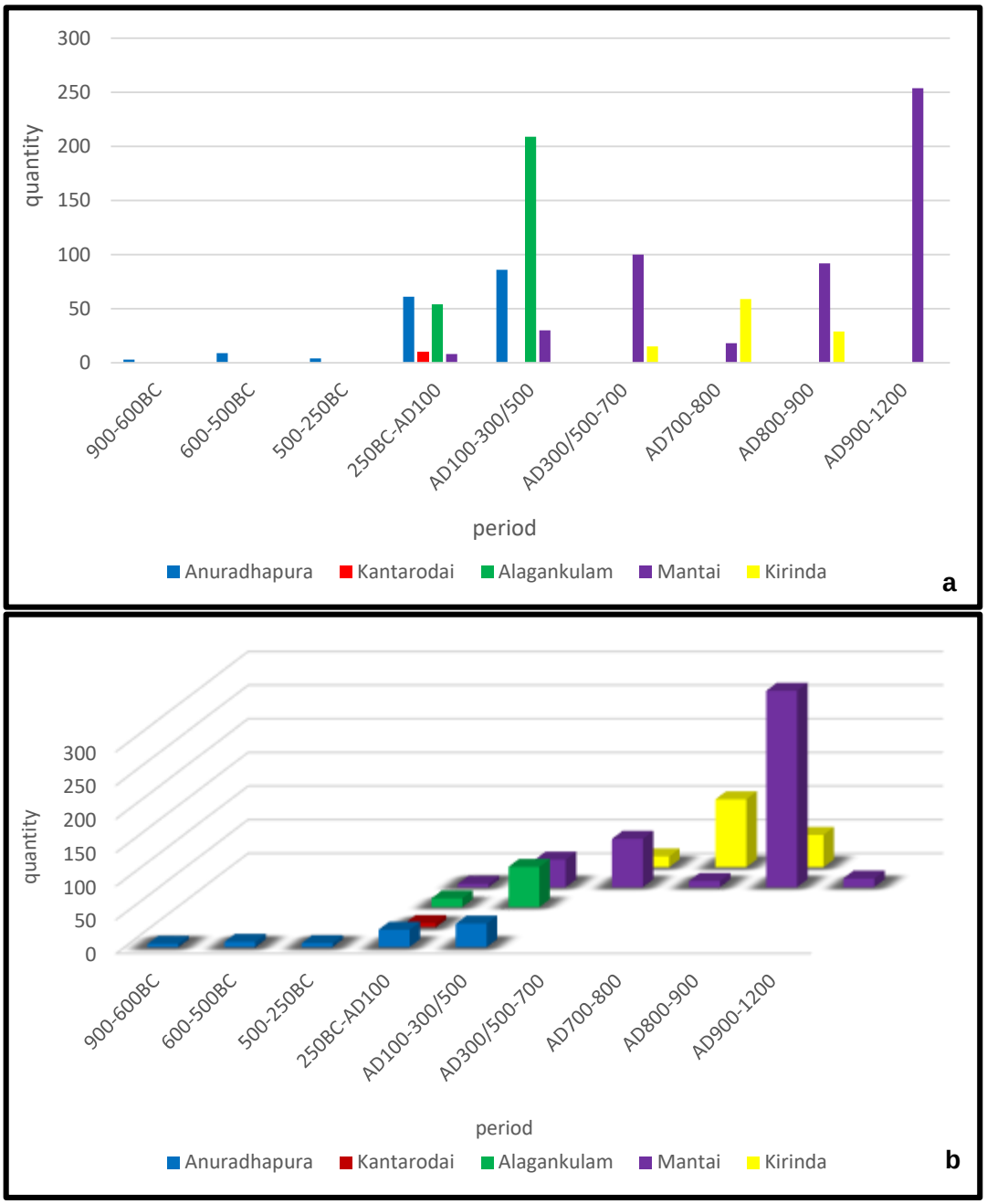

Figure 6.40: Distribution of circular cylinder beads across sites and time
a) data; b) visualization of data

In addition to the downward trend of disc beads over time, and the increase in circular oblates and cylinders towards the later periods, another interesting pattern is evident from the data. The sites in the northern part of Sri Lanka indicate a greater preference for circular oblates than circular cylinders. At Alagankulam

a similar trend can be observed, and this is evident in both the 2014/15 collection and the 'previous seasons' collection (Appendices F3.8 and F3.9). A reverse pattern can be seen at Kirinda, located in the south of the island, where circular cylinders are more numerous than circular oblates. This may suggest different preferences between the north and south of the island. But more datasets from other sites in southern Sri Lanka is required to establish the existence of such patterns. The similarities between Alagankulam, located at the closest crossing point between India and Sri Lanka, and the sites in the north of the island may reflect close and regular contact.

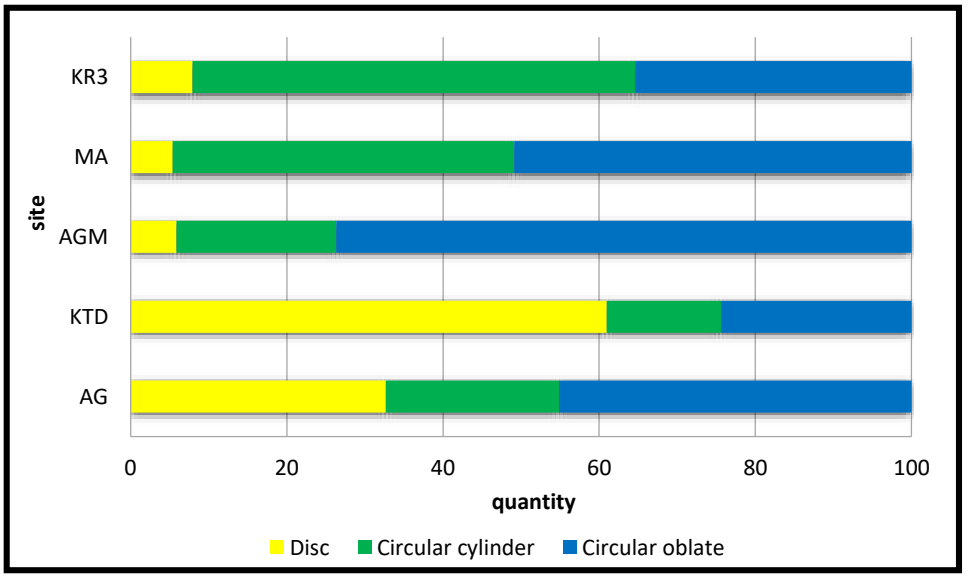

Figure 6.41: Occurrence of disc, circular cylinder and circular oblate beads across sites studied

By observing the patterns of the types of beads, preferences across time, as well as sites could be identified. It suggests that bead shapes indicate fashion choices. With the development of more elaborate shapes, the simpler ones became less sought after. Fashions related to bead shapes also indicate interesting regional preferences and these trends can be further explored with more datasets from other sites in different regions. In addition, more comparisons between Sri Lanka

and South India would also be possible if similar datasets were available from different sites.

6.2.3 Special beads

Apart from beads that have geometrically describable shapes, there are others which have special shapes that have been given self-explanatory names. These beads are therefore grouped as “special beads”. According to Beck (1928, 11), these are “the more elaborate types of beads”. In his classification of special beads and pendants, he groups special beads under subgroup A and pendants under subgroup B. Bohingamuwa (2017, 264) illustrates the special beads in his assemblages, and they are similar to those that I have identified as special beads. However, in his classification, he follows Beck and groups them under “Division” as “special beads and pendants” and then distinguishes each type within that category (Bohingamuwa 2017, Vol.II-17–18). I have avoided a broad category of “special beads and pendants” and categorised them under their specific special bead types. For example, I distinguish collar bead, Stupa bead, longitudinally striped bead and cornaline d’aleppo bead. Hannibal-Deraniyagala (2001, 209–224) and Somadeva (2006, 195–201) also classify the special bead types individually. Hannibal-Deraniyagala (2001, 212, 219–224) classifies Stupa beads as a sub-type of collar beads. Francis (2013a, 351) has also identified these special bead types individually. While several special bead types were identified in the present research, only those that are important for the present discussion are considered below.

Collar beads

Collar beads are those with “extra material surrounding both apertures…” (Francis 2002, 42), that is “collars” surrounding the perforation. The body can take different forms but is mostly tabular (Figure 6.42–Figure 6.44). Francis (2002, 42) claims that as a specific bead type, collar beads are South Indian in origin, on the basis that they are more common in South India than anywhere else, as well as there being substantial evidence of local production at Arikamedu, which is the only place that yields such evidence. Nonetheless, his notes refer to a glass collar bead type with a large diameter and circular outline made in Oc-eo in Vietnam, but states that the common smaller collar bead type is established as originating from Arikamedu (Francis 2002, 43, 227-note 4). Wheeler *et al*. (1946, 96) described the collar beads from Arikamedu in detail and divided them into ‘grooved’ and ‘lug’ collar beads. Francis, as well as Hannibal-Deraniyagala, classified collar beads into these sub-categories, but I have omitted this division in the present research.

Figure 6.42: Collar beads made of amethyst from Alagankulam

Figure 6.43: Transparent glass collar bead from Alagankulam

Figure 6.44: Yellow glass collar bead from Alagankulam

Collar beads have been recovered from all the sites I studied, except Kodumanal. They are limited in number at each site, however, they are discussed here because of their importance in indicating interaction between Sri Lanka and South India. Kantarodai has five collar beads occurring in phase VII (early–mid-1st century BC), which form just 2.3% (Appendix B3.6) of the total bead assemblage at the site. This is the largest proportion of collar beads from any site I studied. Nevertheless, the Mantai assemblage contains the most collar beads (14) (Appendix C3.4), made of synthetic, stone and organic material. Only a single collar bead was recovered from Kirinda, while eight (four of which are fragments), are from Anuradhapura Gedige. The 2014/15 collection from Alagankulam

contained only one collar bead while the 'previous seasons' collection had four altogether, one from period II (300 BC–AD100) and three from period III (AD 100–500) (Figure 6.45). Kelly recorded four collar beads from Kodumanal (Kelly 2013, 450–529) but none were present in the assemblage I studied.

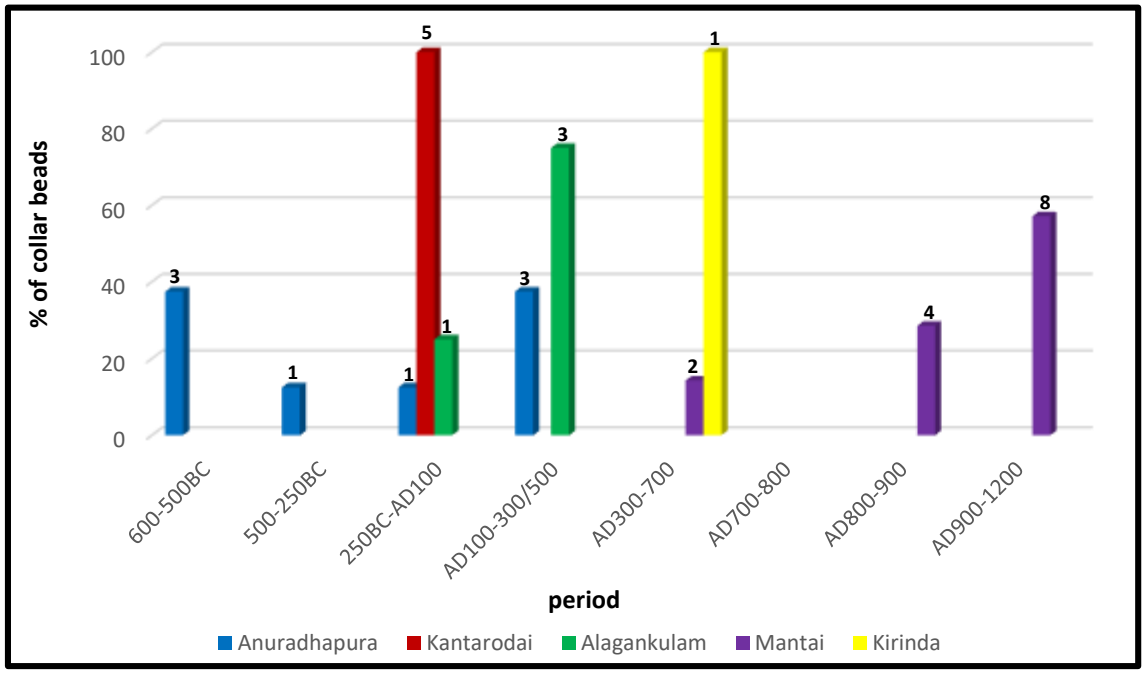

Figure 6.45: Occurrence of collar beads across sites and time (raw numbers given above each column)

All collar beads, except for the four fragments from Gedige, occur after the 2nd century BC, thus do not challenge Francis' claim that Arikamedu is the place of origin of the collar beads. At Tissamaharama their first appearance is recorded in the 1st/2nd centuries AD (Hannibal-Deraniyagala 2001, 221) while at Lower Kirindi Oya Basin (LKB) they are not recovered till as late as phase VII (AD1000–1400). At ASW2 in Anuradhapura, glass collar beads first appear in the structural phase–G (ca. 200 cal.BC–130 cal.AD) (Coningham 2006, 353). Those that Francis found from Mantai are dated to the Early Historic and Early Medieval Periods of the site (Francis 2013a, 353). Bohingamuwa dates the collar beads from his Mantai assemblage to between the mid-3rd century and 12th/13th centuries AD, and traces the provenance of eight beads to India and another four which are also

suspected to be Indian. There is no data available from Pattanam about collar beads.

Dates of occurrence from all the sites fall within the site chronology of Arikamedu. Apart from four beads from the Mantai assemblage recorded as half-processed (Appendix C1), other beads appear to be finished products. Thus, according to Francis (2002, 42), substantial evidence of production was discovered at Arikamedu only, therefore, the provenance of these beads can be traced back to Arikamedu. The sparse numbers in which they are found on the island, as well as at Alagankulam and Kodumanal, suggest that they were probably imports to each site and were probably brought in for the use of a limited and possibly elite group of people in society. For example, at Kirinda, a small port site of non-elite habitation, just a single bead was recovered in comparison to much greater quantities from Tissamaharama, an urban centre nearby.

Not only could some of the collar beads have been imported from India, but also, it is likely that collar bead production knowledge migrated to the island with or without actual groups of bead-makers themselves. Bohingamuwa (2017, 267) puts forth this idea considering the four half-processed collar beads recovered from Mantai. Francis points out a Sri Lankan imitation of segmented beads which are otherwise of Islamic origin (Francis 2002, 90–91, colour plate 22). This is an indication that Sri Lankan bead-makers imitated foreign beads, and produced them locally. As well as a human migration of bead-makers, it is possible that a migration of technological knowledge took place. The imitation of segmented beads further strengthens the possibility of the imitation of collar beads. Furthermore, Francis identifies collar beads as a by-product of IPB (Francis 2002,

42), therefore, at established IPB production centres, such as Mantai, imitation of collar beads might be expected. Either way, collar beads are strong evidence of close contacts between the island and peninsular India.

Stupa beads

The Stupa bead acquired its name due to its resemblance to a Buddhist stupa (Francis 1991, 98; 2002, 138). They are round, flat tabular beads that are perforated through the edges. On either side around the bead there is a raised rim and a “low swelling at the centre of each face, sometimes with an additional small knob atop the swelling” (Francis 2002, 137). The raised rim probably resembles the outer wall of the stupa and the collars the entrance gates (Hannibal-Deraniyagala 2001, 209). Some of these beads are found to have extra material around the perforation on either side, similar to the collars of collar beads (Figure 6.46). The absence of the collar in some beads may be a result of breakage. Francis (2002, 137) suggests that their production involved two methods, either moulding or from a wound bead using some glass.

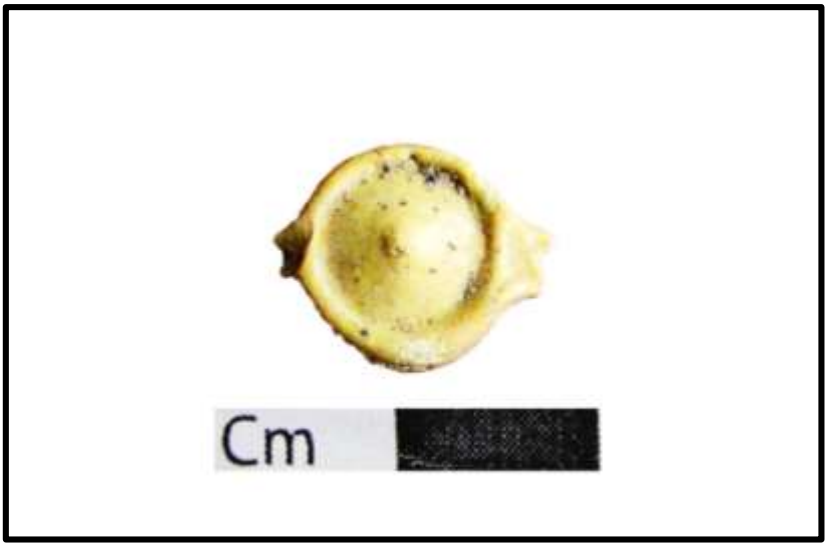

Figure 6.46: A Stupa bead recovered from Mantai

Based on their occurrence, their provenance is assigned to either Sri Lanka or Southeast Asia (Francis 2002, 138; 2013a, 361). At Mantai, Francis recovered only two Stupa beads, one from a context dated at the 1st century AD, the other *c*. 8th century AD (Francis 2002, 138). The Mantai assemblage I analysed also contained two Stupa beads, one from phase VII and the other from the surface. They are both made of glass, one opaque yellow and the other translucent blue. These are assigned a time period between the early/mid-8th to post 8th/9th centuries AD (Bohingamuwa 2017, 252, 414). None of the other assemblages I analysed yielded Stupa beads.

Hannibal-Deraniyagala (2001, 209) categorises these beads along with collar beads under type XI. Stupa beads (type XI.C.1) are comparatively more numerous at Tissamaharama, there are nine in total (Hannibal-Deraniyagala 2001, 221). Similar beads, though in opaque yellow glass, were recovered from an excavation within the Anuradhapura Citadel (Ueyama and Nozaki 1993, 71). Hannibal-Deraniyagala also recorded that the only Stupa beads made of stone she came across were recovered from the Jetavana excavations, Anuradhapura. Furthermore, she records that a Stupa bead made of copper was recovered from the Anuradhapura Citadel–Mahabodhi grounds (Hannibal-Deraniyagala 2001, 221-fn. 139). Bouzek (1993, 80ff; 106; 118; 120f) reports the discovery of a Stupa bead from the Abhayagiri Vihara excavation, Anuradhapura, belonging to ca. the 7th century AD. Momose and Abe's (1996, 102; 123) report on Anuradhapura Citadel Rampart 2 also mentions a Stupa bead that they assign to post AD 1100. Neither Coningham (2006), Deraniyagala (1972) nor Somadeva (2006) record the discovery of Stupa beads at their respective excavations.

Francis's assignment of Stupa beads to a Southeast Asian provenance is based on the quantity of beads recovered from sites in Southeast Asia such as Sungai Mas and Dvaravati (Francis 2002, 137–138; 2013a, 361; Hannibal-Deraniyagala 2001, 221–224). Nevertheless, he has only come across a single bead in Sungai Mas, Malaysia and more commonly at Dvaravati sites in Thailand, but does not give their exact number. Yet, Basa (1992) who analysed Southeast Asian beads does not seem to have a Stupa bead type in his typology of South and Southeast Asian beads. Both Hannibal-Deraniyagala (2013, 372) and (Bohingamuwa 2017, 416) argue that, based on the dating of these sites, the Southeast Asian sites are much later than those of Sri Lanka and therefore, they were most probably made first in Sri Lanka.

Interestingly, neither of the assemblages I studied from South India recorded any Stupa beads. Francis does not record any from Arikamedu and according to Hannibal-Deraniyagala (2013, 372) no Indian excavations have recorded the discovery of Stupa beads. However, Cherian *et al.* (2016, 41) report the recovery of Stupa beads from Pattanam, but no further information regarding their quantity and contextual details are available. Nonetheless, it is noteworthy that these beads were recovered from Pattanam while being absent as yet from other South Indian sites. The occurrences of this bead in Sri Lanka and Southeast Asia indicate interaction between the two regions very likely based on Buddhist networks (Francis 2002, 138; Bohingamuwa 2017, 271). Francis (2002, 138) states that these beads were intended for a Buddhist clientele. Bohingamuwa (2017, 291, 416–417) argues that these beads originated and were produced in southern Sri Lanka and were made for ritualistic purposes. While further investigations in southern Sri Lanka are required to establish the claim of

provenance, particularly because no evidence for on-site production has been recovered, I agree with Bohingamuwa and Francis that these beads were intended for a Buddhist clientele and had ritualistic purposes, rather than personal adornment. The common occurrence of these beads in religious sites outside southern Sri Lanka is a strong indication of their association with religious practices, and the recovery of limited quantities from all the sites indicate that they were made for a defined purpose. These were probably influenced by collar beads, the place of origin of which is assigned to India but were probably imitated later in the island.

This may be a rare instance, providing strong evidence of an alternative purpose for beads other than the personal adornment. Yet we can not dismiss the fact that Stupa beads were influenced by beads meant for personal adornment. The occurrence of Stupa beads in comparatively larger quantities at Tissamaharama could suggest that southern Sri Lankan sites were more instrumental in the interaction with Southeast Asia (Bohingamuwa 2017, 453; 495–496; Guruge 2003, 237–243). Furthermore, these beads signify that, despite close contacts between South India and Sri Lanka, where adornment practices display shared cultural traits, there are occasional dissimilarities. This may be related to the fact that by the time of the popularity of Stupa beads (ca. 5th–10th centuries AD), Buddhist ideology was widespread and thriving in Sri Lanka, whereas in South India Hinduism was transcendent. Despite Nagarjunakonda displaying strong affiliations with Buddhist centres in Anuradhapura, the publication does not record any Stupa beads. It is possible that by the time Stupa beads became popular, Nagarjunakonda had declined. But Francis (2002, 138) dates these beads to a period between the 1st/2nd century BC and 10th century AD, and

therefore, it is more likely that this type of bead was absent in South India as a whole, even at established Buddhist religious sites.

