Middle Cypriot White Painted Ware: A Study of Pottery Production and Distribution in Middle Bronze Age Cyprus.

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Abstract

White Painted Ware, the most identifiable of pottery types of the Middle Bronze Age on Cyprus, has been studied by scholars either with the view to creating chronological typologies or to tracing trade routes. Little attention has been paid to the technology and social organization of production of this pottery. This thesis is concerned with the potters as much as with the pottery. The production sequence is examined from clay selection through to decoration of the vessels. An attempt is made to isolate production centres with unique methods of vessel construction as well as preferences for certain shapes and decorative schemes. Using petrographic analysis, different fabrics are isolated within the ware, and these are in turn related to the groups of vessels created based on style. Similar fabrics are used in multiple sites and most sites were found to have used multiple fabrics to create pottery that is considered to be part of the White Painted ware group. Beneath the major differences in styles between sites are several minor variations in construction method and decoration that are more likely to represent choices made by individual potters or small groups of potters working together. Based on vessel shape and decoration, seven distinct production centres appear to have been manufacturing White Painted ware on Cyprus over the course of the Middle Bronze Age. These were not operating simultaneously, but appear to have been active at the time that their regions were most prosperous, linking the production and use of White Painted ware with political and economic power.
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Chapter 1

Introduction

1.1 The Cypriot Middle Bronze Age

The Middle Bronze Age of Cyprus begins and ends with major changes in material culture, one often explained by migration, the other having the appearance of a revolution. Much scholarly attention has been focused on the great changes in architecture, pottery and metalwork at the transition from the Chalcolithic Period to the Early Bronze Age, and also on the political and economic developments of the Late Bronze Age, but very little attention has been paid to the internal social developments during the Middle Bronze Age. This is partly due to the approach that many scholars take when studying Cyprus, considering the changes in material culture to have been stimulated by external contacts. Some scholars believe that the increased demand for copper, both by native élites, and by foreign powers required some sort of centralized control of the copper deposits, whether the foreign interest acted as a catalyst towards the development of a hierarchy of power (Knapp, 1993:95; 1996:90-95; 2008:1-3), or whether the power differences arose through the creation of agricultural surplus and the use of copper by native élites stimulated the foreign interest (Manning, 1993:35). It seems only natural, then, that scholars wishing to understand the rise of Cyprus would examine the developments in copper production. Such an approach, however, focuses only on the élite members of society and misses some of the social developments that gave Cyprus its unique identity.

At the beginning of the Early Bronze Age the material culture of Cyprus changed perceptibly. The round stone houses of the Chalcolithic period were replaced by rectilinear, multi-roomed, mud-brick structures (Knapp 2008:122-5), the plough appeared together with the use of oxen for traction, as seen in the Red Polished ware ploughing scene from the cemetery of Vounous, and a new kind of dark on light pottery also began to be made towards the end of this period. This light coloured pottery painted with red paint has been called “White Painted Philia” ware after the site where it originated. The White Painted pottery had new shapes and new motifs and does not appear to have been a continuation of the earlier Red-on-White ware of the Chalcolithic.¹ All

¹ Compare Figures 1-7 with Figures 264-268 and 290-292 from Vounous.
of these innovations caused scholars to look to other lands, particularly Anatolia, for invaders or migrants (Dikaios, 1962:22; Catling, 1966:25; Karageorghis, 1973) who brought the secondary products revolution to Cyprus, as well as other aspects of their material culture such as architecture and pottery. Knapp suggests that newcomers from Anatolia merged with the local population to create a third cultural group whose material culture is neither Anatolian nor Cypriot (Knapp, 2008:355-6). This fusion, however, does not appear to have been island-wide. The ceramics of the Middle Bronze Age appear to have developed out of the Philia repertory in the north, while in the south the Red Polished ware developed from the earlier Chalcolithic and Neolithic styles (Peltenburg, 1996:24).

The next major change in Cypriot material culture occurred at the beginning of the Late Bronze Age when people from some of the towns on Cyprus began exporting copper on a large scale, and receiving foreign exotica in exchange. Monumental architecture appeared at such coastal sites as Enkomi and Hala Sultan Tekke, and inland at places such as Alassa and Kalavassos Ayios Dhimitrios. There is evidence of writing at this time also, in the form of a linear script known as Cypro-Minoan due to its resemblance to Cretan Linear A. There was an increase in population and a shift in settlement patterns towards the coast. There were also changes in the ceramic repertory with new types (Base Ring, White Slip) gradually replacing the main wares of the Middle Bronze Age (Steel, 2004:149-86). These new styles, however, can be clearly seen to have developed out of the White Painted ware repertory, particularly at Morphou Toumba tou Skourou.²

The missing chapter in the story of the social, political and economic development of Cyprus during the Bronze Age is the transformation of society during the Middle Bronze Age. There are two main reasons for the lack of scholarly interest in this period: 1) the lack of stratified deposits from good excavations in the north of the island where the greatest innovation occurred, and 2) the focus on metal production and foreign trade. White Painted ware was produced in the parts of the island that were most progressive during the Middle Bronze Age. Innovations in agriculture, such as the introduction of the plough, made their first appearances on the north coast and in the river valleys. The Philia culture, which was thought to be either an import from

² This is discussed more fully in Chapter 5. White Slip technique is related to White Painted, while some of the shapes of both White Slip (wishbone handles) and Base Ring (tankards) wares appear in the White Painted wares at Toumba tou Skourou.
Anatolia or a fusion of Anatolian and native Cypriot culture, originated in the Ovgos valley and spread through the Mesaoria and up to the north coast. Although in many places, the dominant ceramic type was Red Polished ware, the White Painted ware with its limited repertory of shapes may have been associated with the more powerful members of society. Certainly, it is present in all of the major trading centres of the transitional period from the end of the Middle Bronze Age and the beginning of the Late Bronze Age. If the distribution of this unique pottery and the relationship between its centres of manufacture and the sites where it has been found can be established, perhaps more can be understood about the complex relationships and interconnectivity of sites in the Middle Bronze Age.

White Painted Wares have not been ignored by scholars, but the work that has been done with them consists mainly of stylistic analyses in order to understand regional variation (Frankel 1974; 1981, Herscher 1991) or to isolate specific production groups or artists (Maguire 1990, Herscher 1972). Although White Painted (Philia) ware is acknowledged, there has been no attempt to date to try to trace the development of the technology of this ware from White Painted I through to the later eastern styles that are traded off the island in the early part of the Late Bronze Age. Åström’s typology begins with White Painted II, which is taken as the marker of the beginning of the Middle Bronze Age (Åström, 1957: 206). Restricted in its distribution to the north and east of the Troodos Massif, White Painted ware is useful for studying intra-island trade patterns. During the Middle Bronze Age, production centres for this ware shifted from the north coast to the Troodos foothills, then to the east and northwest coasts. The main trading port during the Early Bronze Age, when the Anatolian migrants were thought to have entered Cyprus, was likely Lapithos, Vounous, or Vasilia, all on the north coast. The main trading ports during the Late Bronze Age when Cyprus was at its political zenith were Enkomi on the east coast and Toumba tou Skourou in the northwest. White Painted ware vessels, decorated in eastern Cypriot styles, have been found in the Levant and Egypt where Cyprus probably traded the bulk of its copper (Maguire, 1990; 2009b; 1991:64). At Toumba tou Skourou there is evidence of trade

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3 Such an endeavour, however, is beyond the scope of this thesis. Samuelson did examine the connections between WP I and earlier Red-on-White wares, but did not consider any of the later White Painted ware.

4 For the purpose of this thesis, a production centre is a location where White Painted ware was produced. It is made up of numerous production groups (small groups of contemporary potters and painters working together) and spans long periods of time, often much greater than the lifetime of any production group. The production centre shows preferences for certain motifs and designs that are common to the production groups at that centre.
with the Aegean, although the Cypriot pottery found in Greece is from the Late Bronze Age (Vermeule and Wolsky, 1990:381-385; figs 167-178). No other classes of Cypriot pottery of the Middle Bronze age have been found outside of the island, perhaps suggesting that the White Painted Ware had some special connection to the élite members of society. If White Painted Ware was used for élite display, as its presence in low quantities wherever it is found, and its burial in wealthy tombs would suggest, then perhaps by studying its production, consumption and deposition patterns it may be possible to begin to understand how some sites became more powerful over time, and how an élite class gaining their influence through the control of copper and trade rose to prominence during the course of the Middle Bronze Age. In order to approach such a question from the perspective of ceramic production, it is necessary to start with the potter and try to reconstruct the society in which he or she was embedded.

1.2 General Overview
This thesis examines the technology and social organization of production of White Painted ware in the Middle Bronze Age on Cyprus. White Painted ware was in use from the end of the Early Bronze Age to the beginning of the Late Bronze Age (ECIII-LCI/c. 1900-1400 BCE). This type of pottery was chosen because it is easily identifiable both in sherd form and as whole vessels, and because there are obvious differences in both shape and decoration across the island. These differences are due in part to regional preferences, and also to chronological differences, but there is another reason which is often overlooked: the potter’s act of creation. The potter may experiment with different types of clay, different shapes of spout, handle or other aspects of the vessel, and with different motifs or combinations of motifs. Different potters may have more or less skill than others, perhaps due to their stage of physical or mental development or to the amount of practice they have had. The potter’s choices of shapes and decorations are also limited and controlled to some extent by external factors such as the physical properties of the clay or environment, the demands of the consumer, the use for which the pottery is made, and even the observation of the work of other potters that influences the potter’s mental template of what makes a pot beautiful or useful.

Previous studies of Cypriot ceramics have been mainly concerned with answering the questions when and where. For this reason, many of these studies result in the creation of typologies, while others result in the performance of several physical and chemical analyses to try to find the
provenance of the artefacts. Much can be learned about ceramic production by these means, but the emphasis still remains on the finished vessel as it stands in the laboratory or museum. Explanations of its current state take into consideration its entire lifespan, but the approach is from the present looking backward (van der Leeuw, 2008:218). The potter’s role in the creation of the artefact is barely considered. Instead, the approach taken in this thesis considers the potter and his or her role in bringing the vessel into existence. Following the production sequence, otherwise known as the chaîne opératoire, the choices available to the potter as well as those that were made are considered.

Chapter 2 discusses the development of Cypriot material culture from the introduction of painted pottery in the Chalcolithic period through to the end of the Middle Bronze Age. Although the emphasis is on the development of pottery styles, such things as settlement and subsistence, burials, and metallurgy will also be discussed. It will be shown that Cypriot material culture of the Middle Bronze Age developed fairly smoothly from that of the Early Bronze Age with the addition of some new ceramic and metal types, but that there was no clear break that might indicate the arrival of a new group of people. Next, the traditional approaches to the study of ceramics, particularly White Painted ware, are explored. The questions addressed by previous scholars studying Cypriot ceramics will be discussed and an alternative approach suggested.

Chapter 3 provides the theoretical background for this thesis, exploring pottery production through the reconstruction of the chaîne opératoire, an approach that has been under-exploited in Cypriot archaeology. Ethnographic analogy is discussed as a useful tool for understanding the forming traces and tool marks present on the artefacts. The transmission of knowledge from experienced potters to novices is explored through the theoretical framework of communities of practice. Important to the study of the chaîne opératoire are the choices made by the potter from the selection of raw materials to the organization of production, but attention must also be paid to external influences coming from the physical and social environment. A distributed network of associations offers a way to assess the influences that contribute to the potter’s know-how and his or her perception of the choices available when making pottery. The different parts of the chaîne opératoire that can be approached through the study of ancient ceramics are then discussed, together with the methods that can be used to examine them. Fabric analyses are
considered first, followed by forming techniques, stylistic analysis, firing techniques, the organization of production and the distribution of the finished products.

Chapter 4 presents the results of a petrographic analysis of 68 thin sections taken from samples of pottery from sites across the island where White Painted ware has been found. It begins with an overview of the geology of Cyprus as it is divided into eight distinct geographical regions. The seven fabric groups and miscellaneous outliers are then characterized and an attempt made to match them to the geographical regions based on geology. It is unfortunate that so few ceramic samples could be secured for petrographic analysis. The samples that have been made into thin sections come from many parts of the island, but not all of the production centres are represented. The thin sections come from pottery found at Lapithos, Politiko, Dhenia, Alambra, Ayia Paraskevi, Galinoporni, and Enkomi.

Chapter 5 is a stylistic analysis of the published corpus of White Painted ware. The vessels from the sites where larger quantities of White Painted ware were found are grouped first by decoration, then by shape in order to make the similarities and differences more apparent. For the sites with fewer examples, the vessels are simply classified by decoration. The sites are studied by region according to the eight regions on Cyprus defined by Catling and also used by Frankel in his analysis of the decoration (Frankel, 1974b:19). Several unpublished vessels are also included in this chapter, but all have good provenience. These were studied by the author in order to determine the technology of production through the examination of forming traces. Based on shape and decoration, seven production centres are isolated and described. Each of the production centres, however, appears to have been importing some of its White Painted ware from other centres, showing interaction between them. With very few exceptions, most of the sites that were importing their pottery were receiving vessels from multiple sources, indicating active trade between all the Middle Bronze Age sites.

Chapter 6 relates the fabric groups created in Chapter 4 with the production centres suggested in Chapter 5. The sherds used to make the thin sections are analyzed through the designs painted on them and are then assigned to various production centres based on their decoration. Each sample is treated individually in the order in which they appear in the concordance in Appendix 6. Following the discussion of the sherds from the different sites from which samples were taken, each of the fabric groups is discussed. The fabrics were attributed to various geographical
areas in Chapter 4, and in Chapter 6 the member sherds are discussed to try to refine the suggestions made in the former chapter. Both the style of the vessel from which the sherd came and its fabric are considered together and conclusions are drawn concerning the number of different paste recipes per site as well as the number of sites with similar clay available. This is followed by a discussion of the different fabrics in use in each of the areas where production centres were located through the stylistic analysis of Chapter 5. The chapter concludes with an attempt to understand the relationships between the production centres and the different sites on Cyprus where White Painted ware has been found. The output of each production centre is considered and the number of trade connections each had is estimated based on the analysis of Chapter 5.

Chapter 7 ties everything together with a discussion of the chaîne opératoire as seen through the analyses of chapters 4, 5 and 6. Each step in the production sequence is discussed in order from the selection and preparation of the clay to the distribution of the finished vessel. The possible work of novice potters and painters is examined in more detail than it was in Chapter 5. In this light, the organization of production and the community of practice in which new potters learned the craft are discussed. The chapter ends with a caution about the limitations of this current study and offers some directions for future projects.
Chapter 2

Problem Orientation

2.1 Introduction
In general, the social, political and economic development of Cyprus is characterized by long, periods of fairly steady growth interspersed with short periods of dramatic change (Manning, 1993:40-41; Peltenburg, 1993:19). These changes are often attributed to some type of external influence which acts as a catalyst (Frankel et al., 1995:37). Since Cyprus is reasonably accessible by watercraft without sails from southern Anatolia and Cilicia, but more difficult to reach from the Levantine coast (Held, 1993:30), this influence is usually sought in the form of Anatolian settlers, invaders or traders, even when evidence for the presence of foreign populations is scarce and conjectural (Frankel et al., 1995:38). Changes in the material culture are reflections of styles (ceramics) and technologies (plough, metallurgy) found in different parts of Anatolia, so it is not possible to know for certain whether the contacts were with eastern or western Anatolia or both (Frankel et al., 1995:49-50).

Much scholarly attention has been focused on the great changes at the transition from the Chalcolithic Period to the Early Bronze Age, and also on the political and economic developments of the Late Bronze Age, but very little attention has been paid to the internal development of the island during the Middle Bronze Age. This is partly due to the “outside-in” approach that many scholars take when studying Cyprus, considering the changes in material culture to have been stimulated by external contacts (Knapp, 2008:66-68). While foreign influence certainly played a role in introducing new styles in ceramics and new ways of doing things, the role of the Cypriot craftperson’s innovation and creativity in adapting new ideas to suit their own culture has generally been undervalued. Although some scholars have discussed internal developments on Cyprus during the Chalcolithic and Bronze Ages, they tend to assume that the impetus for change came from outside the island. Manning saw the rise of a group of élites in the Chalcolithic to Early Bronze Age to have been driven by the acquisition of prestige objects, mainly from Anatolia, as well as by the adoption of plough agriculture and the importation of cattle and equids (Manning, 1993:44). Although the question of how the élite members of Cypriot society came into contact with the Anatolian élite is beyond the scope of this
thesis, it is difficult to deny the importance of innovations such as plough agriculture in helping to create the surplus economy necessary to allow some people to create greater wealth than others (Manning, 1993:44). The animals necessary for such new agricultural methods, both cattle and horses, are not native to Cyprus, and therefore must have been introduced to the island from the mainland, most likely Anatolia. Some of the evidence of wealth appears on Cyprus in the Early Bronze Age in the form of models of horses and cattle (Sherratt, 1981:267; Webb & Frankel, 2007:191-194), and also ox bones found in some of the richest graves at Vounous (Stewart and Stewart, 1950:374-380, 381 fig. 272). The bones of donkeys, screw-horned goats and cattle have also been found in the Philia strata at Marki (Webb & Frankel, 2007:191). It is clear that these imported animals played a large role in creating and maintaining the prestige enjoyed by some, but not all, of the people living on the north coast of Cyprus at this time (Manning, 1993:44). Therefore, it can be argued that the creation of large agricultural surpluses that allowed some members of society to become more wealthy and powerful than others owes something to external stimulus. It does not follow, however, that all changes in material culture can be explained by foreign contact.

In the Late Bronze Age the increased demand for copper, both by native élites and by foreign powers most likely required some sort of centralized control of the copper deposits (Knapp, 2008: 81). By this time, there was already social differentiation apparent in burials (Keswani, 2004:85), and it is probable that the already powerful élite also managed to take control of the copper mines and copper production in general, although by the middle of the Late Bronze Age at Enkomi, status may not have been inherited (Keswani, 1989:69). Trading copper with other Mediterranean civilizations undoubtedly brought new products and new ideas to Cyprus. Cypriot craftspeople, however, did not simply imitate the styles of others, but instead incorporated these styles into their own repertory creating something new, something uniquely Cypriot. Even when adopting new technologies, such as the potters’ wheel, Cypriot potters produced their own hybrid wares with similar shapes and motifs to the Aegean pottery that inspired them, but with differences that separate Cypro-Mycenaean wares from Late Helladic ceramics (Gagné, 2007).

Because Cyprus became a major source of copper during the Late Bronze Age for the entire east Mediterranean (Knapp, 1986; 1993:98; 2008:133; Knapp & Cherry, 1994:8; Manning, 1993:53-
54; Steel, 2004: 149-150, 166-171), and may even have been considered a powerful player in the trade network of that time, scholars wishing to understand the rise of Cyprus during this period tend to examine the developments in copper production. This leads to an over-emphasis on the Late Bronze Age and masks the important political and economic changes that occurred in the Early and Middle Bronze Ages laying the foundation for the exploitation and trade of Cypriot copper in the eastern Mediterranean. Surely Manning is correct in suggesting that the élites who engaged in the copper trade had already established themselves and were already exploiting this source of wealth before there was a demand for copper in the international market (Manning, 1993:35). Sadly, little attention has been paid to the Middle Bronze Age at the time this élite class was consolidating its power and gaining control over copper production on the island.

A major difficulty that scholars face when studying Cypriot prehistory from the Chalcolithic period through to the Late Bronze Age is the lack of any well-stratified sites on Cyprus that show continuity through these periods (Catling, 1962:131; Peltenburg, 1993:16-18; Rupp, 1993:5). This is partly due to the shifting of settlements as farmers sought new agricultural land to replace fields with depleted soils (Held, 1993: 28). The problem of the lack of good stratigraphy is exacerbated by the reliance on pottery typologies that often do not reflect regional variation, but tend to treat the material culture of the island as a homogeneous entity. The typology for the Early Bronze Age pottery, for example, was created by Gjerstad based almost exclusively on material found in the tombs at Vounous and Lapithos on the north coast, as well as objects in the Nicosia Museum with or without provenience that were listed in Myres’ catalogue (Gjerstad, 1926:262-263). The typology for the White Painted ware of the Middle Bronze Age is likewise based largely on finds from tombs, although some limited excavations at Kalopsidha turned up stratified material dating to the end of the period (Åström, 1957:264-172; 1966:7-12). While it is true that the older typologies have been modified, they remain largely the same. New material that has been turning up in more recent excavations does not always fit well within the old typologies, demonstrating a need for new methods of studying and classifying ceramics (Barlow, 1985:47; Coleman & Barlow, 1979:163-164; Frankel, 1974a:190; 1974b:6; 1988:31; 1991:241; Herscher, 1991:45-46; Swiny, 2003:65). Additionally, the majority of the sites excavated in the northern part of the island, principally by the Swedish Cyprus Expedition, are tombs and

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5 Assuming Cyprus was Alashiya, as referred to in ancient texts. This point is discussed more fully below.
cemeteries. There are only two settlement sites with good Philia material, one in the Mesaoria (Marki-Alonia), and one in the southwest (Sotira-Kaminoudhia). As Herscher has pointed out, there is a large difference between ceramic types found in tombs and in the settlement areas at Sotira (Herscher, 2003:145-204), which should serve as a caution against attempting to fit settlement pottery from other sites into typologies created from cemetery excavations.

In this chapter, the political and economic background within which potters were working will be explored from the Early Bronze Age through to the beginning of the Late Bronze Age. Important issues, such as subsistence, settlement (where known), burials and ceramics will be explored. Although mention will be made of other ceramics, it is the painted wares that are of primary interest for this thesis. Following the discussion of the political and economic changes on the island over time, the history of the study of Cypriot ceramics, most particularly, White Painted ware will be discussed.

2.2 Transition to the Early Bronze Age
Sustained contact with other parts of the east Mediterranean appears to have begun in the Late Chalcolithic period (Steel, 2004:117-118; Webb, Frankel, Stos & Gale, 2006:282), perhaps centred at Vasilia (Webb & Frankel, 2007: 196-199). Southwest Anatolia has traditionally been considered one of the major sources of inspiration for the cultural changes on Cyprus, especially in the ceramic repertory. Most scholars seem to accept the arrival of people as well as ideas from Anatolia. The debate concerns whether or not there was a large migration of men, women and children, or whether the stimulus for change came from mercantile interactions. Although there are several changes in social organization and in material culture, many of these changes occur against a background of cultural continuity, implying that the occupants of the sites in the Late Chalcolithic period were part of the same population group as those of the Middle Chalcolithic period (Steel, 2004:117-118), although perhaps with some newcomers in their midst.

During the Cypriot Late Chalcolithic period, limited contact between Cyprus and Anatolia can be seen at Tarsus in Cilicia where a few sherds of Cypriot Red-on-White and Black Streak Burnished ware have been found in strata dated to early and late EB II respectively (Mellink, 1991:168-172; Webb & Frankel, 1999:28). Although very few in number, they do attest to some limited contact between the two regions. They may be equated with late Erimi-Philia wares,
although there are a few differences in the shapes of the vessels and in the techniques of manufacture, especially of the Black Streak Burnished wares (Peltenburg, 1981:35-36). The Black Streak Burnished wares from Tarsus were found later to be identical to the Black Slip-and-Combed ware that was found at Kyra in the Ovgos valley together with Red Polished ware in typical Early Bronze Age shapes, showing it to be a Cypriot product (Peltenburg, 1991a:31; Webb & Frankel, 1999:28). It is interesting to note that the earliest evidence for contact between Cyprus and Anatolia appears to have originated from the producers of Red-on-White ware in the Ovgos valley where the Philia Culture first makes its appearance. Because the Cypriot sherds were found at Tarsus before the end of the EB II, this would imply that the Anatolian destructions occurred after the Early Bronze Age had begun on Cyprus (Watkins, 1981:19). Such a possibility casts some doubt on theories that consider the dramatic changes at the beginning of the Bronze Age on Cyprus, particularly the appearance of the Philia culture, to be the result of a migration of Anatolian refugees fleeing the collapse of Tarsus (ibid). Moreover, many of these changes occurred gradually and at different sites on an island characterized by regional variation in its material culture, rather than suddenly across the entire island. It seems most likely that small groups of people migrated to Cyprus over a long period of time, gradually becoming assimilated with the local population, but also influencing the Cypriot material culture (Frankel & Webb, 1999:40; 2007:203-204).