Indented collar beads from Anuradhapura

Another significant bead type exclusive to the Anuradhapura Gedige assemblage is the collar bead that has an indent in the centre of the face. These beads are however, classified as collar beads in my typology (Appendix A1 and A3.6). They were recovered in fragmentary form, three in total, two of which are fragments of the same bead. They are collar beads, similar to the regular collar beads discussed above. Their striking differences are the indents in the centre of the bead's surface as well as the larger diameter (Figure 6.47–Figure 6.49). Interestingly, their occurrence at Anuradhapura is as early as phases IV and V, dating them to between 600–250BC. Two fragments of a similar bead were also recovered from an adjacent trench at Anuradhpura Sanghamitta Mawatha (ASM) (Figure 6.49). They are absent in all other assemblages I studied, both in Sri Lanka and South India, and there is no mention of such beads by other scholars who have studied beads from the major sites in Sri Lanka (Bohingamuwa 2017; Francis 2013a; 2002; Coningham 2006; Hannibal-Deraniyagala 2001; Deraniyagala 1972). I have not come across any such collar beads recovered from any South Indian site either. Nevertheless, during my visits to museums at Jetavanarama and Abhayagiriya in Anuradhapura, Sri Lanka, I observed fragments of similar beads. Both of these sites are religious sites and this may be an indication that these beads were also associated with religious practices. It is possible that these are similar to the collar beads Francis refers to from Oc-eo, considering the description of a large diameter, circular outline and the existence of collars (Francis 2002, 43), but without photographic records conclusive

comparisons cannot be made. Considering the connection with Southeast Asia with regards to Stupa beads and Buddhist connections, this could be a plausible claim and is worth further investigation. Furthermore, it could be suggested that their production site could be Anuradhapura, because one fragment recovered from AG, was perforated only halfway and was broken in two during the process (Figure 6.48). Further investigations would be required before establishing this claim. The small quantity recovered may indicate their limited use restricted for ritualistic purposes in the same manner as the Stupa beads. Considering the evidence of their probable production at Anuradhapura, it may be that these indented collar beads were specialised products at Anuradhapura, as opposed to Stupa beads which, according to Bohingamuwa (2017, 417), were produced in southern Sri Lanka.

Figure 6.47: Indented collar bead recovered from Anuradhapura Gedige

Figure 6.48: Half-processed indented collar bead providing possible evidence of local production

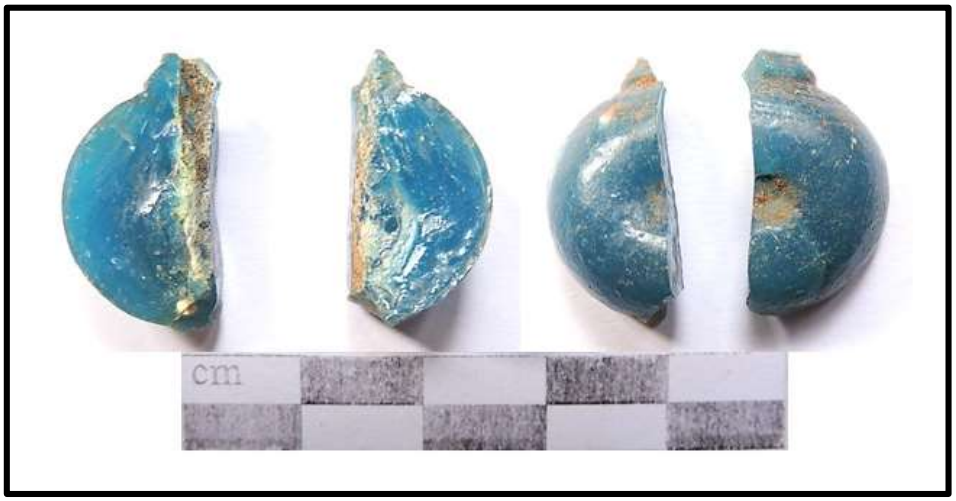

Figure 6.49: Indented collar bead example from ASM

Etched carnelian beads

Etched carnelian beads are one of the most intriguing bead categories known in India, and appear as early as the Indus Valley civilization (Glover and Bellina 2001, 191; Kenoyer 2003; 2005; 2017, 142). The occurrence of these beads in great numbers at Indus Valley sites, and the presence of people who had a distant memory of the technique of producing them, even as recently as the early decades of the 20th century (Mackay 1933), support the claim that these beads were produced in India. Much work on these beads has been carried out since the 19th century (Bellasis 1856a; 1856b), but probably two of the earliest and the

most important works are those of Beck (1933, 384–398) and Mackay (1933, 143–146).

Despite their name, these beads are far from being incised on the surface. As suggested by one of the alternative names, “decorated carnelian”, they are actually painted using a solution of soda with juice from the ‘Kirar’ plant (*Capparis aphylla*). Mackay (1933) elaborately describes the process of producing this solution and decorating the bead with it as demonstrated by a villager from Sehwan in Sind region (modern Pakistan), who he claimed was the last person with the knowledge of producing etched carnelians. Mackay himself did further experiments with this process to discover that by adding soluble lead, the solution became opaque so that the drawn designs were visible while they were being drawn (Mackay 1933, 145-146). These beads are also referred to as soda-etched or alkaline-etched beads (Figure 6.50Figure 6.51).

Figure 6.50: Examples of etched carnelian beads displayed at the State Archaeology Department, Tamil Nadu. These are said to have been recovered from Kodumanal

Beck (1933) identified three periods of etched carnelian production: ‘early period’ (before 2000BC), ‘middle period’ (300BC–AD200) and ‘late period’ (AD 600–AD

1000). Etched carnelian beads have been spread over a vast geographic area spanning the Crimea to West Asia, the west of India to Southeast Asia and China (Golver and Belina 2003, 92; 2001, 193; Zettler 1998; Chakrabarti and Moghadam 1977, 166–168). Some of the beads recovered from West Asian sites belong to the early period of Beck's classification (De Waele and Haerink 2006, 33–38), signifying the contact between these sites and the Indus Valley Civilization (Reade 1979). Glover and Belina have carried out several studies of the beads that were recovered from Southeast Asia (Glover and Bellina 2001; 2003; Glover *et al.* 1984; Glover 1987; 1990; 1997). They also discuss the probable symbolic value of these beads, but not in depth. They suggest that these beads were valuable possessions that symbolized wealth and status (Glover and Bellina 2001, 208; 2003, 103–104). They also suggest that it is possible that etched carnelian beads may have had similar symbolic meanings as those attributed to 'Dzi' beads, a bead group common to Tibet, Nepal and the eastern Himalayas. 'Dzi' beads bear resemblance to etched carnelian beads but the relationship between the two bead groups has not yet been established.

Figure 6.51: Etched carnelian beads on display at the Tamil Nadu State Archaeology Department

Etched carnelian beads belonging to Beck's 'middle period' are the most relevant to my discussions. These beads recovered from Early Historic sites are mostly associated with Megalithic burial sites. Several scholars have researched etched carnelian beads recovered from Megalith sites in South India (Dikshit 1949; 1968, 88–89; Deo 1973, 32; Kelly 2013, 135–145; Niharika1993). Francis (2002, 148; 2004, 500) reports that the etched carnelian beads from Arikamedu could actually be from the nearby Megalithic burial site at Soutekeny and were ritualistic beads that the Pandukals used.

However, Kelly argues otherwise, based on her findings from Kadebakele. Kadebakele is located in the modern state of Karnataka, and has yielded evidence of continuous human occupation since *c*. 2400 BC to the 16th century AD, representing Neolithic, Iron Age, Early and Middle Historic Periods (Kelly 2013, 15). Challenging the view that etched carnelians were ritualistic beads associated with Megalithic burial sites, excavations in the habitation sites at Kadebakele, dating from the Iron Age, have recovered etched carnelian beads (Kelly 2013, 140). Kelly recorded a total of 44 etched or 'bleached' beads, as she terms them, out of a total of 65 agate and carnelian beads from Kadebakele. The distribution of these 44 beads across the burial (Block A) and habitation (Block B) areas of the site are almost the same, 19 and 16 etched beads at each respectively. The nature and pattern of the occurrence of etched beads is yet to be fully understood and Kelly suggests that future research on these beads from well stratified sites may prove these to be chronological markers, through observing the changing etched designs on beads, as well as any change in beads size (Kelly 2013, 169-170). No etched carnelian beads were available in the assemblages from South India that I analysed. Those that were found at

Kodumanal were from burial areas which were away from central mound from which the assemblage that I studied was recovered.

The characteristics of the Megalithic Period have been widely discussed by many scholars as a pan-regional characteristic of India and Sri Lanka (Karunaratne 2010; Seneviratne 1984). Megalithic burial structures, grave goods, the use of iron, associated pottery, such as Black and Red Ware (BRW), and swidden agriculture are features associated with the Iron Age of South India and these features are present in the Protohistoric Early Iron Age in Sri Lanka (Seneviratne 1984; Deraniyagala 2004; Karunaratne 2010). Yet strangely enough, etched carnelian beads that occur in association with Megalithic burial sites in South India are absent in Sri Lanka. No study of Megalithic burial sites in Sri Lanka has recorded the discovery of etched carnelian beads. We are aware of the local production of carnelian beads and their presence in burial sites, but those with etched patterns are completely absent in the archaeological record of Sri Lanka. The only burial site I studied was Ibbankatuwa. Neither Karunaratne (2010) nor myself have recorded a single etched carnelian bead from Ibbankatuwa. Owing to the distinct appearance of these beads it is highly unlikely that their presence would be overlooked during analysis. According to Kelly's work (2013, 133–171) at Kadebakele, it appears that these beads were not exclusive to burial areas but occur also habitation areas. Over the years of research on Megalithic burial sites and associated habitation areas, no etched bead has been recorded in Sri Lanka.

Kelly's work suggests that these beads were not produced exclusively as ritualistic adornment, but were in use in contemporary quotidian life. Yet, these beads must have possessed a higher value or meaning than plain carnelian. They

may have been indicators of wealth and/or social status, as mentioned by Glover and Belina (2001, 208), but the variety of drawn designs, as well as bead shapes may suggest associated symbolic meanings we are yet to understand.

The absence of etched carnelian beads at Sri Lankan sites suggests that adornment patterns between the two regions are not always similar. The etched carnelians belonging to the 'middle period' of Beck's classification, predominantly occur in association with Megalithic burial sites. Megalithic burial practices, along with other associated characteristics representing the Iron Age in South India are present in the Protohistoric Early Iron Age of Sri Lanka. But the absence of etched carnelian beads, which is a characteristic of the South Indian Megalithic Period, could suggest that cultural practices are adopted at the discretion of the people who practice them. Despite Megalithic burials and associated practices having been identified as being a regional phenomenon, the practice of placing etched beads as offerings in the tombs is limited to South India.

6.3 Choice of colour

Moving on from bead types, it has been observed that interesting patterns and preferences are revealed in the use of colour. Perceptions of colours and their associated values are socially and culturally constructed (Micheli 2012, 247). For example, the Shona speaking people of Zimbabwe believe that white and black beads are symbols of spirit mediums and red is symbolic of blood (Bvocho 2005, 419). Similarly, among the Australian aborigines, red has religious meaning in the desert areas while in Arnhem Land, ancestors are associated with a white colour (Soriano and Medina 2009, 101). On similar lines, Young argues that colour is crucial in "understanding how material things can constitute social relations"

(Young 2006, 173). It is therefore, evident that colours used in objects of personal adornment are significant in not only expressing the aesthetic perceptions or fashion trends of the wearer but socially and culturally constructed symbolism and associated values of the relevant societies.

DeCorse *et al.* (2003, 77–110) notes the importance of recording the colours of beads. Bvocho (2005, 412), Micheli (2012, 247–249) and Stine *et al.* (1996) are examples of studies of the colour patterns on beads. Bohingamuwa also discusses colour patterns of glass beads and bangles (2017, 232, 280–281, 402) across the sites he studied in Sri Lanka. In this section I will discuss the glass bead across the sites and site sequences to observe patterns in colour preferences and how they may represent connections between South Indian and Sri Lankan societies. Preference for colour of glass beads will be discussed based on the Indo-Pacific Bead assemblages studied. In addition to Indo-Pacific Beads, colour patterns on glass bangles will also be discussed. Over a hundred shades across seven broad colours were observed but to facilitate comparisons, only the broad colours will be taken into account. However, detailed Munsell colours for each bead and non-bead objects are recorded in the Appendices A–G.

6.3.1 Choice of Indo-Pacific bead colours

Across the sites studied in both South India and Sri Lanka, red, blue and green are the most common colours of Indo-Pacific beads (IPB, Chapter 6.4). The range of IPB colours in the Anuradhapura Gedige assemblage was given in Chapter 4.3.1 and red is the dominant colour. However, across the site sequence, a change in the preference of colour can be observed. Similar to Anuradhapura

Gedige, the Mantai and Kirinda IPB assemblages are also predominantly red in colour. The assemblage from Alagankulam shows a different pattern. The IPB assemblages from both 2014/15 and 'previous seasons' collections, are predominantly green, while red is the third most preferred colour (Figure 6.52 Figure 6.53). The Kantarodai assemblage contains only a single IPB, and the Kodumanal assemblage contains only six and all of these beads are blue in colour. Because of the insignificant number of IPBs from these sites, they are not included in the discussion here. The Ibbankatuwa assemblage contains no IPBs.

Bohingamuwa's analysis of Mantai, Kantarodai and Kirinda colour patterns concurs with the statistical details of my analysis. In Francis' Mantai IPB assemblage, red and orange beads make up 38.8%, while medium and dark blues account for 33.3%. Hannibal-Deraniyagala (2001) and Somadeva also record high proportions of red beads in their assemblages from Tissamaharama and LKB respectively, though neither distinguishes IPBs from other glass beads. Coningham, who like Hannibal-Deraniyagala, recognizes the existence of IPBs in his bead assemblage, does not distinguish them from others, but he too states that just under 50% of the beads from the stratified layers at ASW2 are red in colour (Coningham 2006, 353). He separates orange beads, which are the third most common colour, from red and thus, if both red and orange are grouped together into a broad red group, the proportion of red beads would be well over half of the assemblage.

The patterns from Nagarjunakonda illustrate a preference for green and blue glass, while red is absent (Soundara Rajan 2006, 396). Dark blue IPBs at Arikamedu account for 41.1% out of a sample of 4,706 IPBs, while the total of red

and orange combined is 32.3%. Green, both opaque and translucent, accounts for 8.1% (Francis 2013a, 357). Black, red, blue and green are the most common colours in the IPB assemblage at Pattanam and yellow beads are probably rare (Cherian *et al*. 2016, 39). Due to a lack of data, chronological patterns are unknown for these sites. Nonetheless, the data shows that a uniform pattern cannot be observed across South Indian sites but the preference for blue and green is common to all sites discussed, while a preference for red varies across the sites.

When considering the dominant colours among the IPBs in the region, the patterns show that across Sri Lankan sites, a preference is shown for red, while in South Indian sites blue and green are more common. Among the three Sri Lankan assemblages which contain substantial IPB collections, colour patterns across time can be observed. These patterns show a distinction between northern and southern sites on the island. Anuradhapura Gedige and Mantai are the sites located in the northern part of the island and the colour patterns from these sites show that the most preferred colour changes from blue to red towards the early centuries of the Common Era but blue appear to regain popularity post-8th century AD at Mantai (Figure 6.54). This chronological pattern does not appear in the assemblage from Kirinda where throughout the site sequence red is the dominant colour.

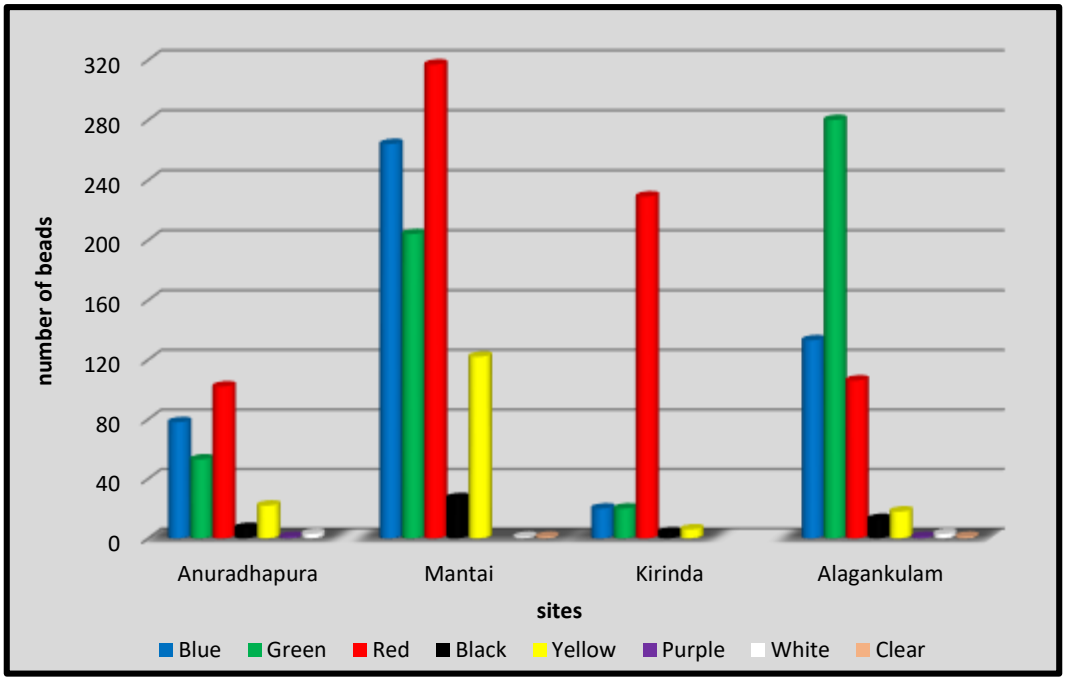

Figure 6.52: Distribution of IPB colours across sites

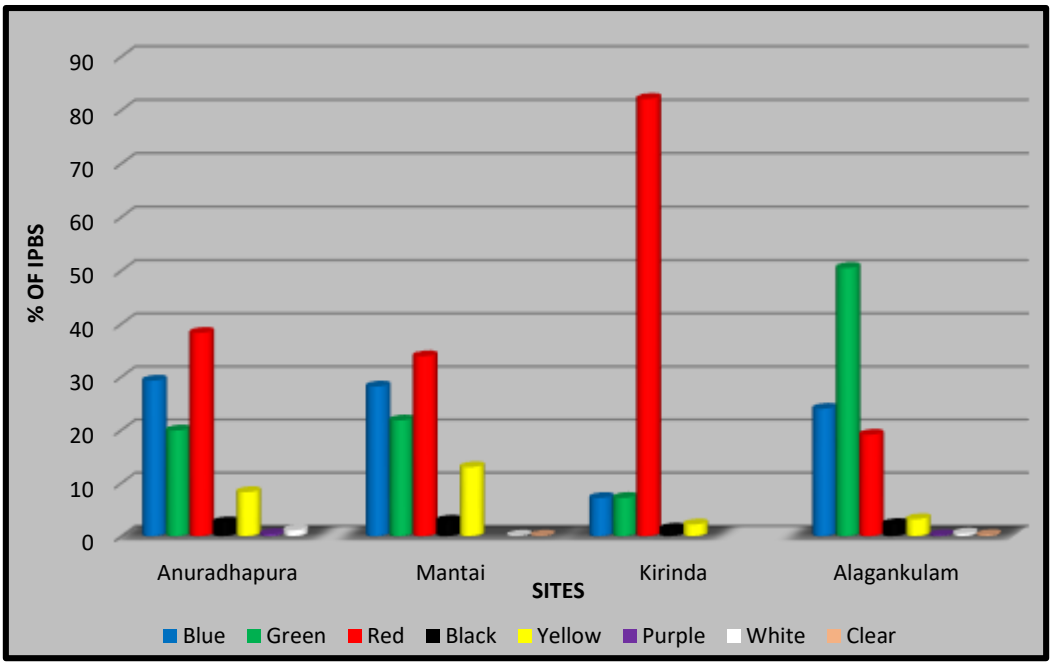

Figure 6.53: Distribution of IPB colour proportions across sites

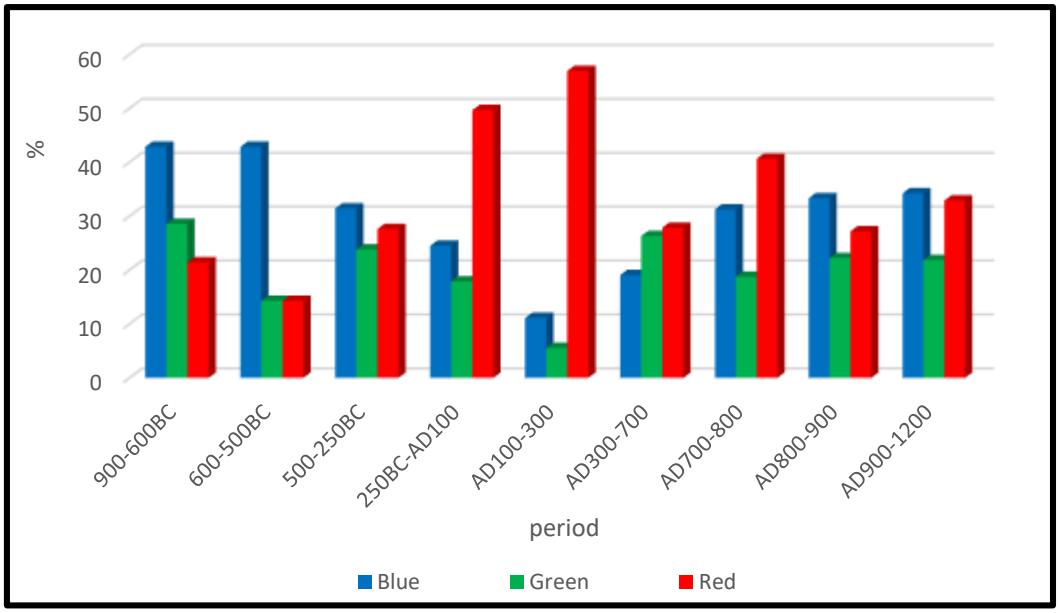

Figure 6.54: Distribution of Red, blue and green IPBs at Anuradhapura Gedige and Mantai across time. Changing colour preferences across time is noteworthy

The demand for yellow beads is also significant despite their smaller proportion. According to Francis (2013a, 357), yellow colour IPBs were rare in Arikamedu and Soundara Rajan (2006, 396) records they were found in "poor quantity" at Nagarjunakonda. In contrast, Sri Lankan IPB sites have shown a demand for yellow beads. At Mantai, 13.0% of the IPBs were yellow, at AG, 8.3% and at KR3, 2.2%. Francis (2013a, 357) records 10.8% yellow beads in his Mantai assemblage, while 6.5% of ASW2 assemblage (Coningham 2006, 353) are yellow. Bohingamuwa (2017, 277) argues that the yellow beads were locally made, considering their greater availability at Mantai and argues that the yellow beads recovered from Zanzibar probably were of Sri Lankan origin as they were rare in Arikamedu. Proportionately, assemblages from IPB production sites in Southeast Asia, such as Oc-Eo, Kuala Seling and Pengkalan Bujan, possess higher percentages of yellow beads than Mantai, but they are chronologically later than Mantai (Francis 2013a, 357). While the number of yellow IPBs from Tissamaharama is difficult to determine, it is obvious that yellow colour beads occurred in the assemblage. Similarly, in the LKB assemblage (Somadeva 2006,

194–200), yellow beads were recovered, though the exact number is not recorded. Considering the proportions in which yellow beads are recovered from the sites in Sri Lanka, their demand appears to be higher in the northern part of the island as compared to the south. However, without further comparable statistics from southern Sri Lankan sites, we can only make a tentative hypothesis. On the other hand, limited quantities of yellow IPBs were recovered from Alagankulam, Arikamedu, Pattanam and Nagarjunakonda. Though statistical details are available only for Alagankulam, the rarity of yellow beads in South India suggests those that were recovered from the sites may have been sporadic imports from Sri Lanka, most likely from Mantai.

The records of colour across IPB assemblages shows a distinction in colour patterns in between Sri Lanka and South India. This may suggest that the colour patterns were highly localized site-based rather than regional preferences. It may also indicate that colour preferences depended on the fashion choices of the inhabitants of the site. Changing colour patterns are evident in the assemblages from Anuradhapura Gedige and Mantai in particular. Observing such patterns over time can provide interesting information about the choices that the inhabitants make across time. Unfortunately, it has not been possible to observe patterns over time from the sites in South India, due to the limited data available.

Notably, the proportion of black IPBs remain more or less uniform across all sites in Sri Lanka despite being limited in quantity. This probably suggests that at each site there was a constant demand for black beads which in turn suggests a specific usage. The percentage of black beads at Alagankulam is similar to that of Sri Lankan sites (Appendices F3.10 and F3.11), however, black beads appear

in a larger quantity at Arikamedu (11.98%) (Francis 2013a, 357). Black is considered to bear talismanic qualities. In South Asian societies, infants and young children are adorned with a black dot on the forehead in order to ward off evil. The ethnographic study I carried out during this research also shows occasions of black beads used, along with white ones, in ornaments to adorn babies, to protect the child from any ill fate (Chapter 7.3.2). These values associated to the colour black may have been present during the time periods under discussion. Hence, black beads were possibly used as amulets but in restricted quantities. Whether the larger proportion at Arikamedu meant higher demand at the site, or if the apparent absence at Nagarjunakonda is because of a cultural choice is difficult to determine. However, further studies on bead assemblages from the two regions may provide clearer patterns.

Colour patterns reveal interesting details of probable socially-constructed values and symbolism associated with colours and inter-site and inter-regional connections as well as changes in fashion over time. However, a larger sample of sites with a wider area of excavation yielding information following a uniform methodology would provide us with a clearer picture that these colour patterns have the potential to indicate individual and social preferences.

6.3.2 Black glass bangles

Still within the discussion of colour, black glass bangles occupy a significant place in past and present-day cultural traditions. In South Asia, young children are adorned with black glass bangles. This practice is expected to ward off evil directed towards the child. The ethnographic study I carried out among the plantation-worker community in Sri Lanka (Chapter 7) revealed that newborn

children were adorned with black bangles that are taken to the temple and broken off after 30 days, to destroy any negativity that was absorbed by the bangles. It is likely that similar talismanic properties were associated with bangles, especially black ones, in the archaeological record.

Table 6.6: Colours of glass bangles recovered from sites studied

Site	**Black**	*%*	**Blue**	*%*	**Green**	*%*	**Yellow**	*%*	**Clear**	*%*	**Total**	*%*
Anuradhapura	4	*18.2*	13	*59.1*	2	*9.1*	2	*9.1*	1	*4.5*	*22*	*100*
Mantai	16	*47.1*	10	*29.4*	6	*17.6*	2	*5.9*			34	*100*
Kirinda	2	*100*									2	*100*
Alagankulam	28	*84.8*			4	*12.1*	1	*3.0*			33*	*100*
Kodumanal					1	*100*					1	*100*
Total	50	*54.3*	23	*25.0*	13	*14.1*	5	*5.4*	1	*1.1*	92	*100*

*4 fragments were from the 2014/15 collection and 29 were from period III ‘previous seasons’

Of the assemblages that yielded glass bangles, only that of Kodumanal is devoid of black bangles. However, Kelly who studied a larger sample of objects at Kodumanal, records the recovery of 54 bangle fragments. These were both monochrome and polychrome and the monochromes were predominantly black (Kelly 2013, 195). At Alagankulam, the 2014/15 assemblage contains no black bangles, whereas, 28 of the 29 glass bangles from the ‘previous seasons’ collection at Alagankulam are black. Of the 92 bangle fragments from these sites, 54.3% are black, followed by 25.0% blue and 14.1% green (Table 6.5 and Figure 6.55).

Chronologically, the earliest glass bangles occur between AD100–300 at Anuradhapura Gedige and AD100–500 at Alagankulam, thus around the same time. All the glass bangle fragments occur in phase VII (AD100–300), at Anuradhapura, but five ring and possible earring fragments were recovered from

phase IV (600–500 BC). At Mantai, glass bangles were recovered throughout the site sequence, though the occurrence of black bangles commences from phase IV (3rd–7th centuries AD) onwards. At ASW2, dark blue/black bangles comprise the majority of the 54 plain bangles (Coningham 2006, 349). According to Coningham, most of these bangles were found from periods C, D and E, dated AD200–600. Both Somadeva and Hannibal-Deraniyagala do not provide information about objects of non-bead adornment made of glass. My findings from Mantai, Kantarodai and Kirinda are similar to Bohingamuwa's.

A total of 921 bangle and nine ring fragments comprised the Mantai glass non-bead assemblage, the majority of which are black glass bangles. Their production method has been identified as being similar to that being still practiced in India (Francis 2013c, 381–384). According to Francis, bangle production at Mantai can be dated to between AD 700–1000, despite the discovery of three fragments from the period dated to 1st–6th century AD (Francis 2004, 519; 2013c, 381). However, Bohingamuwa (2017, 288) argues that bangle production at Mantai began earlier than the dates suggested by Francis and place them in a time period between the mid-3rd century and the early 7th century AD considering their consistent occurrence across the site sequence.

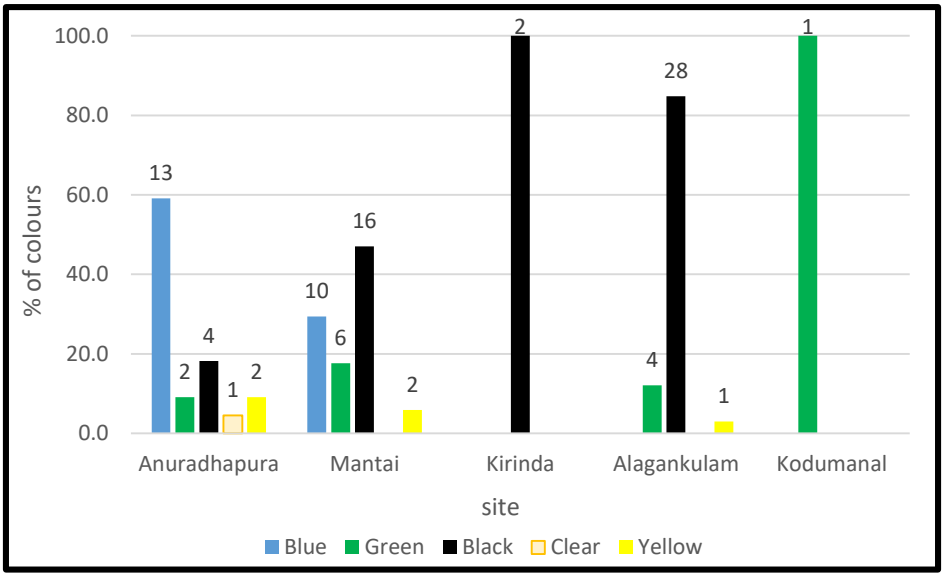

Figure 6.55: Distribution of glass bangle colour across sites

Apparently, according to Sankalia (1947, 252–255) and Dikshit (1969, 47), it was not until the14th century AD that glass bangles were produced in India in substantial quantities. However, there is some evidence of production during earlier times (Francis 2013c, 381–385; 2004, 519). Though the 'previous seasons' collection of the Alagankulam assemblage contained black bangle fragments, there was no evidence of bangle production (Figure 6.56). The evidence from Pattanam shows that bangles were rare at the site (Cherian and Menon 2014, 64) and only 51 fragments were found throughout all nine seasons (Cherian 2015, 43). While images show black glass bangle fragments, no statistical data is available for comparisons (Cherian and Menon 2014, 62). At Nagarjunakonda, glass bangles were widely used only during the medieval period of the site, and were predominantly of black glass (Soundara Rajan 2006, 442–445). There is little evidence of the bangle assemblage at Arikamedu, but Francis refers to a single specimen, a black glass bangle recovered from Arikamedu (Francis 2004, 519).

Figure 6.56: Some of the black bangles recovered from Alagankulam

Carswell's (2013) extensive excavation at Mantai recovered black glass cullet and it provides evidence of black glass bangle production (Francis 2013c, 381). Based on this evidence, Francis claims that the black glass bangle fragment from Arikamedu was produced in Mantai, as it is the only known site to have produced black glass bangles during that period of time (Francis 2004, 519). Based on this argument, Mantai may have supplied black glass bangles to Arikamedu and other South Indian sites, but the occurrence of these bangles at Anuradhapura and Alagankulam, prior to their occurrence at Mantai probably suggests the existence of another production site.

It is possible to argue that Alagankulam could have been the production site considering the larger quantity of black glass bangles recovered from the site during the period from AD 100–500 in comparison to the quantity from Anuradhapura. However, the lack of evidence for bangle production from the site

and their complete absence in the 2014/15 collection which contained the entire excavated assemblage makes it less probable. Further investigation is required to establish probable production sites for black glass bangles from the early centuries of the Common Era. The evidence from Mantai, however, strongly suggests that post 3rd century AD, it became one of the production sites, that supplied black glass bangles to sites in South India as well. They may have been either directly traded to sites which placed quantified orders at Mantai or were exported to a particular site, most probably Arikamedu and/or Alagankulam and from there distributed to other sites which demanded them. Their occurrence in small numbers across the site sequences in both Sri Lanka and South India could indicate that the black bangles were used for a limited purpose, possibly ritualistic, as seen in the ethnographic study. The only two sites that have comparatively larger quantities of black glass bangles are Mantai and Alagankulam, which are both port sites, suggesting they were the sites involved in trading these ornaments.

6.4 Production and prominence of IPBs

Indo-Pacific Beads (IPB) are a particular group of beads found at many sites in South and Southeast Asia that have attracted attention and study. Indo-Pacific beads were common at most sites I studied especially from the beginning of the Common Era. Their production was not limited to Sri Lanka and South India, but the distinct production technique of IPBs indicate interaction between the regions. Although the region of origin of IPB technology is debatable, the presence of evidence of production in both Sri Lanka and South India suggests technology transfer between the regions. Some of the leading production centres, such as Arikamedu and Mantai, are also prominent port sites, which suggests that these

beads were not produced only for local consumption. In addition, their occurrence in large quantities at Pattanam, where no evidence of production has yet been recovered (Cherian *et al.* 2016, 41–42), indicates the importance of these beads as a trade item and also the intensity of the demand for them. By comparing the IPBs recovered from the selected sites in Sri Lanka and South India, being probable places of origin, technology transfers and the regional demand for these beads can be understood.

In this section I will summarize the previous studies and published works and add further detail and interpretation from my research. IPBs are small, drawn, monochrome glass beads of a diameter rarely more than 5mm and always less than 6mm (Francis 2002, 19; Abraham 2013, 244) (Figure 6.57Figure 6.58). They have been referred to by many different names during the past, such as ‘trade wind bead’ and ‘*mutisalah*’ (Sleen 1973; 1958; 1956; Lamb 1965). Based on the geographical distribution of their production sites, Francis proposed the term Indo-Pacific Beads (Francis 2004, 450). Francis, upon discovering these beads at Arikamedu, did extensive ethnographic work in Papanaidupet, Andhra Pradesh, India and identified that the bead-making technology used there was similar to the technology used to make IPBs in Arikamedu. There has been extensive work carried out on IPBs and on the traditional bead-making at Papanaidupet by scholars, such as Kanungo (2004, 2016) and Abraham (2013, 2016).

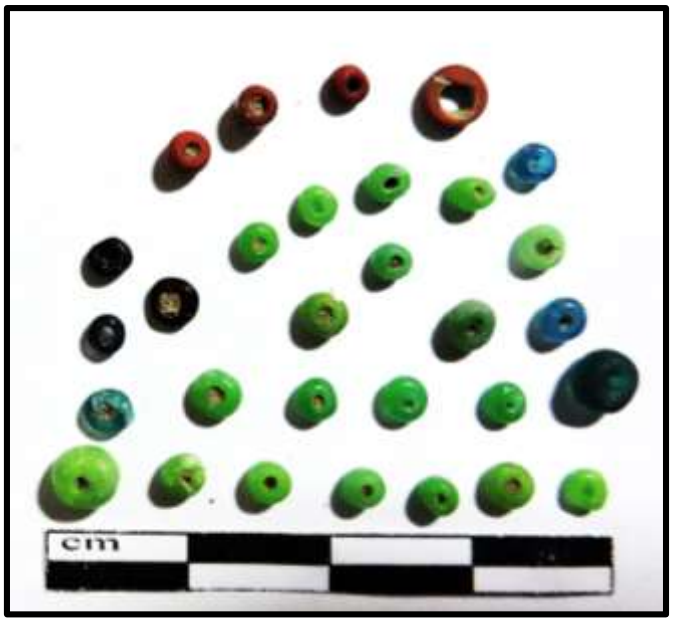

Figure 6.57: Examples of IPBs from Alagankulam

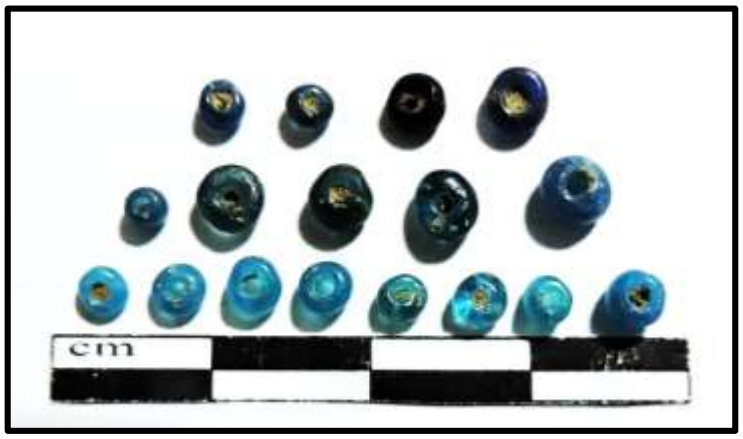

Figure 6.58: IPBs of different shades of blue

Table 6.7: Occurrence of IPBs at the sites studied

Site	Quantity	% from site total
Anuradhapura Gedige	266	9.1
Kantarodai	1	0.5
Mantai	936	59.3
Kirinda	279	63.7
Alagankulam	555*	72.0
Kodumanal	6	3.4

* total of IPBs from the 2014/15 collection and the 'previous seasons' collection combined

All assemblages I studied, except Ibbankatuwa, yielded IPBs (Table 6.6). However, the Kodumanal assemblage contained six IPBs, five of which are

fragments and the Kantarodai assemblage is limited to only a single IPB. According to the data from Sri Lankan sites, IPBs occur from as early as 600–500BC (Appendix A3.4). While Francis states that the production of IPBs probably began in *c.* 3rd century BC at Arikamedu (Francis 2013a, 360), Kanungo argues that IPBs were discovered from South India dating from as early as the 5th century BC (Kanungo 2016, 12) without naming the exact sites. He also mentions that his work at Kopia (Karunugo 2006; 2013) in Uttar Pradesh, and that of Rajan (*et al.* 2013) at Porunthal, provide evidence of IPB production at those sites contemporary with Arikamedu (Kanungo 2016, 13).

Coningham (2006, 357) refers to IPBs as the 'South Indian category of Francis' and claims that beads from this category recovered from ASW2 dated from 400BC. He also suggests the existence of production sites that pre-date Arikamedu. Bohingamuwa (2017, 406) also argues that the production of IPBs pre-dates Arikamedu and that Sri Lanka, Anuradhapura in particular, could be one potential site for such early production of IPBs. The occurrence of IPBs in the Anuradhapura Gedige assemblage from as early as 600–500BC supports this view.

Figure 6.59: A knotted butt-end from the Anuradhapura Gedige assemblage which is a typical IPB production waster

Half-processed beads and wasters have been recovered throughout the site sequences (Figure 6.59Figure 6.61). Just above 20% of IPBs from phase IV at Anuradhapura Gedige, which is the earliest occurrence of IPBs in the sites studied, are half-processed. However, when considered against the finished beads from each site, both the Anuradhapura Gedige and Alagankulam assemblages indicate a lower rate of production debris (Figure 6.60). Both the Mantai and Kirinda assemblages reveal an opposite pattern. However, considering Coningham's argument that IPBs were possibly made on-site, and also the evidence from some of the collections I analysed from other trenches within the Anuradhapura Citadel, the production of IPBs at Anuradhapura Citadel is not improbable and the lesser quantity of production debitage from the Gedige assemblage could simply mean that the production site was located beyond but in the vicinity of the Gedige trench.

Francis, through his vast bead studies carried out across the globe, managed to identify other sites in the region where IPBs were produced and Mantai has been identified as one of the leading sites of early IPB production. Among other IPB production sites are those in Southeast Asia, such as Klong Thom, Takua-Pa and Oc-eo. Francis believes that knowledge of the distinct technique used for IPB production was disseminated to Mantai and the other Southeast Asian countries from Arikamedu and that, even after the decline of Arikamedu, IPB production continued in the other countries (Francis 2002, 27–41; 2004, 513–514; 2013a, 362–364). The production technique of these beads is well documented through the ethnographic studies carried out at Papanaidupet (Francis 1991; 2002; 2013a; Kanungo 2016; Abraham 2016) and therefore will not be repeated here.

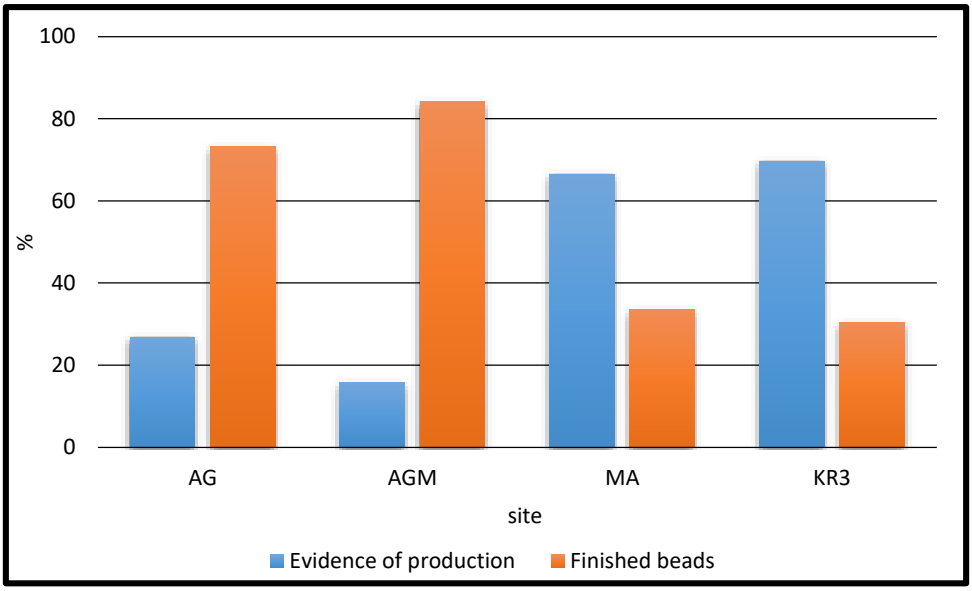

Figure 6.60: Comparison between evidence of production and finished beads across the sites

The data from my research also affirms that Mantai was a leading IPB production centre. IPBs form nearly 60% of the entire bead assemblage recovered from Mantai. The recovery of such a large quantity from a trench that was only 3x3m helps to extrapolate the large quantity of IPBs produced at Mantai. In addition, over 65% of the Mantai IPB assemblage is half-processed or production debitage (Figure 6.60). This further signals the scale of IPB production at the site. Furthermore, Bohingamuwa, who previously analysed the same assemblage has also stated this and records the finding of a probable glass furnace, which could further strengthen this view (Bohingamuwa 2017, 393). Similarly, Kirinda, despite being a small non-urban port site, has yielded strong evidence of IPB production. Nearly 70% of IPBs from Kirinda are production debitage (half-processed beads and wasters). Evidence from Tissamaharama suggests that there is not enough evidence to suggest glass bead production took place at the site (Hannibal-Deraniyagala 2001, 225). The contrasting evidence from Kirinda could suggest that the IPBs at Tissamaharama were supplied from Kirinda.