Red-on-White style was replaced in the ceramic repertory of most sites during the Late Chalcolithic period by a new monochrome ware decorated in relief. The main ware of the period was Red and Black Stroke-Burnished ware, used to make bowls, bottles, flasks and hole-mouth jars (Steel, 2004:93-94). There was much greater experimentation with different slips and clays than in earlier periods. The monochrome wares were produced using non-calcareous clays, unlike the calcareous clays used to produce Red-on-White wares (ibid). The vessel walls tended to be thinner and ceramics were fired harder than previously. In addition, the red and black surface of the vessels was deliberately created by manipulating the firing atmosphere, creating oxidizing and reducing conditions, rather than being the product of accidental firing anomalies. These changes in potting technology suggest that ceramic production had become a specialized craft in the Late Chalcolithic period (ibid; Bolger, 1991:92). The high degree of experimentation among potters may be responsible for many of the changes in the ceramic repertory, with or without external influence, although foreign influence would have acted as a catalyst for change.
2.3 The Philia Culture

2.3.1 Settlement and subsistence
The Philia culture takes its name from the type site of Philia in the Ovgos valley. The settlement there has its beginning in the Chalcolithic period. It is part of the Erimi group of sites possessing Close Line Style Red-on-White ware, which developed from a dark burnished pottery that varies from dark brown to red in colour (Peltenburg, 1991:16). The sites at which Philia material has been found are mostly in the western Mesaoria area, and in the western and southern parts of the island. Most of the material comes from cemeteries, but two important settlement sites have recently been excavated, providing not only good stratigraphy, but also the opportunity to compare tomb groups to settlement material. These two settlements are Marki Alonia in the Mesaoria, and Sotira Kaminoudhia in the southwestern part of the island. Some Philia material has also been found at Kissonerga-Mosphilia in the southwest (Peltenburg, 1987:61), but the best record for this period in the southern part of the island comes from Sotira-Kaminoudhia (Swiny, Rapp, & Herscher, 2003). Nineteen sites have been identified as having Philia Culture material, and are mainly found near copper resources, perhaps hinting at the reason for their foundation (Steel, 2004:121; Webb & Frankel, 1999:5-12; 2008:288). Fourteen further sites may have Philia material, but the evidence is insufficient to make a positive claim (Webb & Frankel, 1999:12-13). The nineteen sites are mainly situated inland, either in the copper-rich foothills of the Troodos Mountains, or on good agricultural land, although Vasilia, Episkopi, Kissonerga and perhaps Yialia are located on the coast and may have served as nodes in a maritime trade network, either amongst themselves or with coastal towns in Anatolia (ibid:40). The fact that the settlements were established near copper resources and along trade routes to facilitate the transportation of raw materials indicates this metal’s importance to the new communities (Steel, 2004:121). Most of the sites with Philia material are cemeteries, but recent excavations at settlement sites provide a much clearer understanding of the Philia culture. According to Steel, a new rectilinear architectural form appears at this time in association with the new material culture (ibid: 129). These Philia houses were supposedly made of moulded mud bricks on top of a stone foundation, but some houses, particularly at Marki, had walls built entirely from stone (ibid). She concludes that the settlements show no signs of social differentiation between

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6 See Map 2 for sites where Red Polished Philia material has been found.
households for this period (ibid: 131). This is contradicted by Webb and Frankel, who point out that there are no architectural remains associated with Philia cultural material at any of the settlement sites, including their own site of Marki-Alonia (Webb & Frankel, 1999:37). There is some evidence for prototypes for the rectangular house shape, and also for multi-roomed dwellings as early as the Neolithic-Chalcolithic transitional period at Sotira (Dikaios, 1962:71-77). The large rectilinear buildings at Marki have been shown to be composed of several individual units joined by party walls (Webb, 2009b:257-265), which contradicts the view that the larger rectangular buildings were a form of communal living in contradistinction to the earlier circular architecture of the Chalcolithic period (Swiny, 2003:64).

One of the major changes in subsistence is the introduction of cattle and the plough to Cyprus (Steel, 2004:127; Webb & Frankel, 2007:191-195; Knapp, 2008:69). This meant that much larger areas of the island could be placed under cultivation, leading to population growth and the production of agricultural surplus, which could have provided a means of creating wealth, and hence social status (Manning, 1993:44-48). With so few settlement sites excavated in the innovative northern part of the island, it is difficult to determine whether the introduction of cattle and the sole-ard plough was rapid or gradual. Peltenburg points out that it is very difficult to distinguish in the archaeological record whether caprines were used for meat, or also for milk and wool, and that the presence of cattle bones on a particular site does not necessarily mean that the animals were used for traction. Secondary products agriculture does not seem to have had as great an effect on Cyprus as it had in other places, such as Crete, where it led to settlement nucleation (Manning, 1994:232-237; Peltenburg, 1996:21). On Cyprus, the adoption of the various technological advances, such as the use of the plough, seems to have occurred in a piecemeal fashion, rather than as a complete agricultural package (Manning, 1993:43-44).

The diet, as seen at Sotira-Khaminoudia and Marki-Alonia, comprised mainly caprines and cattle, but also deer, and pig (Croft, 2003:439-447; 1996:217-223). Horses and donkeys seem to have arrived in Cyprus at this time as well, used mainly for traction and as pack animals (Swiny, 1986b:38; Steel, 2004:132; Croft 1996:222). It should be noted, however, that the changes during the Philia phase were not uniform across the entire island. The north seems to have felt a greater influence than the south, but several Philia shapes typical in the pottery of the Ovgos area also appear in southern sites, showing some degree of interconnection between the northern
and southern parts of the island (Swiny, 1986a:32). The remains of cattle have been found all over the island, but those of equids were not found in the south, at least not at Sortira-Khaminoudhia (Croft 2003:439-447). The earliest evidence on Cyprus for the presence of cattle actually comes from the southern site of Sotira-Khaminoudhia (Swiny, 1986a:38), although this may simply be due to the fact that there are no excavated settlement sites in the northern part of the island where the remains of cattle might also be found.

In addition to agricultural surplus, a new product may have appeared on Cyprus at this time: alcohol (Manning, 1993:45). Manning argues that the production and distribution of alcohol at social gatherings allowed the emerging élite members of society to extend their influence by creating an imbalance in the ability to reciprocate such acts of generous conspicuous consumption (ibid). This may also explain the introduction into the ceramic repertory of new shapes generally associated with the serving and consumption of liquids. He also suggests that the beginning of extra-island trade was the catalyst that led to the formation of this élite group and to social stratification in general, as Cyprus came into contact with groups who were already socially stratified (ibid:46-48). The few sherds of Red-on-White ware and Black Streak Burnished ware found at Tarsus during the end of the Late Chalcolithic period indicates some contact between Anatolia and Cyprus (Mellink, 1991:170-172), probably initiated by a group of élites seeking prestige from the acquisition of objects from a distant and unknown land (Helms, 1988:114; Manning, 1993:46), but it is not clear whether these élites were Anatolians who sought Cypriot pottery or Cypriots who exchanged their pottery for some other unknown objects. Manning seems to be of the opinion that the Cypriot élites took the initiative for trade, especially with respect to cattle, equids and the other necessary goods and knowledge in order to create agricultural surplus (1993:47). This idea fits better with the archaeological record that preserves evidence for the arrival of new ideas and animals rather than evidence for the movement of large numbers of people together with their own particular material culture.

These changes in settlement and subsistence, as well as in material culture are at the heart of the debate concerning foreign influence or even the influx of people from Anatolia. Webb and Frankel explain the changes in material culture by positing a migration of settlers from Anatolia who brought their material culture with them (1999:38; 2007:191-204). For the most part, the innovations in material culture centre on household tasks, particularly cooking, weaving and
child-care (Webb & Frankel, 2007:202). These are not spheres of prestige display, so the adoption of new ways of doing things requires some explanation. The new animals that appear in the archaeological record at this time (cattle, equids, and caprines) are not native to the island. Consequently, they must have been brought by boat from the mainland. The knowledge of raising breeding cattle and training them for the plough requires a great deal of specialized knowledge in animal husbandry, implying that these animals and the attendant technology of plough-based agriculture must have been brought from Anatolia by migrant farmers (Peltenburg, 1996:23; Webb & Frankel, 2007:191-195).

Although it is true that there are new forms of architecture, new methods of farming, and new pottery shapes in the Early Bronze Age, there is still some continuity. Bolger suggests that there are prototypes, particularly for pottery shapes, in the Chalcolithic ceramic repertory (1991:32). In addition, she points out that there is great variability in the ceramic technology of the Late Chalcolithic period, indicating great experimentation by potters in paste recipes, forming techniques, shapes and decoration. Held prefers to consider the changes in the archaeological record as being the result of stimulation from an external source, rather than a discontinuity in material culture resulting from the influx of foreign migrants (Held, 1993:29). It is quite possible, however, that while new agricultural practices and implements may have been introduced to Cyprus from elsewhere, the new pottery may have developed on Cyprus through experimentation by Cypriot potters, perhaps with some external stimulus. An examination of the technology of production of Chalcolithic, Philia and Early and Middle Bronze Age wares may further our understanding of the development of ceramic industry of prehistoric Cyprus. Such a study, however, is beyond the scope of this thesis.

2.3.2 Burials
There is a high degree of variability in burial types among the Philia cemeteries, ranging from pit burials at Nicosia-Ayia Paraskevi, to chamber tombs at Kissonegerga-Mosphilia and Sotira-Kaminoudhia. Even among the chamber tombs there is variability in tomb architecture (Webb & Frankel, 1999:8; Swiny, 2003:104). There are also a few pithos burials, particularly at Kissonegerga-Mosphilia and Philia-Laksia tou Kasinou. All of these burials are placed in cemetery sites, rather than within the settlements, and grave goods accompany them (ibid). Although the idea of separate cemeteries and the inclusion of grave goods in a burial are new to some of these
sites, such customs were also practiced in the Chalcolithic period, for example, at Souskiou-Vathyrkakas and -Laonas, and at Kissonerga-Mosphilia (Keswani, 2004:39). The differences in grave goods, including pottery, do not show sufficient distinction to be considered burials of two or more different ethnic groups (ibid). What is interesting, however, is that there seems to be a clear distinction between ceramic vessels found in tombs, and those found in settlements, particularly at Sotira-Kaminoudhia (Herscher, 2003:146-194). Unfortunately, it is not possible to know whether this trend is common throughout the island as most of the other Philia sites excavated are cemeteries only, with no settlement material to serve as a comparison. There is evidence in some of the northern cemeteries (Vounous and Lapithos in particular) to suggest that mortuary feasts were held at the tombs during burials. Bowls, juglets and animal bones attest to the remains of the feast being buried with the corpse (Webb & Frankel, 2008:291, 2010:195-198). There is also evidence to support the idea that cemeteries may have been sites of mortuary or ancestor cults, particularly at Karmi-Palealona, Vounous and Lapithos, where some tombs and their dromoi were elaborately carved (Webb & Frankel, 2010:187-194). This type of activity was likely part of competitive display and, as such, would have involved more elaborate vessels and other prestige items than those that would be typical in a settlement (ibid:195-204).

2.3.3 Metallurgy
Advances in metallurgy are often cited as evidence for groups of immigrants arriving on the island bringing their technology with them. Stating that Philia and Late Chalcolithic sites appear to have been contemporary in the southwestern part of Cyprus, Webb and Frankel argue for the arrival of “intrusive Philia groups” at the end of the Chalcolithic Period (Webb & Frankel, 1999:31). The most common metal objects that appear to be restricted to the Philia material culture are copper armbands, and copper or gold spiral hair- or ear- rings with flattened terminals (Swiny 2003:369-381, fig. 8.1, 8.28.3; Steel, 2004:125). These do not require any special technology to produce, as they are simply hammered rather than cast. Other metal objects, such as flat axes, flat-tanged knives, and pins with conical heads continue into the Early and Middle Bronze Age, showing continuity between the Philia and Bronze Age technologies (Steel, 2004:125). Similar objects have also been found at Kissonerga and Lemba in Late Chalcolithic contexts. There is some evidence, however, for imported finished metal objects, such as spear heads that would have been cast in a two-part mould (Webb, Frankel, Stos, & Gale, 2006:265). Copper, or objects made from copper, seem to have been imported from Anatolia and the
Cycladic Islands in the Aegean, although some of the objects tested may have been produced using native Cypriot copper (ibid:271-277). Knapp argues that if the new metal technology was introduced by foreign immigrants, then one would expect to see two distinct types of metal artifacts and possibly different sets of metallurgical tools used to extract and process the copper, one native and one intrusive, but this is not the case (2008:105). The technological innovations of the Early Bronze Age, according to him, would appear to be a result of the hybridization of the cultures of Anatolian migrants and indigenous Cypriots. More excavations of settlement sites where metal-working might have taken place are required in order to determine whether there is a development of metal-smithing on Cyprus as the two cultures merged.

2.3.4 Pottery

New ceramic shapes in conjunction with changes in architecture appear in some places on Cyprus. Scholars have called the assemblages at these sites “Philia culture”, “Philia facies”, or “Philia Phase”, after the type site of Philia on the Ovgos River (for example, Dikaios, 1962:190-191; Stewart, 1962:274-276; Webb & Frankel, 1999:4; Bolger, 1991:29; Swiny & Rapp, 2003:3). The so-called Philia culture ceramic repertory seems to lie somewhere between the Chalcolithic pottery and the Red Polished and White Painted wares of the Early and Middle Bronze Age. In recent excavations Philia material has been found in contexts with both Chalcolithic pottery (at Kissonerga-Mosphilia), and Early Bronze Age pottery (at Marki-Alonia and Sotira-Khaminoudhia). At Marki, new evidence seems to indicate that the Philia culture material pre-dates the Early Cypriot pottery sequence (Webb, Frankel, Stos, & Gale, 2006:280). Chronologically, it overlaps both the Late Chalcolithic period and the beginning of the Early Cypriot period (Manning, 1993:36, Fig. 1). There is also some degree of regionalism in that the White Painted (Philia) wares only appear at Vounous and Lapithos, while the Red Polished (Philia) is more widely spread.

Although the shapes of the vessels, particularly the elongated spouts and the presence of handles, are new to Cyprus, they do not have any direct parallels in Anatolia (Mellink, 1991:173). Perhaps what has been borrowed from Anatolia is the function of such vessels that requires modification of spouts and handles, as well as the technology that was necessary to produce them. Technological modifications, such as thrusting the handle through the wall of the vessel, may indicate the movement of potters (Frankel et al., 1995:42-43), but the Philia vessels are not
direct copies of Anatolian vessels as one might expect if potters from Anatolia came to Cyprus and continued to produce the pottery they made at home. However, it should be borne in mind that most of the changes in the material culture, such as new pottery shapes, horse-shoe shaped hobs, new types of spindle whorls, and loom weights signaling the use of the warp-weighted loom, are not prestige items, but rather common domestic tools used mainly by women in their daily lives (Webb & Frankel, 2007:190-202). This raises the possibility that women may have been moving from Anatolia to Cyprus during this period, if not entire families (Webb & Frankel, 2007:190). On the other hand, actual imports found at Vounous and Lapithos average 1.3 pots per century, which is hardly sufficient to be considered evidence of a large migration of people (Peltenburg, 1996:20). In this case, the changes in material culture may be due more to stimulus diffusion than to mass migrations of people (Watkins, 1981:19; Mellink, 1991:173-174). The debate over whether or not there was a migration of people from Anatolia at the beginning of the Bronze Age continues to shift back and forth, but new evidence appears to point toward the movement of some people along with the new ideas. When more Philia sites have been excavated and published, the debate over the origins of the new material culture may be resolved, but to date very few sites have been found, and of those sites, not all have been well-published (Webb & Frankel, 1999:7-13). The nature of the types of changes in material culture, however, argues strongly for the movement of families, rather than simply merchants and metalworkers.

There are four distinctive varieties of Philia ware: Red Polished, White Painted, Black Slipped and Combed, and Red Polished Coarse (Steel, 2004:132-135). The White Painted Philia has been called White Painted IA (Philia) by Stewart and Red-on-White by Dikaios, but this thesis will follow Webb and Frankel (Webb & Frankel, 1999) in referring to it simply as White Painted (Philia). The White Painted (Philia) wares are found almost exclusively in the Ovgos valley and at Marki in the foothills of the Troodos (Steel, 2004:135), although some have been found at Vounous as well (Stewart, 1962:269; Stewart & Stewart, 1950:304, 364, pl. XCV). While the Red Polished (Philia) ceramics do show some continuity from the earlier Chalcolithic styles, and the later Early Bronze Age styles seem to develop out of them, there are a number of differences that have been attributed to foreign influence, particularly from Anatolia. The fabric is lighter in colour and does not show evidence of chaff tempering as does the Red-on-White ware from
Sotira-Kaminoudhia. The paint is matt, and applied to an unslipped, but possibly wet-smoothed surface (Swiny, 1985:31).

Among the most notable changes that appear in the Red Polished (Philia) repertory are elongated cut-away spouts, punched-through loop handles and flat bottoms that seem more at home in Anatolia than on Cyprus, although they are neither imports nor imitations of known Anatolian forms (Mellink, 1991:173). Peltenburg points out, however, that vessels with flat bases already existed in the Chalcolithic ceramic repertory, casting doubt on the novelty of the so-called changes (Peltenburg, 1991b:13). The new method of attaching handles by punching them through the vessel was can be found in Anatolia, and also appears in the Cyclades and the Greek mainland at roughly the same time as it appears on Cyprus (Mellink, 1991:173). Because such an innovation is not visible to the consumer, Frankel and his associates (Frankel et al. 1995:42-43) argue for the movement of potters who brought their techniques with them. Peltenburg, however, claims that many of the attendant innovations in pottery manufacture, such as the use of new clay sources, less temper, and better control of firing, may be part of the change from household production to greater standardization, and as such, could have been introduced by Cypriot potters (Peltenburg, 1996:25). The characteristic cut-away spout finds parallels in western Anatolia, but it can also be seen in Euboea. It may imitate some foreign prototype, but does not necessarily point to Anatolian settlers (Stewart, 1962:276).

Some of the decorative motifs found on the Red Polished (Philia) wares, particularly incised chevrons, zigzags, and herringbone patterns, have parallels in the EB II ceramic repertory from Tarsus (Steel, 2004:124). Similar designs appear painted on White Painted vessels, too. Such designs are somewhat universal and their presence on pottery does not necessarily require foreign ceramic prototypes. These designs are also easily produced on a loom and may have been transferred by the trade in textiles in the absence of foreign immigrants. They may also be indigenous inventions, perhaps based on textiles or weaving of other objects (reed mats, baskets).

There is very little difference between the Red Polished (Philia) ware and the early Red Polished ware. Webb and Frankel admit that sherds without distinct Philia attributes were grouped together with early Red Polished ware, perhaps giving higher than true amounts of Red Polished and lower than true amounts of Philia wares for their excavations at Marki (Webb & Frankel, 1999:42). The difficulty in distinguishing between the wares makes it difficult to identify Philia
material with certainty, complicating the understanding of its chronological development and its
distribution on the island. Webb and Frankel chose to use only diagnostic sherds from their
excavation for analysis, which has the advantage of excluding non-Philia fabrics from their
descriptions, but has the disadvantage of possibly excluding fabrics that are from Philia wares,
but are not recognized as such (ibid). The fabric of the Red Polished (Philia) sherds studied was
found to be quite homogeneous and finer textured than most of the early Red Polished wares
(ibid: 25). The clay selection and preparation are similar for both Red Polished (Philia) and
White Painted (Philia), but quite different for both the Chalcolithic and Early Bronze Age
pottery. There is much more homogeneity in Philia wares than in the highly regional wares of
both the Chalcolithic period and the Early Bronze Age. Webb and Frankel do not believe this to
be the result of a single production centre, as petrographic and chemical analyses of the material
from both Kissonerga and Marki show the use of local clays for the manufacture of Philia
pottery, neither do they see its uniformity as the result of the spread of technology by an
emerging élite (ibid: 17).

White Painted (Philia) is also present at Marki, although it is very rare, accounting for only about
0.3% of Philia sherds (Webb & Frankel, 1999:24). It has been found at seven other Philia sites
as well, in each case as a minor ware alongside the more plentiful Red Polished (Philia). It
seems to be restricted in its distribution mainly to the Ovgos valley (ibid), although it has also
been found at Vounous and Lapithos. Black Slip and Combed ware may also have originated in
the Ovgos valley (ibid: 25). The range of shapes in the White Painted repertory is also much
smaller than that of Philia wares in general, restricted mainly to small shapes such as bowls, jugs,
jars, pyxides and possibly offering stands (ibid:24). The fabric of White Painted IA is slightly
different from White Painted IB. White Painted IA fabric is hard, yellow to pink, and has small
black, white or grey inclusions. The fabric of White Painted IB is generally medium-hard and
cream-coloured with less iron content than IA (Samuelson, 1993:25). The paint of White
Painted IA is matt and varies from red to black over a buff to pinkish, well-burnished slip. White
Painted IB is painted with matt dark red paint over a well-burnished cream to white slip (ibid).
The common motifs are zigzags, wavy lines, chevrons and lattice patterns, all of which appear in
the later White Painted repertory, although the syntax is different (Webb & Frankel, 1999:26).
These are also typical motifs for the Chalcolithic Red-on-White ware. White Painted IA has a
much larger repertory of motifs with pictorial images of animals, trees, flowers and geometric
shapes, while White Painted IB has a more regulated repertory of geometric shapes arranged in more rigid patterns (Samuelson, 1993:35-36).

The Red Polished (Philia) Coarse ware repertory comprises mainly cooking vessels. These vessels tend to be dark and hard-fired, suggesting that the Philia potters deliberately selected and processed clays to counter the effects of thermal shock. These coarse pots were the first such vessels known on Cyprus to have been used to boil liquids over a fire, perhaps suggesting a change in cuisine (Webb & Frankel, 1999:29).

In addition to pottery, the biconical spindle whorl appears in the archaeological record and may signal the appearance of a new type of textile, or at least a new technology for weaving (Steel, 2004:117). So-called hobs have been found at Marki in Early Cypriot III/Middle Cypriot I contexts. They are thought to be of Anatolian origin (Webb & Frankel, 1999:35; Herscher, 2003:191) and have also been found at Sotira-Kaminoudhia, although in this case, the hob may not have been associated with the Philia Phase (Herscher, 2003: 191-192).

Based on evidence from Marki and Sotira, it would appear that the “Philia Phase” represents a distinct cultural group situated in specific geographical locations that flourished during a specific time period intermediate between the Chalcolithic period and the Early Bronze Age. Because different parts of the island developed at different rates from others, there was some overlap in time with earlier and later periods (Webb & Frankel, 1999:40). The material culture of the Philia sites is different from that of other sites without Philia material, but is broadly homogeneous, indicating a high degree of connectivity between the Philia sites (Webb & Frankel, 2007:199). Because some of the innovations in metal-working and ceramic production are radically different from what went before, it would seem plausible to accept Webb and Frankel’s suggestion that there was a substantial movement of people, particularly craftspeople and their families, from Anatolia where precedents for the new technologies exist (2007:202-204).

2.4 The Early Bronze Age

Several Chalcolithic sites were abandoned just before the beginning of the Early Bronze Age, and the cultural contacts of the western settlements shifted from the southern to the northern

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7 See Map 3 for sites.
parts of the island (Webb & Frankel, 1999:40). New developments in potting traditions appear confined to the north where there is also more sophisticated metalworking, while the south and west of the island made more conservative pottery, continuing in the tradition of the Chalcolithic period, hinting at a cultural division between the northern and southern parts of the island (Peltenburg, 1982:94). Webb and Frankel consider the Early Bronze Age material culture to have developed gradually out of the Philia material culture, mainly because there is clear continuity at Marki, a site that seems to have been established during the Philia phase (1999:40). The idea that the Philia phase is chronological as well as cultural has support in radio carbon dates, showing a sequence from Late Chalcolithic to Philia, Early Cypriot and then Middle Cypriot (Manning, 1993:36, fig. 1). The shifts in settlement across the island and lack of continuous stratigraphical evidence for the entire prehistoric period noted by Peltenburg (1991a) make it difficult, if not impossible, to sustain arguments for continuity and discontinuity for the island as a whole. The picture appears to be different at each site, and much more excavation will be necessary, particularly of settlements associated with the tombs in the northern part of the island where most of the Philia culture sites seem to have been, before many of the gaps in our understanding of the transition from the Chalcolithic period to the Early Bronze Age can be filled.

The precise beginning of the Early Bronze Age is as difficult to pinpoint as its end. There is no clearly-defined break between the Erimi culture sites and the Early Bronze Age sites, which suggested to Peltenburg that there were two distinct groups of people coexisting on Cyprus for a number of centuries at the transition from the Chalcolithic to the Bronze Age (Peltenburg, 1982:94). The Philia phase, for example, appears to end just at the beginning of the Early Bronze age for sites in the south, whereas it may have persisted a little longer in the north where its influence can be seen in the new Red Polished and White Painted wares (Manning, 1993:38). The distinction between the material culture of the Early and Middle Bronze Ages is also difficult to identify, giving rise to the use of the term “Prehistoric Bronze Age” to cover the entire period (Knapp, 1993:88-89; Knapp & Cherry, 1994:6; Steel, 2004:11-15; Swiny, 1985:30). Although chronological tables and pottery seriation follow linear schemes, at the transitional periods it is very difficult to maintain distinctions between phases. From the end of the Chalcolithic period through to the end of the Early Bronze Age, there is a blurring of cultural continuity and change, with traits attributed to the Early Bronze Age appearing in the north
contemporary with Erimi and Philia cultural material in the west and south (Bolger, 1988:128-129).

Most of the evidence available for the Early Bronze Age comes from cemeteries and tombs, but not many have been scientifically excavated (Merrillees, 1974:44-48). Cypriot tombs are not difficult to find in a landscape with little accumulation of soil over time, and they have been plundered since Roman times (ibid). There are two substantial settlement sites for this period which have been very well excavated and published, adding to our knowledge of the central and southern parts of the island.\(^8\) The settlements associated with the two cemeteries in northern Cyprus, Lapithos – Vrysi tou Barba and Vounous- Bellapais, have not yet been found. It would seem, however, that by the Early Bronze Age, cemeteries were located at some distance from the settlement, quite unlike the burials of the Chalcolithic period (Merrillees, 1974:46).