Figure 6.61: Evidence of IPB production from Mantai and Anuradhapura Gedige

Despite the common occurrence of IPBs across sites in Sri Lanka, their near absence at Kantarodai, an urban settlement site contemporary and well-connected to Anuradhapura, is interesting. Bohingamuwa argues that based on Coningham's findings from ASW2, IPBs were in vogue at Anuradhapura during the site occupation at Kantarodai and therefore the reason for the absence of IPBs at the latter site was a result of cultural choice. He claims that the inhabitants of Kantarodai opted for RDBs instead of IPBs (Bohingamuwa 2017, 402–403). The results from my analysis show similar data. The Anuradhapura Gedige assemblage indicates that IPBs were used and even produced from as early as 600–500BC and continued throughout the site sequence. Despite the occurrence of IPBs on the island and the possibility of obtaining them, the inhabitants of Kantarodai showed a lack of interest in IPBs.

According to Francis (2013a, 357, 364) yellow IPBs were rare at Arikamedu. My data reveals that all Sri Lankan sites have a considerable proportion of them (Figures Figure 6.52 and Figure 6.53). This suggests that Sri Lanka could have been a lead producer of yellow beads. Based on recent research, Bohingamuwa

argues that the yellow beads recovered from Zanzibar could have been made in Mantai (Bohingamuwa 2017, 277). In addition, Francis records the discovery of Mantai IPBs at Siraf, as well as east and west Africa (Francis 2013a, 368) and based on this data, and his own work, including that of ceramics, Bohingamuwa argues that Sri Lankan IPBs were probably traded from China and Southeast Asia in the east to the Persian Gulf, the Red Sea and East Africa in the west (Bohingamuwa 2017, 413). Considering the evidence of Indian Ocean-wide demand for Sri Lankan IPBs, it is plausible to suggest that the yellow IPBs at the South Indian sites may have been acquired from Mantai. The discussion in 6.3.2 demonstrates that the number of yellow beads at South Indian sites are limited. They were therefore, not locally made but imported from Mantai.

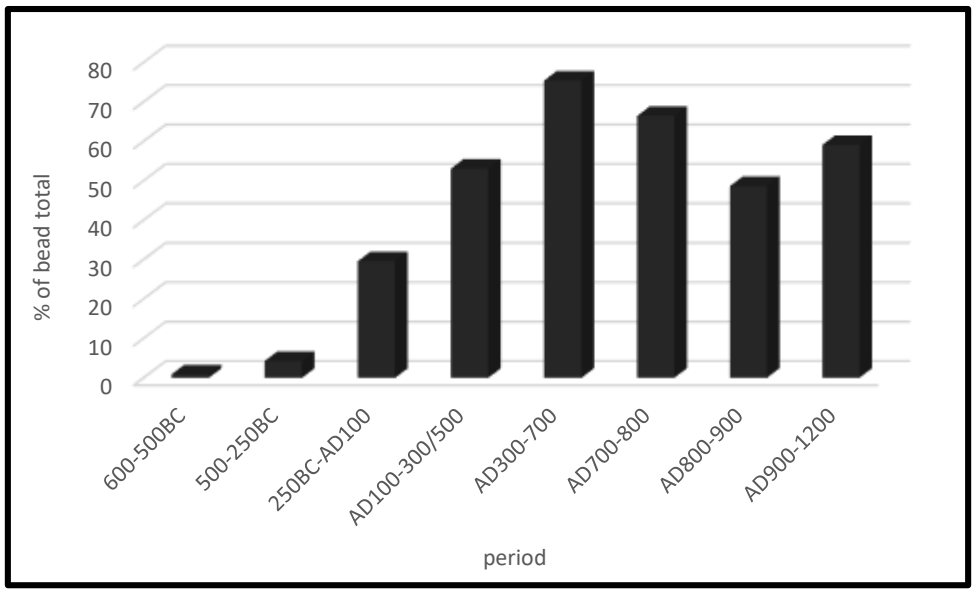

Figure 6.62: Distribution of IPBs across time

Francis claims that Sri Lanka was self-sufficient in glass beads, thus there was less demand for foreign ones (Francis 2002, 129). The data from all these sites, especially Mantai and Kirinda, which are chronologically later than Anuradhapura and Kantarodai, shows that there was great demand for IPBs, both locally and outside the country. The quantity of IPBs increased significantly towards the first centuries of the Common Era across the sites studied. However, the data from

Mantai (see Figure 4.44), as well as the integrated data from Anuradhapura Gedige, Mantai, Kirinda and Alagankulam across periods (Figure 6.62), suggests that proportionately, there was a decrease in IPBs after the 7th century AD, the time period that marks the development of Islamic trade in the Indian Ocean. With the expansion of trade networks, various foreign bead types, such as segmented beads, melon beads and mosaic beads, were occurring in the Mantai bead assemblage. Yet, these beads still occurred in limited numbers, indicating they were probably exclusive to the elite and affluent groups in society.

6.4.1 Diaphaneity and surface lustre of IPBs

The diaphaneity and surface lustre of the IPBs in each assemblage were described in their respective sections in chapters 4 and 5. These two features indicate technological advancements made by bead-makers as well as choices of the wearers/users. Although these features could represent valuable information, the lack of comparative datasets from other sites limits their potential.

Diaphaneity

Diaphaneity was recorded under three criteria: opaque, translucent and transparent. Data from Anuradhapura Gedige, Mantai, Kirinda and Alagankulam is discussed because only these assemblages contain prominent IPB collections. The statistical data related to diaphaneity also indicates a north-south distinction in Sri Lanka and the patterns of the northern sites are more inclined towards those of South India (Table 6.7 and Figure 6.63).

Table 6.8: Diaphaneity of IPBs across sites

Sites / Diaphaneity	Anuradhapura Gedige	Mantai	Kirinda	Alagankulam
Opaque	110 (*41.4%*)	379 (*40.5%*)	237 (*84.9%*)	121 (*21.8%*)
Translucent	154 (*57.9%*)	543 (58%)	42 (*15.1%*)	433 (*78%*)
Transparent	2 (*0.8%*)	14 (*0.5%*)		1 (*0.2%*)

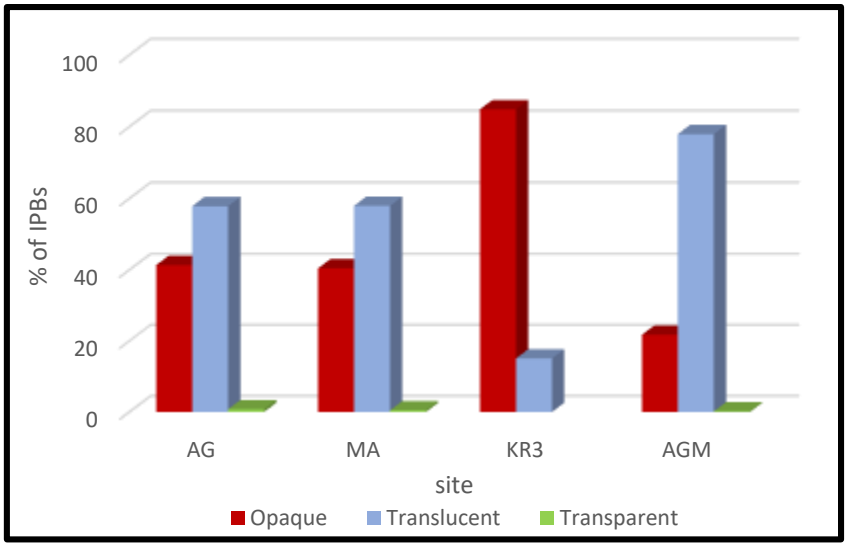

Figure 6.63: Diaphaneity of IPBs across sites

The Figure 6.63 illustrates that both Anuradhapura Gedige and Mantai IPBs are mostly translucent, similar to those from Alagankulam, whereas a vast majority of IPBs at Kirinda are opaque beads. In addition, it is only the assemblages from northern sites in Sri Lanka and Alagankulam that contain transparent beads, although in very small numbers. In 6.2.2 above, it was noted that the preference for circular cylinders and circular oblates also indicated a pattern similar to this. The patterns between South Indian and Sri Lankan sites in the northern part of the island could signal closer relations between the regions, whereas Kirinda, located in the south suggests a different regional pattern. However, similar datasets from other sites in southern Sri Lanka and South India will be useful to establish this argument.

Surface lustre

The surface lustre of IPBs from the sites discussed above also indicate interesting patterns, but further comparable statistical data from other assemblages in both Sri Lanka and South India will be crucial for valid arguments to be made. Of all four sites the quantities of beads with ‘shiny’ and ‘very shiny’ surfaces together are larger than those with dull surfaces. The north-south distinction observed in the diaphaneity of IPBs is absent in the surface lustre.

By comparison with Anuradhapura Gedige and Alagankulam, the proportion of shiny-surfaced beads from Mantai and Kirinda are prominently greater. Of Mantai IPBs, 85.9% have either shiny or very shiny surfaces. This indicates high standards of bead production at the site, where the majority of the production was probably intended for export. The Figure 6.64 illustrates the surface lustre of finished IPBs and production debris (half-processed beads and wasters), and a pattern similar to Figure 6.60 can be observed. Figure 6.60 suggests that production debris was greater than finished products at Mantai and Kirinda, while the pattern was reverse at Anuradhapura Gedige and Alagankulam. According to Figure 6.65, a lustrous surface is found on a larger quantity of finished beads than on production debris, in the Anuradhapura Gedige and Alagankulam assemblages. Indicating a reverse pattern, at Mantai and Kirinda, the surface on production debris is lustrous than on finished beads.

Bohingamuwa (2017, 233, 259, 402) has argued that the high quality surface lustre of Mantai IPBs is a signatory of the site and indicates specialization of IPBs. Based on his argument, and from the patterns evident from my data, I argue that the highly lustrous IPBs at Anuradhapura Gedige and Alagankulam were

produced at Mantai. The Anuradhapura Citadel was an elite residential area and it is likely that the best quality products were imported to cater to the elite. The IPBs with high quality surface lustre produced at Mantai were procured by the elite of Anuradhapura, despite IPB production at Anuradhapura itself. It is probable that the Anuradhapura IPB-makers did not produce the same quality of lustrous beads as those of Mantai. Similar argument can be made for Alagankulam, which is the closest port to Mantai on the peninsula. It is likely that the elite from urban centres of South India acquired lustrous IPBs from Mantai via Alagankulam. Lack of similar datasets from urban settlement sites, as well as IPB production sites in South India, makes corroboration of this statement difficult. Likewise, Kirinda may have provided lustrous beads to urban centres in southern Sri Lanka, such as Tissamaharama, but there are no comparable data to confirm this argument. It is clear that comparable datasets from a wider range of sites in both Sri Lanka and South India are needed to develop this line of enquiry.

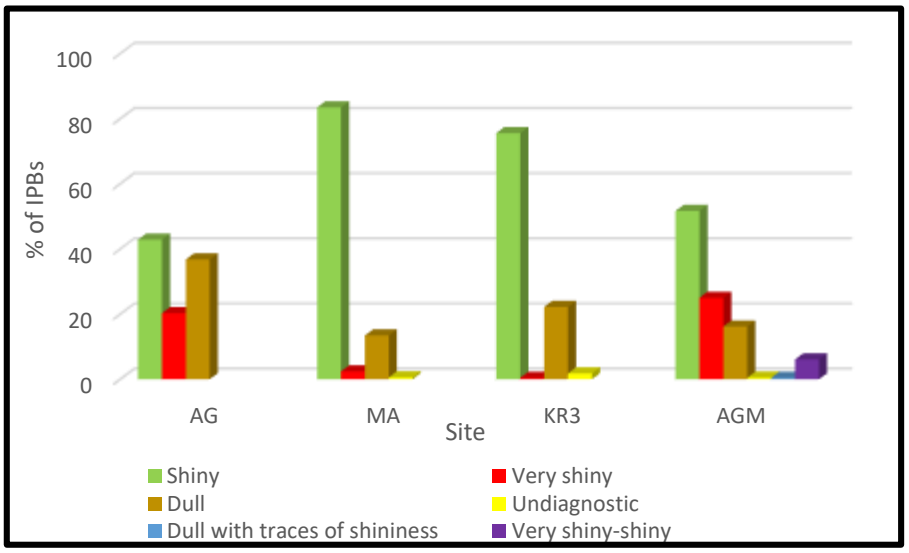

Figure 6.64: Surface lustre of IPBs across sites

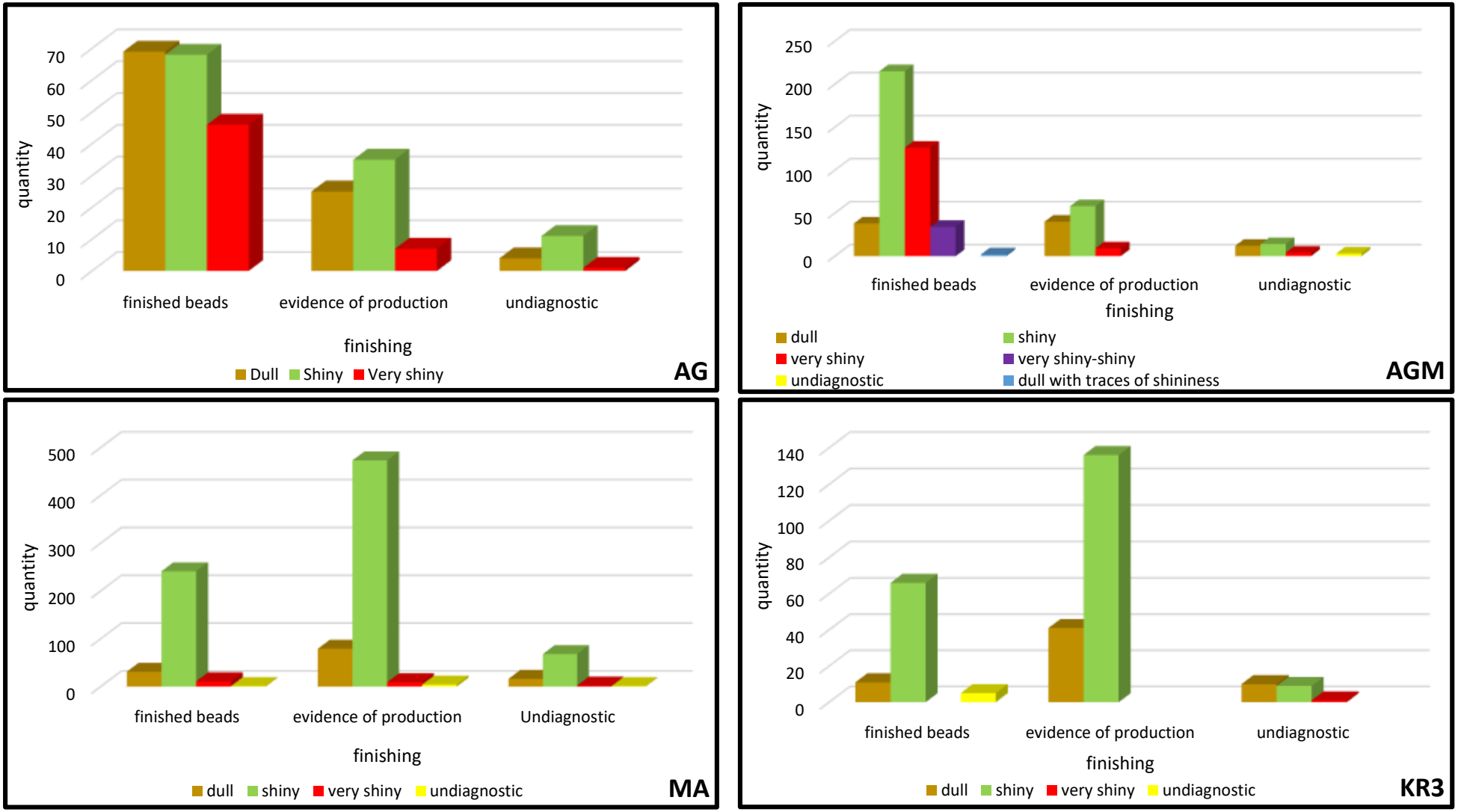

Figure 6.65: The surface lustre of IPBs against their finishing at each site

6.5 Chapter summary

In this chapter, I have looked at the patterns that have emerged from my analysis of the assemblages from sites in Sri Lanka and South India. These patterns show a variety of possible modes of interaction and cultural contact across the region. In addition, they indicate possible values associated with objects and practices of personal adornment.

Glass has been the dominant raw material used for bead-making across the sites, except Kodumanal, which was primarily a stone bead production site. Possibility to mass produce beads is a characteristic of glass, which made glass beads accessible to the general populace. They were of lesser value due to their common place, and it is likely that both elite and non-elite alike used glass ornaments probably as daily wear. In addition, the same reason probably led to the lesser curation of glass beads, in comparison to those made of raw materials that were considered valuable. Adornments made of stone were more valuable because of the lengthy production process it needs to undergo, from the acquisition of raw materials to the finishings of the bead. Also, the values associated with stones increased their desirability. The presence of beads made of non-local stone varieties indicate interaction between regions as well as the social status, wealth and power of the wearers. The wider range of stone varieties at sites, such as Anuradhapura and Mantai, suggests that they maintained wider interactions with South India as well as other regions both in India and other countries. In comparison, the external interactions at Kantarodai and Kirinda were limited.

The data I gathered from the Ibbankatuwa burial site and Kodumanal habitation area indicate similar results to Karunaratne's work (2010) in Ibbankatuwa and Kelly's work (2013) in Kodumanal. According to them, the burials from both these sites yielded large quantities of carnelian beads whereas in the associated habitation areas carnelian beads occurred sporadically. This demonstrates that adornment made of imported, exotic raw material were expressions of social status and/or wealth and therefore, recovered in burials while in habitation areas, commonly available raw materials, such as quartz were used to produce adornments.

The large quantities of carnelian production wasters in the Anuradhapura Gedige and Mantai assemblages, further attests the claim that carnelian beads were locally produced. It is probable that carnelian beads recovered from Ibbankatuwa, Kantarodai and Kirinda were also produced on the island. In addition, the stone production wasters indicate that the bead-makers of Anuradhapura probably specialized in amethyst and carnelian bead production. The common occurrence of amethyst at Anuradhapura indicates a pattern similar to South India rather than North India.

The patterns and preferences of adornment from the sites studied, indicate that access to raw material was not an essential factor for the demand of goods. While the evidence from Sri Lankan sites indicates that proximity to the sea increased the use of shell, in South India, Kodumanal, which is an interior site, was a shell bangle production site. In addition, the absence of shell bangles at Anuradhapura was a cultural choice, rather than a consequence of geographical location. The possibility of easily accessing the shell ornaments from production sites, such as

Mantai, had there been a demand, implies that there was a lack of interest in shell bangles at Anuradhapura. Similar cultural choices have been noticed at Kantarodai, where despite possible access to Indo-Pacific Beads, the assemblage contained only a single bead and the popular choice at the site was for Red Disc Beads.

Patterns pertaining to shapes were revealed from the data gathered. The choice of shapes changed over time and across sites. RDBs were popular among the Sri Lankan sites in the early centuries BC, which took a downward trend towards the Common Era. The occurrence and quantity of these beads led to the argument that RDBs were produced in Sri Lanka, and the small quantities found in South Indian sites were a result of irregular trade with the island. From the early centuries of the Common Era, circular oblates and circular cylinders became popular across the sites. The occurrence of these shapes indicates a distinct regional division of preferences between the north and south of Sri Lanka. Similarly, colour patterns also reveal changing trends over time. They also suggest that choice of colours differed regionally and overtime.

Some of the colours in the assemblages suggest that they had symbolic meanings associated with them. The limited but consistent occurrence of black beads and black bangles may indicate such symbolism. The assemblages studied indicated that not all beads were produced for the purpose of adornment. For example, Stupa beads recovered from Sri Lankan sites may have been religious offerings rather than personal adornment. Some of the beads recovered from burial and religious sites indicate they were offerings. However, beads were generally produced as objects of adornment and their function may have varied

according to the context in which they were found. The nature of the site provides context to the function of the beads. For example, beads recovered from production sites suggest they were the products of the craftsmen, those from port sites indicated they were trading items, those from ritualistic sites functioned as offerings and beads from habitation areas may indicated that they were generally used for adornment.

The patterns and preferences revealed in this chapter suggest that practices of adornment indicate close interaction between Sri Lanka and South India. It has revealed that trade and exchange took place both ways between Sri Lanka and South India. There are patterns that suggests some of these exchanges took place at a small-scale, personal level and such instances need to be further investigated. Despite the patterns and preferences pertaining to objects of adornment providing strong evidence of close cultural interaction between Sri Lanka and South India, there are practices that are distinct to each region. Therefore, while geographical proximity obviously led to frequent interaction both on a large-scale diplomatic level and personal level, characteristics distinct to each region also existed.

CHAPTER 7:

EXPRESSIONS AND MEANINGS:

AN ETHNOGRAPHIC STUDY

In chapters 4 and 5, I synthesized my research datasets, followed by chapter 6 where these datasets were compared at a regional level, in order to examine patterns and preferences in the archaeological record. The interpretations in Chapter 6 have highlighted possible practices and meanings that need further consideration. Therefore, this chapter takes a different approach towards practices and meanings embedded in adornment. Through a range of human activities, cultures across the world attribute meanings and expressions to their adornment practices. In the first part of this chapter an overview of these practices will be presented. In the second part, these human behavioural patterns are examined at a more regional level, specific to South Asia through an ethnographic study undertaken as part of this research.

PART I

7.1 Expressions through adornment

It was discussed in Chapter 3 that the body is often used as a medium of expression. Using both jewellery and the permanent or semi-permanent application of cosmetics, modifications are made to the body in order to express individual and social identities. The use of adornment to express identities is a practice prevalent in cultures across the world displaying both distinct as well as shared cultural traits. Because adornment is used as a medium of expression, objects of adornment are attributed different values by individuals and societies. Based on the associated values, the objects of adornment pass through life

stages creating object biographies. The associated values also give the objects an agency over their wearers and thus humans and objects often seem interdependent.

7.1.1 Expressions of social status, power and wealth

Personal adornment is widely used as an indicator of social status, power and/or economic status. Even today, valuable metals such as gold and precious stones such as diamonds, rubies and emeralds are expressions of the wearer's wealth and even social status and power. Although social status does not always depend on wealth, most often, it is the wealthy and the powerful that occupy the higher ranks in social hierarchy.

Through studies of mortuary practices, it has been assumed that the treatment of a dead individual has a relationship with his social status in life and the organization of the society in which the individual lived (Binford 1971, 17; O'Shea 1984, 3). The Neolithic burial at Varna, Bulgaria, dating from to 4000 BC, included a large quantity of gold. This has been interpreted as an expression of the social status and power of the deceased (Renfrew and Bahn 2004, 409).

Burials are fine representations of social hierarchy. Braghin (1998, 279–289) describes the tombs of a Marquis of the Yan state, in Hebei province and a Count buried along with concubines and his wife, in Shaanxi province. The grave goods associated with these burial sites illustrate a clear distinction between them, reflecting perhaps their social and gender differences. In Egypt, people at the top of the social hierarchy used gold as well as semi-precious stones such as lapis lazuli, carnelian and turquoise, while ordinary people used faience as a substitute

(Freed 1997, 227). This is a further indication of objects of personal adornment being social markers.

In the ethnographic record also it is visible that social ranking and wealth are expressed through adornment. Some African tribal women wear large discs in their lips, in either the upper lip or the lower, and sometimes even both are pierced and discs are inserted. Among some tribes the size of the disc is a demonstration of the economic importance of the tribe (Turton 1980, 67–68). The Mursi tribe in Ethiopia perceives the lip plate as having a direct relation with bride-wealth. On getting married, families of women who wear larger lip plates would get a larger number of cows as a bride price (La Toskey 2004, 385–390). Steiner's study (1990, 431–445) of the communities in Polynesia, Melanesia and West Africa demonstrates how body adornment using tattoos, body painting, masks and crowns indicate political leadership.

Cultures around the world, use objects of personal adornment to express social status. Accessibility to exotic raw materials that are not locally available is an expression of power and the economic status of a person. In the archaeological record as well as in modern society, social status, power and wealth are expressed through practices of personal adornment.

7.1.2 Expressions of Health and well-being

Often, objects of adornment are worn as amulets for the health and well-being of the wearer. Particularly in astrology, precious stones are associated with celestial bodies and thus attributed qualities that could bless and protect the wearer from different forms of evil (Chapter 6.1.2). In most cultures it is believed that the gaze

of an evil eye could fall on someone and bring ill fortune upon them. An evil eye would look directly in the eye, therefore, wearing an object that will draw the attention of the evil eye away from the beholder's eye is significant. A representative eye would counterattack the evil by staring back at the gazer (Maloney 1976, 5-16) and this is the logic behind wearing an eye bead. Cowry Shells and certain seeds that naturally took the shape of an eye were initially used as eye beads. Rounded beads are also representative of the eye (Francis 1994, 26). According to Dubin (1995, 105), stone beads incised with an eye, banded agate and etched carnelian beads were also among the earliest eye beads (Figure 7.1). Eye beads are still largely made and worn in Turkey (Figure 7.2).

Figure 7.1: Banded agate and etched carnelian beads were used as eye beads during the early periods. The stones were cut in such a way that the bands will appear like an eye (Source: Dubin 1995, 104)

The Egyptians commonly used amulets to ward off evil and thus many amuletic pendants depicting scarabs and wedjat eyes have been discovered (Freed 1997). Ancient Egyptians believed that the scarab beetle was a symbol of the sun god Re (Figure 7.3). They deemed that a giant scarab moved the sun from the eastern

horizon to the west each day, making the amulet a potent symbol of rebirth. Meanwhile, the wedjat eye, also known as 'the eye of Horus', is an ancient Egyptian symbol of protection, good health and restoration (Encyclopaedia Britannica 2018) (Figure 7.34).

Figure 7.2: Eye bead bracelet from Turkey. These beads are stylized as human eyes to ward off evil. Eye beads come in different shapes but the fundamental design aims to resemble a real eye

Figure 7.3: Scarab beetle amulets from Egypt (Source: Metropoliton Museum of Arts, NY)

Figure 7.4: Wedjat eyes were popular Egyptian amulets that were believed to ward off evil (Source: The British Museum)

A general practice in Sri Lanka is to adorn a newborn baby with a pendant named the '*panchayudha*', strung on a black thread (Figure 7.5 Figure 7.6). Usually made

of gold, young children are seen wearing this pendant around the neck. *Panchayudha* means five weapons and the pendent depicts a bow and arrow, a trident, a conch shell, a chakra (pointed wheel) and a sword. This pendant, symbolic of these arms, is believed to help the child to fight against illnesses or any evil. Among the *Jataka* stories, the so-called stories of the Buddha's previous lives, there is one *Panchayudha Jataka* (Amaramoli 1961, 136-138), the 55th *Jataka* of the total of 550. The Buddha is said to have been born as Prince Panchayudha in a previous life. He was gifted four weapons by his teacher, namely a bow and arrow, sword, trident, and chakra. He faced a demon whom he fought by using these weapons, but ultimately became triumphant by using his fifth and strongest weapon, wisdom. It is, uncertain however, if the *Panchayudha* pendant has a connection with this story. It was observed during my ethnographic study that this practice of wearing the *panchayudha* is also prevalent among the plantation worker community.

Figure 7.5: A panchayudha depicts five different weapons that are expected to protect the child wearing this amuletic pendant from any ill fortune

Figure 7.6: A baby adorned with a Panchayudha strung on a black thread

Another Sri Lankan personal adornment is the '*suraya*', worn by males and females of all ages (Figure 7.7). This too is believed to possess amuletic powers and is worn to ward off the evil-eye or bad luck. It is usually a metal tube a few centimeters in length, inside which a rolled metal sheet with writing on it can be found (Figure 7.8). The writings are usually a chant (*Shloka*) that fights off evil. This amulet is also strung on a black or yellow thread and is worn around the neck, arm or waist. Women are not supposed to wear them during menstruation and wearers are usually advised against wearing them to funerals, lest its power becomes redundant. Although now apparently gone out of use, similar amuletic tubes with scrolls in them, named '*thaayethu*' have been used by South Indian communities (pers. comm. Srinivasan 2018).

Female babies in Sri Lanka are adorned with black bangles till they are a few months old. This is another practice shared by the plantation worker community (See below 7.2.5). Along with black bangles, adorning infants with a black dot on

their foreheads is a general practice in the Indian Subcontinent. In South India, these dots may even be placed on the cheek or the chin. In addition, babies' eyes are adorned with kohl in India (Figure 7.9) and both of these practices are carried out in the belief that they will ward off any evil-eye directed towards the infant.

Figure 7.7: A suraya is an amulet worn in Sri Lanka to protect the wearer from ill fortune

Figure 7.8: A copper scroll on which a shloka is written is inserted in the suraya

Figure 7.9: An infant adorned with a black dot on his forehead and eyes with kohl to ward off evil (Source: Jyoti Sharma)

Practices of personal adornment related to health and well-being existed in pre-modern societies and are still being practiced in modern societies. These practices are mostly to ward off an evil spirit, but often have an underlying scientific reasoning. It is interesting to note that the practices related to health and well-being have continued over generations and these practices are strongly entrenched in society.

7.1.3 Symbolic and ideological expressions

Practices of personal adornment are often associated with symbolism and ideology. Their significance relies on their readability and the symbolism needs to be comprehended (Sørensen 1997). Each type of personal adornment or the raw material used to make it, is attributed a certain quality that is believed to transmit to the wearer. Often the symbolism associated with practices of personal adornment is considered to bring upon good fortune to the wearer. While these

symbolic meanings related to ancient societies can be difficult to discern, modern communities continue to carry on certain practices, often even without understanding the embedded symbolism. Thus, ethnographic studies are an excellent method for comprehending the symbolism attached to ancient practices of personal adornment. In addition, ancient literary sources can also provide insights.

The aborigines of Australia use red ochre pigment either to smear over the body or draw different patterns on parts of the body. The patterns drawn are symbolic to their community (Soriano and Medina 2009, 100-103). In Indian society, hand painting among women is very common. They draw vivid patterns on their palms (Figure 7.10) using henna (*Lawsonia inermis*), a herbal plant. These decorations, which are called *mehndi* designs, are done for ceremonies, particularly weddings. Apart from their medicinal value, henna decorations have a symbolic value in Indian society. A bride adorned with dark henna stains is believed to have a successful married life. Red signifies blood, and is hence symbolic of fertility and prosperity (Untracht 2008, 26–27).

Figure 7.10: The bride's hands are decorated with elaborate *mehndi* designs

In Africa, symbolic meanings are associated with objects of personal adornment. Therefore, personal adornment is an important part of ritualistic practices. The attributed qualities distinguish the adornment used on a daily basis and at ceremonial events. In the past, among the African tribal communities, brass beads were higher priced as they possessed a mystical element, having been made by smiths (Morris and Preston-Whyte 1994, 9). The art of the metalsmith was beyond the understanding of the general public, thus the process of a hard piece of metal being transformed into a utilitarian or beautification object was perceived as mystic.

Among the African tribal communities, different coloured beads are attributed with different meanings. Among Zulus, for example, the colour white is symbolic of purity and innocence, black of depth and profundity and light blue of ripeness and fertility (Morris and Preston-Whyte 1994, 55). The Shona-speaking people of Zimbabwe believe that white and black beads are symbols of spirit mediums and red is symbolic of blood (Bvocho 2005, 419).

7.1.4 Expressions of social identity

Some adornment practices are carried out as expressions of the roles one plays in society.

Ethnicity, religion and community membership

Use of adornment to express ethnicity or community alliance is common practice within different societies. These practices can also express religious affiliations. For example the use of blue beads among the African-Americans of Geogia and South Carolina in the USA is an expression of ethnic identity (Stine *et al*. 1996).

Scholars such as Smith (1977, 161) and Otto (1984, 75) have stated that the blue beads are ethnic markers, a practice brought from Western Africa.

Occasionally, ethnic identity is expressed through the same practices or objects that express marital or social status, age or religious affiliation. For example, the women of Tamil community in Sri Lanka wear *kunkuma* on their forehead to indicate that they are married. This also expresses their ethnic or group identity as the practice makes them distinct from other communities. Similarly, adorning the forehead with a *pottu,* (a dot, usually of red colour) and the hair with flowers are practices that express ethnic identity.

The practice among Hindus of adorning their foreheads with holy ashes signifies their religious affiliation. Not only does it identify the wearers as Hindu, but also distinguishes their sect of worship, particularly in Southern India. The Shivites, who are followers of the God Shiva, draw horizontal lines on their foreheads while the Vaishnavites, who are followers of the God Vishnu, draw a single or two vertical lines (Untracht 2008, 24). These examples demonstrate how adornment practices express ethnic and religious affiliations across cultures.

Figure 7.11: Bridegroom adorning the bride with '*Sindhoor*' at their wedding as a symbol of their bonding (Source: Jyoti Sharma)

Marital status

Just as rings worn on the ring-finger generally indicate marital status, there are other practices specific to cultures that express marital status. The red vermillion worn on the forehead by Indian women is a sign of marriage (Figure 7.11). '*Sindhoor*' as it is called, is a symbol of pride for married women and symbolizes blood and thus emphasizes the strength of bond created through marriage. Once married, the couple are connected through blood, a very strong bond. Hindu women express their marital status by wearing a '*mangalsutra*' (Figure 7.12) or a *talikodi* which has an amuletic pendant, called the *tali*, strung to it. The *mangalsutra* made of black glass beads is termed '*kalapota*'. It is traditional among Bengali women to wear shell bangles after marriage. The *Sindhoor* is wiped off and all other adornments are immediately removed when a woman becomes a widow. A widow in South Asian society is required to be void of all jewellery. Adornment is a sign of prosperity which a widow loses with the death of her husband.

Figure 7.12: A married woman dressed in traditional Maharashtrian attire wearing a *mangalsutra*, a black-bead necklace with a gold pendant

Gender

In the recent past, earrings have generally been accepted as an adornment associated with female gender. However, in the past, both men and women wore earrings. Today, gender-defining adornment has gained fluidity but in some pre-modern communities, such distinctions can still be observed. For example, in the communities in the Ecuadorian highlands, beads are used to distinguish the gender of infants. Girls' ears are pierced soon after birth and are adorned with a loop of beaded string. Female babies are also adorned with bead necklaces (Meisch 1998, 149). Gender is a culturally constructed phenomenon, therefore gender expressions through objects and practices of personal adornment are socially constructed. They differ from society to society as well as over time. (White 2005, 5).

7.1.5 Aesthetics, fashion and appeal

While adornment practices are often embedded with expressions of identity and symbolism, sometimes certain practices are carried out in order to enhance physical appearance and attract the attention of others. In addition, different communities follow different fashion trends that change over time. And it is likely that most members of a community would change their adornment practices to suit the contemporary fashion trends.

We observe that over time, different fashions and fads trend temporarily for a period of time and then are replaced by another wave of fashions. These fashion trends may be in relation to colour, raw materials or design. The compilation of the changing fashions within the British community from 1840s to the 20th century by the Victoria and Albert Museum, UK (Victoria and Albert Museum 2016a and 2016b), for example, indicates that preferences and fashions change, and also some of these fashions recur over time. Therefore, it is important to note that not every pattern pertains to symbolism and meaning, but can be a result of a collective response to a change in preference.

Adornment practices are expressions of human identity. These identities can be individual or social. Adornment can express affiliation to a group or express individuality that makes one stand out among others. Adornment practices are also subjected to cultural context and the period in which they are practiced. Therefore, the same practice within different contexts could express different meanings, and over time, practices as well as associated values and meanings could change.

PART II

Bearing in mind that adornment practices change over time, an ethnographic study was carried out among the descendants of a South Indian migrant community in Sri Lanka, in order to observe the expressions, values and meanings associated with their adornment practices. By doing so, it was expected that a more specific, regional-level understanding of traditional practices of adornment, as well as their associated values, could be gained.

7.2 Ethnographic study of personal adornment practices among plantation workers in Sri Lanka

7.2.1 Introduction

A brief ethnographic study of practices of personal adornment among the tea plantation workers in Sri Lanka was undertaken. Material evidence of personal adornment, particularly beads, are numerous in the archaeological record but they alone are insufficient to interpret the possible practices and meanings of bodily decorations. Historical records, while giving clear indications of interactions between the two regions, provide little direct evidence of practices of personal adornment of those who travelled between the two countries. This makes it essential to look for alternative sources of evidence, to consider if they can add new insights to these objects and practices.

Consequently, a study of communities of tea plantation workers in the Badulla district of Sri Lanka was undertaken in May 2017. This community of workers is mainly settled in the central hilly areas of the island, such as Central, Sabaragamuwa and Uva provinces (Figure 7.13). The location of their settlements is determined by the situation of tea and coffee estates of the British

colonial period. Ancestors of these workers were South Indians, who, during the 19th and 20th centuries migrated to Sri Lanka as indentured labourers. They, together with those who were taken to places such as Mauritius, the Caribbean Islands and Africa, form a wide-spread Indian diaspora community in the Indian and Pacific Ocean regions (Tinker 1993; Carter and Torabully 2002). Wesumperuma's work (1986) on the plantation worker community provides detailed information on the historical development of the immigrant plantation workers in Sri Lanka. Earliest immigrants came from the southeast most districts of Tamilnadu (Figure 7.14). According to him the main route of migration in the initial stage was via the 'North Road' (Figure 7.15) across the Palk Strait from Dhanushkodi to Mannar by boat and from there by foot to Matale (Wesumperuma 1986, 41–60). Despite being Tamil by ethnicity, these migrants are not recognized as belonging to the same ethnic group or social status as the Tamil populations in the north and east of the island, who trace their origins to an elite and affluent class that migrated from South India in ancient times.

Previous generations of these plantation workers were housed on the estates in accommodation known as 'lines', under generally poor living conditions. As Indentured labourers, they did not have the right to land ownership and therefore, their wealth was accumulated in the form of precious metals, gold in particular. With the declaration of independence of the island from the British rule in 1948, these plantation worker-communities were left stateless and were not recognized as citizens of either Sri Lanka or India. This continuous social isolation and thereby inhibition to adapt to wider society resulted in the preservation and continuation of their traditional practices. Such traditions include their practices of adornment.

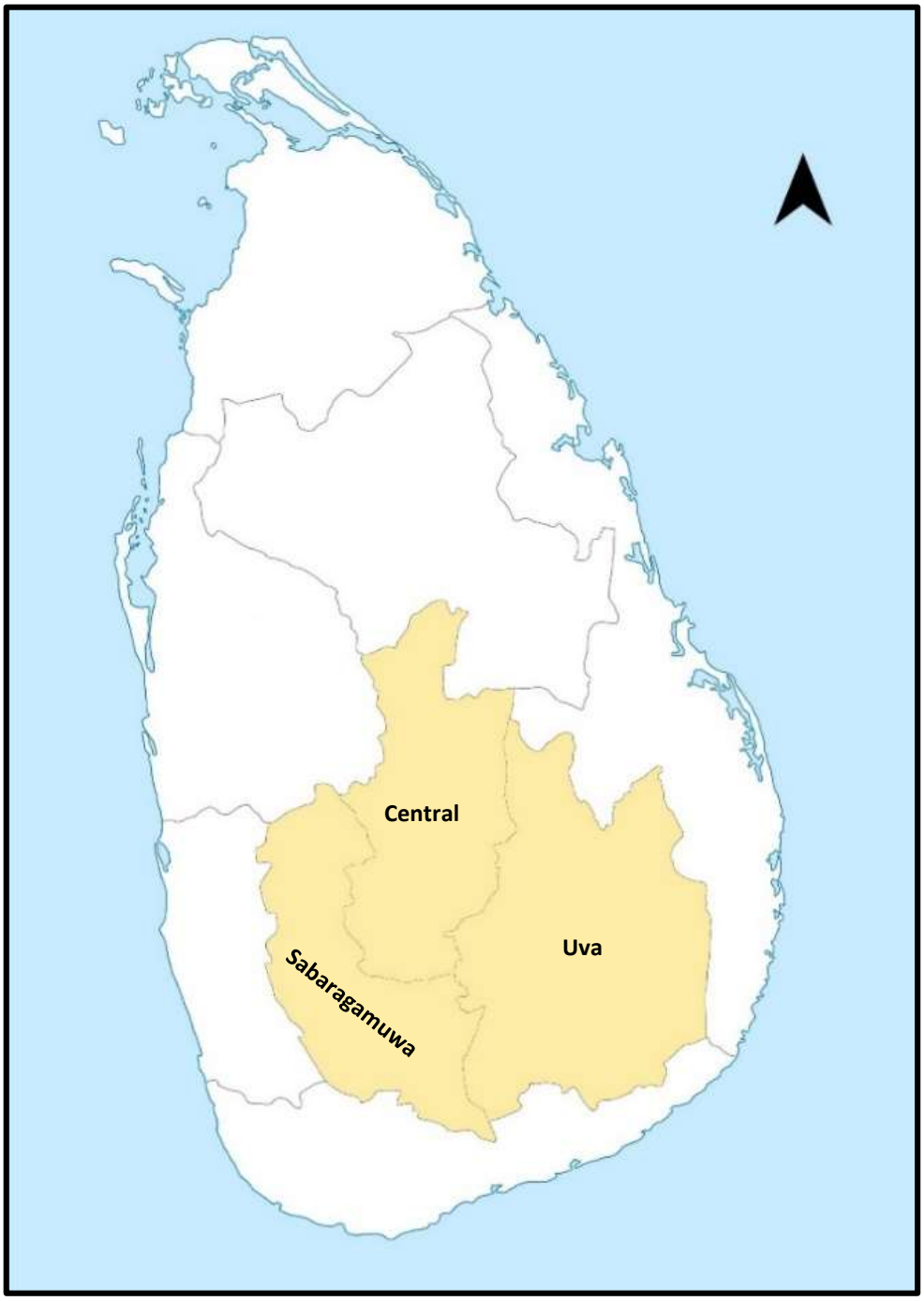

Figure 7.13: The plantation worker communities are mainly settled in Central, Sabaragamuwa and Uva Provinces