Although many scholars (Dikaios, Catling, Swiny, and Frankel to name a few) argue for some form of migration from Anatolia, there is a growing number of supporters for an indigenous economic restructuring during the Early Bronze Age, perhaps linked both to developments in metallurgy and the exploitation of the island’s copper resources, and to expansion in foreign trade (Stewart, Knapp, Held, Manning and Mellink, for example). As Manning argues (1993:35-36), the Cypriot élites must have already begun to exploit and control their own resources and initiated the trade contacts with other parts of the eastern Mediterranean before the Anatolians would have had knowledge of or an interest in Cypriot copper. This means that these people, arising from the Neolithic egalitarian agrarian background, must have managed to create power in the absence of external contact. Indeed, the evidence from the tombs of Vounous and Lapithos contain native pottery and large quantities of metal objects made from Cypriot copper, indicating that prestige was acquired through the conspicuous consumption of controlled local resources (Peltenburg, 1996:20). There are also metal items that are made from imported copper, or were imported in their finished form, which indicates foreign trade in luxury objects dating from the beginning of the Early Bronze Age (Webb, Frankel, Stos, & Gale, 2006:271-283). Whether the stimulus came from within or outside of the island, it seems clear that foreign

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\(^8\) They are Marki-Alonia, excavated by Frankel and Webb, and Sotira-Kaminoudhia, excavated by Swiny and his team. See bibliography for references to publications.
contact played an integral role in creating and maintaining power distinctions on Cyprus from at least the beginning of the Early Bronze Age.

Throughout the Early Bronze Age, Cyprus seems to be characterized by two different political and socio-economic systems: the northwestern communities were hierarchical with élite members of the society buried with metal weapons and other wealth, while the southern communities remained more or less egalitarian with very little distinction between houses or burials (Peltenburg, 1996:20-21). This regionalism makes it difficult, if not impossible, to discuss the prehistory of Cyprus in general terms. Instead, one must consider each area almost on a site-by-site basis as if the site clusters were islands in an archipelago, sharing a common culture, but with localized variation.

2.4.1 Settlement and Subsistence
At the transition from the Chalcolithic period to the Early Bronze Age, Cyprus experienced major changes in both settlement patterns and material culture. Whereas settlements in the Chalcolithic period tended to be on the south coast, Early Bronze Age settlements were located in the north and central part of the island, most likely due to changes in agricultural practices and the exploitation of copper resources (Steel, 2004:128-129). New settlements also appeared at Politiko, Marki, Alambra and Ayios Sozomenos, all of which are close to copper resources in the Troodos foothills, and are on major inland trade routes (Catling, 1966a:27). The round stone houses of the Chalcolithic period were replaced by rectilinear, multi-roomed, mud-brick structures (Knapp, 2008:123-125), and the plough appeared together with the use of oxen for traction, as seen in a Red Polished ware ploughing scene from the cemetery of Vounous. All of these innovations caused scholars to look to other lands, particularly Anatolia, for invaders or migrants (Catling, 1966:23-34; Stewart, 1962:274-276; Buchholz & Karageorghis, 1973:132) who brought secondary products agricultural practices to Cyprus, as well as other aspects of their material culture such as architecture and pottery. Knapp criticizes these ideas. He suggests that newcomers from Anatolia merged with the local population to create a third cultural group whose material culture is neither Anatolian nor Cypriot (2008:106-110). He does not explain, however, how this process took place, especially in the absence of any evidence of foreign imports that might be expected to accompany this group, such as kitchen sets, tools and weapons. There is no clear evidence of a distinct group of foreigners in the archaeological record, making
the idea of either an assimilated population from Anatolia, or an indigenous assimilation of foreign ideas and styles plausible. Perhaps the question could be settled through further excavation, particularly in the northern part of the island which seems to have been the point of contact between the two cultures.

To add further support to Manning’s proposal for indigenous development of an élite class, social complexity seems to begin before the advent of the Early Bronze Age, particularly at Kissonerga where the occupants of the Pithos house seem to have controlled agricultural surplus and possibly access to rare goods, such as copper (Peltenburg, 1991a:28-29). It is interesting that these people were able to create a surplus of agricultural produce before the introduction of the plough. They may also have been involved somehow with Levantine maritime traders who provided them with faience, which appears on Cyprus for the first time at Kissonerga (Peltenburg, 1996:19). Although the incipient social stratification and control of resources could have developed into the type of political situation seen at the end of the Middle Bronze Age, it came to a halt following the destruction of the site (ibid). Whereas on Crete, at about the same time, foreign contact led to élite control of exotic luxury goods to enhance status, eventually giving rise to palatial economies, on Cyprus, élite status seems to have been enhanced through the control of native goods such as agricultural produce and copper, as can be seen in tomb offerings (ibid).

The site of Kissonerga shows continuity through to the beginning of the Early Bronze Age. There are some spurred, annular shell pendants that are typically found in Philia contexts, but here they are not found with the usual Red Polished (Philia) wares, but with the local Late Chalcolithic pottery. Peltenburg interprets this as an indication that the new material culture from the Morphou Bay area was imitated by other communities on Cyprus (Peltenburg, 1991a:29-30). During Period 5 at Kissonerga, purpose-made spindle whorls make their first appearance, following the use of modified pottery sherds. They are made from the same finely levigated clay as the new Red Polished (Philia) wares (ibid: 31). Black Slip-and-Combed ware also appears in this stratum. It is found at Philia sites in the north and centre of the island, and also at EB II Tarsus, before it appears at Kissonerga (ibid). Peltenburg points out that the Red Polished (Philia) pottery and also the new spindle whorls are produced using different clay sources and techniques from those used to produce the earlier wares, which would “imply a
radical departure from traditional modes of production”, rather than a simple change of fashion (ibid). He does state, however, that the Red Polished and other wares of the south and west part of Cyprus have local precursors, and are therefore not evidence of a new invasive culture (Peltenburg, 1981:55).

### 2.4.2 Burials
During the Early Bronze Age, multiple-burial tombs became more popular, perhaps indicating an increase in the importance of ancestry for maintaining social differences (Manning, 1993:48). Cemeteries are most often found on hillsides, but sometimes can be located on flat land (Stewart, 1962:215-222). Large underground chamber tombs are found in both the Ovgos valley and on the north coast, showing cultural connections between the two areas (Hennessy, 1974b:3). They are also found at Sotira-Kaminoudhia in southern Cyprus (Swiny & Herscher, 2003:103-144). Hennessy uses the lack of chamber tombs in Anatolia to support his argument that Philia and Early Bronze Age Cypriot culture were not derived from Anatolian culture (Hennessy, 1974b:3). Some of these cemeteries continued in use until late in the Middle Bronze Age. Some of the tombs, particularly at Vasilia, were so elaborate that Catling speculated the settlement had people who specialized in the construction and maintenance of tombs in the cemetery (1966a:29). In the earliest burials, the corpse was laid out either on its side or its back, but by the end of the period, the most common position for the corpse was seated against one of the chamber walls (ibid). Grave offerings were left with the dead, mainly in the form of ceramics that were probably containers for food and drink. Other clay objects, in the Red Polished ware tradition, include genre scenes, such as people and animals ploughing, the Vounous bowl sanctuary, scenes of people carrying out different tasks on the shoulders of jars and bowls, and plank idols. Many of the tombs in the Lapithos and Vounous cemeteries also contained several metal items, mainly of copper. There are very few imported items found on Cyprus during the Early Bronze Age, and even fewer Cypriot items found abroad. External connections seem to have been restricted to Anatolia and possibly the Aegean (Frankel, Webb, Stos & Gale, 2006:271-283).

### 2.4.3 Metallurgy
In the Early Bronze Age, tin is first seen as an alloy with copper to produce bronze. This occurs at Vounous (Stewart, 1962:233-241). The source of the tin could be tin-rich metals imported into Cyprus as raw materials, or imported bronze objects that were melted down and recycled. It is not clear whether the tin was added deliberately in this early period (ibid). Weapons found in
graves seem to be derived from foreign prototypes, both Anatolian and Levantine (ibid), hinting that foreign contacts may have been through trade, rather than migrations. Ingots in the shape of rings and axe heads, as well as finished axes, spear heads and swords appear to have been imported both from Anatolia and from some of the Cycladic islands in the Aegean. Lead Isotope Analysis shows that the copper is compatible with those locations, and the style of the blades as well as the use of a double mould to form them, are paralleled in Anatolia, but are new to Cyprus. (Frankel, Webb, Stos & Gale, 2006:271-283).

2.4.4 Pottery
The characteristic Red Polished pottery of the Early Bronze Age develops directly from the monochrome pottery of the Chalcolithic period. The cut-away spouts so typical of the Philia wares are also common in the Red Polished repertory. New to the ceramic tradition on Cyprus during this period, however, are multiple vessels of dubious function which are often covered with plastic decoration. These have no parallels, but are considered to be inventions of the Cypriot potters (Hennessy, 1974a). Many of the pottery shapes are similar between Philia and north coast wares, including the flat bases and cut-away spouts, but the bowls of the north coast tend to have round bottoms unlike the flat-bottomed Philia bowls. The flattened bottoms evolve into stump bases over the course of the Early Bronze Age, and the elongated cut-away spouts become shorter and rounder. Complete or mostly-complete vessels are necessary to distinguish between the Philia and north coast styles, as they are almost identical in surface treatment and difficult to tell apart in sherd form (ibid; Webb & Frankel, 1999:42). To add to the confusion, Red Polished wares continued to be made in much the same way throughout the Early and Middle Bronze Age, so sherds of a Red Polished fabric could represent a Philia vessel or anything from the beginning of the Early to the end of the Middle Bronze Age (Merrillees, 1974:46-47).

Stewart divides the White Painted ware of the Early Bronze Age into three types, which he calls White Painted IA (Philia), White Painted IB (Philia) and White Painted IC (Philia) (Stewart, 1962:224-225). In all cases, he notes that its distribution is very limited. White Painted IA has been found in the Ovgos valley and also at Ayia Paraskevi, while White Painted IB is found only at Vasilia and White Painted IC appears to be represented by a single jug found in Lapithos (ibid). The White Painted IA (Philia) ware is thought to date to the beginning of the Early
Bronze Age, having been found in Tomb 14 at Ayia Paraskevi which is contemporary with Early Cypriot I-II at Vounous. Its decoration is quite similar to that seen on vessels from Erimi and Ambelikou, and shows continuity between the Red-on-White ware of the Chalcolithic period and the White Painted Ware of the Early to Middle Bronze Age (ibid). Since most of the arguments for changes in material culture revolve around ceramics, it may be possible to examine the various production sequences on a site-by-site basis to see if there is continuity in technology, which would signal indigenous development rather than imported potting traditions.

2.5 The Middle Bronze Age

The Middle Bronze age developed smoothly from the Early Bronze Age with no particular destructions to mark the transition (Catling, 1966b:35). For this reason, it is often very difficult to separate the material culture of one period from the other. Stewart (1962:210-211) and Åström (1957:11) consider White Painted II ware to be the ceramic marker of the onset of the Middle Bronze age, since White Painted I ware appears to be a localized phenomenon whose shapes and decorations do not evolve into the repertory of later White Painted ware types. Other than White Painted II ware, there are no other clear indicators of the Middle Bronze Age, but this ware is not found throughout the island, making it unreliable as a chronological marker.

Several of the sites occupied during the Early Bronze Age continued to be occupied during the Middle Bronze Age, and the cemeteries also show a continuity of use. In fact, there is so little difference between the end of the Early and the beginning of the Middle Bronze Age that Knapp and Cherry combine the Early Cypriot III period with the Middle Cypriot I and II to create a period they call “PreBA2”, which lasts from 2000-1700/1650 (1994:6). They then combine the Middle Cypriot III period with the Late Cypriot I to create a period they call “ProBA 1”, lasting from 1650-1450 (ibid). They do this because they consider the transitions between periods to be more significant than the periods themselves. This approach, however, creates spurious revolutions because it ignores gradual developments, especially technological and socio-political transformations. Unfortunately the data are insufficient to define the Early and Middle Bronze Ages with more precision at the present time, with no new excavations in the northern and eastern parts of the island. The earlier excavations from those areas of Early and Middle Bronze

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9 See Map 4 for sites. See also Map 5 for Late Bronze Age sites showing continuity for some sites and new settlement patterns.
Age sites are mainly of cemeteries rather than settlements (Swiny & Rapp, 2003:1), and most tombs have multiple interments making it very difficult to understand developments during those periods. Perhaps a more detailed examination of the ceramics that are stored in museums, with an eye to the technology of production as well as stylistic attributes, would help to extend our knowledge of these periods of the transformation of Cypriot culture. It may be possible, at least, to see the spread of new technologies and new styles from one part of Cyprus to another.

At the beginning of the Middle Bronze Age, Cyprus was still very much isolated from the other cultures of the eastern Mediterranean. A few sporadic Minoan objects have been found in northern cemeteries, particularly at Toumba tou Skourou (Vermeule & Wolsky, 1990:381-385, figs 167-178), but for the most part, the élites of the island were buried with locally produced luxury items. Towards the end of the Middle Bronze age and into the beginning of the Late Bronze age, however, foreign imports increased and Cypriot pottery, particularly White Painted, White Slip and Base Ring wares, was exported to the Levant and Egypt (Maguire, 1990; 2009b).

One of the difficulties encountered in studies of state formation on Cyprus is the sparse evidence for Middle Bronze Age settlements in the north, and even of the so-called forts, which lie mainly in the northern part of the island. Much new work has been done in the south, but the major centres of the Middle Bronze Age appear to have been in the northern and eastern parts of the island. Scholars tend to look at the well-excavated and published Late Bronze Age site of Enkomi as the representative site of urbanized Cyprus, and extrapolate backwards into the Middle Bronze Age to understand how copper exploitation developed into the industry seen there. This requires a look at the initial conditions in the Early Bronze Age when copper began to be exploited, and an examination of the Late Bronze Age evidence of the emergence of the state-like polity of Enkomi. An understanding of the shift of power from the north to the east, and the rise of new settlements associated with copper production and trade would require the excavation of new sites. New excavations and surveys in the southern part of the island can help to fill in some of the gaps, especially for the transition to the Late Bronze Age, but it is really necessary to learn more about the northern and eastern sites to have a good idea of how the economy of Cyprus grew from the Early to the Late Bronze Ages.
2.5.1 Settlement and Subsistence

The socio-economic situation on Cyprus at the transition from the Early to the Middle Bronze Ages was not uniform across the island. In the northwest part of the island, both on the coast where Lapithos and Vounous are located and in the Ovgos valley and western Mesaoria, there appears to have been a social hierarchy, with some graves having burials much richer than others in metals, decorated pottery, and animal bones (Herscher, 1978; Stewart & Stewart, 1950; Keswani, 2004:63-83). This social differentiation may be partly explained by a shift away from subsistence farming towards other forms of creating wealth, such as the exploitation of the copper mines. In the south, the older agrarian society seems to have continued relatively unchanged (Peltenburg, 1996:27). New settlements appear near the copper mines in the foothills of the Troodos, most likely in order to exploit the mineral wealth of the island, as well as in the Mesaoria and coastal plain north of the Kyrenia range in order to take advantage of good agricultural land (Knapp, 2008:70). Certainly by the beginning of the Middle Bronze Age, Cypriot metal smiths were smelting and casting copper, as evidence from Alambra clearly shows (Coleman, Barlow, Mogelonsky and Schaar, 1996:359-360). Although part of the copper production was for export, a great deal of it was also used by Cypriot élites for prestige display, particularly mortuary display, whereby it was removed from circulation, thus increasing demand (Keswani, 2004:75). Very few imported items appear on Cyprus before the Late Bronze Age, and these are mostly found in graves in the northern cemeteries, particularly at Lapithos and Vounous (Knapp, 2008:76-78). Interestingly, the sites that show wealth in copper artifacts, foreign imports, and evidence of metallurgy are generally the sites where White Painted ware appears to have been manufactured.10

The rise of Enkomi at the beginning of the Late Bronze Age was accompanied by the decline of Lapithos and Vounous on the north coast, and also of Alambra, Politiko and Dhenia, all of which may have been in competition with the more successful eastern polity. Ayia Paraskevi, which was close to one of the forts, seems to have flourished, perhaps in an alliance with Enkomi (Peltenburg, 1996:30). In addition to the population increase at Enkomi, the Karpass peninsula also became more densely settled (Catling, 1966b:37). The shift from north and west to east may be partly a result of the change in major trading partners from Anatolia to the Levant. It is

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10 This will be discussed in more detail in Chapter 7.
interesting to note that in the Early Bronze Age and beginning of the Middle Bronze Age, the north coast was the vanguard for ceramic experimentation and metal production as well as the centre for exotic foreign imports (Herscher, 1978; Knapp, 2008:76). It faces the Anatolian mainland, which is likely to have been the source of stimulus for cultural development. At the end of the Middle Bronze Age and beginning of the Late Bronze Age, the east coast assumed this role as trade shifted to the Levantine emporia, notably Ugarit and Byblos, as well as Egypt (Hulin, 2003; Knapp, 2008:76-78; Maguire, 1990; Maguire, 2009b). In MC III there is evidence for trade with the rest of the east Mediterranean, as well as with Crete (Knapp, 2008:132; Vermeule & Wolsky, 1990:381-385, 397, figs 167-178). Although imported objects appeared in several places on the island, the greatest concentration was in the cemetery and settlement of Kalopsidha, thought to be the founder of the great trader port of Enkomi (Catling, 1966b:44).

2.5.2 Burials
Burials in the Middle Bronze Age were very much in the tradition of those of the Early Bronze Age, with continuity at several cemeteries such as Lapithos and Vounous on the north coast and Dhenia and Politiko in the Mesaoria plain. There was considerable variation in tomb types, but this may reflect regional differences as much as chronological changes (Catling, 1966b:40). In most cases, the chambers used for burials radiated from a central entrance passage, and many tombs had small niches cut into the chamber walls which Catling thought were for the deposit of offerings (ibid), but are now known to have been used for infant burials (Keswani, 2004:44).

2.5.3 Metallurgy
The number and variety of metal objects increased in the Middle Bronze Age. Weapons, tools and personal items such as pins and tweezers, are of types common throughout the east Mediterranean and Aegean (Åström, 1957:248-253). Several of these, particularly those made of tin bronze, are probably imported from Anatolia or the Aegean, but it is possible that some of the objects were made of Cypriot ores (Webb, Frankel, Stos & Gale, 2006:270-283). Cypriot copper was probably being exploited from at least the Early Bronze Age (Knapp & Cherry, 1994:9). Since most of the settlements known on Cyprus that were established in the Middle Bronze Age are located in the metal-rich Troodos foothills, it follows that copper extraction probably played an important role in the Cypriot economy at this time.
2.5.4 Pottery
The most characteristic ware of the Middle Bronze Age is White Painted Ware, although it was never present in large quantities. Red Polished ware is always the dominant ceramic material in any Middle Bronze Age excavation, but it is not as diagnostic because it spans the Early and Middle Bronze Age and is not very different in sherd form from other monochrome wares of the Chalcolithic or Bronze Ages. Although the presence of White Painted ware in a stratigraphic sequence signals the Middle Bronze Age, perhaps overlapping slightly with the end of the Early and beginning of the Late Bronze Ages, its absence cannot be considered proof of discontinuity of occupation for sites in the Middle Bronze Age. White Painted ware is highly regional, found almost exclusively in the north, central and eastern part of the island\(^{11}\). Although it sheds very little light on social, political and economic development in the south and western parts of Cyprus, it is found at many of the most important sites in the north and east, and is usually found associated with copper artifacts in burials, signaling its role as a marker of élite status.\(^{12}\) Other minor Cypriot wares present in the Middle Bronze Age include Red Slip, Black Slip, Red-on-Black, Red-on-Red, Plain White (Handmade), Red Burnished and Black Burnished ware, as well as imitation Tell el-Yehudiyeh ware.

White Painted Wares have not been ignored by scholars, but the work that has been done with them consists mainly of stylistic analyses in order to understand regional variation (Frankel, 1974a; 1974b; 1974c; 1981; 1988; 1991; 1993; 2008; Herscher, 1991) or to isolate production groups or artists (Herscher, 1972; Maguire, 1990; 1991; 2008). Although White Painted (Philia) ware is acknowledged as a type, Stewart does not consider it to have developed into the White Painted II ware, which he considers to be the true beginning of the White Painted tradition (Stewart, 1962:231-232). Typologies for White Painted ware tend to follow this assumption (Åström, 1957; Frankel, 1974b). There has been no attempt to date to try to trace the development of the technology of White Painted ware from White Painted I (or even White Painted II) through to the later eastern styles that are traded off the island in the early part of the Late Bronze Age. There has also been little interest in trying to assess whether or not there is

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\(^{11}\) A few pieces have been found in the northwest and southwest, but these are most certainly imports. See Chapter 5.

\(^{12}\) White Painted ware and its production will be discussed in much greater detail in chapters 4, 5 and 6.
continuity in potting technology between the Chalcolithic Red-on-White ware and White Painted ware\textsuperscript{13}.

2.6 Summary
Scholars such as Catling, Peltenburg, Swiny, Knapp and Manning have examined architecture, the evidence for shifting settlements, ceramic production, stone tool production and what small evidence there is for metal exploitation to give us a fairly clear picture of the social, political and economic development of Cyprus from the Neolithic period through the Chalcolithic and up to the beginning of the Early Bronze Age. Often, discussions of the Bronze Age of Cyprus begin with the debate about the Philia Culture and its meaning, then move straight to the Late Bronze Age as if nothing of any importance happened in between (for example, Knapp (1997), in discussing religion goes from the Vounous bowl straight to the Horned God of Enkomi, ignoring the plank idols and zoomorphic/anthropomorphic vessels in the White Painted tradition). The Early and Middle Bronze Ages receive very little attention by scholars, with the exception of a few, such as Frankel, Herscher, Maguire and Barlow, who are mainly concerned with the study of ceramics, although Swiny has made major contributions in the illumination of this period in the southern part of the island. Part of the problem is the lack of excavations of northern settlements for this period. Almost all of the evidence for the Early Bronze Age comes from cemeteries (Dikaios, 1953:11-12; Dunn-Vaturi, 2003:111; Herscher, 1978; Schaeffer, 1936; Stewart & Stewart, 1950:40-45), and only a few settlement sites have been excavated that represent the Middle Bronze Age (Coleman, Barlow, Mogelonsky & Schaar, 1996; Coleman & Barlow, 1979)\textsuperscript{14}. Merrillees in particular called for more excavations of Philia Culture and Early Cypriot sites in the Western Mesaoria to help to increase our understanding of the transition to the Early Bronze Age which seems to have taken place mainly in the inaccessible area of the Ovgos valley (1985). Little work has been done in this area. Excavations at Alambra, Marki, Dhenia, and Politiko have helped to increase our knowledge of settlements from the Early to Middle Bronze Age in the Troodos foothills, and hopefully future excavations will continue to fill in the gaps for this important period in the history of Cyprus.

\textsuperscript{13} Such a study is beyond the scope of this thesis.
\textsuperscript{14} That is, settlement sites where White Painted ware has been found.
Many of the arguments concerning foreign influence and possibly foreign presence on the island have been centred on pottery. Scholars have looked at the changes from the Chalcolithic monochrome and Red-on-White wares that are characteristic of the Philia culture and argued for new people bringing new potting technologies with them (Frankel, Webb & Eslick, 1995:42-43; Knapp, 2008:103-130; Webb & Frankel, 1999:42-43; Webb & Frankel, 2007). After the Philia phase in ceramics, the Red Polished ware that develops from it, and is often indistinguishable from it, continues to be the main ceramic type in any assemblage right up to the end of the Middle Bronze Age (Barlow, 1994:2). It is found in nearly every part of the island and a coherent typology has proved to be extremely difficult to create, although Barlow has done admirable work in this regard by examining the technology of manufacture as well as the shape and surface finish of the vessels she studied. The ubiquity of Red Polished ware renders it of limited use for the study of trade and population movement, although petrographic and chemical analyses have helped to suggest provenance for some objects (Barlow, 1989; 1991; 1994). White Painted ware is a more specialized ceramic type, and one that may be linked to either a special group in society or a special function.

Restricted in its distribution mainly to the north and east of the Troodos Massif, White Painted ware is useful for studying intra-island trade patterns. During the Middle Bronze Age, production centres for this ware shifted from the north coast to the Troodos foothills, then to the east coast and the northwest. The main trading port during the Early Bronze Age, when the Anatolian migrants were supposed to have entered Cyprus, was likely Lapithos or Vounous, both on the north coast (Herscher, 1978:1). The main trading ports during the Late Bronze Age when Cyprus was at its political zenith were probably Enkomi on the east coast and possibly Morphou Toumba tou Skourou on the northwest coast (Crewe, 2007:155-157; Dikaios, 1969:vol. I, 10-11; vol. II, 508-509; Vermeule & Wolsky, 1990:7, 397). White Painted ware vessels, decorated in eastern styles, have been found in the Levant and Egypt where Cyprus probably traded the bulk of its copper (Maguire, 1990; 1992; 2009b). If White Painted Ware was used for élite display, as its presence in low quantities wherever it is found, and its burial in wealthy tombs would suggest, then perhaps by studying its production, consumption and deposition patterns it may be possible

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15 It is very rare in an assemblage and has a very limited repertory of shapes, mainly small objects associated with the service and consumption of liquids.