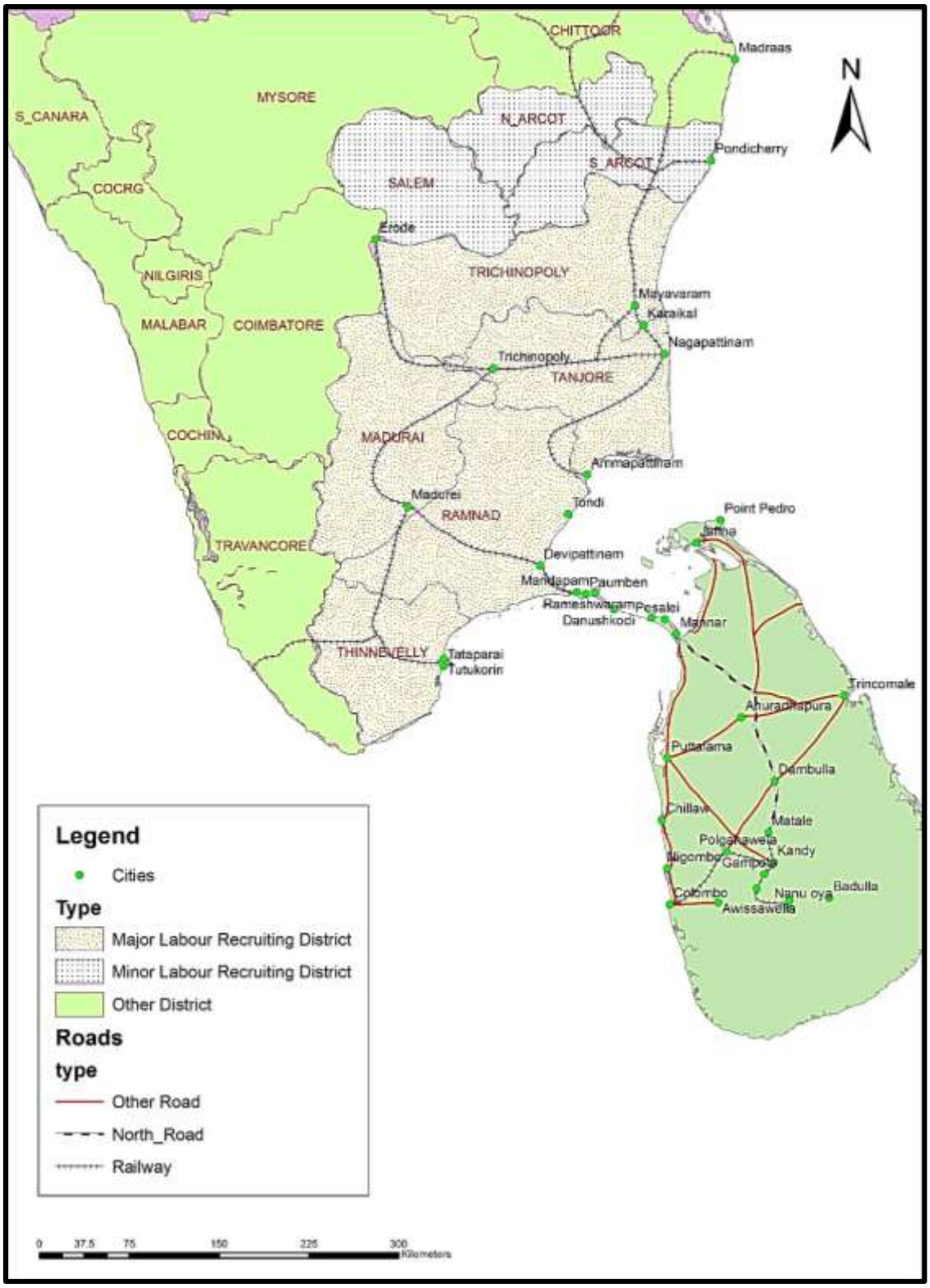

Figure 7.14: South Indian districts which supplied labour to the plantations in Sri Lanka (1880–1910) (after Wesumperuma 1986, 86)

In the recent past, these workers were granted Sri Lankan citizenship, though some had already repatriated to India, which in some cases led to the division of families. Their identity as a distinct community on the island began to be

acknowledged, helped by their strong political representation, particularly, in the last few decades. In comparison to previous generations, the living conditions and social status of these workers have improved considerably, some of them even becoming leading politicians, businessmen, government officials and renowned sports personalities (notably the nationally, much-loved cricketer, Muttiah Muralitharan). Nonetheless, some families still remain in dire poverty and unimproved living conditions (Philips 2003, 27–28).

While socio-economic studies of these plantation workers have been carried out (Wesumperuma 1986; Philips 2001; 2003; Mookiah and Sasidaran 2017), no ethno-archaeological studies of these communities have been undertaken to date, to the best of my knowledge. Over the passage of time their material belongings, including items of personal adornment, may have changed; however, certain practices of adornment and their symbolic meanings appear to continue and are likely to provide clues to such practices in the past, which they inherited from their ancestors. Therefore, the present study is important as it documents the objects and practices of adornment within this community, in the hope of shedding some light on those of the past.

Figure 7.15: The 'North Road' through which the plantation workers initially arrived in Sri Lanka from the 1830s (after Wesumperuma 1986, 76)

7.2.2 Significance of the ethnographic study

Right from the start, within the discipline of archaeology, ethnographic studies have been used in order to both supplement and interpret incomplete

archaeological records (Yellen 1977, Binford 1968). Both processual and post-processual archaeology have been based on ethno-archaeology (Hodder 1982). Whilst the indiscriminate use of ethno-archaeological analogies has come under severe criticism (Wylie 1985), its significance and contribution in interpreting past societies and helping to interpret archaeological records has been acknowledged to date and is still being employed in many regions.

In Sri Lanka, the study of the indigenous communities in order to find analogies with which to interpret the past, in particular, the prehistoric period, dates back to late 19th century (Sarasin and Sarasin 1907, Seligman and Seligman 1911, Noone 1945). Deraniyagala (2004) studied the Vedda community, a native non-urban population who are considered to be direct ancestors of the Mesolithic (*c.*43000–3900BC) people of Sri Lanka, and similar studies of the Veddas were carried out by Noone (1945) and Kennedy (1962) in order to understand aspects related to the demography, subsistence, technology and rituals of the prehistoric period on the island. Whilst the focus for most of these studies has been the Veddas, limited studies on other native communities (Bohingamuwa and Siriwardena 2010; see also Gunawardena *et al.* 2010) and migrated communities (De Silva Jayasuriya 2008) have also been undertaken. The Veddas and other communities serve little purpose for this study. To date, however, no ethno-archaeological studies have been published on the plantation workers of Sri Lanka who are more relevant to my study.

Present study

The study is focused on the practices of adornment among a Sri Lankan community whose ancestors migrated to the island from South India almost two

centuries ago. These ancestors were either induced or were forced to migrate by the British for the sole purpose of first creating, by forest clearing, and then working in their plantation estates. There is no direct historical analogy between this community and those who may have migrated in the Early Historic Period. However, because they are direct descendants of those migrators from South India, irrespective of the purpose and the circumstances under which they reached their final destination, they belong to and carry forward the cultural tradition they inherited. These cultural practices, including personal adornments, are probably a continuation of those of the past. All communities retain certain cultural aspects such as those which are ritualistic, while also adopting new ones. While technology, raw materials, types of objects and their designs are replaced or new ones are added to the paraphernalia, certain types of adornment, as well as their symbolic meanings, continue. Migrated plantation workers are unlikely to be an exception. The rationale of ethno-archaeology is that traces of the past still present in living communities can provide reliable analogies to interpret the past. It is in the same context that these plantation workers were studied.

7.2.3 Methodology

During this ethnographic study, qualitative data was collected by interviewing 20 families who are descendants of the South Indians who migrated to Sri Lanka as plantation workers during British rule.

Sampling

A sample of 20 families living on the tea estates of Uva Province were selected for the study. These families were randomly selected, based on their accessibility and willingness to consent to participating in this research, as well as the

presence of family members aged over 50 years able to be interviewed. There are both physical and cultural barriers to their settlements. Whilst they are very welcoming people, they are reluctant to invite strangers into their houses due to their humble living conditions. Although a larger sample would have been preferable, time constraints made this unachievable. The main methodology applied to this study consisted of conducting informal, semi-structured interviews and the completion of a pre-prepared questionnaire (Appendix H). Photographic records of selected ornaments were also made. Similarly, participatory observation in ceremonies where traditional costumes and ornaments were worn was undertaken.

7.2.4 Ethical requirements

The University of Exeter requires clearance from its Ethics Committee before ethnographic studies are undertaken. Thus, to meet this requirement, I obtained clearance from the Ethics Committee (Appendix H1.1). As per university requirements as well as general ethics in archaeological studies, consent was obtained from the participants to be interviewed. These consents were taken verbally. In addition, verbal consent was obtained to record conversations and take photographs, as well as relating to the disclosure of names in this research. A self-introduction and a brief description of the nature of the research was provided to the participants prior to commencing the interview.

7.2.5 The interview process

I was assisted by two archaeology graduate students from Sri Lanka to carry out these interviews[1] (Figure 7.16). They were local to the area and were familiar with the plantation community. The community are of Tamil ethnicity, thus, research assistants' ability to converse in Tamil was helpful. In fact the interviewees themselves, having lived together with the Sinhalese people all their lives, were able to converse in Sinhala[2] without much difficulty. If some of the elderly participants experienced language difficulties, their younger relatives would act as interpreters (Figure 7.17Figure 7.18). Hence, there was minimal opportunity for miscommunication or misunderstanding.

Figure 7.16: Conducting an interview at a participant's house

[1] The author acknowledges with thanks the able assistance of Mrs. Chamila Wickramaarachchi and Mrs. Tamara Senani in the field. The author is also grateful to Dr. Bohingamuwa, University of Ruhuna, Sri Lanka for making this arrangement.

[2] Mother tongue of the author

The interviews were informal and semi-structured. The interviewees were asked questions based on the prepared questionnaire (Appendix H1.2) which was either filled in as they answered or filled in later using the notes made in the field-note books (Figure 7.19). The questionnaire was prepared in Sinhala to avoid any suspicion by using English text, which most participants were unfamiliar with. Where permitted, some of the interviews were recorded using a digital recorder and the questionnaires were filled later based on the recordings. Frequently, it was difficult to adhere to the order of the questions and answers to some questions had to be found within answers to other questions. The answers were often lengthy narratives and some questions were unanswered.

Photographs were taken of the participants and the jewellery they wore or which they possessed, with their consent. I was also shown old photographs of their ancestors wearing traditional jewellery. Where possible copies were taken of old photographs (Figure 7.20Figure 7.21).

Figure 7.17:An older interviewee assisted by a younger relative acting as interpreter, where necessary, during the interview

Figure 7.18: An interviewee with her daughter during interviews

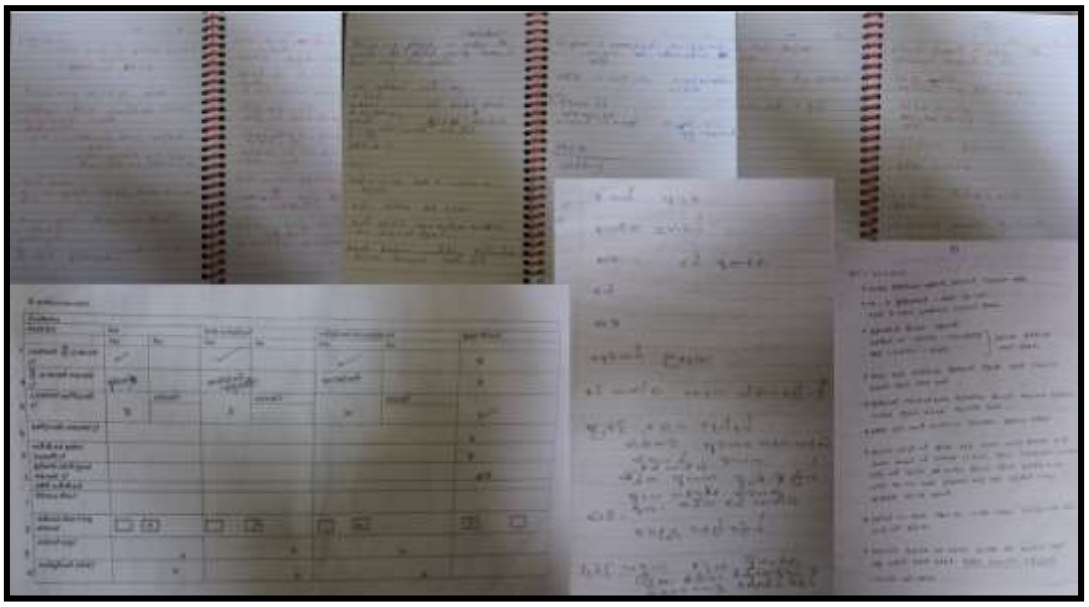

Figure 7.19: Examples of the notes taken during interviews

Figure 7.20: A Group of interviewees holding up an old photograph

I had the opportunity to attend a traditional wedding ceremony. I also had permission to take photographs and make video recordings of the ceremony (Figure 7.22 Figure 7.23). Weddings are one of the ceremonies where traditional adornments are best displayed. Thus, this opportunity enabled me to observe and record the traditional practices of the plantation worker community.

Figure 7.21: Example of a copy of an old photograph provided by a participant

Data Recording

All the interviews conducted are provided in Appendix H2, transcribed and synthesised from the questionnaire forms. To assist the reader, the questionnaire and the answers have been translated into English. All data that was recorded on the voice recorder and in the field-notebooks have been stored safely, in order to ensure the information could not be misused. The questionnaires are numbered from H2.1 to H2.20, according to the order in which the interviews were carried out. When references are made to individual interviews, it is cross referenced using these numbers.

7.2.6 Migratory patterns

The 20 families that participated in this research could trace their ancestral origins to Tamil Nadu, South India. Their ancestors migrated from different areas of Tamil Nadu, particularly the southernmost area of the peninsula, including Namakkal, Pudukkottai, Tiruchirappalli, Thanjavur, Madurai and the Nilgiri hills (Figure 7.24). Only one person informed me that their ancestors had come by boat to Mannar and then moved on to the interior of the island (H2.6). The plantation workers fell mainly into two categories, the workers and the *Kankanis* or the estate labour overseers. Any individual who could gather at least 50 people to work in Sri Lanka would be hired as a *Kankani*. The *Kankanis* had more benefits than the other workers. Originally, the *Kankanis* belonged to the higher castes, and would gather together fellow village men/women and migrate to Sri Lanka. The interviewees revealed that most of their ancestors had been living in harsh conditions in their places of origin and therefore could easily be convinced to migrate to Sri Lanka, a place about which they were given misleading descriptions.

Figure 7.22: Images from the wedding ceremony

a) Welcoming guests; b) Flower garlands and other ritualistic objects ready for the ceremony; c) The groom's mother making final preparations before the ceremony begins; d) The musical instruments being played during the ceremony; e) The groom's family arriving at the venue with ritualistic offerings

Figure 7.23: More images from the wedding ceremony

a) The head priest performing rituals to bless the bride with female relatives taking part; b) The newly wedded couple adorned with flower garlands; c) The groom adorning the bride's forehead with *kunkuma*; d) The groom tying the *tali* around the bride's neck; e) The bride's sister-in-law adorning the bride with the toe ring

Figure 7.24: Places of origin in South India of the ancestors of the participants

It is interesting to observe how these immigrants maintained contact with their ancestral regions, in most cases right up until today. During the interviews it was revealed that some of these families who migrated to Sri Lanka as plantation workers had prior contact with the island. Three of the interviewees (H2.3, H2.4, H2.7) informed me that their ancestors had travelled to Sri Lanka for business, particularly textile trading. While these interviewees were aware of their ancestors' business affiliations with Sri Lanka prior to migration under British rule, they did not have further information regarding the travel route. Neither did they know whether these business contacts had been taking place for generations. However, the interesting information that we can gather is that trade contacts between Sri Lanka and South India were probably not limited to institutionalized trade but also operated as small family businesses. South Indians could have been traveling between the two countries via ports such as Thoothukudi and Alagankulam/Dhanushkodi.

One of the participants (H2.5) stated that his mother arrived from India to be married to his father, who was a Tamil plantation worker in Sri Lanka. Many interviewees informed me that, even today, they maintain relationships with South India via marriage connections. It demonstrates that, despite migration, people maintain family connections with their ancestral roots.

The parents and grandparents of some of the interviewees, who migrated from South India, had married descendants of South Indian migrants who had been born on the island. In addition, there were also instances of migrants marrying Sinhalese women, despite the difference in ethnicity and citizenship status. Thus, a mingling of the different ethnicities and nationalities took place. Rajan (H2.7) has related how non-authorized migration took place. When a family member migrated to the island, probably as a plantation worker, it was natural that the family would seek some means to visit him, particularly in times of need. Thus, family members sought any possible mode of travel in order to visit their migrant relatives and eventually these unobserved, illegal migrants from South India, who were actually visiting family were termed *kallatoni*, a derogatory term generally used by Sri Lankans for South Indian migrants, particularly those who entered the island as illegal immigrants.

Furthermore, the participants from Alagolla (H2.1, H2.2, H2.3, H2.4, H2.5) informed me that the soil used to make small, ritualistic statues of gods was still brought from India. Sivasami Pakyam (H2.9) revealed that the *kunkuma*[3] and

[3] Red colour powder that is applied on the forehead of married women as a symbol of their marital status

tunnoru[4] they used, were formerly brought from India by traders of miscellaneous goods, known as *mani badu velenda*. It became apparent that the South Indian immigrants and their descendants would seek to use materials from their place of origin, particularly for ritualistic purposes, even after several generations of settlement. This reflects a natural tendency to be attached and affiliated to the migrants' roots, keeping alive persistant and durable ties.

7.2.7 Adornment practices

This ethnographic study was able to illustrate the symbolic meanings behind some of the adornment practices, the choice and use of different raw materials, the presence of floral adornments, as well as the roles played by of gender, age, caste, marital status and economic conditions. Some of these practices make it evident that it would be extremely unlikely that they would be present in the archaeological record.

The women working on the tea estates have been an iconic feature of the hill country of Sri Lanka, represented in popular images, particularly associated with the tourist industry. They are often depicted clad in colourful sarees and heavily adorned with jewellery and *pottu* (a dot on the forehead) (Figure 7.25). Today, such sights are rare, as the tea-plucking women tend to wear more modern clothing and less jewellery. But they continue to carry out their traditional practices of personal adornment, despite the social changes that are taking place.

[4] An ashy powder that is applied on the forehead after making offerings to God in order to bestow His blessings

Some of my descriptions may repeat and overlap when describing these practices across the sections.

Figure 7.25: Women of the plantation community plucking tea

Types of ornaments

Traditional practices of adornment among the plantation worker community encompasses an array of ornaments. Unsurprisingly, in the community under study, objects of personal adornment for women outnumber those of men. Some objects of personal adornment are worn daily, while others are specific to occasion, age, caste and even marital status.

The adornments of the women

Among the jewellery that the women wear on a daily basis are necklaces, bangles, ear, finger and nose rings, and anklets. The interviewees refer to these ornaments in their native language, Tamil. Earrings are referred to as either *todu*, *jimiki,* or *ten kanchi nadei*. *Modiram* is the term used for finger rings while *mukkutti* means a nose ring. Bangles are referred to as *valavi* and anklets as either *kolasu* or *salangai*. A necklace is called a *malai.* In addition to these ornaments, married

women wear a *tali*, a pendant strung on to a gold chain or yellow thread, which is called the *talikodi* and two toe rings referred to as *minji*. They also apply *kunkuma* (a red colour powder made using turmeric powder to which slaked lime is added to make it red) on their forehead to indicate they are married. *Pottu*, a dot on the forehead is often worn by women, with married women restricted to wearing red colour dots only (Figure 7.26). This *pottu* is worn in addition to the *kunkuma*, and can be worn by married and unmarried women. Usually, the pottu worn by married women is larger than that of the others and the red colour is significant as it is symbolizes fertility and rejuvenation.

Figure 7.26: Married woman wearing kunkuma and a red pottu on her forehead clad in colourful 'pattu' sari

The adornment of the men

Men also wear adornments, but are limited in comparison to those of women. Occasionally they wear gold chains, especially those who are financially able. Traditionally men also wore earrings, called *kadukkan*, a practice that has now gone out of vogue. Married men wear a wedding ring on their right ring finger. Apart from these which are worn on daily basis, there are some ornaments that are worn on special occasions such as weddings. These will be discussed below.

Dressing up for special occasions

When visiting the temple, the women bathe, mostly in turmeric mixed water. Turmeric (*Curcuma longa*) is considered an antiseptic and plays a significant role in the practices of personal adornment carried out by the plantation worker community. They wear clean, colourful saris which they call *pattu sari* and adorn themselves with jewellery. In addition, women of all ages wear flowers in their hair, mostly firecracker flowers (C*rossandra infundibuliformis*) or jasmine (*Jasminum officinale)*. At occasions such as weddings also, all these types of ornaments are worn (as many as the wearer possesses) (Figure 7.27). A bride wears a diadem/head-dress (*nettichutti*) on the forehead, a waistband (*ottiyanam*) (Figure 7.28), *minji* and *tali* in addition to the jewellery types worn daily. The bridegroom is also adorned with *minji* (Figure 7.29), which he generally wears only at his wedding ceremony.

Figure 7.27: A group of women attending a wedding clad in colourful saris and jewellery

Figure 7.28: A bride wearing a diadem (head-dress) and a waistband

Figure 7.29: The sister-in-law adorning the groom with a toe ring (minji)

The adornments for infants and children

Some of the ornaments are worn to attract blessings as well as to ward off evil. Adorning new born babies with a *Panchayudha* strung on a black thread is a tradition that is common among this community. *Panchayudha* are worn by both male and female children and they can be seen wearing it till they are few years old (Figure 7.30). The *Panchayudha* is a source of defence against any “evil eye” that may fall upon the young child. New born babies are adorned with a string of black and white beads around their waists, details of which is given below. At the end of one month this strand of beads is replaced with a silver waistband called *arunakodi*, which is traditionally presented by the baby’s maternal uncle. Girls wear anklets from childhood, and after marriage these are worn on both ankles and are larger and more elaborate.

Figure 7.30: A child wearing a Panchayudha

Use of beads

Beads as a type of ornament are rather rare in practices of personal adornment among the plantation worker community but not completely absent. Only a few instances were observed when they used beads as part of their personal adornment. Ten of the interlocutors indicated that married women use beads along with their *tali* (H2.1-5, H2.8-9, H2.13). Seven of them stated that on either side of their *tali*, a gold bead is worn and such beads are added during the annual *tali* renewal ceremony. One participant (H2.13) wore two red colour glass beads on either side of her *tali*. She was unable to give a reason for the practice, but it may be a cheaper alternative to gold beads which her husband could not afford. Dhanapakyam (H2.8) informed us that new born babies are adorned with black and white beads, along with a piece of turmeric, strung on a thread around their wrists and waist. This is done in order to ward off any “evil eye” on the baby. This

is worn until it is ceremonially replaced by a silver ornament (*arunakodi)* a month after birth.

Eight participants (H2.1-5, H2.12-13, H2.18) referred to *karugamani* (or *karukamani*), a type of beads worn after a marriage or an engagement. Three of these people (H2.12,13,18) mentioned that they are worn by people of higher castes. I was not aware of the caste status of any of the participants because such a question would be insensitive. Five of the interlocutors (H2.1-5) described *karugamani* to be black and red in colour; however, the word's literal meaning is "black beads". Further details about their symbolic meanings and the reasons for wearing them were not known by the interviewees. There were others who had mixed responses. A few said (H2.10, 15) that young people wear beads while one (H2.20) mentioned that women of all ages wear beads. Some interviewees (H2.10, 20) stated beads were used in ornaments such as necklaces, bangles and earrings, without necessarily specifying which age group used them or the marital status represented. These results show that though the use of beads was not completely absent in practices of personal adornment among this community, it is quite limited.

Amuletic thread

It is common practice among the plantation worker community to use cotton threads of different colours as objects of personal adornment. These threads that are worn on different occasions are mostly for blessings and also as defence against the "evil eye". Women, both married and unmarried, wear a thread on their forearm, for 30 days between the months of November and December. They fast and make prayers during this time, requesting God's blessings: either to find

a worthy husband if she is unmarried, or to have children if she is married. This occasion is called *Gauri Virudam* and the thread, which is either red or yellow in colour, is tied at the temple. One of the interlocutors (H2.6) informed me that this thread is also worn to pray for the long life of the woman's husband.

Figure 7.31: White thread tied on the child's right wrist for protection from inauspicious omens

I observed a few strands of white thread tied on the right wrist of the little girl who was present during the interviews at Alagolla (Figure 7.31). It was revealed that these strands of thread were tied for blessings and to defend against the inauspicious omens she has, as part of her horoscope. Infants and young children are often seen wearing a black thread either around their neck or waist. Often the *panchayudha* is strung on a black thread. This is a practice which is also followed by the Sinhala community in Sri Lanka. Occasionally, a black thread is tied around the waist of the new born babies in place of black and white bead strand. It is intended to protect the child from the "evil eye". While the thread around the waist is replaced with a silver *arunakodi* a month after birth, the panchayudha is worn for a few years.

A yellow thread around a woman's neck is a common sight among the plantation worker community. It is the married women who wear yellow threads, in most cases their *tali* is strung on it instead of on a gold chain. Indra (H2.3) informed me that those who are financially constrained as well as those who have inauspicious omens according to their horoscopes, replace the *tali* with a piece of turmeric. Thus, they wear a yellow thread to which a piece of turmeric is tied. (Figure 7.32). One of the interviewees (H2.9) stated that when a woman is widowed, her *tali* is removed by her sisters-in-law and a yellow thread is tied around her neck.

Figure 7.32: Piece of turmeric tied to a yellow thread substitutes the *tali* if the bride's horoscope has inauspicious omens

Display of caste or social hierarchy

A white, cotton thread worn over the left shoulder of men, is called the *poona noola*, an adornment worn only by the caste of priests. This is an indicator of their higher caste and distinguishes them from the rest of the community. The priests also wear a red colour thread on their upper right arm. I observed that the chief

priest who performed the rituals at the wedding ceremony I attended had a gold ornament attached to his thread (Figure 7.33), while his apprentice wore a plain red thread with no ornamentation attached. This is an indicator of hierarchy among the priests. Furthermore, the *rudraksha* seed worn by the apprentice priest was also strung on a red thread (Figure 7.34), as opposed to the gold chain of the chief priest. These practices make it evident that some of the adornment practices are a display of caste or group identity as well as making a distinction in the hierarchy.

Figure 7.33: Head priest's arm band with gold ornamentation as opposed to the apprentice priest's plain one. The white 'poona noola' is visible across the apprentice priest's shoulder

Figure 7.34: Apprentice priest wearing a plain red thread and a *rudraksha* bead strung on a red thread as opposed to the gold ones of the head priest

In the array of objects of adornment within the plantation worker community, there are objects such as those described previously, which are generally accepted as jewellery. Their practices of adornment also include the application of cosmetics, mainly made of plant material, such as *kunkuma* and turmeric paste. These are discussed further in the following section.

Raw material usage

The study made it clear that the objects of personal adornment used by the plantation workers are predominantly, but not exclusively made of gold. However, gold is not worn below the knees, because it is considered an important metal that should not be worn on the lower areas of the body. Therefore, anklets (*sarangail kolasu*) and toe rings (*minji*) are always made of silver (Appendix H2). It is evident that the obsession with gold is due to its high monetary value and possession of a large quantity of this metal is a significant marker of the social status of the people within this community. At least 15–20 sovereigns of gold, if

not more, is mandatory as a dowry, which attracts more respect to the bride from her in-laws. Married women wear *tali*, a gold pendant on a yellow colour thread or a gold chain, as a symbol of their marital status. Most of the interlocutors stated that the *tali* design was based on the caste of the wearer (Figure 7.35–Figure 7.37). While, none could describe to me the different designs allocated to each caste, they informed that there are four different designs (Appendix H2).

Figure 7.35: *Tali* designs differed from person to person based on their caste

Figure 7.36: Beads are worn on either side of the *tali*

Figure 7.37: A *tali* of a different design based on her caste

Most of the interviewees denied the possession of large quantities of gold, stating that the array of gold jewellery worn by their ancestors as seen in the photographs they showed me had been sold off during times of economic hardships (Figure 7.38 and Figure 7.39). Several people outside the community who have worked with the plantation workers also stated that the preference for gold within the plantation-worker community is so strong that, despite their humble living conditions, they normally possessed a fair quantity of gold in form of jewellery.

Figure 7.38: Photographic copy of a lady adorned with gold jewellery which it is claimed was sold off during times of economic hardships

Figure 7.39: The first generation of migrants of Dhanapakyam's family adorned with heavy gold jewellery

Silver is another commonly used metal in adornments by the plantation workers but not as widely used as gold. Because of the general notion of gold being superior to silver, the former is not used to make ornaments worn below the knees. Hence, silver is used for adornments such as anklets (Figure 7.40) and toe rings. However, infants are adorned with a silver waistband (*arunakodi*), which may indicate that traditionally all ornaments worn below the waist were made of silver. In the traditional practices of adornment of the Sinhalese community, ornaments from the waist downwards are made of silver, thus *havadiya* that is worn around the waist is traditionally silver. *Ottiyanam*, the waistband used by plantation workers are said to be made of gold or silver. Krishna (2015, 238), who describes jewellery practices of South India, also notes that the waistbelt, *Oddiyanam* (different pronunciation of the same word), was made of either gold or silver. Many of the ornaments she describes in her article are similar to those described by the plantation worker community.

Figure 7.40: A silver anklet that was passed down for generations within one interviewee's family

Apart from gold and silver, glass is also used in the ornaments worn by this community. Six interlocutors (H2.1–H2.5, H2.7) confirmed that married women wore red glass bangles and these were worn daily (Figure 7.41). When they attend a special ceremony they will replace the glass bangles with those of gold. Seven interviewees (H2.1–H2.5, H2.7 and H2.9) described a ritual that took place between the 8th and 9th months of pregnancy. During this occasion, the pregnant woman's relatives visit her and perform a ceremony where she is dressed like a bride and is adorned with glass bangles. All the female relatives present these bangles, which could be of different colours. Glass bangles are also used to adorn new born babies. These are black in colour and they will be worn until the baby is a month old. The baby will then be taken to the temple where these bangles are removed. The practice is associated with warding off the "evil eye" from the baby. Whatever negativity that has come towards the baby is expected to have been absorbed by these black bangles. Destroying them at the temple is symbolic of removing all that negativity from the child at a sacred location.

Figure 7.41: Example of a woman wearing a red coloured glass bangle as a symbol of her marital status

Some of the beads used by the people of this community are also made of glass. New born babies are adorned with a string of black and white beads, which is replaced with the silver *arunakodi* after one month. The string of *karugamani*, which is said to be worn by married women consists of black and red glass beads, despite the name meaning black beads. There are also occasions where the gold beads used to accompany the *tali* are substituted with glass. This may be due to the economic status of the wearer. Kadirai (H2.13) showed her *talikodi* which had two red coloured glass beads on either side of the *tali.* While she was unable to explain the reasons for the use of red colour beads, it is very likely that the economic status of her family resulted in the substitution of gold with glass and the red colour was used probably because of its general association with marriage.

All the participants mentioned that they wear precious stones in their jewellery but the choice of stone is prescribed by the priest at the temple. Based on one's

birth time, and accordingly the astrological profile at the time of birth determines the type of stone that should be worn, as a blessing or as protection against evil as an amulet. None of the interviewees could state exactly which stones they wear during which period. The choice of raw materials in producing objects of personal adornment appear to depend on several conditions. There are strict specifications on the raw materials used for the production of certain ornaments. Any variations are the result of the economic status of the wearer or related to the amuletic qualities attributed to the material.

Use of Plant material

Health and well-being is often the reason for the use of certain plants as raw material. Peter Francis (1984, 194), in discussing the use of plants as ornaments in India, refers to their importance as both ornaments and cosmetics and states that other than their use as adornment, they are important as amulets. In the same article he records a long list of literary references to the use of plants as personal adornment in India. It is only through such literary sources and ethnographic studies, such as the present one, that we are able to understand and make inferences about the use of plant material, such as flowers, seeds, leaves and reed, as personal adornment (Francis 1984, 194-209).

All the interviewees communicated that wearing flowers in their hair was essential for all women. It was mandatory to bathe and wear flowers in the hair when going to the temple or attending a special event (Figure 7.42). Wearing flowers in the hair is also done on a daily basis. This practice; however, is now mostly limited to special occasions. These ladies would wear particular types of flowers in their hair, either jasmine (Sin. *Pichcha*, Tam. *Malligai po,* bot. *Jasminum officinale*) or

firecracker flowers (Tam. *Kahahambaram* bot. *Crossandra infundibuliformis)*, a light orange flower that grows in household gardens. In addition to these flowers, chrysanthemums (Sin. *Kapuru,* bot. *Chrysanthemum indicum*, Tam. *Sewwandi)* and roses are also used during weddings and when visiting the temple. Wearing fresh flowers in the hair is symbolic of purity. Flowers are worn by all women regardless of age. The practice of women wearing flowers in the hair is a common sight in South India as well.

Figure 7.42: Flower-adorned hair of women attending a wedding, white coloured flowers are jasmine while the orange ones are firecracker flowers

Figure 7.43: The bride adorned with jewellery and flowers performing pre-marital rituals

At wedding ceremonies, the bride's hair is plaited and adorned with flowers from top to bottom (Figure 7.43). An elaborate flower arrangement is an essential part of bridal adornment, as a display of the purity of the bride. Use of flower garlands at weddings is also a common practice. The bride and groom adorn each other with a thick floral garland to symbolise their marital knot (Figure 7.44). During the wedding ceremony that I attended, the fathers of the couple also exchanged flower garlands, to symbolize welcoming each other into their respective families (Figure 7.45). This practice is seen widely across Sri Lankan society. Flower garlands are used to welcome guests at functions. It is a common practice throughout the subcontinent.

Figure 7.44: The bride and groom exchanging floral garlands symbolizing the acceptance of each other into their lives

Figure 7.45: The respective fathers of the couple exchanging flower garlands as a gesture of their new family ties

Turmeric (*Curcuma longa)* is a widely used plant material in practices of adornment among the plantation worker community. Its antiseptic properties give it amuletic value. One of the participants (H2.3) informed me that some women wear a piece of turmeric in lieu of the *tali*, due to inauspicious conditions mentioned in their horoscopes. A piece of turmeric is tied on the wrists of both the bride and the groom during pre-marital rituals in order to ward off any evil directed at the couple (Figure 7.46). It is generally accepted that turmeric can absorb any negativity and cleanse the surrounding of the newly-weds.

Another plant used as adornment due to its antiseptic properties is the use of bangles made of margosa leaves (*Azadirachta indica*). According to Sivasami Pakyam (H2.9), during the “bangle adorning ceremony” of pregnant mothers, which is conducted by the woman’s female relatives, the subject would first be adorned with bangles made of margosa leaves. Margosa leaves possess cooling

and antiseptic qualities. Therefore, the pregnant woman is adorned with margosa-leaf bangles to protect her from any germs that could be contracted during the ceremony.

Figure 7.46: A piece of turmeric tied to the wrist and a ring made of reed on the right ring-finger of the groom

Another instance of using plant material for adornment is seen during the “evil-ridding ceremony” prior to the wedding rituals. During this ceremony, where the bride and the groom are individually blessed by the priest, they are adorned with a ring that is made of reed, the bride wearing it on her left ring-finger, the groom on his right (Figure 7.46). One of the interviewees (H2.6) explained that this ring is worn during the wedding ceremony and is then returned to the temple to be burnt with all the “evil eye” or “evil tongue” that it absorbed during the ceremony. It is considered an act of protection for the newly-weds, safeguarding them from any evil directed towards them during the ceremony. The ring is made of a material that could be burnt, as a symbol of destroying all the evil it absorbed.

The seeds of *rudraksha* plants (*Elaeocarpus ganitrus*) are also used for adornment. Only the *aiyars*, who belong to the caste of priests, wear the seed in this community. The seed is worn around their neck, strung on a red, cotton thread or a chain (Figure 7.34). *Rudraksha* seeds are associated with the God Siva, the name itself meaning “Siva’s teardrop”, in Sanskrit. These seeds are believed to possess amuletic powers that generate protective energy from within the wearer. The powerful nature of this seed makes it auspicious and its use is limited to priests who have dedicated themselves to God. The association of this seed with Siva may suggest that the priests of this community are Shivaites but I was unable to get confirmation of this. Nonetheless, the application of *tunnoru* (described below) is a practice that supports this possibility.

Plant materials are also used as cosmetics. Application of turmeric paste is a common practice among the plantation worker community. This paste is applied on the face daily by women, and also prior to any auspicious event. I have noticed women in Tamil Nadu, with a hint of yellowness on their faces due to daily application of turmeric. It was unanimously stated that they would bathe in water mixed with turmeric and sandalwood before going to temple. Three participants mentioned that new born babies are bathed in turmeric water (H2.12, H2.13, H2.18).

Applying *kunkuma* to the forehead is a practice that is prevalent among married women. This is an indication of their marital status (Figure 7.26 andFigure 7.48). Furthermore, a bride decorates her hands with *maratondi* designs, a substance made from henna leaves (Figure 7.47). Occasionally, this practice is carried out by women more widely on special occasions. Another form of application, which

is practiced among the plantation worker community, that is not strictly an adornment is the application of an ashy powder called *tunnoru* (Figure 7.49). This is applied, every morning without age or gender discrimination, after making offerings to the God (Figure 7.49Figure 7.50). *Tunnoru* is not directly made from plant material but by burning cow dung cakes with semi-grown rice grains (*karukkai*) and hay, stacked in the shape of a *sivalinga* on Sivaratri day, to make the ash used as *tunnoru*. This is worn on the forehead in order to bestow God's blessings (Figure 7.51). This is one type of application that could invariably be seen to be worn by every person in the community. In addition, some womenfolk would apply a dot of the same, on their neck and I was informed that it is done by women who have sons, in order to bring blessings to them (H2.4). Dhanapakyam (H2.8) on the other hand, explained that it is done to bring blessings to the entire family not just the sons.

Figure 7.47: Traditionally a bride's hands are decorated with henna designs. Glittery designs stuck on the hands are probably a modern practice, an indication of how adornment practices evolve and change

Figure 7.48: *Kunkuma* that adorns the forehead of married women

Figure 7.49: A plate of *tunnoru* kept at the place of worship

Figure 7.50: Area of worship in the house of a plantation worker with a plate of *tunnoru* to be applied after morning prayers

Figure 7.51: Tunnoru applied on the forehead after daily prayers to bestow god's blessings

7.2.8 Discussion

This ethnographic study of the traditional practices of personal adornment among the descendants of immigrant South Indian plantation workers has helped to reveal important information. It was expected that this study gives us an understanding of migratory routes and patterns, as well as traditional practices of adornment and their associated values and meanings.

South Indians migrated to Sri Lanka during the British period, as plantation workers, either by force or having been induced by the Colonial rulers. The ethnographic study revealed different inter-regional contacts that were maintained by the community. Information from one of the interviwees confirmed that the ancestors of the present-day plantation community migrated to Sri Lanka via the 'North Road' (Wesumperuma 1986, 76), a route that was common in South Indian migration in the Early Historic Period. This is further supported by the brief ethnographic study carried out by Bohingamuwa (2017, 353) at Alagankulam. He came in contact with a community of Sri Lankan origin, who had settled down in Alagakulam for generations. They freely travelled by boat between the two countries until very recently, and these contacts were beyond the authorized and monitored migrations. This resonates with the migrations of the South Indian plantation workers and their families. It is possible to extrapolate such interactions to the past societies.

It was seen among the plantation-worker community that, even after several generations since the initial migrants, they maintain family ties with their ancestral regions, either through marriage connections, trade or regular correspondence. They continued to import goods such as *kunkuma* and *tunnoru* from South India

till recent times, through itinerant traders who travelled between the two countries. The continued contacts not only paved the way for human migration but also to transfer of knowledge, rituals and ideologies. Cultural practices and rituals were carried forward, retaining traditions, and obviously new customs were added and mixed with the traditional ones. These scenarios led to shared cultural traits being evident between the two regions, with certain aspects still being distinctive to each area. They allow us to envisage the possible variety of migration patterns involving small-scale trade in requested items and family-level movements of people that may have operated in the past.

Due to the large temporal gap between this community and those of the Early and Middle Historic period, direct analogies cannot be made. However, despite changes in raw materials, designs, and fashion trends, traditional practices are often preserved over generations. Beads are famous for their ubiquitous nature in the archaeological record. In both Sri Lanka and South India beads are one of the most numerous artefacts recovered from the Early–Middle Historic periods, in particular. Nevertheless, this ethnographic study demonstrated that gold ornaments were far more sought after, while beads were not used in abundance. The practices of personal adornment among the plantation workers are a display of wealth. Gold being a valuable metal, is the prime raw material used to produce ornaments. These are occasionally replaced by other materials due to the financial status of the wearer.

The assemblage of objects of personal adornment used by this community is rather different from that of the archaeological record. Beads that are the most common in the archaeological record have a limited use within the plantation

community. It is possible that over the years the use of beads went out of fashion. Furthermore, Sri Lanka having been a main centre of Indo-Pacific Bead production in the Indian Ocean, has been left with no trace of traditional bead making in any part of the country. On the other hand, the excessive use of gold in the present day context is not reflected in the archaeological record. The findings from excavations, such as those at Brahmagiri (Wheeler 1948, 188–194) and Kodumanal (Kelly 2013, 213, 215–216; The Hindu 2018), indicate that gold was widely used by ancient societies and the occasional gold beads and fragments from the assemblages I studied are also indications that gold was not completely absent. But it is probable that due to the valuable nature of this metal as well as reusability, gold ornaments were better curated and passed down from generation to generation, and when damaged or no longer in use, they were melted down and remade into different ornaments, thus, limiting their occurrence in the archaeological record.

This study has also revealed that the use of plant material in adornments is common among the plantation worker community. The properties that plants possess provide them with amuletic values for which they are used on different occasions. Plant materials used as adornment are rare in the archaeological record due to their bio-deterioration. Therefore, the information provided by this study reveals that, despite being absent in the archaeological record, plant-based adornment is likely to have been a major component of adornment practices in past societies.

The traditional practices of personal adornment of the plantation worker community makes it evident that these practices are not carried out simply to

adorn one's self. They are expressions of wealth and status, gender, age and marital status. They also distinguish caste as well as professional hierarchies, as in the case of the priests. These practices also reflect associated symbolic values, as well as talismanic qualities given by the people. These practices survive down the generations, even when the people migrate to new cultural environments. It is evident that adornment is not limited to externally attached ornaments but also includes alterations carried out on the body. In the present study, this involves the application of different substances. The common use of floral ornaments is also an important observation. Both of these practices of adornment are rarely visible in the archaeology record. Thus, it is an excellent reminder of the limitations of the archaeological record.

The aim of this chapter was to explore alternative approaches to adornment practices to supplement the archaeological datasets. What arises from this chapter is a greater appreciation of the diverse range of expressions of personal adornment and the values and meanings associated with these practices. They extend significantly beyond the material culture seen in the archaeological record.

CHAPTER 8:

CONCLUSIONS

8.1 Introduction

The interactions between Sri Lanka and her closest neighbour, South India, have been widely discussed for decades, but the majority of these discussions have been based on the evidence from historical sources and have focussed on large-scale state-mandated contacts. Therefore, throughout this thesis, I have attempted to identify personal and community-level interactions between the two regions. Objects and practices of adornment carry intimate and personal signatures that exhibit individuality and social identity. Thus, the rationale of this study was that, by observing patterns related to adornment, interpersonal communications that existed between Sri Lanka and South India, underlying the diplomatic contacts, could be identified. In that sense this study is a departure from the traditional perspectives of such relations, which have been largely based on historical sources.