16 See chapter 5 for a complete discussion of production centres for White Painted ware.
to understand how an élite class rose to prominence during the course of the Middle Bronze Age, making the changes in the archaeological record of the Late Bronze Age seem like part of an internal development rather than a revolution caused by external factors.

As Knapp points out (2008:39), “there is no one-to-one correspondence between, for example, a pottery style and an ethnic group: the distribution of a certain type of pottery may mark political boundaries or the limits of an exchange system rather than an ethnic identity.” Continuity in pottery manufacture from the Chalcolithic Red-on-White ware, through the Philia White Painted and into the Middle Bronze Age may represent continuity in the population who eventually rose to power on Cyprus in the Late Bronze Age. While this is very difficult to prove, it is interesting that production centres for this particular ware have been found in each of the areas that were economically successful, and when their power waned, the White Painted ware began to be manufactured in the area that next rose to prominence.17

If it is true that White Painted wares became more standardized, and possibly fell under the control of the élites at Enkomi where they became items of export along with copper to the eastern Mediterranean, a study of the production and exchange of this ware might shed some light on the social, political and economic developments on Cyprus at the transition from the Middle to the Late Bronze Age. More is known about the Late Bronze Age, due in part to the excavation of sites such as Enkomi, Hala Sultan Tekke, and Kalavasos Ayios Dhimitrios, to name a few. Also, at this time, historical documents from other areas, such as Egypt, mention Cyprus and its role in the east Mediterranean, if one accepts that the name Alashiya refers to Cyprus (Steel, 2004:144, Peltenburg, 1996:28).

Pottery is a useful indicator of trade, both foreign and domestic. White Painted ware, for example, appears to have been traded between various sites on Cyprus since the beginning of the Middle Bronze Age. Lapithos styles appear at sites such as Alambra and Dhenia, showing a trading link between them.18 By the end of the Middle Bronze Age and the beginning of the Late Bronze Age, White Painted ware vessels were being traded to Egypt and the Levant (Maguire, 1990; 2009b). The characteristic wares of the Late Bronze Age seem to have developed from the shapes and decorations of the White Painted ware, rather than the more common Red Polished

17 This will be discussed further in Chapters 5-7.
18 See Chapter 5.
ware. Base Ring ware tankards are very similar in shape to tankards found at Toumba tou Skourou (Vermeule & Wolsky, 1990:362-363), and their decoration is indistinguishable from the Cypriot Bichrome and Trichrome tankards found there (ibid). The decoration of White Slip ware bowls is related to the framed lattice bands seen on bowls and other shapes from Toumba tou Skourou (ibid), while the White Painted Wheel made ware appears to develop from its handmade precursor (Crewe, 2007:115-116). A study of White Painted ware may yield interesting information about the development of specialist pottery production on Cyprus during the Middle Bronze Age. Such a study, however, needs to consider the entire chaîne opératoire from the selection and processing of the clay through to the use and discard of the vessel. Simply attempting to fit the various styles of White Painted ware into a new typology would mask the regional variations and create a false chronology, which has been a problem with most of the earlier studies of this ware.

2.7 Traditional approaches to the study of Cypriot ceramics

2.7.1 Early Classifications of Cypriot Bronze Age Ceramics
In the late 19th century, the classes of Bronze Age Cypriot ceramics were formulated by Sandwith based on the physical attributes and the technology of production of the different types of pottery, rather than their chronological period. He associated the different technologies of ceramic production with four different ethnic groups (Sandwith, 1880:128). The cemeteries he studied, both through his own excavations or from the work of others, spanned the period from the Chalcolithic to the Roman period, and although he seems to have been aware of the Phoenicians and Romans, his ideas of chronology cannot be relied upon. He grouped both White Painted and White Slip wares together, and believed that they represented the graves of élite native Cypriots who could afford to have beautifully decorated vessels, unlike the poor burials that contained only undecorated wares (ibid). Although Sandwith’s conclusions are erroneous, his contribution to the study of Cypriot pottery was the separation of the wares into separate types based on the technology of production. Subsequent studies have tended to focus on one or another of his basic classes.

John L. Myres and Max Ohnefalsch-Richter created a basic typology for the large amount of prehistoric Cypriot pottery from several excavations, scientific or otherwise, that was in the Cyprus Museum as of 1894 (1899). Much of this pottery was without provenience, and most of
what did have a provenience was unstratified, having come from tombs. In addition, many of the
data that had been in the care of the British government of Cyprus had been neglected for
several years and several items were damaged beyond repair. Some tomb groups were dispersed
when they were sent to a special exhibit in 1887, and some pieces were sold to collectors (ibid:
vi-vii). These problems made it very difficult for Myres and Ohnefalsch-Richter to make an
accurate study of the material. The pottery was divided by its shape and decoration, but largely
treated as tomb assemblages, rather than wares.

By the time Gjerstad wrote his doctoral thesis, there was enough material in the Cyprus Museum
collection for him to create the first real typology from the classification system Myres had
produced using the same nomenclature that Myres and Ohnefalsch-Richter had established in
their catalogue (Gjerstad, 1926:88-228). He combined Myres’ two types of White wares into the
category of White Painted II (ibid: 148-155). Gjerstad was also one of the first scholars to
describe the fabric and technology of production of each ware, although his descriptions were
somewhat subjective. He described the fabric of the White Painted I ware as being identical to
that of the Red Polished II-III ware, with a red paint “of the same composition as the red lustrous
slip used in the Red polished ware”, and he also noted that most of the shapes derive from those
Red Polished wares as well (ibid:148). In his typology, he divided the ware into five different
types based on fabric colour and decoration, describing the slip, paint, decorative elements and
shapes of vessels in the museum collection, and including a separate category for the animal-
shaped vases (ibid:226-228).

2.7.2 Seriation
Gjerstad’s goal was to establish a relative chronology for the Bronze Age of Cyprus. Under the
auspices of the newly formed Swedish Cyprus Expedition, he conducted excavations across the
island at settlement sites rather than tombs (Gjerstad, 1926:1; 1980:1). He divided the tripartite
scheme of Myres and Ohnefalsch-Richter into nine periods: Early, Middle and Late Bronze Age,
with subdivisions I, II and III in each, following the model used for the Aegean Bronze Age.
Although he stated clearly “this chronological scheme is not definitely fixed” (Gjerstad,
1926:263), it has remained in use to the present day, with all new discoveries being forced into
these limiting categories. Gjerstad excavated at Alambra (Early Bronze Age), Kalopsidha
(Middle Bronze Age), and the ‘fortress’of Nikolidhes, which he states is not useful for
chronology. Referring to a stratified excavation at Ashkalon in the Levant where Cypriot pottery was found, he tried to create a relative chronology for the Middle Bronze Age of Cyprus (ibid: 303-310). He compared all of these settlement excavations to the various tomb groups, looking at the relative occurrence of each type of pottery over time. His typology thereby assumed a chronological character, implying that White Painted II is earlier than III, while III is earlier than IV, and so on. Not only does this scheme not consider regional variation, but it also treats the island of Cyprus as culturally homogeneous, implying also that the Cypriot pottery found in the Levant came from a single source: Cyprus generally. Gjerstad was aware of this problem, considering his results as tentative until more stratified sites could be excavated across the island (ibid: 294).

2.7.3 Regional variations considered
In 1931-1932, Dikaios excavated the cemetery of Vounous, which had been continually looted by the local population. He divided the tombs of the cemetery into three periods, which were in turn divided into two sub-periods each. The first period was generally characterized by undecorated Red Polished ware; the second by much more elegant shapes, including composite vases, as well as decoration on the Red Polished ware, and also by the appearance of White Painted ware (Types I and II); and the third by the modeling of human figures in the round, the disappearance of large bowls from the Red Polished ware repertory, the continuation of multiple vessels as well as the appearance of ring vases, and the appearance of White Painted wares of types IV and V (Dikaios, 1938). He cautioned that the typology created by Myres and modified by Gjerstad for the Red Polished wares needs to be considered critically because at that time very little was known about pre-Bronze Age pottery. With more recent discoveries of Neolithic sites (Khironkhitia, for example), as well as tombs likely to date from the Chalcolithic period, many of the shapes and decorations of the Red Polished wares can be traced to an earlier potting tradition (ibid). Dikaios compared the finds from the tombs of Vounous to those of the Swedish Expedition from Lapithos and concluded that the two cemeteries show marked differences in the evolution of their pottery. He realized that the changes in the pottery showed regional as well as diachronic differences (ibid). He also suggested that the White Painted wares that make their appearance in the tombs at Vounous may have had predecessors in the Neolithic and Chalcolithic periods, particularly in the Red-on-White pottery of the site of Erimi, but he states that “the
White Painted pottery, which was produced before the standard Middle Bronze Age, is different, and so far occurs only at Vounous” (ibid).

Stewart also recognized variations between sites as well as over time and suggested that this was due to the presence of different cultures on Cyprus. This recognition of inter-site variation changed the focus of ceramic studies away from simple chronology to an interest in regional trade and production (Frankel, 1974b). Sjöqvist traced the origins of the Late Bronze Age pottery by looking at the style, technology of production, and relative abundance of various Cypriot wares both on the island and in the eastern Mediterranean in general (1940:28-97). He recognized that the geology of Cyprus is not much different from the geology of the rest of the eastern Mediterranean, but that choices made by potters, such as clay mixing and tempering, were governed by local traditions. He also used a quantitative analysis arguing implicitly that pottery will be most abundant where it is produced (ibid: 75-97). Although he compared Monochrome ware (part of the Base Ring I group) to White Painted III and IV wares, at least for the shapes of bowls and jugs of Type I, he claimed a Cypriot origin for the Monochrome ware but did not go so far as to demonstrate the Cypriot origin of the White Painted wares he used as comparanda (ibid: 76).

In the 1950s, Åström worked on Middle Bronze Age White Painted wares for his PhD thesis, looking at shape, decoration and technology, and using the basic classification established by Gjerstad and Sjöqvist (1957). Working with vessels already in the Cyprus museum, as well as those found during various excavations conducted by the Swedish Cyprus Expedition19, he divided the White Painted wares into sub-groups based on decoration. He divided the corpus into six Types (numbered Type I-VI), and also created some special categories for the transitional wares which he named descriptively (Pendent Line, Cross Line, etc). These transitional styles span more than one Type, so that there such categories as White Painted III-V String Hole Style, for example. Åström noticed that there were three distinct regional styles in the White Painted II-V wares: an eastern style of linear decoration, a western style of geometric decoration and a wavy line style peculiar to the Karpass peninsula (ibid). He did not discuss White Painted I styles in detail, but began his typology with White Painted II.

19 Several vessels were sent to Sweden and a few others are in different places. Åström notes the location of each of the vessels in his publication and the reader is referred there for further information.
Because Åström based his work on that of Gjerstad, his typology appears to be arranged chronologically, with White Painted II being earlier than IV, but some of the types do not follow each other in sequence. For example, IV-VI Cross-Line Style is derived from III-IV Pendant Line Style in eastern Cyprus, but it is not clear whether the White Painted III styles from the north are contemporary with or earlier than the eastern styles. Excavations of settlement sites since the 1960s have turned up additional White Painted material that does not fit the current typology, suggesting that the categories based mainly on tomb material are not useful for material excavated in settlements (Coleman & Barlow, 1979:167). New terms have had to be added to the classification systems by scholars working with material from recent excavations that cannot easily be placed within the current typology (Barlow, 1985:47; 1994:2). Additionally, a small amount of petrographic work done on White Painted sherds has demonstrated a need for the refinement of the type categories based on fabric as well as decoration (Barlow, 1994:163-164; Barlow & Idziak, 1989:90). Åström did warn that “[t]he attributions are not meant to be definitive or dogmatic; as the proveniences and contexts of a great part of the pottery are unknown, future excavations are bound to cause necessary adjustments” (1957:11). Nevertheless, his seminal study forms the basis for all subsequent classifications of White Painted wares.\footnote{Refinements on the chronology of transitional wares have been suggested recently by Kathryn O. Eriksson (Eriksson, 2008).}

Frankel published his thesis in 1974. He used a combination of factor and cluster analysis based on the components of the decoration of several vessels in museum collections on Cyprus as well as in England and Australia (Frankel, 1974a; 1974b; 1974c; 1981). The results of his study suggested to him that White Painted ware, found almost without exception in the northern and eastern part of the island, showed distinct regional variability which was not well accounted for in Åström’s typology. He examined preferences for various motifs and combinations of motifs in different parts of Cyprus and found that there were eight separate regions, each with its own distinct ‘style’, although there was also some overlap of motifs. Using factor analysis to determine the frequency of the occurrence of various motifs on White Painted vessels from forty-seven sites, he was able to link sites together by the motifs they had in common with each other, suggesting communication between them (Frankel, 1974a;1974b;1974c). Frankel’s study is useful for trying to trace the spread of decorative motifs and perhaps also for determining trade
patterns and the degree of contact between various sites. Motifs can spread through the trade of actual objects, movement of potters, or imitation of the products of one potter or production group by another. Motifs can also cross media from textiles, seal stones, wall paintings as well. Decorative analyses alone are not particularly helpful in distinguishing between local and imported ceramics, particularly in a culture where experimentation and creativity characterize the artisans.

Herscher (1976) looked at southern ceramics, both for their fabric and the shape and decoration of vessels. She wished to illuminate intra-island trade patterns, but concluded that there is a need for more careful excavation and sorting of sherds before such a thing will be possible. She also attempted to determine individual hands in the decoration of some White Painted vessels, hoping to be able to define certain production groups (1972, 1991). Human beings differ from each other in their motor habits and cognitive abilities. These differences are visible on the artifacts they make and use, and help us to identify individuals in the archaeological record (Hill & Gunn, 1977:2). The structure of a design, and the symmetrical arrangement of repeated elements, have been shown to be specific to particular cultures, and is usually restricted in time and space, making symmetry analysis a useful method of reconstructing ancient technologies (Washburn, 1983:138; 1994:158). While there may be some similarities in the execution of design elements, and the syntax of decoration on a group of vessels, it is more likely that an ‘analytical individual’ could be found, rather than an actual single artist (Redman, 1977:41-45). The identification of an artistic “hand” may still have practical applications at least in provenience studies (C. Morris, 1993:56), although with the very low standardization in the earlier White Painted wares it is of limited use. Maguire has used attribution studies most successfully in her detailed analysis of the sequence of brush strokes used to paint White Painted, Proto White Slip and White Slip wares (Maguire, 2009a). She found remarkable homogeneity in the direction of brush strokes within each ware type, but differences between types. Most of her White Painted ware came from Lapithos, however, so it is not known whether this homogeneity extended across the island, or only applied to one or two production centres.

2.7.4 Chemical Analyses
The determination of the provenance of a vessel requires a study of the fabric, not just the decoration, potentially linking the clay of the pot to its source. Studying the mineral composition
of the clay from which the pot is made, and then comparing it to the geology of the island, should suggest where on Cyprus a given pot was made. This is not an easy matter with a fine ware with few mineral inclusions such as White Painted ware (Knapp & Cherry, 1994:26). It is sometimes more fruitful to examine the chemical composition of the clay instead. Chemical characterization of ceramics was done for various Cypriot wares in the 1970s. Scholars hoped to be able to distinguish imports from local imitations of various Late Bronze Age wares.

Some limited Optical Emission Spectrometry studies on White Painted ware were carried out by Frankel and his colleagues at Oxford. These tests did not help to discriminate between sherds from different sites, but instead showed the selection of clays for this ware to have been fairly uniform across the island, perhaps, as Frankel suggested, as a result of the sedimentary geology of Cyprus (Frankel, Hedges, & Hatcher, 1976:38-41). Unfortunately, the same year that Frankel published his thesis, political events made exploration of this part of the island impossible for scholars. There have been no new excavations, and it is difficult to study material that had been deposited in northern museums before 1974. Scholars working on Cyprus turned to the exploration and study of southern sites, very few of which produced White Painted wares in excavations.

Asaro, Perlmann and Artzy were among the earliest scholars to perform Neutron Activation Analysis on Cypriot pottery. They were attempting to answer the question of whether Bichrome ware of the Late Bronze Age was a local product or a Syrian import. They found that it is chemically consistent with the White Painted ware fabric group, and is therefore native to Cyprus (1976:24-25). NAA studies were also conducted by Gomez and his colleagues (Gomez & Doherty, 2000; Gomez, Rautman, Neff, & Glascock, 1995) on White Slip ware in order to determine its place of origin. NAA is still being used by the teams at Berkeley and in Jerusalem at the Hebrew University, looking at Late Bronze Age pottery in Near Eastern contexts (Knapp & Cherry, 1994:21). Vaughan conducted ICPMS and NAA analyses on Base Ring ware and was able to suggest regional production centres for these objects based on her analyses (Vaughan, 1991). Knapp and Cherry also used chemical analyses to look at primarily Late Bronze Age wares from Cyprus, but chemical means are not always the best way to determine provenance for ceramic material. Day and his associates (Day, Kiriatzi, Tsolakidou, & Kilikoglou, 1999), working on Crete, argue convincingly for the use of both petrographic and chemical means in
order to determine provenance with accuracy. Moreover, they found that the combination of the two methods in “an integrated programme which exploits complementary types of archaeological and analytical information” is the best way to approach the study of archaeological ceramics (ibid: 1034). It is also necessary to combine analyses of the ceramics with analysis of the raw materials from potential clay beds in order to make good comparisons between locally manufactured pottery and the geological raw materials from which it was made. Knappett and his associates carried out such a study on Red Lustrous Wheel made wares to determine whether they were made on Cyprus or in Anatolia. The conclusion they reached was that the geology of both areas is too similar to be able to distinguish between them (Knappett, Kilikoglou, Steel, & Stern, 2005:48-49). It would seem, then, that scientific analyses alone are insufficient for the study of Cypriot ceramics.  

2.7.5 Petrographic Analyses

According to Knapp and Cherry (1994:19), “petrography was only incorporated usefully into Mediterranean ceramic provenience studies in the mid- to late- 1970s.” It was not widely used, however, but was largely confined to the study of Late Bronze Age material, specifically the Aegean and Aegeanizing ceramics of the LC III period in order to determine which vessels were imports and which were local imitations. Courtois and Velde conducted both petrographic and electron microprobe analyses of White Slip wares (1980). They found that the White Slip wares came from the area of the Troodos, based on mineralogy and the lack of carbonates in the body of the vessels, but that the slip showed the use of a different source from the clay used to make the vessels. Although they did not have access to sufficient samples to pinpoint the location of possible production centres, their work showed that it is possible to learn more about a ceramic type through the combination of methods, rather than by the use of a single type of analysis.

Coleman and Barlow, excavating at Alambra, found some White Painted sherds, but these account for less than one percent of the assemblage which was dominated by Red Polished ware (Coleman, Barlow, Mogelonsky, & Schaar, 1996:237). Based on both decoration and fabric (in hand specimen), Barlow divided these into two groups: White Painted A and White Painted B

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21 It should be noted that a very recent article by Frankel and Webb (2012) has shown through pXRF studies that at some sites the Red Polished ware was made locally, while special wares, such as Drab Polished, that make up a small percentage of the assemblage appear to have been imported. It may be fruitful to perform similar tests on White Painted ware.
(Barlow, 1994:5, fig 1B, 7; Barlow & Idziak, 1989:67). Some of the 144 sherds she studied bore decoration that matched Åström’s description of the fabric in his White Painted II category, but the fabric itself was closer to the description of the fabric of his White Painted IV group. Barlow concluded, based on the clear stratigraphy of the settlement site of Alambra, that rather than the chronological development from White Painted II to IV implied by Åström’s typology, both types were in use simultaneously, suggesting that the variability in fabric is due to factors other than time (Coleman & Barlow, 1979:163-164).

Both petrographic and chemical analyses were performed on the Red Polished ware from the site, which formed the bulk of the assemblage. Four sherds of White Painted ware were included: two from each of Barlow’s two categories (Barlow & Idziak, 1989:68). The two White Painted A sherds, although similar in decoration, had slight differences in mineralogy, suggesting that they were not made in the same place, although Barlow felt they may be local wares using clay from different clay deposits (Barlow, 1994:11; Barlow & Idziak, 1989:76). Barlow and Idziak determined that the potters of Alambra were likely using two very different clays: one from the sedimentary deposits of the lowlands, and the other from the igneous rocks of the Troodos Massif (Barlow & Idziak, 1989:69). Although all the White Painted wares seem to have been made using calcareous clays derived from sedimentary rocks, the White Painted B sherds were minerallogically distinct from the White Painted A sherds. Those White Painted B sherds with green-coloured fabric may have been fired at a higher temperature, perhaps over 850 degrees centigrade, which would explain their low calcite composition (ibid: 75; Barlow, 1994:12). Barlow concluded that overall the White Painted B sherds had been fired at a higher temperature than the White Painted A sherds, and suggested that due to their decoration, hardness, colour and types of inclusions visible with the unaided eye, that they may have come from vessels imported from Dhenia. Her study established trade connections between Dhenia and Alambra, but her focus was on characterizing the wares in order to determine provenance.

Vaughan (1991) carried out an extensive study of Base Ring ware, combining chemical and petrographic analyses. She began with a macroscopic examination of each sherd, and then grouped these sherds into various sub-groups. Samples from the sub-groups were then made into

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22 It is likely that all of the White Painted ware sherds from Alambra came from Lapithos where several different fabrics were used to make White Painted Ware. This is discussed in detail in Chapters 4, 5 and 6.
thin sections and studied with a petrographic microscope. At the same time, she also analyzed several clay samples taken from Cyprus so that she could determine the provenance of the various sherds. She found that the clay was fairly uniform, but did show some limited regionalism, which she interpreted as demonstrating the existence of a limited number of production groups that produced this type of pottery. Base Ring ware is a product of the Late Bronze Age. During that period, there was a much greater degree of standardization of both shape and decoration of all of the wares, suggesting a few production centres were responsible for the production of ceramics.

Hatcher performed a chemical analysis of White Slip ware, another important class of Cypriot ceramics that was found throughout the eastern Mediterranean in the Late Bronze Age (Hatcher, 2002). She built upon the work of Liliane Courtois who proposed an origin in the Troodos massif for some White Slip sherds. Courtois (1970:83; 1977) believed that there may have been a connection between the copper mines and clay beds in this area, based on chemicals present in the clay, as well as the higher firing temperatures necessary for both copper smelting and the production of the harder fabrics of White Slip ware. Gomez and his associates reached the same conclusion (Gomez et al., 2002:31). Hatcher was able chemically to distinguish two different groups of White Slip wares at Hala Sultan Tekke, which she interpreted as representing two different sources for the pottery found there. One of these sources seems to have supplied not only Hala Sultan Tekke, but several other places along the coast of Cyprus and also possibly Atchana (Hatcher, 2002). Gomez and his team performed chemical analyses on clays collected in the vicinity of Sanida in the southeast foothills of the Troodos mountains believed to be the source of some White Slip II wares (Gomez, Rautman, Neff, & Glascock, 1995). Using principal components analysis, they found that the clays derived “from the outcrop of highly weathered leucocratic gabbro” closely matched the composition of the White Slip wares in their reference group (ibid: 113). Gomez and Doherty performed a mineralogical analysis using a scanning electron microscope to examine the minerals. They looked at the same wares and found that the “mineral assemblage is analogous to that recognized as having been produced by the alteration of the wallrock (pillow lavas) adjacent to copper veins at a variety of sites on Cyprus” (2000:116). The fact that the slip did not show evidence of oxidation or iron staining led them to suggest that the clay was not found at the surface, “but became available as a by-product of sub-surface ore extraction” (ibid).
MacLauren (1985) looked at the shape and decoration of Red Polished wares, but focused on the fabric, considering the choice of clay and technology of production by potters. Using an ethnographic study of contemporary ceramic production groups, she discovered that potters often mix clays and add tempers based on cultural preferences. She called for two separate classifications of the vessels in this group: one based on shape and decoration, and another based on fabric composition. These two sub-groups should overlap and give a clearer understanding of regionalism. To date, however, no one has done this.

2.8 Summary
It appears that the geology of Cyprus is too homogeneous for petrographic or even chemical analysis alone. Those studies that have chosen to focus on one aspect or the other have been inconclusive. Although some studies have attempted to combine petrographic with chemical analysis, an approach that has yielded good results on Crete, this has not been the case on Cyprus. Part of the problem is that the different types of geology: igneous, sedimentary and metamorphic, occur in several different parts of the island. This makes it very difficult to determine the exact provenance of the clay used to make the vessel in question. Scientific analyses of Cypriot ceramics have so far only concerned themselves with questions of provenance, questions they seem unable to answer. Clay selection and processing, however, are only a part of the work of the potter in the production of a vessel.

Stylistic analyses alone only give information on a small part of the production sequence. Maguire (1990) studied White Painted wares found outside of Cyprus for her PhD thesis. She was primarily interested in the Cypriot pottery found at Tell el-Dab‘a in Egypt, but also considered that found in the Levant and Aegean. Her study was based on decoration, and part of her stylistic analysis focused on attempting to isolate particular artists or production groups (1990; 1991; 2008; 2009B). She was most concerned with brush strokes and did not consider the actual construction of the vessel. Although very useful for understanding the size of the various production centres based on the number of different hands that can be isolated, her study does not shed much light on the organization of the pottery production groups or the development of potting technology.
2.9 Conclusion
From the end of the Chalcolithic Period through the Late Bronze Age, the material culture of Cyprus bears witness to a society in flux. Settlements shifted from the arable land on the banks of rivers, to coastal areas and sites in the foothills of the Troodos Mountains, possibly to take advantage of the lucrative metals trade. At the transition from the Chalcolithic Period to the Early Bronze Age, there is some division between the north and south in terms of innovations in technology, as witnessed by the Philia culture which appears contemporary with the Chalcolithic cultures in the south (Manning, 1993:37-38). The north appears to be more progressive than the conservative south, at least in terms of material culture. Unfortunately, the north is known to us mainly through the excavation of cemeteries, rather than settlements.