In order to arrive at such understandings, I have analysed archaeological material related to personal adornment, primarily beads, recovered from seven different sites in Sri Lanka and South India. Data was extracted according to various criteria to observe patterns across sites and time (Chapter 3.2). Inter-site and intra-site comparisons were made in order to understand broader patterns of interaction between the two regions (Chapters 4, 5 and 6). An ethnographic study, was undertaken in order to supplement the archaeological data and to gain a better understanding of adornment practices, as well as the possible symbolism and values associated with them (Chapter 7). No attempts were made to

establish any direct historical analogies due to the time difference between the archaeological material and the ethno-archaeological sample studied. The study was mainly aimed at gaining insights that would aid in interpreting archaeological data. In this chapter, the research questions stated at the beginning of the thesis (Chapter 1.4) are revisited and attempts are made to seek answers to them using the data and the discussions presented in the preceding chapters. It is expected that by answering these research questions, the objectives of the thesis can be achieved.

8.2 Significance of objects of adornment as an archaeological source

Sri Lanka is one of the very few countries in South Asia that has several historical sources that narrates its continuous history from as early as the 6th century BC. Therefore, more often than not, these sources have dominated studies of the history and archaeology of the island. Similarly, South Indian Sangam literature has been a strong source of information on the history of the region. The historical sources of both regions as well as other foreign sources (Chapter 2.3.1), have helped us to understand the nature of contact between Sri Lanka and South India. Although immensely valuable in the reconstruction of history, literary sources are subject to author bias and compromise authenticity. In addition, as mentioned in the first two chapters of the thesis, these sources mainly focus on state-level communication and describe state-mandated migrations and marriages, invasions and military alliances, religious and diplomatic contact and trade networks (Chapter 2.5).

Archaeological sources, including inscriptions, coins, ceramics and beads as well as art and architecture, have been important as reliable sources of the past

(Chapter 2.3.2). These sources can reinforce the information related by the historical sources and supplement them. Despite being crucial for understanding the past, archaeological sources on their own cannot always be interpreted accurately. Therefore, both historical and ethnographic data is required to supplement as well as to complement the archaeological sources. For example, the assemblages I studied indicated that pearls were recovered only in trade ports bordering the pearl banks of the Gulf of Mannar and reliquaries from religious sites, indicating that pearls were exclusively religious offerings that were exchanged through port sites (Chapter 6.1.3). However, the *Mahavamsa* reports that pearls were among royal gifts and the *Silappadikaram* (1920) narrates how the anklet of the protagonist, Kannagi, contained pearls inside it, implying they were also used as personal adornments. Perishable raw materials are rarely represented in the archaeological record. Therefore, mainly objects of adornment, such as beads, bangles and rings, made of durable raw materials are predominant in the assemblages studied. However, the ethnographic study indicated that a wide range of plant materials are used as adornment. In addition, the ethnographic study also revealed how objects of adornment are used and their associated symbolic meanings, a core element of personal adornment that is not easy to determine from the artefacts alone.

In order to gain a comprehensive understanding of past societies, it is important to integrate data from literary sources, archaeological material culture and ethnographic studies. In the present research, my aim was to understand more commonplace interactions between Sri Lanka and South India. The literary sources provide information mostly on state-level contact but the archaeological material culture of personal adornment indicated that underlying these diplomatic

contacts, there were patterns and preferences of personal adornment revealing closer interaction on a personal level.

Unlike other categories of artefacts, objects of adornment are expressions of individual and social identities, behaviours, practices and preferences. Across cultures around the world, both in the past and the present, adornment practices express social status, power, wealth, gender, ethnic or group identity, ritualistic beliefs, symbolic meanings and aesthetic tastes (Chapter 7). Such expressions can be observed in the archaeological record, mostly in burial contexts because the practices associated with burial sites often represent the individuality and the social roles of the deceased (Binford 1971).

My analysis of the beads from Ibbankatuwa as well as that of Karunaratne (2010), and Kelly's (2013) analysis of the beads from burial sites in Kodumanal, for example, clearly indicate a preference for beads made of imported raw materials (Chapter 6.1.2). The common occurrence of black bangles, though in limited quantities, indicate that these bangles had associated symbolic values and a ritualistic purpose (Chapter 6.3.2). The results of my analysis indicated that site-specific colour patterns could be observed and that these patterns changed over time (Chapter 6.3.1). Such patterns probably indicate the colour preferences of the inhabitants and how these preferences change over time and across regions. The studies indicated similar patterns in choices of shapes across time and sites. Disc beads were recovered in comparatively larger quantities during the first centuries BC and declined towards the Common Era, whereas circular cylinders and circular oblates gained popularity towards the early centuries of AD (Chapter 6.2.2).

Objects of personal adornment also reveal possible cultural choices. Bohingamuwa (2017, 402–403) argued that the near-absence of IPBs at Kantarodai, where RDBs were recovered in large quantities, is an indication of a cultural choice made by the inhabitants to favour RDBs rather than IPBs. I have argued in support of this, based on my findings from the assemblages I studied, especially at Anuradhapura Gedige. IPBs were accessible to the inhabitants of Kantarodai, but the assemblage contained only a single bead, and suggests they chose not to use IPBs (Chapter 6.4). Similar arguments were made regarding the shell bangles at Anuradhapura and Kantarodai and the lapis lazuli at Alagankulam, which seemingly were not so popular (Chapters 6.1.2 and 6.1.3). Favouring certain trends, while rejecting others, indicate site-specific cultural choices and fashion preferences at a collective level. The data suggests that these are not chance preferences, but conscious choices.

8.3 Rethinking Sri Lanka-South India Interaction

According to the ethnographic study carried out among the plantation worker community, the information revealed about the inter-regional travel and contact of previous generations sheds light on possible migrations that may have occurred in ancient times. The plantation workers from South India first travelled to the island of Sri Lanka by crossing the Palk Straight (Wesumperuma 1986, 76; Figures Figure 7.14Figure 7.15). Ethnographic work at Alagankulam in India by Bohingamuwa (2017, 383) reported similar migrations. The same route taken by the South Indian plantation worker migrants who arrived in Sri Lanka and those from Sri Lanka who travelled and settled in Alagankulam, is likely to have continued as the main access route from as early as the Early Historic Period or

even before. Dhanushkodi, off Alagankulam and Talaimannar, off Mantai, are the two closest points of contact between South India and Sri Lanka and this shallow strip of sea would have been constantly crossed by the inhabitants of both regions.

The participants in the ethnographic study informed me that their ancestors visited Sri Lanka for textile business prior to migrating as plantation workers (Chapter 7.2.4). In addition, some of their ancestors arrived on the island for the purpose of marriage. There were marriage connections with descendants of South Indian migrants who were born and brought up in Sri Lanka, or those who migrated not too long ago. Occasionally, marital connections took place between the migrants and the Sinhalese. Similarly, some of the descendants born in Sri Lanka migrated to South India, in order to marry those from South India (Chapter 7.1.4). Historically, marital connections with South India albeit elite are evident from the time of Prince Vijaya, who is said to have married a Pandyan princess. But the ethnographic study helps us make inferences about how such marital contacts may have occurred at all levels of society of the two regions. Despite these South Indian migrants being indentured labourers, the regular movement between the two regions helped them to not become isolated from cultural and ethnic origins and to maintain cultural links with their origins.

Apart from marital connections, most participants informed me that they have close contact with their relatives in South India, via correspondence and some of them visit their ancestral homes across the shores. They continue to follow the practices of adornment as well as culinary and religious practices that were followed by the earlier generations in their home territories. These practices have

undergone changes, due to adapting to the new environment and circumstances as well as the adoption of new practices. One of the interviewees described how strict adherence to adornment practices was expected when they visited their South Indian relatives and their relaxed practices were frowned upon. Stricter adherence to these practices are seen on special occasions, such as weddings and funerals, but everyday practices seem to have become more relaxed. The preservation of practices of adornment over generations took place due to such cultural expectations. Similarly, it is likely that in ancient times, migrants carried with them practices of adornment from their own community and continued to practice them in their new place of settlement. Their practices may have impacted on the other communities and vice versa, therefore, shared cultural traits are evident.

Contact with ancestral roots is evident from the importation of goods from South India, especially for ritualistic purposes. Some people still import special soil to make statues of the gods they worship, from their land of ancestry. Similarly, *kunkuma* and *tunnoru* are bought from traders who frequent the two regions. The participants revealed that these traders brought those goods from South India and that was the only source of acquisition for them. The frequent visits by these traders indicate that they could travel between the countries freely until recently, and also that such trading did not need state permission/ intervention or institutionalization. These traders, called *mani badu velenda*, brought miscellaneous small items from South India to trade in Sri Lanka and probably took back small items of Sri Lankan goods to be sold in South India. We can envisage that alongside the historically recorded diplomatic elite contacts, there were individuals or small groups who travelled between the regions carrying small

items for trade and exchange. It is also possible that some of the beads, such as collar beads recovered in limited numbers, may have come with such traders, possibly as bespoke orders.

Similar to the plantation worker community, the Paratava community in Sri Lanka provides an example of human migration between the two regions (Chapter 2.5.1). This South Indian community commuted between the two regions frequently for the purpose of pearl fishing and trading. As a result, a Paratava community migrated to the island and has continued to live in Sri Lanka for generations. They have assimilated into the wider Sri Lankan community while preserving their own cultural practices (Croos 2017). A community such as the Paratavas, who are historically referred to in the Early Historic Period (Seneviratne 1985b; Pushparatnam 2001; Bohingamuwa 2017, 465–466), still exists independently on the island and provide important evidence of social interaction between the two regions.

Migration did not take place only from South India to Sri Lanka, and ethnographic studies show evidence of Sri Lankan migration. The brief ethnographic study carried out by Bohingamuwa (2017, 353) at Alagankulam revealed that there is a community of Sri Lankan migrants who, for several generations, have been crossing the Palk Strait and settling in the area. They claimed that they migrated as a result of fishing and trading expeditions. With recent migration regulations between the two countries, such free migration has stopped but the existence of such a community in the South Indian town of Alagankulam, who can trace their ancestry to Sri Lanka is significant and provides a model for past movement of people.

Similarly, the legendary Sri Lankan origin of the Ezhava community in Kerala is important. As detailed in Chapter 2, the story of their origins is limited to legends. But the existence of such legends is significant, because it suggests that such migration was a possibility and that people were aware of it. During the conversations I had during my field studies in Kerala it was revealed that the martial art form in Kerala, called *Kalaripayattu* shows strong affiliation with *Angampora*, a martial art form practiced in Sri Lanka. The fact that it is the Chekavas, a sub group of Theeyas (the term used for Ezhavas of northern Kerala), who mastered this art form has led people in Kerala to further accept the Sri Lankan origin story of the Ezhavas. In addition, *putta*, a food item made of steamed rice flour and coconut, akin to *pittu* in Sri Lanka, is said to have been a dish introduced to Kerala by the Theeyas. Ezhavas, were originally Buddhists and their original occupations included toddy tapping, which coincides with the legend that four men who were sent by the Sri Lankan king to maintain a coconut grove in Kerala were the forefathers of the community. This is just some of the noteworthy information mentioned about tracing the Ezhavas' origins back to Sri Lanka. While there is scope for a study in its own right, these snippets of information help our understanding of migratory patterns between the two regions. These examples indicate that such migrations took place till very recent times, and we can expect them from as early as the Early Historic Period, or even before. Fluid and regular movement between the two regions as indicated by these examples is a good model for understanding such movement in archaeological record.

According to Bohingamuwa (2017, 299) some of the potters in Sri Lanka can trace their origins to South India. The study of the black pottery tradition carried

out by Karunathilake *et al.* (2010) also provides evidence of continuous pottery traditions in Sri Lanka that originated in South India. These examples are not only evidence of human migration, but also of technology transfers (Bohingamuwa 2017, 332, 391, 508). It was widely accepted that Indo-Pacific Beads were first produced at Arikamedu and the production technology then diffused to Mantai and Southeast Asia (Francis 2002; 2004; 2013a). Carswell further argues that after the fall of Anuradhapura as a result of the Chola attack in AD 993, the IPB makers of Mantai moved to Nagapattinam, a site south of Arikamedu, bringing an end to the bead industry in Sri Lanka (Carswell 1983, 85). However, based on recent research, it has been argued that Mantai continued to be a flourishing trade port even after the Chola invasion (Bohingamuwa 2017, 7, 524; 2018, 38–39).

Furthermore, arguments have been made that there is no evidence of bead-making in Nagapattinam in India and the only possible place of IPB production using the same technology as that used in Arikamedu is Papanaidupet. Nonetheless, I argue in this thesis, based on the arguments made by Kanungo (2016, 12), Coningham (2006, 357) and Bohingamuwa (2017, 524) that Arikamedu may not have been the first IPB production site in the Indian Ocean, and based on the evidence from the AG assemblage, Anuradhapura is a strong contender for the origin of IPBs (Chapter 6.4). While the place of origin of IPBs is still debatable, the technology transfer, either from South India to Sri Lanka or vice versa, is evident.

Both Karunaratne (2010, 129) and Bohingamuwa (2017, 307; 530) have argued that although ceramics such as BRW were first imported from India, the same

production techniques were then adopted by local potters, as a result of technology transfers. These local craftspeople probably also developed other types of ceramics based on the adopted techniques. Similarly, Francis claims (2002, 42; 2013, 353) that collar beads probably originated in Arikamedu and those recovered from Mantai were imported from India. Bohingamuwa (2017, 266–267) also assigns Indian origin to the collar beads recovered from his Mantai assemblage, but states that the half-processed beads may indicate local production as a result of technology transfer. These arguments and examples illustrate the nature of interactions between the two regions. Just as ceramic evidence reveals that production technology was adopted to produce new wares, the Stupa beads, which are argued to have originated in Sri Lanka (Hannibal-Deraniyagala 2013, 372; Bohingamuwa 2017, 417), as well as the indented collar beads recovered from Anuradhapura Gedige, are examples of the adoption of South Indian technology used to produce ornaments that are distinct from the original.

Another significant feature in adornment practices between the two countries is the presence of characteristics distinct to each region. Etched carnelian beads, which have a strong affiliation with Megalithic burial sites in South India, are absent in Sri Lanka. Interestingly, the features of the Megalithic Period were adopted almost completely by Sri Lankan communities, except etched carnelians. Carnelian was a popular raw material used for adornment production on the island, being both imported as finished products and raw material for local production. However, it is intriguing that the well-established etching technique was not adopted, nor were any such beads imported. Similarly, Stupa beads have not been recovered at archaeological sites in India so far, indicating they were

absent in the region. Collar beads, the origin of which is attributed to Arikamedu, are the prototypes of Stupa beads. This may indicate that, while certain cultural practices were absorbed, others were rejected in cultural transmission.

Trade was an important part of Sri Lanka-South India interaction. Information from literary sources, as well as inscriptions, indicate strong trade contacts involving powerful trade guilds. The *Mahavamsa* refers to South Indian horse traders in Sri Lanka (*Mv*:XXI.10–12; *Mv*:LV.13–33), who appear to be politically influential because Sena and Guttika, who were the sons of a horse trader, were able to topple the King and ascend to the throne. Another horse trader was instrumental in informing the Cholas about the political instability in the island and encouraging an attack. This information also indicates that there was constant attention in South India to the political situation of island and frequently Sri Lanka was part of their power struggles.

Interestingly, South Indians appear to be the mediators of the horse trade in Sri Lanka, and the horses were originally from either Sind, Persia or Oman (Prickett 1990, 168; 2003a, 53). Similarly, it is likely that South Indian traders were mediators for some objects of personal adornment and raw material required for their production. Lapis lazuli was likely to have been imported to Sri Lanka via South India, probably from ports such as Muziris or even Arikamedu. The most popular port of contact, Alagankulam, being the closest to the island, does not seem to have traded in lapis lazuli (Chapter 6.1.2). In addition, evidence of the local production of carnelian beads indicates that the raw material was imported. While Thailand may be one of the suppliers of carnelian (Theunissan *et al.* 2001; cf. Carter 2013), it is obvious that some of the raw materials, if not the majority,

were traded with the island via South India, Alagankulam specifically. The discovery of potsherds bearings Sri Lankan *Brahmi* script from Alagankulam enforces the argument (Sridhar 2005; Mahadevan 1996a, 55–65).

The data gathered during the present research provides evidence of goods related to personal adornment being imported to South Indian sites from Sri Lanka. The black glass bangles and hessonite garnets recovered from Arikamedu, as claimed by Francis (2002, 240-note 18; 2004, 481), as well as the limited number of yellow IPBs and RDBs discovered from South Indian sites (Chapters 6.2.1, 6.3.1 and 6.4) are such examples. It is possible that, before the establishment of strong trade guilds in the early centuries of the Common Era, personal level exchanges, or small-scale individual trading took place, as evident from the limited number of carnelian and agate beads recovered from Kantarodai.

Similarities in the patterns of adornment between South India and northern parts of Sri Lanka are greater than those between the north and the south of the island. Such observations were also previously made by Bohingamuwa (2017, 383). His observations, however, were based on the similarity of artefacts recovered from Alagankulam, Mantai and Kantarodai. My conclusions were made based on a larger sample of comparable datasets from Alagankulam in South India and Mantai, Kantarodai, Anuradhapura Gedige and Kirinda. The intensity of interaction is also stronger with the northern parts of the island than with the south. Therefore, geographical proximity has had a strong impact on the similar practices and objects of adornment in South India and northern parts of the island. Apart from the patterns related to circular oblates and circular cylinders (Chapter 6.2.2) and the diaphaneity of IPBs (Chapter 6.4.1), distinctive north-

south division of practices of adornment are not clearly evident on the island. However, more comparable datasets from sites in southern Sri Lanka may illustrate patterns that would reveal further information.

8.4 Notable reflections

This study has brought to light some significant points that should be drawn to attention. More often than not, objects of personal adornment, beads in particular, are recorded as minor antiquities or small finds in excavation reports. It is almost as if due to their small size, they are described only briefly. This leads to the loss of vital data relating to these artefacts by the time specialist analysis takes place. Bead studies in South Asia in particular, with the exception of a few, have focussed on the provenance, use of raw materials, production techniques and typology. Information regarding these criteria is important for the understanding of assemblages, but the human actors associated with these artefacts are often neglected. Francis (2002; 2004), refers to the Pandukal community who he claims were probably involved in bead production at Arikamedu. Kenoyer and his colleagues have conducted ethnographic studies among the stone bead-makers of Khambhat in Gujarat (Kenoyer *et al.* 1991; 1994). Kelly (2013) has discussed social change by studying craft specialization and the technology of bead production. Abraham (2013) discusses how craft production represents the socio-economic organization of society. Bohingamuwa refers to actors involved in bead production and trade and also refers to colour patterns and cultural choices (Bohingamuwa 2017, 222–295, 389–437). However, none of these studies have focussed on beads and other objects of adornment as evidence of the practices and preferences of the inhabitants of a site or region. An important observation made in this research is that the patterns emerging from assemblages of

adornment reveals personal or social choices made by the wearers and users of these ornaments, in addition to information about the makers and even traders.

The second important point revealed through this research is the diversity of objects and practices of adornment. The archaeological record does not always reveal the complete picture of the past societies to which they belong. Objects of adornment made of plant materials are rare in excavated assemblages due to their non-durability. However, the ethnographic study that I undertook indicated that plant based materials, such as flowers, leaves, seeds and roots, are commonly used as adornment (Chapter 7.2). Apart from Kirindi seeds, no plant materials were found in the assemblages studied and these seeds were restricted to the assemblages from Kodumanal, Alagankulam and Anuradhapura Gedige. In addition, adornments made of plant materials are used in a range of practices. Similarly, valuable metals, such as gold, are commonly used in present day societies, according to the ethnographic study, but are represented in limited quantities in the archaeological record. It is evident from historical records and artistic representations that valuable metals, as well as precious stones and pearls were widely used in objects of adornment. The wearers or possessors of ornaments made of such valuable raw materials probably took greater care of them than those made of raw materials that were ranked as lower in value. As a result, ornaments made of valuable raw materials are under-represented in the archaeological record, but it should not therefore be concluded that these raw materials were less sought after in past societies.

Adornment practices and their associated values are not represented so evidently in the archaeological record, therefore, through the information

gathered from ethnographic studies, inferences can be made about the archaeological findings. The symbolism associated with black beads and bangles was evident from the ethnographic study (Chapter 7.2.5). This revelation led me to conclude that the common occurrence of black beads and bangles throughout the assemblages studied, although in limited quantities, may be due to their associated symbolism. Practices like these may have continued through generations and centuries.

Finding alternative means of interpreting material culture and revealing something previously unknown are probably the biggest challenges for archaeologists. This research used objects of personal adornment for identifying possible interpersonal contacts that could have existed between Sri Lankan and South India in the past. Despite the limitations encountered during this research, the results have indicated the potential of alternative approaches to understand interactions between Sri Lanka and South India.

8.5 Directions for future research

The present research has revealed that through the study of the material culture of personal adornment, integrated with ethnographic studies and critical re-reading of historical sources, it is possible to delineate the personal-level interactions that existed between the general populace of Sri Lanka and South India. However, in order to strengthen and reinforce the findings of my research, it is essential to study larger assemblages from other archaeological sites in the region and gather similar datasets. It is only by gathering comparable data, including stratigraphic and contextual details, as well as accurate dating, that shared cultural traits can be identified across time and space. It is mandatory,

therefore, that objects of adornment recovered from each site are allocated the same importance as other artefacts and are well recorded and curated for future analysis. The lack of certain crucial data in some of the assemblages studied was the greatest challenge faced during this research. Although I have managed to mitigate these drawbacks, as far as feasible within this study, it is undeniable that the information that can be revealed through larger datasets has great potential in better understanding inter-regional contacts at a personal level, underlying the state-mandated interactions.

Ethnographic studies with a larger sample could reveal information that would provide further insights into people-to-people interactions between the two regions, as well as meanings and symbolism associated with practices of adornment. Studies are already being carried out, in collaboration with Dr. Bohingamuwa, on Sri Lankan garnets and their apparent widespread dispersal. Scientific analysis of beads, including SEM and LA-ICP-MS techniques, could reveal further information about their production techniques and provenance. Such studies would enhance the understanding of inter-regional contacts.