Copper, which had been cold hammered into tools and weapons as well as objects of personal adornment at the beginning of the Chalcolithic Period, was being smelted and possibly alloyed with other metals by the end of the period (Stewart, 1962:233-242). Copper objects appear in relatively high numbers in some of the tombs at Lapithos and Vounous during the Early Bronze Age, particularly in the later graves at Lapithos (Dikaios, 1938; Herscher, 1978:742-754; Stewart & Stewart, 1950:371) and also at Vasilia (Frankel and Webb 2006:277-281) indicating its role in prestige display among the Cypriot élite (Manning, 1993:44-45). By the end of the Middle Bronze Age, copper was being traded off the island, and copper production had become an important part of the Cypriot economy (Keswani, 1993:76; Knapp, 1986:39-46; 1993:91-98; Knapp & Cherry, 1994:161-167). The procurement, processing and distribution of this precious commodity determined to a large part the location of settlements and the connectivity between them (Keswani, 1993:78-80). Ceramics were traded along the same routes as metal, although not all types were traded off the island (ibid). All of the main types of ceramics seem to have had their beginnings in northern or eastern production centres, such as Vounous, Lapithos, Toumba tou Skourou and Kalopsidha\textsuperscript{23}. It is unfortunate that so little is known about this part of the island. Although it is difficult to understand much more about settlement distribution, architecture, town planning and other things without surveys or excavations, it is possible to reconstruct at least part of the trade network based on a study of ceramics.

\textsuperscript{23} White Painted at Vounous and Lapithos; White Slip, Bichrome and possibly Base Ring at Toumba tou Skourou; White Painted Wheelmade at Kalopsidha.
To date, the study of Cypriot ceramics has been approached from two directions: stylistic analyses and scientific analyses. In both cases, however, the focus has been on the ceramics themselves, most often with the goal of providing a provenance for the various vessels, although chronology has certainly played a large role in the design of the studies. Pottery has been used to try to establish dates for tombs or settlements, or to determine whether Cypriots imported Aegean-type wares or made their own. Some mention has been made regarding the connection between certain types of pottery and the metal trade (Hatcher, 2002), and certainly there has been a lot of attention paid to the circulation of the various types of Cypriot pottery both on the island, and in the rest of the Mediterranean (Frankel, 1974a:205-206; 1993:60-61; Keswani, 1991; 1993; 2003; Knapp & Cherry, 1994:9; Maguire, 1990; 2009b). Pottery has been seen as an essential grave gift, with rare types, such as White Painted ware, seen as markers of status. When ceramic studies focus on the product and its place in society, the potter is often overlooked. Ceramic manufacture, however, is an embedded social process (Arnold, 1985:16). Knowing about the technology of production, the organization of production centres, and the social connections between the potters, painters and consumers offers information about Cypriot society that may not be easy to determine through other means, particularly for the northern part of the island. In the next chapter, a method for studying ceramics with the goal of reconstructing the social milieu in which the vessels were manufactured will be explored.
Chapter 3
A Socio-technological Approach to the Study of Cypriot Ceramics

3.1 Introduction
Material culture and technology are often treated separately, with the interaction between people and things forming the subject matter for material culture studies, and the process used to make those objects being the basis for technological studies (Miller, 2007:7). In addition, and particularly on Cyprus, many studies of material culture tend to focus on the consumption of artefacts, rather than their production. Some studies, such as those by Schiffer, combine analyses of technology and function, using experiments to try to quantify various aspects of the finished product such as thermal shock resistance, firing temperature, and other characteristics of pottery (Schiffer & Skibo, 1987). Although such experiments are useful for understanding the mechanical properties of ceramic objects, they shed little light on the potter’s choices between several more or less equivalent options. David and Kramer argue that artefacts can yield information about the interaction of humans and their environment as well as their social interactions and thought processes, provided the proper questions are asked of material culture (David & Kramer, 2001:1-2).

The line of questioning that forms a complete analysis of ancient ceramics must include all stages of the life of any particular vessel from the selection and preparation of the clay from which it is made, the technology used to make it, to the role played by the finished product in society. This more comprehensive study of artefacts with particular attention to technology of production and use was pioneered by Leroi-Gourhan in the 1940s. Leroi-Gourhan’s focus was on the techniques and gestures used to create objects (Audouze, 2002:283-288). By dividing the various techniques into their constituent steps, it is possible to reconstruct the chain of actions that forms the production sequence for any artefact. Every stage in the history of the ceramic object, including its production, is socially informed and involves choices on the part of the potter and the consumer (Lemmonier, 1992:85; 1193:3; van der Leeuw, 1993:241). This approach to the study of ancient technology is quite different from that of Schiffer as it takes into consideration non-technical choices rather than simply assuming that the potter used certain techniques or materials for mechanical reasons. The difference between the two approaches is
mainly due to the viewpoint taken by the researchers.\textsuperscript{24} Schiffer, like many archaeologists, was concerned with the finished object and attempted to reconstruct the process that led to its present state. Scholars considering the chaîne opératoire of production are more concerned with the development of the artefact and the choices available to the potter: both those taken and those not taken. It is the difference between standing in the present and looking back at the past to try to explain it, and mentally journeying back in time to follow the life history of the artefact (van der Leeuw, 2008:218). Most of the steps involved in the production of hand-made pottery leave traces on the finished product, from the minerals present in the clay that give clues to clay selection and processing to marks left by the tools used to shape and finish the vessel. These forming traces are the silent witnesses to the work carried out by the potter thousands of years ago and they form the body of evidence archaeologists need in order to understand ancient pottery production. But it should be remembered that there is not always a direct correspondence between features such as tool marks and the tools and gestures used to make them. When attempting to explain any particular feature of an artefact, it is also necessary to be aware of multiple causes for the attribute in question (Wylie, 1985:105-107). Additionally, both the choices made, and those that were available but not taken, are important in the reconstruction of the potters’ craft.

On Cyprus, attention has been turning recently to a concern with ceramic production, rather than simply considering the ‘life’ of the finished pot. What began as an art historical approach to the classification of pottery later developed into the classic typological approach used by archaeologists around the world to create relative chronologies. Such chronologies could be used to compare excavated material in order to create a history for prehistoric societies. The typologies were based on the decoration and morphology of the vessels and gave rise to pottery groupings that do not take the potter’s work into consideration. With a new focus on the technology of production, scholars have become increasingly dissatisfied with the current typologies, noting that newly excavated pottery does not often fit well within the current scheme (Barlow, 1989:67; 1994:2). Although there has been some suggestion that an entirely new categorization based on fabric is needed, at least for Base Ring ware, as Vaughan has suggested (1991), it is not clear that this would solve all of the problems inherent in the current typology

\textsuperscript{24} Schiffer’s view is an example of the Anglo-American approach, whereas Lemonnier and van der Leeuw represent the French school of thought.
for White Painted ware. For example, similar fabrics were used to create different types of ware, particularly some of White Painted and Red Polished wares found at Alambra (Barlow & Idziak, 1989:74-75). It is also highly probable that different fabrics were used to produce vessels that would currently be considered part of the same ware group, for example Red Polished or White Painted, that are found in many different places across the island. The fabric itself is only one part of the production sequence of the pot. There are many other things to be considered.

In order to approach White Painted ware from a technological viewpoint, it will be necessary to look at each vessel individually with the goal of understanding how it was produced, rather than to begin with the standard typologies. Variation in shape and decoration may be due to random errors, but it is so great in Cypriot Middle Bronze Age ceramics that it is much more likely to be due to intentional experimentation with form and design among the potters (Eerkens & Lipo, 2008:69). Distribution, use and discard of ceramic artefacts have usually been examined with the objective of tracing trade routes, or perhaps understanding mortuary ritual, or even reconstructing diet through residue analysis. Manufacture, however, is partly informed by distribution and use, with the demand for the potter’s products coming from those destined to use them as well as from the purpose for which the vessels are made. By separating the two phases in the vessel’s life, its manufacture and its distribution, use and discard, the influence of demand is placed outside of the chaîne opératoire. Also, by separating style from function, technological style is ignored. Part of the problem lies in the way that most archaeologists approach the study of pottery. Often, the archaeologist looks at the vessel in its current state, either whole or broken, and tries to explain how it came to be the way it is, from its creation, through breakage, disposal and all of the changes to it that were caused by its environment until it arrived at the laboratory (van der Leeuw, 2008:218). Instead, van der Leeuw suggests there is a need to understand pottery production as a creative process in which the potter has several choices to make, each of which affects the outcome of his or her work (ibid:246).

The optimal method for understanding ancient potters and their products in society is to approach the study of ceramics through a distributed network of relations. Both people and artefacts are

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25 Eerkens and Lipo attribute variation to human error or cognitive or social processes. They state that cognitive processes create variation when someone deliberately chooses from a limited number of possibilities and experiments with them (p. 69).
26 See the work of Knapp and Cherry, Merrillees, and Keswani to name a few.
considered to have agency in such a model, but the agency of artefacts is mediated through the humans in the network (van der Leeuw, 2008:228). The archaeologist is more limited than the ethnologist who studies pottery production in that questions about the choices made by the potter can only be answered indirectly through the traces left behind on the finished object. The ethnologist has the opportunity to watch the chaîne opératoire in action and to see which choices are made, which gestures are used, and how the labour is organized. They can also ask questions of the potter, whereas the archaeologist can only infer these things from the physical remains (David & Kramer, 2001:6-14). Although it is not possible to completely reconstruct the potter’s craft from forming traces found on ancient pottery, the ancient potter can be approached through the study of modern traditional potters. To do this, it is necessary to use ethnographic and experimental analogies, but such analogies must be corroborated by archaeological evidence (Kamp, 2001:427). Additionally, it is best if there is some relationship between the subject culture and the source culture to which it is being compared. For example, the subject culture could be an ancestor of the more recent culture being studied by ethnographers and used as a basis of comparison for the ancient culture being studied (David & Kramer, 2001:51-54).27 Experimental studies can provide the archaeologist with the knowledge of which tools and gestures leave different types of marks seen on ancient vessels. Ethnographic studies can give insight into how potters manage to construct different objects with or without rotative kinetic energy, and what sort of choices the potter makes or is aware of making. In the case of the potters of the Middle Bronze Age on Cyprus, all vessels were hand-built without the potter’s wheel (Frankel, 1988:31), but there is evidence that more than one method of hand-building was used. Although there have been studies of traditional potters on Cyprus, these have not been well incorporated into the study of ancient ceramics.

3.2 Ethnographic studies of traditional Cypriot potters
A number of ethnographic studies have been performed to document the work of the last remaining traditional potters on Cyprus. These studies looked at potters working from the late eighteenth century until 1974, at which time traditional pottery-making seems to have ended. Although it is clear that these potters owe more to Roman and Byzantine practices than to the very ancient potting traditions that form the subject of this thesis, they may have been working in

27 The fact that the source culture is an antecedent of the subject culture does not imply continuity. David and Kramer list several other factors that should be similar between the two if they are to be comparable (p. 47).
similar environmental conditions with similar tools. The potting season on Cyprus is from April to November due to the rainy season being from November to April (Ionas, 2000:198; London, 1991:223). Pottery production does not take place during the wet season because pots would not be able to dry properly and would be likely to explode in the kiln.\(^{28}\)

London studied contemporary potters in Cyprus for a six-month period during the potting season, from April to about November. She noted that most of the potters were female, but that the men in their families, particularly husbands, helped in production with clay procurement and preparation, and were also responsible for the sale of the finished product (London, 1989:65). In many cases, the potters were producing their wares in addition to carrying out agricultural tasks, and pottery production would be suspended during times of harvest when all members of the family were required to help with farming duties (Ionas, 2000:198). It is also possible that during the Bronze Age, as with all other time periods, different potters used different techniques to produce their vessels more or less simultaneously. While pottery surface treatments were copied and changed often in a group of potters, the manufacturing techniques were more stable, and therefore, are better for understanding the organization of production (London, 1991:222).

Ionas found that the distribution of pottery followed well-defined patterns with the production centres at Kaminaria and Ayios Dhimitrios trading their pottery with sites in the western part of the island from Morphou to Limassol, Phini potters selling pottery to consumers south of the Troodos Massif, and Kornos potters selling their vessels to those in the eastern Troodos area to the central lowlands (2000:198-201). The man of the household would take the pottery by donkey to the areas he could walk to in a day, but he could make several consecutive day trips that carried him over much of the island. Donkey transport was also available to the ancient potters and was likely the method of distribution for the bulk of pottery trade\(^{29}\). The road system that was in place before the British created the modern network of roads was likely very similar in ancient times as it followed mountain passes and linked the various settlements together (ibid).

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\(^{28}\) Gibson and Woods (Gibson & Woods, 1997) disagree, but since clay is hygroscopic it would absorb water from the air during the wet season. Although it can be dried in the kiln if the temperature is maintained at approximately 100 degrees Celsius (Rice, 1987), such temperature control would have been difficult for ancient potters.

\(^{29}\) There is a White Painted ware model of a quadruped with panniers on its back from Lapithos dating to the Middle Bronze Age. It is thought to represent a donkey (see figure 240). A Red Polished figurine of a donkey with panniers is illustrated by Karageorghis (V. Karageorghis, 2006)
Although it is not certain that the ancient potters traded their products in the same way as the traditional potters did, it is certainly possible given that the geographic situation and technology of transportation were similar.

Stewart believed that the production of pottery was likely industrialized as early as the Middle Bronze Age with the appearance of the specialized White Painted Ware which made its appearance in many parts of the island (Stewart, 1962:291-292). Frankel, on the other hand, argued for the domestic production of ceramics, mainly by women working in their own households (1988:50-51). Frankel came to this conclusion because he noted that there was a high degree of variation in the shapes and decorations of White Painted ware and also that many of the forms of vessels found in tombs were fairly complex. Such a low degree of standardization led him to posit part-time domestic production as a model that would explain the archaeological record. According to Ionas, however, there was a different model of specialization among the traditional potters of the late 19th and early 20th centuries on Cyprus from that found among traditional potters in other parts of the world. The potters themselves may have specialized in the shape or type of wares they produced, but villages also specialized in various crafts (2000:221-222). For example, Lefkara was famous for its lace, while Kornos specialized in the production of pottery. Rather than the usual definition of Household Industry as given by Frankel to describe the women of Kornos, Phini, Ayios Dhimitrios and Klirou who made ceramics in their homes for sale (Frankel, 1988:33, figure 3), Ionas points out that in these villages many women made pottery for sale in their homes, but the village as a whole was known as a pottery-producing centre. Although the women worked independently, rather than in a village production group, there was some overall similarity in the vessels produced in each particular village. Clay sources would have been similar, if not identical, among the potters of a village. It is likely that production techniques would have been similar, and perhaps some of the decorative motifs would have been shared. In the village of Kornos, some women worked in their homes, while others worked together in the Cooperative, but their motifs were still shared. The village, it appears, had its own particular style, regardless of whether pots were made by individuals or in groups (London, 1991:226-228). This could explain some of the similarities and subtle differences between the White Painted wares found at different sites, and such a model must be borne in mind when the vessels are analyzed in terms of shape and decoration in order to suggest production centres.
3.3 The transmission of knowledge
People learn to become adept at a craft through participation, not only by being directly involved in doing things, but also through association with those who are experts, and through carrying out minor tasks in the production process. This type of learning is referred to as “legitimate peripheral participation” (Lave & Wenger, 1991:29-58). For potters, this means that learning requires not only active, physical involvement in making pottery, but also social associations with more and less accomplished potters working in the trade. The novice constantly negotiates and renegotiates his or her associations with the raw materials, the pot as it is being formed, the tools, and the other potters in the production group. In time, the child internalizes the thought patterns of the community and the muscle patterns of the gestures necessary to create pottery, forming what Bourdieu called a habitus (Bourdieu, 1977:72-95). Although such know-how is mainly subconscious, it can still be demonstrated and the potter is aware of the sequence of actions (Lemonnier, 1992:79-85). The new potter’s participation in the community of potters not only shapes him or her into a full member in that community, but it also transforms the community itself as the novice brings new ideas and new ways of doing things into the group (Wenger, 1998). Frankel suggested that this was true of the female potters of the Middle Bronze Age on Cyprus who moved to a new potting community upon marriage, bringing motifs and designs with them (Frankel, 1974c:43; 1988:31-32). In this way, he explained the transmission of motifs, and the spread of the technique of White Painted ware.

Of more interest currently is the study of how potters learn the craft and the vertical, rather than horizontal transmission of knowledge. Rather than simply learning how to make pottery, children become potters by internalizing not only the physical gestures, but also the social and cultural aspects of the environment in which they learn (Minar & Crown, 2001:371-374). Students learn by practicing one part of a task at a time, adding new parts until they have mastered the entire process of making pottery. Once mastery has been achieved, the process becomes automatic and more difficult to change. Changes to the way things are done require beginning the process anew (ibid). Although the output of a master potter may be standardized to the point that her or his work is easy to detect in the archaeological record, it would be more difficult to distinguish her or his earlier products during the time of learning to make pottery (Crown, 2007). The ethnographic studies conducted with Cypriot potters showed that this is nearly impossible to document for traditional potters, as they do not keep their older work for...
comparison, and in very few cases was it possible to trace the output of a single potter for even one decade (London, 1991:224). While some attention has been paid to looking for the work of individuals who painted White Painted ware (Herscher, 1972; Maguire, 1991; 2008; 2010), these studies do not consider the organization of production or the way that new potters are acculturated into the community of potters. Rather than look at unique brush strokes or intricate patterns of decoration, it would be more profitable to examine vessels that appear to have been painted by more than one hand, or that may have been manufactured by someone of a greater or lesser skill level than the person who painted them. The focus in this case is on the community of potters rather than on a single individual and also makes the chaîne opératoire more explicit by dividing the tasks involved in producing a vessel (Crown, 2007:677-682). Among the vessels in this study are a number that show some discrepancies in the execution of different parts of the chaîne opératoire.⁴⁰

In a household production model, children would learn pottery manufacture from their parents. In the case where potting was a full-time occupation, muscle patterns would become subconscious habits and would not change much over time once mastered (Arnold, 1985:235-237; Arnold, 2008:42-45). Novices would participate in various parts of the production sequence so that they would acquire the knowledge required for each step, and they would also learn the gestures through doing the tasks. Although not yet carrying out the work of a potter, per se, it is this type of legitimate peripheral participation that ensures the novice learns the appropriate techniques for making pottery in his or her society (Lave & Wenger, 1991; Wenger, 1998).

It is also possible that the same movements used for other household tasks would be used to make pottery; for example grinding corn is like grinding temper and kneading bread is similar to wedging clay by hand. The tools and gestures may have been the same. Because of the similarity in movements, it would be easier for the new potter to master the movements if they were engaged in other household tasks besides the production of ceramics, which would have been a relatively infrequent activity in a part-time craft. If the potter, however, is not in the continuous act of making pottery, he or she would not develop consistent gestures used to make pots, giving rise to a larger variation in vessel shape than that seen in the output of a potter who makes

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⁴⁰ These are discussed in Chapter 5.
similar vessels on a daily basis. It would be unwise, in this case, to attribute differences in shape to a number of different potters since it is not possible to know how the work of one specific individual might vary over time, particularly during the time when that person is learning the craft (Crown, 2007:682-685).

3.4 Material Agency and the distributed network
Before beginning a discussion of the chaîne opératoire, it is important to define who or what the actors are and how they are related in a network of associations that leads to the choices made by the potter while forming the vessel. Agency is often attributed to the potter, who is considered to be responsible for his or her choices, but the potter’s choices are also determined in part by external influences. While it may seem strange to attribute agency to inanimate objects, such as a lump of clay, this is only because the traditional view of agency conflates it with intentionality, making the agent actively responsible for causing events to happen (Gell, 1998:7-10,155-163). This view places intention prior to the action, making it a conscious decision on the part of the agent. Malafouris argues instead for the placement of intention within the action itself, removing it from the mind of the agent and making it “a component of extended cognition” (Malafouris, 2008:31). All of the objects, people and institutions influenced by and influencing the potter are then considered part of the ‘Background’ which has an equal role to that of the potter as far as intention is concerned (ibid). In other words, the affordances of things inform the choices made by the potter, and the recognition of the possible affordances is conditioned by social conventions as much as by physical properties.³¹

Although there could be many minor influences affecting the potter, it is possible to construct a distributed network of the potter’s ‘Background’. All of the components of this network make up the potter’s know-how, which includes technical knowledge. Some of the components have a direct effect on the potter’s output, while others have an indirect effect through their influence on other components. The network is illustrated in Figure 8, and the following is a brief explanation of each of the components and how it affects the components to which it is connected in the figure.

³¹ For example, a wine glass “affords” the drinking of liquid, but it would not likely be used for drinking coffee.
Labour:

- Demand – affects the number of potter-hours needed to satisfy it
- Tools- these can be time-consuming or labour-saving. For example, the potter’s wheel may help to increase output and decrease labour per pot
- Shapes – complex shapes require more labour than simple ones
- Quantity – the higher the output required, the more labour needed (or conversely, the more labour, the greater the output)
- Non-plastic inclusions – require labour if they need to be removed or added
- Clay properties – requires labour if it needs modification
- Environment – may determine whether potting is seasonal, for which labour is required only part of the year

Demand:

- Labour – when demand is high, there is need for more labour. Also, if there are a limited number of potters, then production is restricted and demand cannot be met.
- Shape – some shapes may be in higher demand (cooking ware, water vessels) than others (élite/ritual)
- Function – is often socially determined. There can be need for certain shapes to prepare certain dishes, or to fulfill particular ritual needs. This is related to shape.
- Quantity – Pottery is fragile and vessels used most often will require more frequent replacement.

Tools:

- Labour – more efficient tools require less labour (e.g. Potter’s wheel)
- Clay properties – determine what tools are necessary (vat for levigation, sieve, grinders for temper), or what techniques can be used (coil building, wheel-throwing, moulding).
- Non-plastic inclusions – Wheel throwing requires their removal (if present), hand-built large vessels require their addition in order to strengthen vessel walls.
- Quantity – more pots can be made more quickly with the potter’s wheel than by hand or moulding.
Shape:

- Tools – shape determines which tools are to be used, and tools determine shape.
- Demand – some shapes are more delicate and break often and need replacing (thin-walled cups, jugs with long spouts)
- Labour – more complex shapes require more time and labour to make
- Clay properties – small shapes can be made with more plastic clays than large shapes can
- Non-plastic inclusions – large shapes require more than small shapes
- Quantity- shapes that can be thrown ‘off the hump’ on a wheel can be more easily mass produced than intricate hand-made shapes like multiple vessels
- Function – these are intimately connected – some shapes are more suitable for pouring, holding liquids, serving, etc

Function:

- Shape – the shape is determined by the function – for pouring, serving etc
- Demand – pottery needed for its function
- Quantity – cooking and serving vessels are used more often, and possibly by more consumers, than ritual vessels and hence more will be required

Quantity made:

- Function – require more common vessels for daily use, fewer special vessels for ritual or infrequent use
- Shape – shapes produced in large quantities tend to be simple and quick to make
- Tools – need efficient tools to produce mass quantities
- Demand – very few, labour-intensive products generally tend to have more value than mass-produced simple products
- Labour – may require more workers to produce more pots
- Environment – potting season may determine how many pots per year can be made, but if need is very high, new ways to dry pottery in damp weather may be required (artificial environment – i.e. lower temperature in kiln before actual firing).
Non-plastic inclusions:

- **Shape** – if good temper is not available, shapes may be smaller
- **Tools** – if there are too many inclusions, the wheel cannot be used (the potter can fix this problem, of course)
- **Labour** – can be due to having to add or remove inclusions, or to the need to travel to procure temper, or to prepare it (grinding stone, chopping straw).

Clay properties:

- **Shape** – if clay is too plastic, only small shapes can be made
- **Tools** – type of clay may determine use of wheel or mould
- **Labour** – if the clay is unsuitable, it needs to be prepared
- **Non-plastic inclusions** – some clays need inclusions removed or added

Environment:

- **Labour** – clay and temper sources may not be nearby and must be sought, length of potting season may be limited by rainy season
- **Quantity** – if potting season is short, fewer pots can be produced annually
- **Non-plastic inclusions** – can be found locally or at a distance. Geology determines mineral types available, local soil fertility determines organic material available
- **Clay properties** – clay beds available

The final component in the figure is the potter’s know-how. This is determined by experience with all of the other factors in the network, but also by the potter’s training. The potter constantly assesses his or her choices based on physical, as well as social, and perhaps ideological constraints, particularly in design, that cannot easily be recovered in the archaeological record (Arnold, 2008:11-13). It is clear from Figure 8 that each of the components is linked in a feedback loop with know-how, but the actual associations which are represented by the lines between the boxes are not as simple to describe. The potter’s interaction with each of these components, however, represents choices made, and as such, can be understood through the chaîne opératoire approach.
3.5 The chaîne opératoire and its application to ceramic analysis

Approaching the study of ceramics from the point of view of the chaîne opératoire facilitates an analysis of technological style which focuses on choices made from a number of apparently equivalent options (Miller, 2007:194). In some cases, choices may be necessitated by raw materials or tools, but in other cases social factors inform the selection process (van der Leeuw, 1993:238-242). This approach works very well in ethnographic studies when the researcher is able to watch the potter at work and ask questions about the various choices made. It is much more difficult to apply to ancient ceramics when both the potters and their societies are long gone, and the only evidence that remains are the faint traces left on the fired pot by hands and tools, raw materials altered by the process of making ceramics, and distribution networks worked out through patterns in artefact styles.

Studies of ancient Cypriot pottery tend to focus on shape with a view to creating typologies, or fabric with the hope of determining the source of the vessel. Although Herscher and Maguire have looked at the potters and painters at work (Herscher, 1972; Maguire, 1991; 2008, 2010; Frankel, 1991:247-249), and Frankel has considered human migrations and the transmission of motifs (1974a:204-205; 2008:22-23), few others have seriously considered the potter and his or her place in society, let alone the role played by his or her products in a social context. While it may not be possible to project the production techniques and choices made by modern potters onto the potters of the past, van der Leeuw believes that regardless of the constraints that the environment and physical properties of the raw materials place upon the potter, there is still plenty of scope for individual choices, which are often guided by the social network to which the potter belongs (1993). Society creates tradition, and this in turn can give rise to patterns in material culture as craftspeople are working within certain traditions to meet the demands that society places on their products. Style, which is inherent in the distinctive set of attributes typical of the production system that created the vessel, is what distinguishes White Painted ware from other wares, and makes it possible to isolate regional similarities and differences. Style is the product of choice and is apparent in every part of the chaîne opératoire. It is not restricted to shape or decoration.
3.6 Fabric analyses
The first step in the production of any ceramic vessel is the selection of raw materials. According to Arnold, traditional potters generally use clay sources within one kilometre, but up to 6-9 kilometres, of their production centres (Arnold, 1985:232), although occasionally they may choose clays from farther away if they have journeyed to such a location for reasons other than clay procurement (ibid). Clay gathered on long distance visits would only make up a small percentage of the overall raw materials used to make pottery, but if it were mixed with the local clay it could make the determination of the source of clay used for ceramic production very difficult.

The two most commonly used methods for the study of the raw materials of pottery production are ceramic petrography and chemical analyses. In both cases, the focus is on the minerals eroded from rocks that constitute a clay bed. Most of the minerals in clay are silicates of elements such as aluminum, magnesium, calcium, sodium, potassium and iron (Rice, 1987:313), all of which can be identified chemically as well as with a polarizing microscope. Although the clay bed itself is sedimentary, the minerals can erode from volcanic, sedimentary or metamorphic rocks. Clay minerals themselves are too small to be seen with a polarizing microscope but can be identified either with a scanning electron microscope or chemically. Inclusions, on the other hand, are visible and can be determined by their refractive properties under a polarizing microscope (Mackenzie & Adams, 1994:9-30; Rice, 1987:376-382).

For the particular case of Cyprus, however, such analyses often do not produce useful results. Frankel and his associates found that chemical analysis did not help to determine provenance with any real accuracy (Frankel, Hedges, and Hatcher, 1976:40). Petrographic analysis is complicated by the fact that Cyprus is part of a geological formation that covers most of the eastern Mediterranean (Robertson & Mountrakis, 2006; Robertson, 1977; Sjöqvist, 1940:75), which means it can be difficult to determine the provenance of vessels that may be from Cyprus or from other places, such as Anatolia (Knappett, Kilikoglou, Steel, & Stern, 2005:48-49). In addition, sedimentary formations on Cyprus, such as the Lapithos Formation, can be found in multiple places across the island, and minerals from the Troodos Massif can be distributed over long distances by the two main rivers, the Yialias and the Pedieos, which run through the

32 But see the article by Frankel and Webb (2012) for more recent successes using pXRF analysis.
Mesaoria Plain from west to east. In order to understand ceramic production and distribution, then, many different types of analysis must be used in conjunction with each other. It is for this reason that clay procurement needs to be discussed as part of the chaîne opératoire, rather than simply to determine provenance or to trace trade routes.

Potters choose clays with certain properties, which are not necessarily the properties studied by the analyst. On Crete, for example, modern itinerant potters or those who moved due to marriage tended to look for clay beds with similar properties, such as texture and colour, to those clays they were used to using to make their vessels (Day, 2004:120). The potter has a mental template of what characteristics a clay must have to make certain vessels. If appropriate clay cannot be found, then the potter may mix clays or add temper to try to create a paste with the correct properties. For White Painted ware, it seems that the most important factor in clay selection was a light enough background colour for the red, brown or black painted designs to be visible.\textsuperscript{33} The light clays on Cyprus are calcareous, and usually derived from limestone, a very abundant material on the island. Most of the limestone occurs in areas with sedimentary geology, but around the Troodos Range the boundary between the pillow lavas and the sedimentary rock is very sharp.\textsuperscript{34} In the eastern part of the island, the two main rivers flow down from the Troodos Massif, bringing igneous as well as sedimentary rock fragments with them. The potters in this part of Cyprus may have had less choice and may have had to alter the clay to make it suitable for White Painted ware. The choice of clay and the subsequent processing should be visible through petrographic analysis, which is the subject of Chapter 4.

3.7 Forming techniques

The techniques used to make pottery are partly determined by the raw materials as certain clays may be unsuitable for some sizes and shapes of vessel (Rice, 1987:118-135; Rye, 1981:16-21). Also, if potters are using the wheel to make vessels, they will not be able to use coarse pastes which would hurt their hands (Rice, 1987:128-129). Clearly there is an association between the clay selection and the forming techniques to be used, although the potter is certainly able to change the properties of the clay by sieving or levigating the clay to remove large particles, or by adding temper. The potter has a mental template, as with clay selection, that informs his or her

\textsuperscript{33} The painted pottery was not limited to a light background. In the Karpass region the classes of Red on Red and Red on Black serve as illustrations of this point.

\textsuperscript{34} See map 1
choice of forming technique. This mental template is created through experience under the
guidance of a teacher, whether an unrelated master potter or a skilled family member. The
potter’s mental template can also be altered through association with other potters who use
different techniques, or through the demands of consumers as well as over the course of time
with the potter’s own creativity.

Ethnographic studies and experiments show that other than vessels made in a mould, there is
variability in the output of a single potter. Even in a single day’s work there will be a difference
between the pots made early in the day and those made near the end of the day, partly due to the
drying of the clay over the course of the work, but also due to random drift in the execution of
the motor habits by the potter that give form to the vessel (Eerkens & Lipo, 2008:66-76; van As,
1984:136-137). Such differences would be very small in the case of experienced potters and may
only be evident with precise measurement. According to Eerkens and Lipo, the potter may
have an idea of what a particular pot should look like, and may even be attempting to create
several similar pots, but there will be some variation in his or her output simply due to the fact
that humans are limited in their manual dexterity, their memories and their vision, and are
therefore not precisely accurate in the replication of material culture (Eerkens & Lipo, 2008:67-
69). These scholars are assuming that uniformity of shape is the potter’s goal, which may be
true in the case they studied, but Cypriot potters in the Middle Bronze Age seem to have placed
much greater emphasis on creativity than on the replication of shapes. If they had a mental
template, it must have been a fairly fluid one as any attempts to classify White Painted ware have
shown. When other influences, such as the demands by a particular consumer, the ideas
presented to the potter by the developing object, and the creative impulse of the potter are
considered, the wide variation in shapes even among the same class of vessel is much easier to
understand.

Middle Bronze Age pottery from Cyprus was exclusively hand-made. The potter’s wheel did not
make its appearance on Cyprus until the Late Bronze Age, and was used mainly to make Cypriot

\[35\] Particularly if the potter has moved to a new village after marriage and needs to learn how things are done
there.

\[36\] According to Eerkens and Lipo (pp. 69-71), the human eye cannot detect differences of less than 3 percent, so to
the eyes, the pots would look identical.

\[37\] It is also possible that the notion of uniformity and mental templates is a western idea imposed upon material
culture by the investigators.
versions of foreign wheel-made ceramics (Yon, 1976:33-35). Many of the shapes, particularly composite, zoomorphic and anthropomorphic vessels, cannot be made easily with the potter’s wheel. These shapes tend to be the most variable in both size and form, although they are linked together by more general ‘types’. In fact, most of the shapes in the Middle Bronze Age Cypriot potters’ repertory tend to be more easily classed in large, undefined groups such as jugs, bowls, and amphorae than in more descriptive groups such as carinated cups or bridge-spouted jars. Although many of the names of shapes are borrowed from the classification of Aegean ceramics, the Cypriot vessels collected under those names have a great deal more variability than the vessels in the Aegean categories. Attempting to use a system of measurements to try to detect technological changes in ceramic production as Roux has done for pottery in the Southern Levant (2003a, 2003b) provides one with a clear idea that there are no exact duplicates in the repertory.38 Towards the end of the production of White Painted ware, in the Late Bronze Age, the shapes and decorations became more standardized, in that there was less variation between them than previously (Rice, 1987), but there are still easily detectable differences. The standardization may be a result of consumer demand, fashion, or perhaps even a need to produce more vessels quickly, but there is still enough variation to make it possible to detect the potters’ own input. It is not possible to know whether the same person made and painted the vessels, but similar standardization appears in shape, size and decoration, particularly in the wares from Enkomi and Kalopsidha.

Rather than attempting to classify pottery based on the ratio of vessel height to maximum diameter, which led Frankel to posit the production of pottery was in the hands of non-specialists (Frankel, 1988:50-51), another approach must be used: one that does not rely on measurements that may have more meaning for the analyst than they did for the potter. White Painted ware, by its scarcity, was likely a specialized ware. It has a fairly restricted shape repertory, although there is variability in proportions and accessories such as spouts and handles. The shapes are mainly small, and are mostly jugs, amphorae, tankards and bowls, as well as a few odd shapes (rattles, askoi, and figurines). Attempting to measure things precisely only proves that the potter was not restricted by exact size or proportions when making different vessels. It is more fruitful

38 This was attempted by the author, measuring such things as the maximum diameter, height of maximum diameter, neck diameter, lip height and thickness, handle width and thickness and proportions of the decorative field. The results did not produce any clear patterns.
to look at how the potter assembled the various vessels by looking at forming traces. The lack of uniformity in shape indicates that the Middle Bronze Age potter had a different sort of mental template for how the vessels were supposed to look from what Roux and Frankel had in mind with their measurements.

### 3.8 Decoration and Style

Frankel’s work on White Painted ware focused on the decoration on the vessels (1974a, 1974b, 1974c, 1981, 1991, and 1993). He broke the decoration into very small components he called motifs, although in some cases these were merely straight or wavy lines. Using a computer program, he looked at where the various motifs and combinations of motifs occurred. He then concluded that the pottery was made in the home by women who moved to other villages through marriage, taking their potting traditions with them. The study of decoration, however, can yield far more interesting information than simply the spread of different motifs.

Often decoration is viewed as part of style, and is treated separately from function (Gosselain, 1998:81-83), but decoration may also have a psychological function, encoding meaning. The decoration on a vessel may give an indication of its contents, its maker, its role in ritual or other social activity, or it may simply be aesthetically pleasing. Decoration has a social function, and as such it cannot be divorced from the other attributes of the vessel. The choice of motif and decorative scheme is determined through associations between the potter, the potter’s community, and the consumer (David & Kramer, 2001:172-173). It is influenced by the shape of the pot, fashion (either created by the expert potter or imitated from others), the potter’s creative impulse, the potter’s idea of how the finished object should look, and even the intended function of the pot. Decoration can carry personal meanings for the consumer and his or her social network (David, Sterner, & Gavua, 1988:365). With such cultural information influencing the choice of motifs, decoration cannot be studied using a simple model. The choices available to the potter are very complex and if they can be understood at all, they can yield much valuable information about the social organization of which the pot and potter were a part.
3.9 Firing
There has been only one kiln so far discovered at a site where White Painted ware has been found, but it is of Late Bronze Age date.\(^{39}\) If pottery production was carried out in the various homes of the potters of the village, then it is possible that there was a communal firing of their output, since owning and operating a kiln would have been too costly for potters with small production groups (Rice, 1987:162). It may have been possible through the use of refiring experiments to estimate the firing temperatures used, but no sherds could be removed from Cyprus for this purpose by the author. The firing temperature alone is not really relevant unless it is also possible to know in what sort of atmosphere the object was fired and how long the maximum temperature was sustained during the firing (Rice, 1987:343-345, 427-429). For ancient kilns that were operated by burning wood or other fuel, such information is very difficult to extract from the finished vessels, particularly since the ceramic objects could have been subsequently altered through chemical reactions with the soil during burial for thousands of years. It is possible, however, to estimate whether the temperature was relatively high or low based on the hardness of the ceramic. The colour of the clay, particularly in section, may give an indication of the firing atmosphere, whether oxidizing or reducing. Under the microscope, it may also be possible to tell whether a vessel was fired at a high temperature or for a long duration based on the optical activity in the matrix and whether iron oxide has been separated from the clay as well as whether carbonates have been burnt out.\(^{40}\)

3.10 The organization of production
Perhaps the most interesting question that one can ask about White Painted ware is whether it was produced in several different production centers or in only one or two. Because White Painted vessels occur in such small numbers, with such a limited repertory of shapes, and with such a restricted distribution across the island, it is most likely a specialized ware, as opposed to the ubiquitous Red Polished ware with which it is often associated. Was this ware the product of specialist potters who created it for a particular purpose, or was it made by the same potters who were responsible for the production of other wares? Is it possible to know whether production

\(^{39}\) This is the kiln at Toumba tou Skourou. It is discussed in more detail in Chapter 5. It should be borne in mind that kilns would have been associated with settlements, not cemeteries, and may await future discovery. It is also possible that communal firings could have taken place in a clamp rather than a kiln. Ceramics could also be fired in the hearth of a home, making it impossible to detect their presence unequivocally.

\(^{40}\) This is discussed more fully in Chapter 4.
was organized in a similar way to the traditional potters studied by London and Ionas (Ionas, 2000:220-222; London, 1989, 1991)?

A petrographic analysis of the clay may help to determine whether the raw material came from a single source or many. It may even be possible to make some suggestions about where the source of the clay might be, but the interpretation of the results of this analysis is complicated by the possibility that potters in different parts of the island may have been purposely selecting clays with specific properties and that these clays may resemble each other very closely under the microscope. An analysis of the shapes and decorations of the pottery, comparing White Painted to other wares when possible, may help to decide whether there is any relationship between the different wares from any particular site. If there is a single source, then perhaps this particular type of pottery was indeed being created by specialists. The high degree of variation in shape and decoration, however, argues against a single source. If White Painted vessels are being produced by the same potters as the other vessels in any particular assemblage, then interesting questions about its role in society can be asked.

### 3.11 Summary

White Painted ware provides an interesting case study for the development of a dynamic model of ceramic production. It is an easily recognized ware among the other Bronze Age wares and has a very limited repertory of shapes. It is found mainly in the northern part of the island from Morphou Bay to Enkomi on the east coast. Most of it comes from funerary contexts, although some sherds have been found in settlements at Alambra, Kalopsidha and Enkomi. Very likely, White Painted ware served a special social purpose in life or in death, and because of its special nature, could yield interesting information about Middle Cypriot society.

The chaîne opératoire approach to studying ceramic production in a distributed network that considers the social associations of potting as a creative act can yield a great deal more information about ancient ceramics than any other approach that has been used to study Cypriot ceramics in the past. The model is dynamic, focusing on actions and associations rather than measurements, shapes and design motifs on the finished product. Finally, this approach focuses on the questions of how and why the potter created this special ware instead of looking at where and when, which have been the questions most often asked of Cypriot pottery to date.
Chapter 4

Petrographic Analysis

4.1 Introduction
This chapter presents the results of a petrographic analysis of 68 thin sections of sherds from the sites of Alambra, Ayia Paraskevi, Dhenia, Enkomi, Galinoporni, Lapithos, and Politiko. These sherds were obtained from the collections of the Cyprus Museum in Nicosia, Cyprus, the teaching collection of the University of Sheffield, and the University of Pennsylvania Museum in Philadelphia, Pennsylvania. The seven sites represented in the sample are fairly evenly distributed across the geographic area of Cyprus where White Painted wares have been found, and also represent vessels from the end of the Early Bronze age to the beginning of the Late Bronze age, thus giving a cross-section of both the spatial and temporal distribution of the ware. The sample size is small due to the fact that White Painted ware comprises less than 1% of any given assemblage, and is mainly found in the northern and eastern parts of the island. Those areas have been inaccessible to scholars since 1974. The small number of sherds sent to the Cyprus Museum before 1974, as well as the tiny amounts that have turned up in more recent excavations of southern sites, were sampled by the author. None of the whole pots examined in the next chapter has been sampled for petrographic analysis. The current political situation on Cyprus prevented the acquisition of soil samples for more than half of the sites represented by thin sections in this study; therefore none was taken in order that the data collected for each site might remain comparable.

The samples have been divided into seven fabric groups based on their mineral content and texture. There are also 5 outliers that appear to be the sole representatives of 5 distinct fabrics. Since only 68 sherds were sampled for thin section analysis, it is not only possible, but quite likely, that this study does not include representatives of all the fabrics used to make White Painted ware in the Middle Bronze Age. Instead, it demonstrates the use of different paste recipes and clay sources to make vessels that superficially form a distinct class of ware. Although it is not possible to pinpoint the exact location of the production centre for each fabric group, there is enough variability between groups and consistency within them to suggest large geographical regions where the geology is compatible with the mineralogy of the thin sections.
First, the main geological features of the eight main areas defined by Catling (1962:134-135) and refined by Frankel (1974b:19) will be discussed. Following this discussion, the seven fabric groups and 5 outliers will be characterized and a possible geographical region for the clay source will be suggested for each.

4.2 Overview of the geology of Cyprus

4.2.1 The North Coast
The north coast of Cyprus is dominated by the Kyrenia mountain range. The oldest rocks of this range are metamorphic, but there are also beds of sedimentary rock with igneous intrusions present in them (Ducloz, 1972:5). In many parts of the Kyrenia range the sedimentary and igneous rocks have been metamorphosed. Serpentinite is abundant throughout the north coast and could be of volcanic or metamorphic origin. The Lapithos Formation covers much of the area and is composed mainly of globigerinal limestone with microfossils of Eocene origin (ibid:21). This combination of minerals: limestone, foraminifera and serpentinite, occurs in several parts of the island. Schists and phyllites are also common in several of the formations on the north coast. The sites of Lapithos, Vounous and Kazaphani are situated in this region.

4.2.2 The Southern Foothills
This region comprises the southern slopes of the central part of the Kyrenia Range. Geologically, it is nearly identical to the North Coast region, except that it contains a large area of sands, silts, clays and gravels in its southern portion (Constantinou, 1995). Rivers flowing from the Kyrenia Range could bring some igneous rock fragments into the area, but the region is dominated by chalks, marls and limestone. The site of Kythrea is located in this region, but no sherds from this site were sampled in this study.

4.2.3 The Western Region
The Western Region is dominated by sedimentary rocks, mainly limestone, chalks and marls. The Kythrea Formation, which is the most prominent formation in the area, contains abundant foraminifera, quartz, calcite (often as fragments of marble), biotite and serpentinite (Moore, 1960:35-37). The Ovgos River flows through the area, emptying into Morphou Bay. To the north is the western end of the Kyrenia Range. Igneous rocks appear mainly in the Kyrenia

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41 See map 1
42 See map 2
Range, although there are a few outcrops of pillow lavas in the Kythrea Formation further south (ibid). The sites of Morphou, Stephania and Dhenia are part of this region, of which only Dhenia is represented in the samples taken for this study.

4.2.4 The Central River Valleys
The two main rivers of Cyprus, the Pedieos and Yialias, flow through the Mesaoria plain, which dominates this area. The Mesaoria is composed of limestones, marls, chalks, and sandstones. The main formations are Pakhna and Lapithos, nearly identical to those found in the Southern River Valleys and the Western Region, but without the igneous rocks from those areas (Constantinou, 1995). The rivers, however, could have transported igneous material to the clay beds in this region since both of them have their origins in the Troodos Massif. The site of Ayia Paraskevi is located in the centre of this region.

4.2.5 The Southern River Valleys
This area comprises the northern foothills of the Troodos Massif as well as the river basins of the Pedieos and Yialias Rivers. The proportions of igneous and sedimentary rocks are roughly equivalent. The Troodos Massif is composed of diabase and pillow lavas. The diabase consists of quartz, albite, epidote, micro-gabbros and microdiorite, while the pillow lavas are mainly composed of olivine-basalt (Bear, 1960:42-44). The structure of the pillow lavas has become obliterated either through metamorphism or erosion (Gass, 1960:67-68), which means that the minerals derived from them will be highly altered. The sedimentary rocks are part of the Lapithos formation, consisting of limestone and chalk. The Perapedhi Formation, in which Politiko is located, consists of chalks and marls overlying igneous material. It contains a large quantity of iron-rich umber that could be metamorphosed marl (ibid:25-29). Bear also mentions the presence of bentonite in this formation. Bentonite is pale green and made up of montmorillonite clay with feldspar, quartz and carbonate grains. This clay is not found west of Politiko, and is not particularly abundant anywhere (Bear, 1960:20, 108). In addition to Politiko, the site of Alambra is also located in this region. Politiko is much farther from the igneous rocks than Alambra, but is located on the banks of the Yialias River which could have transported volcanic minerals to the clay beds in its vicinity.
4.2.6 The Eastern Area
The eastern area is an extension of the Mesaoria plain and has the same geology. Both of the main rivers empty into the sea at the east coast, although the Pedieos River is fed by tributaries coming from the Kyrenia Range as it crosses the valley.\(^{43}\) The mineralogy of the clays from this area is not likely to be very different from that of the central valley, although it is possible that any igneous material being transported by river could be more decomposed than that found closer to its source. Enkomi, Milia and Kalopsidha are found in this region. The samples in this study come from Enkomi.

4.2.7 The Karpass Region
The Karpass peninsula is an extension of the Kyrenia Range and has similar geology (Constantinou, 1995). The Pakhna Formation occurs near the site of Galinoporni which is situated amid limestones, marls, calcarenites and gypsum. The same geology is also present near the site of Ayios Iakovos where clay beds are likely to produce the same suite of minerals in very similar proportions to those near Galinoporni. Only sherds from Galinoporni were sampled in this study.\(^{44}\)

4.2.8 The Larnaca Region
Igneous and sedimentary rocks occur in roughly equal proportions in the region. The Troodos Massif is in the western area, with several rivers having their origin there and emptying into the sea to the south and east. Igneous rocks occur as diabase and pillow lavas. The diabase in this area is made up of the same minerals as that found in the Southern River Valleys (Bagnall, 1960:68-71; Bear, 1960:42-44). The dike rocks contain quartz, plagioclase feldspar, biotite and serpentinite in various proportions depending on the type of diabase. Basalts in this region tend to be highly altered, as are the pillow lavas (Bagnall, 1960:68-85). The sedimentary rocks of the Perapedhi formation are not very common and generally do not contain foraminifera. They are mostly located next to the pillow lavas in the foothills of the Troodos Massif. The largest group of sedimentary rocks in the region is the Lapithos Group consisting primarily of chalks, marls, siltstones and cherts (ibid:18-32). The sites of Hala Sultan Tekke, Laxia tou Riou and Klavdhia

\(^{43}\) See map 1.
\(^{44}\) The sherds from Ayios Iakovos, Kalopsidha, Enkomi, Larnaca and a few other eastern sites were kept in the Famagusta Museum prior to 1974 and are presently unavailable for study by scholars.
are located in this region. Unfortunately it was not possible to obtain sherds from any of these sites for petrographic analysis.

4.3 Characterization of the Fabric Groups

4.3.1 Fabric Group 1 – Quartz with sedimentary material (no volcanic rock fragments)
Members: sample numbers 11, 13, 16, 18, 19, 21, 28, 30, 33, 34, 53, 55, 67, 68, and 69

I Microstructure:

a) Vesicles, vughs and channels are present in the samples. 5-20% of sample (average 10%)
b) Inclusions account for 5-10% of the sample with open spacing.
c) There is a random orientation of voids and inclusions, although in sample 34 the channels are aligned parallel to each other.

II Groundmass:

a) The groundmass is homogeneous.
b) Micromass: the optical activity is low to moderate. The clay appears green to brown in plane polarized light, and darker green to brown in cross polarized light.
c) Inclusions: The grain size distribution is unimodal.

Coarse Fraction: 0.24mm-0.05mm

Frequent – predominant: quartz

Few-common: biotite, mica, foraminifera, micrite

Rare-few: plagioclase feldspar, calcite, amphibole

Fine Fraction: 0.05mm-0.01mm

Dominant – predominant: quartz

Few – frequent: mica, micrite, plagioclase feldspar

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45 See Appendix 3, Table 1 and Appendix 4, Graph 1.1.
46 See Appendix 3, Table 2 and Appendix 4, Graph 1.2.
Rare-few: foraminifera, calcite, amphibole, biotite

III Textural concentration features:

Textural concentration features are present only in sample 16. They are generally red-brown in both plane polarized and cross polarized light, with moderate optical density. They are well-rounded with low to moderate sphericity. The maximum diameter is 0.60mm and the mode is 0.20mm. Constituents of the textural concentration features include quartz and micrite.

IV Amorphous concentration (depletion) features:

These are generally depletion features and are present in nearly every sample. They cover 1-5% of the total field, although they represent 20% in samples 33 and 34. They are composed of dark red, semi-opaque to opaque material and are moderately to highly spherical. The average diameter is 0.03mm. These objects are most likely red iron oxide that has leached out of the groundmass due to high firing temperatures.

Discussion:

The members of this fabric group all have very few and very small inclusions. Quartz dominates both the coarse and fine fraction. Not all of the minerals are present in every sample, but the group is unified by its high quantity of quartz and the absence of volcanic rock fragments. Foraminifera are present in samples 16, 18, 33, 34, and 53, where they are accompanied by micrite. This suggests that the source of both micrite and foraminifera is likely to be foraminiferal limestones such as those present in the Lapithos Formation.

Generally, the vessels have thin walls, usually five millimetres or less in thickness. The inclusions are mainly 0.15mm or less, except for one or two grains that are up to 0.30mm but these are very rare. The absence of larger inclusions may be due to some type of processing of the clay, such as levigation or sieving to remove larger inclusions, although the presence of a few larger grains may indicate that the clay bed contained mainly small inclusions. In many cases the fabric appears green and mottled in thin section under crossed-polars, suggesting a very high firing temperature for most vessels in this group. The green quartz-rich clay so typical in these samples may be derived from the bentonite of the Perapedhi formation in the central and

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47 See Appendix 1, figure 9 for an example of this fabric.
southern river valleys discussed above, but the fact that some samples contain foraminifera suggests that the vessels were not made of pure bentonitic clay. The most likely origin for this fabric group is the Mesaoria Plain, either in the Western Region or the Central River Valley region.

4.3.2 Fabric Group 2 – Sedimentary inclusions with very few volcanic rock fragments
Members: samples 2, 3, 4, 5, 7, 15, 25, 29, 31, 35, 56, and 57

I Microstructure:

a) The voids appear as vesicles, vughs and channels. They account for 5-10% of the sample, but reach 20-30% in samples 5 and 15.

b) Inclusions in this group cover from 5-10% of the total field, with open spacing (samples 2, 5, 15, and 31), and up to 20-40% with single to double spacing (samples 4, 25, and 56).

c) The voids and inclusions are randomly aligned.

II Groundmass:

a) The groundmass is homogeneous.

b) Optical activity is moderate to high. The samples are brown to golden-brown in plane polarized light and have a sparkly appearance in crossed polars.

c) The grain size distribution is generally unimodal, except for samples 4, 6 and 60.

Coarse Fraction\(^{48}\): 0.26mm-0.05mm

**Frequent to dominant:** quartz

**Common to frequent:** micrite, foraminifera

**Rare to few:** volcanic rock fragments, mica, amphibole, calcite, plagioclase feldspar, biotite, chert

Fine Fraction\(^{49}\): 0.05mm-0.01mm

\(^{48}\) See Appendix 3, Table 3 and Appendix 4, Graph 2.1.

\(^{49}\) See Appendix 3, Table 4 and Appendix 4, Graph 2.2.
**Frequent to predominant:** micrite

**Common to frequent:** quartz

**Few:** foraminifera, mica

**Rare to few:** plagioclase feldspar, amphibole, biotite

**III Textural concentration features:**

Samples 15, 25 and 31 have bands of different colours of clay. In samples 2, 4, 5, and 56, the textural concentration features are red in both plane polarized and cross-polarized light and are sub-rounded to rounded with moderate sphericity.

**IV Amorphous concentration (depletion) features:**

Amorphous depletion features represent only 1-2% of the total field where they are present. They are composed of dark red, semi-opaque to opaque material and tend to be fairly spherical. The average size is 0.03mm.

**Discussion:**

The fine fraction of this fabric group is dominated by micrite, giving the thin sections a sparkly appearance in crossed-polars. Foraminifera, serpentinite, mica and quartz are also present in most of the samples, although mainly in the coarse fraction. This group contains the highest number of foraminifera per sample of all the fabric groups in this study. In addition, every sample in this fabric group contains at least a few foraminifera. The lack of red iron oxide spots and the presence of so much micrite and so many foraminifera tests suggest that the vessels in this group were not fired at a very high temperature. The presence of such a high quantity of micrite and foraminifera suggests that the clay used to make these vessels derived from foraminiferal limestone such as that found in the Lapithos Formation. Such conditions would have been present in pools at the foothills of both the Kyrenia Range and the Troodos Massif on Cyprus during the period of uplift from the Upper Cretaceous to Pliocene periods (Gass, 1960:14-15, 22-23). The presence of chert in most of the samples suggests the clay may have formed at the contact between the Lower Pillow Lavas and the chalks around the Troodos massif where chert

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50 See Appendix 1, figure 10 for an example of this fabric.
is abundant (Stewart, 2006:41). Volcanic and metamorphic inclusions such as biotite, mica and red minerals that may be altered biotite, are quite rare and are highly altered. Volcanic rock fragments occur in samples 4, 5, 7, 25, and 56, but there are very few grains per sample and it is quite decomposed where it does occur. The clay bed may have been distant from the pillow lavas of the Troodos foothills and the diabase outcrops of the Kyrenia Range, although these minerals could have been transported by river from either or both of these regions. The most likely sources for the vessels of this group are the North Coast, Western Region or Central or Southern River Valleys. Very similar geology occurs in the Eastern Area and it is possible that this fabric group contains samples from multiple areas where similar clays occur.

**4.3.3 Fabric Group 3 – Sedimentary inclusions and volcanic rock fragments**

Members: samples 6, 8, 12, 17, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, and 54

**I Microstructure:**

a) The voids are mainly vesicles, with some vughs and channels and a few mega vughs. The voids make up 5-10% of the field, although in samples 38, 40, 42, 45, 46, 49, 50, 51 and 52 they reach 20%.

b) Inclusions comprise 20-40% of the field and are single- to double-spaced.

c) The voids and inclusions are randomly aligned, except for samples 37, 39, 43, 45, 46, 47 and 48, in which the mica is aligned parallel to the sample margins. There are also two lines of inclusions in sample 50.

**II Groundmass:**

a) The groundmass is homogeneous in most samples. In sample 40, the core is a different colour from the margins.

b) The optical activity of the samples of this group is low to moderate. The groundmass appears golden-brown to greenish-grey in plane polarized light and golden- to greenish-brown in cross polarized light.

c) The grain size distribution is generally bimodal with more inclusions in the coarse fraction than the fine fraction.
Coarse Fraction\textsuperscript{51}: 0.50\text{mm}-0.05\text{mm}

**Few to dominant:** micrite, quartz, volcanic rock fragments

**Common:** calcite, foraminifera

**Rare to few:** mica, polycrystalline quartz, plagioclase feldspar, amphibole, biotite

Fine Fraction\textsuperscript{52}: 0.04\text{mm}-0.01\text{mm}

**Frequent to dominant:** micrite, quartz

**Few to common:** mica

**Rare to few:** foraminifera, volcanic rock fragments, plagioclase feldspar, amphibole, biotite

III Textural concentration features:

Textural concentration features are present in seven of the fifteen samples in this group.\textsuperscript{53} They are orange to reddish brown in plane polarized as well as cross polarized light. They have moderate to high optical density with clear to sharp boundaries and are well rounded with moderate sphericity. Their main constituent is quartz. The maximum size is 2.50\text{mm} x 1.70\text{mm}. The minimum is 0.18\text{mm} x 0.08\text{mm}. The average is 0.30\text{mm} x 0.20\text{mm}.

IV Amorphous concentration (depletion) features:

Amorphous depletion features occur in eleven of the fifteen samples, ranging from 1-5\% of the total field, but up to 30\% in sample 58. They are red to reddish-brown in both plane polarized and cross polarized light, and are semi-opaque to opaque. They are generally spherical with an average size of 0.02\text{mm} – 0.03\text{mm} round. The maximum is 0.15\text{mm} x 0.10\text{mm} (samples 38 and 46).

\textsuperscript{51} See Appendix 3, Table 5 and Appendix 4, Graph 3.1.
\textsuperscript{52} See Appendix 3, Table 6 and Appendix 4, Graph 3.2.
\textsuperscript{53} Samples 36, 40, 43, 46, 48, 51, 54
Discussion:

This fabric group is characterized by the relatively large and abundant inclusions present in it. Although the suite of minerals is quite similar to Group 2, the fabric appears coarser. The micrite in these samples is mostly in the coarse fraction, so that the fabric does not appear sparkly the way the fabric in Group 2 does. In this fabric, quartz is as common as micrite and the inclusions are about the same size. The fabric has a sandy texture much coarser than the quartz-rich fabric in group 1.

The clay bed from which the clay in this group was drawn was different from that (or those) used to make the vessels of Group 2 with respect to coarseness, but similar in terms of types of inclusions, except that there are more volcanic rock fragments in the samples in Group 3 than those of Group 2. In most cases, the amount of foraminifera in each sample is roughly equivalent to the amount of volcanic rock. This is not true in Fabric Group 2 where the foraminifera outnumber the decomposed pieces of volcanic rock. The volcanic rock fragments in this group, although altered, are not as weathered as those in Group 2, suggesting that they came from a nearby source rather than having traveled down a river before being deposited. Sample 43 has an interesting altered mineral in it and several textural concentration features. Sample 40 has the same spongy texture that was present in samples 1, which is an outlier, and 6, also in Group 3. Although the minerals can be found all over the island of Cyprus, the near equivalency of foraminifera and volcanic rock fragments, as well as the weathered state of the volcanic rock fragments suggests an origin for the clay in the Eastern or Larnaca Region.

4.3.4 Fabric Group 4 – Micaceous
Members: samples 10, 20, 26, 27, and 32

I Microstructure:

a) The voids are vughs, mega vughs, channels and vesicles. They comprise 5-10% of the field.

b) Inclusions comprise 15% of the total field in samples 10 and 27 with open spacing, and 40% in samples 20, 26, and 32 with double spacing. Most of the inclusions are tiny.

c) The voids and inclusions are mainly aligned parallel to the sample margins.

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54 See Appendix 1, figure 11.
II Groundmass:

a) The groundmass is homogeneous.

b) Optical activity is low to moderate. The groundmass appears brown to green in plane polarized light, and brown or grey to jade-green in cross polarized light.

c) The grain size distribution is unimodal to weakly bimodal with 80-85% of the inclusions in the fine fraction. Sample 26 has a roughly even distribution of the fine and coarse fractions.

Coarse Fraction\(^{55}\): 0.33mm-0.05mm

**Common to dominant:** quartz

**Few to common:** mica, volcanic rock fragments, biotite

**Very few to few:** foraminifer, micrite, calcite, plagioclase feldspar, amphibole

**Rare:** polycrystalline quartz

Fine Fraction\(^{56}\): 0.05mm-0.01mm

**Common to dominant:** mica, quartz

**Few:** foraminifer, micrite, volcanic rock fragments, plagioclase feldspar, amphibole, biotite

III Textural concentration features:

Textural concentration features are present in three of the five samples.\(^{57}\) They are reddish-brown in plane polarized and cross polarized light. They have moderate to high optical density and clear to sharp boundaries. They are well rounded with low to moderate sphericity. Their constituents are quartz and mica laths. In samples 20 and 32, a change in direction of the orientation of the mica laths can be seen. Sample 10 has red streaks 7.35mm x 0.04mm and 1.10mm x 0.14mm. The maximum size of the rounded textural concentration features is 1.15mm x 0.55mm and the minimum is 0.52mm x 0.45mm.

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\(^{55}\) See Appendix 3, Table 7 and Appendix 4, Graph 4.1.

\(^{56}\) See Appendix 3, Table 8 and Appendix 4, Graph 4.2.

\(^{57}\) Samples 10, 20, and 32
IV Amorphous concentration (depletion) features:

Amorphous depletion features occur in all of the samples in this group and occupy from 1-10% of the total field, averaging 5%. They are red to reddish-brown in both plane polarized and cross polarized light, and are semi-opaque to opaque. Their sphericity is high, and their average size is 0.02mm to 0.03mm round. The largest is 0.51mm round (sample 32).

Discussion:

Superficially, this group resembles Fabric Group 1 in that the samples contain very small inclusions. The fine fraction of this fabric group, however, is rich in mica, although quartz is also abundant in both the coarse and fine fractions. The quantity of other minerals present is quite variable. Mica does not appear to occur in conjunction with any mineral other than quartz. Volcanic rock fragments and foraminifera are comparatively rare, perhaps suggesting that the clay bed used to produce this pottery was neither near the basalt or pillow lavas, nor the Lapithos Formation. The Dhikomo Formation is made up of micaceous marble and grey or green phyllites (Ducloz, 1972:9), which would account for the large amount of mica in combination with quartz. This formation passes along the ridge of the Kyrenia Range to the south of the site of Lapithos. The river that flows past that site would most certainly carry minerals from this formation to any clay beds near that site. It would seem, then, that the most likely candidate for the origin of the vessels in this group would be the site of Lapithos, although Vounous, Kazaphani and Kythrea could also produce pottery with a large content of mica since they are located on rivers fed by the same formation (Constantinou, 1995). These vessels were probably made from clay taken from the North Coast Region.

4.3.5 Fabric Group 5 – Micaceous with no volcanic rock fragments
Member samples: 61 and 63

I Microstructure:

a) Voids occur as vughs or vesicles. They comprise 5-10% of the sample.

b) Inclusions comprise 10% of the total field. The spacing is open.

c) The voids and inclusions are aligned randomly, but in sample 61 the channels tend to run at an angle of approximately 45 degrees to the sample margins.

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58 See Appendix 1, figure 12 for an example of this fabric.
II Groundmass:

a) The groundmass is homogeneous.

b) Micromass: the optical activity is low to moderate. The groundmass of sample 61 is jade green, while that of sample 63 is reddish-brown.

c) The grain size distribution is unimodal.

Coarse Fraction\textsuperscript{59}: 0.15mm-0.05mm

**Dominant:** quartz

**Common:** mica

**Few:** plagioclase feldspar, biotite

Fine Fraction\textsuperscript{60}: 0.04mm-0.01mm

**Dominant:** mica

**Frequent:** quartz

**Few:** plagioclase feldspar

III Textural concentration features:

Sample 61 has textural concentration features. They are reddish-brown in both plane and cross polarized light. They have moderate to high optical density and clear to sharp boundaries. They are well-rounded with moderate sphericity and contain mica and quartz. The maximum size is 1.15mm x 0.55mm. The other one is 0.65mm x 0.35mm.

IV Amorphous concentration (depletion) features:

Both samples contain amorphous depletion features which cover approximately 10% of the visual field. They are red and semi-opaque to opaque with moderate to high sphericity. In sample 63 there is also a red streak measuring 1.20mm x 0.20mm. The maximum size for the spots is 0.15mm x 0.08mm, with a mode of 0.05mm round.

\textsuperscript{59} See Appendix 3, Table 9 and Appendix 4, Graph 5.1.

\textsuperscript{60} See Appendix 3, Table 10 and Appendix 4, Graph 5.2.
Discussion:

Sample 63 is quite thick and it is therefore difficult to identify all of the minerals. Both samples appear to have been highly fired as the groundmass is green with red iron oxide mottling. Because the samples contain mica but no volcanic rock fragments, the most likely source for the clay used to produce them is the North Coast.

4.3.6 Fabric Group 6 – Micritic with sedimentary inclusions and volcanic rock fragments

Members: samples 22, 24 and 60

I Microstructure:

a) The voids are vesicles and channels and comprise 5% of the sample.

b) Inclusions comprise 15-30% of the sample and have double to open spacing.

c) The voids and inclusions are aligned randomly, except in sample 24 where they are aligned roughly parallel to the sample margins.

II Groundmass:

a) The groundmass is homogeneous.

b) Micromass: the optical activity is low to moderate. The clay appears brown in plane polarized light, but golden-brown in cross polarized light.

c) The grain size distribution is unimodal to weakly bimodal.

Coarse Fraction: 0.20mm-0.05mm

Dominant-frequent: quartz

Common-Few: foraminifera, micrite, volcanic rock fragments

Rare: plagioclase feldspar, amphibole, sparry calcite

Fine Fraction: 0.05mm-0.01mm

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61 See Appendix 1, figure 13 for an example of this fabric.
62 See Appendix 3, Table 11 and Appendix 4, Graph 6.1.
**Dominant-Frequent:** quartz

**Common:** micrite

**Few:** amphibole

**Discussion:**

The samples in this group contain mainly quartz, but there are also relatively high percentages of sedimentary inclusions such as micrite and foraminifera, as well as volcanic rock fragments. Although volcanic rock fragments are present in all three samples, they are most abundant in sample 60. The proportions of volcanic rock to sedimentary inclusions are quite similar in samples 22 and 24. It is possible that sample 60 was produced in a different area, but one with the same mineral constituents, from the other two samples. The most likely sources for the clay are the Western Region and the Central and Southern River Valleys, although the North Coast is also a possibility if the clay were taken either from a bed near a basalt outcrop or from a river flowing from the area of basalt outcrops.

**4.3.7 Fabric Group 7 – Volcanic rock fragments and quartz, but no sedimentary material.**

Members: samples 14 and 23

**I Microstructure:**

- a) The voids are vesicles and vughs and comprise 10% of the sample.
- b) Inclusions comprise 10-20% of the sample and have double to open spacing.
- c) The voids and inclusions are aligned randomly.

**II Groundmass:**

- a) The groundmass is homogeneous.
- b) Micromass: the optical activity is low to moderate. The clay appears grey to greenish brown in plane polarized light, but green in cross polarized light.
- c) The grain size distribution is weakly bimodal.

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63 See Appendix 3, Table 12 and Appendix 4, Graph 6.2.
64 See Appendix 1, figure 14 for an example of this fabric.
Coarse Fraction\textsuperscript{65}: 0.35mm-0.05mm

**Dominant-frequent:** quartz, volcanic rock fragments

**Few-rare:** plagioclase feldspar, amphibole, mica, biotite

Fine Fraction\textsuperscript{66}: 0.05mm-0.01mm

**Dominant-Frequent:** quartz

**Few:** plagioclase feldspar, biotite, mica

**Discussion:**

The inclusions in these two samples are very few, but some are quite large.\textsuperscript{67} Volcanic rock fragments are very common in both, but foraminifera and micrite are absent, which suggests that the material from which the clay eroded must not have been chalk or limestone. The most likely origin for the clay used to make these two vessels is the Southern River valleys near the pillow lavas.

**4.3.8 Samples that do not conform to groups**\textsuperscript{68}

**4.3.8a Sample 1**

**I Microstructure:**

a) The voids are mega vughs and channels. They occupy approximately 20\% of the sample.

b) The inclusions occupy approximately 30\% of the sample, with single to double spacing.

c) The inclusions and voids are randomly oriented with respect to the sample margins.

**II Groundmass:**

a) The groundmass is homogeneous.

\textsuperscript{65} See Appendix 3, Table 13 and Appendix 4, Graph 7.1.

\textsuperscript{66} See Appendix 3, Table 14 and Appendix 4, Graph 7.2.

\textsuperscript{67} See Appendix 1, figure 15 for an example of this fabric.

\textsuperscript{68} These are likely sole representatives of other fabric groups.
b) The micromass shows moderate optical activity. It is pale brown in plane polarized light, and sparkly golden brown in cross polarized light.

c) The inclusions show a unimodal grain size distribution. c:f:v=40:40:20

Coarse fraction\(^{69}\): 0.60mm-0.05mm

**Frequent:** quartz

**Common:** foraminifera

**Few to rare:** micrite, calcite, volcanic rock fragments, plagioclase feldspar, biotite

Fine fraction\(^{70}\): 0.05mm-0.01mm

**Predominant:** micrite

**Common:** quartz

**Discussion:**

Sample 1 contains several altered minerals that may be altered basalt\(^{71}\). The volcanic rock fragments are different in appearance from those present in other groups and may be highly altered through metamorphism. The clay could have come from the North Coast region where metamorphic rocks are most common on the island.

**4.3.8b Sample 58**

I Microstructure:

a) The voids are vesicles, vughs and channels. They occupy approximately 10% of the sample.

b) The inclusions occupy approximately 15% of the sample, with open spacing.

c) The inclusions and voids are randomly oriented with respect to the sample margins.

II Groundmass:

a) The groundmass is homogeneous.

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\(^{69}\) See Appendix 3 Table 15 and Appendix 4, Graph 8.1.

\(^{70}\) See Appendix 3, Table 16 and Appendix 4, Graph 8.2.

\(^{71}\) See Appendix 1, figure 16.
b) The micromass shows low optical activity. It is grey in plane polarized light, and jade
green in cross polarized light.
c) The inclusions show a bimodal grain size distribution. c:f:v=25:65:10

Coarse fraction:\(^{72}\): 0.40mm-0.05mm

**Common:** quartz, micrite, calcite

**Few:** mica, amphibole, biotite

**Rare:** foraminifera, volcanic rock fragments, plagioclase feldspar

Fine fraction:\(^{73}\): 0.04mm-0.01mm

**Dominant:** quartz

**Common:** micrite, mica

**Rare:** foraminifera, plagioclase feldspar, amphibole, biotite

**Discussion:**

Some of the inclusions in this sample are quite large, angular and unaltered\(^{74}\). The grain size
distribution is bimodal and it is possible that the larger inclusions represent temper added by the
potter. Although the micromass appears to be green, this is not likely due to a high firing
temperature because the calcite crystals and micrite are well-preserved. The volcanic rock
fragments are highly altered and are quite rounded, suggesting weathering and transport by
water. The possible origins for the clay used to make this vessel are the North Coast or Karpass
Region, where volcanic rocks are metamorphosed, or the Eastern Region where such could have
been transported by water by the Yialias or Pedieos Rivers.

### 4.3.8c Sample 59

**I Microstructure:**

a) The voids are mega vughs and channels. They occupy approximately 5% of the sample.

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\(^{72}\) See Appendix 3, Table 15 and Appendix 4, Graph 8.1.

\(^{73}\) See Appendix 3, Table 16 and Appendix 4, Graph 8.2.

\(^{74}\) See Appendix 1, figure 17.
b) The inclusions occupy approximately 20% of the sample, with double to open spacing.
c) The inclusions and voids are moderately oriented with respect to the sample margins.

II Groundmass:

a) The groundmass is homogeneous.
b) The micromass shows low optical activity. It is brown in both plane polarized and cross polarized light.
c) The inclusions show a unimodal grain size distribution. c:f:v=45:50:5

Coarse fraction\(^{75}\): 0.50mm-0.05mm

**Frequent:** quartz, micrite

**Few:** foraminifera, volcanic rock fragments, mica, calcite

**Rare:** plagioclase feldspar, amphibole, biotite

Fine fraction\(^{76}\): 0.05mm-0.01mm

**Common:** quartz, mica, micrite

**Few:** amphibole

**Rare:** foraminifera, plagioclase feldspar, biotite

**Discussion:**

This sample is very similar in composition to the members of Group 2 except that its inclusions tend to be larger and there are more of them\(^{77}\). Also, it does not contain chert, which is present in most of the samples in Group 2. It is possible that the clay used to make this vessel may have come from a different part of the clay bed used to make some of the members of Group 2. Mineralogically, it would be at home on the North Coast or in the Central and Southern River Valley regions. This sample also contains an ooid, which would have been formed in shallow,
moving water through the precipitation of carbonate rock (Mackenzie & Adams, 1994:110).78
This could have happened in either of those two regions as the island of Cyprus was rising from
the sea bed.

4.3.8d Sample 65
I Microstructure:

a) The voids are vughs, and appear mainly in the darker clay. They occupy approximately
10% of the sample.
b) The inclusions occupy approximately 40% of the sample, with single to double spacing.
c) The inclusions and voids are randomly oriented with respect to the sample margins.

II Groundmass:

a) The groundmass is heterogeneous.
b) The micromass shows moderate optical activity. The darker clay is orange in plane
polarized light, and darker reddish-brown in cross polarized light. The light clay is light
brown in plane polarized light and light reddish brown in cross polarized light.
c) The inclusions show a bimodal grain size distribution.

Light Clay

Coarse fraction79: 0.50mm-0.05mm

Frequent: micrite

Few: foraminifera, volcanic rock fragments, mica, quartz, plagioclase feldspar, amphibole,
biotite

Fine fraction80: 0.04mm-0.01mm

Frequent: micrite

Common: quartz

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78 See Appendix 1, figure 95.
79 See Appendix 3, Table 15 and Appendix 4, Graph 8.1.
80 See Appendix 3, Table 16 and Appendix 4, Graph 8.2.
**Few:** foraminifera, volcanic rock fragments, mica, plagioclase feldspar, amphibole, biotite

Dark clay

Coarse fraction\(^{81}\): 0.50mm-0.05mm

**Frequent:** volcanic rock fragments

**Common:** mica, quartz

**Few:** plagioclase feldspar, calcite, amphibole, biotite

Fine fraction\(^{82}\): 0.04mm-0.01mm

**Frequent:** quartz

**Common:** mica

**Few:** volcanic rock fragments, plagioclase feldspar, amphibole, biotite

**Discussion:**

This sample has two distinct clay types.\(^{83}\) The darker clay contains polycrystalline quartz and does not contain limestone or shell fragments which are present in the lighter clay. The darker clay has a cloudy appearance, while the lighter one is sparkly due to a large amount of micrite being present in its fine fraction. The paste is relatively coarse, with large inclusions. The volcanic rock fragments in this sample appear to be fresh, suggesting that the clay bed is close to a source of volcanic material. The most likely source for this clay is the foothills of the Troodos Massif where there are pillow lavas, but also chalks, marls and fossiliferous limestones. The Southern River Valley is the most likely location for the production of the vessel made from this clay.

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\(^{81}\) See Appendix 3, Table 15 and Appendix 4, Graph 8.1.

\(^{82}\) See Appendix 3, Table 16 and Appendix 4, Graph 8.2.

\(^{83}\) See Appendix 1, figure 19.
4.3.8e Sample 66

I Microstructure:

d) The voids are vesicles and vughs. They occupy approximately 5% of the sample.
e) The inclusions occupy approximately 40% of the sample, with single to double spacing.
f) The inclusions and voids are randomly oriented with respect to the sample margins.

II Groundmass:

d) The groundmass is homogeneous.
e) The micromass shows low optical activity. It is orange-brown in both plane polarized and cross polarized light.
f) The inclusions show a bimodal grain size distribution. c:f:v=80:15:5

Coarse fraction\textsuperscript{84}: 0.90mm-0.05mm

Frequent: volcanic rock fragments

Common: foraminifera, micrite

Few: mica, quartz, calcite, amphibole, biotite

Rare: plagioclase feldspar

Fine fraction\textsuperscript{85}: 0.04mm-0.01mm

Frequent: quartz

Common: micrite, mica

Few: amphibole, biotite

Rare: foraminifera, plagioclase feldspar

\textsuperscript{84} See Appendix 3, Table 15 and Appendix 4, Graph 8.1.
\textsuperscript{85} See Appendix 3, Table 16 and Appendix 4, Graph 8.2.
Discussion:

This sample contains a large quantity of volcanic rock fragments as well as several foraminifera.\textsuperscript{86} The inclusions are quite large and plentiful. It resembles the lighter clay of sample 65 and may have been taken from the same clay bed. The most likely origin for the minerals in this clay is the foothills of the Troodos Massif at the contact between the Pillow Lavas and the limestone. This vessel was probably produced in a production centre in the Southern River Valley.

4.4 Conclusion:

Although it is possible to suggest large geological areas for the source of the clay used to make the various vessels in this study, it is difficult to isolate a specific production centre by looking only at the minerals present in the thin sections. Seven fabric groups have been created from the 68 samples that are part of this study, but some of these groups have only two or three members. There are also five samples that do not fit well within the six fabric groups. Most likely, this means that there are more groups than have been sampled. Given the small number of thin sections available, this is highly probable. The geographical areas suggested for each group are as follows\textsuperscript{87}:

Group 1: Quartz with sedimentary inclusions but no volcanic rock fragments

- The Western Region or Central River Valley

Group 2: Sedimentary inclusions with very few volcanic rock fragments

- The North Coast, Western Region, Central or Southern River Valleys or the Eastern Region (if volcanic rock fragments were transported by water)

Group 3: Sedimentary inclusions with volcanic rock fragments

- The Eastern Region
- The Larnaca Region

\textsuperscript{86} See Appendix 1, figure 20.
\textsuperscript{87} Refer to Appendix 5 for the proportions of fabric groups per site, and Appendix 6 for the concordance between the sample numbers and the sites represented in this study.
Group 4: micaceous with volcanic rock fragments

- The North Coast

Group 5: micaceous with no volcanic rock fragments

- The North coast

Group 6: Micritic with sedimentary inclusions and volcanic rock fragments

- The Western Region, Central or Southern River Valleys or the North Coast

Group 7: Volcanic rock fragments and quartz with no sedimentary inclusions

- The Southern River Valley

Sample 1:

- The North Coast

Sample 58:

- The North Coast, Karpass Region or Eastern Region

Sample 59:

- The North Coast or Central or Southern River Valleys

Sample 65:

- The Southern River Valley

Sample 66:

- The Southern River Valley

As can be seen clearly above, it is not easy to distinguish between the Central and Southern River Valleys. That is because all of sites in these areas are situated in the Mesaoria Plain at different distances from the Troodos Massif and the Kyrenia Range. It may be possible to suggest that a clay bed is closer to the pillow lavas where there is abundant fresh serpentinite and
basalt in the thin sections, or closer to limestone formations where there are abundant foraminifera and micrite or calcite, but any of these inclusions could have been borne by river to a clay bed anywhere in the Mesaoria Plain. In addition to the problem of river transport of various minerals is the presence of minerals such as mica, micrite, and quartz in nearly every part of the island. Most likely candidates for parent rocks can be suggested, but the more unlikely sources cannot entirely be ruled out. Petrography, then, can serve as a guide for isolating potential geographical locations of ceramic production centres, or clay procurement areas, but it cannot give a precise place on a map where the potter found the clay to make the vessels.

There is another issue that arises when the clay sources are considered: that of the potter’s choice of clay. While it is unlikely that the ancient potter knew what minerals were present in the clay, it is almost certain that he or she chose clay with specific properties in order to make White Painted vessels (Barlow & Idziak, 1989:75). In a study of contemporary traditional potters on Crete, Day found that potters chose clay according to colour and feel based on their own ideas of what kind of clay made the best pots, seeking out similar clays in different locations if they were forced to find a new source through marriage or other social or political factors (2004:120). If the potters of the Middle Bronze Age on Cyprus needed to change locations due to marriage, as Frankel (1974b:51; 1974c:43; 1993:70) suggests, then the choice of light-coloured, fine clay could be made in many parts of the island, making the overall composition of the paste similar even though the pottery was made in different geographical zones.

When attempting to isolate pottery production centres, it is necessary to consider the clay available to the potters in terms of mineral composition, but their choices may not be so apparent in ceramic thin sections. Some of the fabric groups have very few, very small inclusions, while others have several large ones. This may illuminate the potter’s deliberate selection of specific clay, or perhaps a processing method to remove large inclusions, or the use of sand temper, which may be the case for some of the samples in Group 3 and sample 58. The clay itself may be specific to certain geological regions, but as so many scholars previously have argued (Gjerstad, Åström, Frankel, Herscher and Maguire to name a few), the decoration of White Painted ware shows strong regionalism. The next chapter is concerned with regional patterns in decoration, attempting to isolate ceramic production centres based on style.
Chapter 5

Determining Production Centres Based on Style

5.1 Introduction

Petrographic analysis only presents part of the picture of ceramics and their place in society. In order to fully analyze the production, distribution, use and discard of pottery, it is necessary to construct a model that will explain all of the data collected from the study of pottery found in the archaeological record. That means that the style and function of vessels must be taken into consideration, in addition to the technology of production. This chapter presents an analysis of the shape and decoration of the published vessels available to the author, as well as several vessels personally studied by her. Åström’s work was mainly centred on the material found at Lapithos, since that was the most abundant collection of White Painted ware available to him. He arranged the material by shape, then by overall decorative schemes and attempted to create a sequence. Because of the limited amount of material available at the time, it was not possible to make inter-site comparisons. The fact that the material came from very few sites also gives the impression that the types created by Åström were island-wide, although he does isolate eastern and western styles (1957:11).

The fact that White Painted ware can easily be divided into various groups is in part due to regional variation. The high creativity of the Cypriot potters and painters, however, makes it very difficult to understand all of the possible reasons for variation. There are very few objects, particularly in the early Middle Bronze Age, that are similar to each other. Åström did not consider each vessel as an individual product, but considered broad groups of pots. The vessels in his study, therefore, are not individual products of potters and painters, but are large classifications into which subsequent scholars, with great difficulty, have tried to fit new material.

Frankel focused on the decoration of the vessels. In his analysis, he reduced the decoration on White Painted ware vessels to single motifs, such as horizontal wavy lines, cross-hatching, chequerboard patterns, etc. He then looked at the regions where such motifs were found on
pottery. He did not consider the shape of the vessel at all, but completely divorced the decoration from the pots. Although there are certainly regional preferences for particular motifs, Frankel’s analysis does not take into consideration the relationship between the various motifs in the overall design of the decoration, or the relationship between the various designs and the shapes of the vessels. Like Åström, Frankel did not look at the chaîne opératoire, but concentrated only on the work of the painter, who may or may not have been the person who made the pot. In his later work, he recorded the colour of the fabric, slip and paint, but he still continued to try to fit the vessels into Åström’s typology, even though he admits that this typology is not satisfactory for newly discovered material. What is needed, then, is not a new typology, but a new model of ceramic production in Middle Bronze Age Cyprus.

Such a model must be both static, to include the basic and essential ingredients such as clay, water, temper, fuel, and dynamic, to examine the choices made by the potters, such as type of clay, paste recipes, forming techniques, choice of tools, and firing methods (van der Leeuw, 1976:68) as well as the shapes formed and the decorative motifs used. The shapes and decorations can be determined in part by function, and in part by cultural norms. Most of the steps in the production of pottery are necessary regardless of the type of vessel being manufactured. There is more scope for individual choices in areas such as the techniques used to form the pot, the type of surface finish, painted designs and, in some cases, even the firing atmosphere which can produce variations in colour. Ceramic “style” can be most easily detected in these latter operations that allow for more variability (Rye, 1981:3), although it is not possible to determine whether the person who made the pot also decorated it. Variability is the most important factor in the isolation of production centres, since it is based upon the choices made by the potter or group of potters, but there should be some uniformity in style of the output of any given production centre. In order for a site to be considered a possible production centre for any type of pottery, there should be more variability between the vessels found there and vessels from other sites than there is between the vessels in the assemblage at that site. This is not easy with respect to White Painted ware, which is not abundant at most sites where it is found, and is quite variable in its shape and decoration even at the same site.

In the cases where the potter is making pottery for his or her own household, there will be considerable variation in the products from a given site comprising numerous households.
Where there are similarities in shape, decorative motifs and decorative schemes between households and tombs, it is possible that the pottery was produced by specialist potters, or at least by potters and painters working closely together and influenced by each other’s work.\(^8\) This is in part due to the fact that the demands placed upon potters by consumers tend to limit variability in the potter’s repertory (Rice, 1987:171, 201-204). Although environmental constraints, such as the availability of raw materials, limit the choices potters make, social factors also play a role in the decisions between various possible shapes and decorative schemes. Potting skills can be learned through observation and imitation by children living in a potting home, or by an novice in the service of the master potter. In either case, the novice learns not only techniques, but the social aspects of potting which are part of the techniques (Lemonnier, 1993:2-6). The novice will likely use the same techniques as the master, which will limit the variation in shape, although general shapes may be preferred by consumers. Decoration, on the other hand, may be more open to influence from the consumer whose preferences control the potter’s ability to sell products. Although consumers may influence the shapes and possibly the decorations chosen by the potter, there is still some room for variation. Potters may choose particular motifs or combinations of motifs from a range of possibilities, based on their own aesthetic values, or perhaps to brand their own products (Pool, 1992:298-300). Clusters of similar products in a consumption context signal the presence of a common producer, or group of producers, making pottery for consumers with similar demands. Thus, although technological studies are important in order to help us understand some of the choices made, some consideration must be taken of both the potter and the society in which he or she is embedded (Feinman, 1989:217). Production groups, then, will reflect not only the raw materials available (clay, temper, fuel, water, etc), but also the choices made by the potter, as well as the tastes of the consumers.

If, as Frankel has suggested, pottery production was carried out in the household during the Middle Bronze Age (1974a:204-206; 1981:96; 1988:50-51), then it would be very difficult to locate production centres on the ground. When pottery production is not a full-time occupation, it is carried out in domestic spaces used for other purposes. Excess raw materials, such as clay and temper, would become part of the stratigraphy of the building and would be difficult to isolate,

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\(^8\) It is also possible that older pottery was taken from the tomb on subsequent burials and may have served as a model for later potters and painters to imitate. Most tombs were used for several generations.
while areas of burnt earth may indicate an open firing for ceramics, or a hearth for cooking (Pool, 1992:289-290). To complicate matters further for this particular study, very few of the sites where White Painted Wares have been found represent areas of settlement. Most of them are tombs and cemeteries. Stratigraphy, then, is not available to help with the establishment of chronological relationships between the various vessels and groups of vessels. It is not possible in most cases even to assign certain objects with specific burials in a multi-period tomb, as the action of water annually disturbs the tomb contents (Stewart & Stewart, 1950:44). Production centres themselves, would be very difficult to find, particularly for the Middle Bronze Age on Cyprus. Instead, they must be inferred through an examination of consumption centres which offer assemblages without stratigraphy.

In this chapter, White Painted ware from twenty nine sites from all around the island will be examined based on fabric colour, vessel shape, vessel dimensions, design elements and decorative syntax. Fifty three vessels were examined by the author in the Cyprus Museum, and thirty seven were examined in the University of Pennsylvania Museum. The data about the other vessels were taken from publications. While the sample is small, it should be borne in mind that White Painted ware is rare in any context, and that much of it remains unpublished. Unfortunately, several of the vessels in this chapter were published in older publications and much of the important information such as fabric descriptions and vessel dimensions is missing, making comparison between sites difficult. In the previous chapter the fabric of 68 sherds from various parts of the island was examined in thin sections in order to assign the vessels to geological clay procurement areas. In the next chapter the petrographic analysis will be combined with the stylistic analysis of the present chapter in order to determine where the production centres that supplied White Painted ware to the various sites were located and whether each site received pottery from one or multiple sources.

For the stylistic analysis in this chapter, the material from each site was first sorted into vessels with similar shapes and decorative motifs in order to attempt to isolate production units. Where there were very few vessels, the objects were sorted by main decorative motif. Those objects which are unique have been kept separate in order be compared to the material from

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89 All of this information is not available for every vessel in the published corpus.
90 For the purpose of this thesis, a production unit is a small group of potters working together. It could be a single potter, a family unit, or an unrelated group of people.
other sites to determine whether they might be imported. Given the creativity of Cypriot potters, however, it is also possible some of the objects that do not fit into groups were experiments or unique items made by the potters who produced other wares as well.

The North Coast

5.2 Lapithos

The cemetery at Lapithos is the richest on the island for White Painted ware. Its finds formed the basis for Åström’s typology (1957:xii-xviii), and for all subsequent studies of the ware including this one. The site is located on the north coast of the island and has attracted the attention of looters as well as excavators for over a century. The material discussed below comes from the excavations of the Swedish Cyprus Expedition, the University of Pennsylvania Museum excavations, as well as various others who have deposited their finds in the Cyprus Museum. It is very likely that Lapithos was also the source of several objects without provenience, which had been looted and sold on the antiquities market.

There are clear similarities between the wares of various tombs, suggesting a common source for the vessels. Within the groups of similar objects, there is still some degree of variability, but the motifs chosen, the syntax of the decoration, and in some cases the shapes and proportions of the vessels share more in common with each other than they do with jugs and cups found in other parts of the Lapithos cemetery. It appears that at Lapithos there were several different potters and painters of vary skill levels working within the same sphere of influence, imitating each other’s shapes and motifs, but in different combinations.

Because there are so many vessels from Lapithos, they have been divided based mainly on decoration, although shape has also been taken into consideration. There appears to be a connection between decorative scheme and shape, with some patterns being found only on certain shapes.

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91 See Appendix 2, map 10 for imports into Lapithos.
5.2.1 Group 1. Solid-coloured bases, decorated with lattice panels and chequerboard patterns.

There are seventeen members of this group, from six different tombs. Some of the vessels are so closely similar that they may have been produced by the same person, while others are only superficially similar and may represent the work of artists influenced by more skilful potters and painters. The three shapes in this group are the jug, the askos, and the amphora. The jugs have either round mouths, or angled spouts, and some of them also have additional tubular side spouts.

5.2.1a Group 1A. Round-mouthed jugs (Appendix 3, Table 17).

There are ten members of this subgroup. Three jugs have side spouts, and one has a strainer in its mouth. All have piriform to biconical bodies with round bases, cylindrical necks, and handles from the neck to the shoulder of the vessel.

The three jugs with side spouts are decorated with framed vertical lattice panels.92 They all have a vertical loop handle that is attached from the shoulder to the neck, although it has been broken off on vessel A678. The shape of the spouts of vessels L.316.118 and A678 are very similar, as is the overall shape of the body. All three jugs also have a vertical, semi-circular unpierced lug on the front of the shoulder at the base of the neck. Jug A678 has dimples on its surface that were most likely created by the potter’s fingers, and has flat, parallel, vertical facets on its neck from scraping.93 Both the handle and the neck were formed separately and inserted through the wall of the vessel. Clay collars were then added to support the handle. These remain on the jug, whereas the handle has broken off.94 The spout appears to have been attached in the same way, and then its base smoothed carefully to make the joint invisible on the surface.95 There are very fine parallel striations on the surface in different directions, probably caused by a cloth, grass or a brush used for the application of the slip. Shiny parallel facets over the paint and slip show that the jug was burnished after painting. Unlike the other two spouted jugs, the spout of A678 is

92 Jugs L.316.118, L.316.107 and A 678; Appendix 1, figures 32, 33, and 24-27 respectively.
93 See Appendix 1, figure 24.
94 See Appendix 1, figure 25 for the rings on the neck and shoulder. The hole in the shoulder of the jug can also be seen.
95 See Appendix 1, figure 26.
painted a solid colour the same as the base. The three jugs are so similar that it is likely they were the product of the same potter or group of potters.96

Most of the jugs in this group have vertical panels of decoration, but three jugs have a horizontal decorative scheme. The jug with a strainer has a combination of vertical strips of decoration, with horizontal bands filling the spaces between.97 They come from tombs 4, 9, 303, 313, 316, and 803B. The jugs from tomb 31698 all have framed vertical lattice panels, with vertical decorative motifs between them. On all three jugs the solid coloured base is separated from the body decoration by thin horizontal rings just below the maximum diameter. The spouted jug from Tomb 999 also has thin horizontal rings below its maximum diameter. These vessels were probably all made by the same small group of potters and painters.

The jugs from tomb 313 are strikingly similar, although the decoration is slightly different on each one. In all cases, the solid colour of the base is separated from the body decoration by nothing more than a gap. Jugs L.313 A.47100 and L.313 A.71101 both have flaring lips, while L.313 A.21102 does not. Jugs L.313 A.47 and L.313 A.21 both have lugs on the front, but the lug on L.313 A.47 is pierced, while that on L.313 A.21 is not. The decorative schemes of L.313 A.71 and L.313 A.21 are quite similar. Both have four horizontal bands, the top and third band being elongated chequerboard patterns in each case, while the second and fourth bands are lattice bands on L.313 A.71, and bands of interlocking hatched triangles on L.313 A.21. The necks are decorated with bands of chequerboard patterns and lattice panels on both jugs, one of each on L.313 A.21 and two of each on L.313 A.71. Jug L.313 A.47 shares motifs with the other two, but not the same arrangement. There is a vertical lattice panel on the front and back of the jug, and a vertical chequerboard on each side. The four vertical panels thus created are filled with a horizontal lattice panel on the top and bottom and a horizontal band of chequerboard pattern in the middle. The neck is decorated with a series of wavy bands and triple straight bands. The top

96 Refer to Appendix 3, Table 1 for vessel attributes.
97 Jug L.313 A.47, Appendix 1, figure 30
98 See Appendix 1, figures 32 and 33
99 See Appendix 1, figure 24-27
100 See Appendix 1, figure 30
101 See Appendix 1, figure 31
102 See Appendix 1, figure 29
of this jug is fitted with a strainer, indicating a specialized use. Jug 69-35-50 is too fragmentary to be able to assign it to the round or angled mouth categories, but it is clearly a jug and has a solidly coloured base. There are multiple horizontal bands below the maximum diameter, in same style as many of the jugs in this subgroup. It has a multiple zigzag pattern very similar to that on jug 32-27-61 from Tomb 803B. Jug 69-35-50 has been sampled for petrographic analysis. It would seem by the limited number of motifs and the similar arrangements of them that these jugs are contemporary and the work of a few potters and painters who must have been working together and were influenced by each other’s work.

Jug A675 is very similar in shape and dimensions to L.313 A.21 Each of the jugs has an unpierced vertical lug at the base of the front of its neck, and both have the same entasis of the neck. The bases are round, but slightly pointed towards the centre. The handles were attached from the shoulder to a point just above the base of the neck and clay collars were placed around the point of attachment of the neck and handle and smoothed to give an even transition between the joined parts. The motifs used to decorate Jug A675 are similar to those used on other jugs in this group, demonstrating some awareness on the part of the painter with the work of other painters who made vessels for the graves of the Lapithos cemetery. All of the jugs in this group were probably made close together in both time and physical proximity.

5.2.1b Group1B. Jugs with angled spouts (Appendix 3, Table 18)

This subgroup comprises five jugs, all of which have been classified as White Painted II. One (L.306 A.14) has a double spout, and a tubular side spout. This jug has its body decoration separated from the base with thin horizontal bands similar to the jugs with round mouths and side spouts. Jug L.315 B-C.6 has a wavy line at the base of its body decoration similar to A675 from Tomb 4. In all other cases in this group, the side decoration continues down to the beginning of the solid colour of the base. Four out of five of the jugs have pendant wavy lines as

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103 See Appendix 1, figure 35
104 See Appendix 1, figure 34
105 See Appendix 1, figures 21-23
106 See Appendix 1, figure 29 and Appendix 3, Table 1.
107 See Appendix 1, figure 23
108 See Appendix 1, figure 36
109 See Appendix 1, figure 39
part of their decoration, while the fifth one\textsuperscript{110} has elongated vertical chequerboard zigzags between the lattice panels. The double-spouted jug has the most elaborate decoration, with a series of horizontal bands of chequerboard pattern, wavy lines and zigzags down its back under the twisted forked handle. The shape of its spout and its proportions are very similar to jugs L.313 B.101\textsuperscript{111} and L.315 B-C.6. All of the jugs in this group have small lugs at the base of their necks, but only those on L.315 B-C.6 and L.306 A.14 are pierced. Because of the nearly identical, and unique, treatment of the interior of the spouts of jugs L.313 B.101 and L.315 B-C.6, as well as the identical small pierced lugs at the top of the spout on either side, it is very possible these two jugs were produced by the same potter. Jug L.306 A.14 shares similar lugs on the spout, and a similar tilt of the neck. It may be the work of the same person or by potters who were working closely together and were aware of each other’s work. The same small pierced lugs appear on jugs from Group 2.\textsuperscript{112}

5.2.1c Group 1C. Amphorae, askos and deep bowl (Appendix 3 Table 19)

There are four amphorae in this subgroup\textsuperscript{113}, each of a different size, and with necks of various lengths. One of them is fragmentary, but enough remains to reconstruct its shape and decoration. All have lattice panels, either placed horizontally, vertically, or both. Three of them also have the elongated chequerboard patterns seen on the jugs. Two have horned handles, while the handles of the two smallest ones are flat on top. The shapes of the bodies are similar to the shapes of the piriform jugs, but the openings are wider. The askos\textsuperscript{114} is included in this group because its shape is similar, except that the top is closed. The decorative motifs on it are also present on the amphorae. The deep bowl\textsuperscript{115} is also part of this group by virtue of its solid coloured base, as well as its lattice panels. It is likely that the same potters and painters who made jugs also made other shapes.

\textsuperscript{110} L.313 B.101, Appendix 1, figure 38  
\textsuperscript{111} See Appendix 1, figure 346  
\textsuperscript{112} L.315 A.26, A742, and L.315 A.43; Appendix 1, figures 57, 52-55, and 58, respectively. The fact that jugs likely to have been made together appear in different groups is a result of the groups being arbitrarily divided based on decorative motifs, in this case, the decoration of the bases.  
\textsuperscript{113} L.306 A.7, L.306 C.6, L.313 A.114, and L.322 D.86. See Appendix 1, figures 41, 42, 43 and 44, respectively.  
\textsuperscript{114} See Appendix 1, figure 45  
\textsuperscript{115} See Appendix 1, figure 46
5.2.2 Group 2. Bases decorated with broad lines. Bodies decorated with lattice panels and wavy lines.

There are thirteen vessels in this group, although the base decoration is not as uniform as that in Group 1. In all cases, the jugs are decorated with vertical schemes consisting of lattice panels with pendant wavy lines between them. In all but two cases, the lattice panels are framed. Two of the jugs (32-27-82 and 32-27-2139)\(^{116}\) are fragmentary, but enough remains to reconstruct the basic shape (except the neck and mouth), and decorative scheme. They will be included with the round mouth jugs for the sake of discussion, but it should be borne in mind that this is an arbitrary choice. Jug 32-27-2139 has been sampled for petrographic analysis\(^{117}\).

5.2.2a Group 2A Round-mouthed jugs (Appendix 3, Table 20)

The round-mouthed jugs have more globular bodies than the jugs with angled spouts. One jug has a horizontal mouth\(^{118}\), while the others have their mouths either pinched at the end into a pouring spout\(^{119}\) or slanted downward toward the front of the jug. The handles are attached at the rim and join the body at the shoulder, except in the case of jug L.313 B.82 whose handle is attached from the centre of the neck to the shoulder. In all cases the lattice panels are framed. The lattice panels end at the top of the first broad band encircling the base, except in the case of jug L.311 A.35, whose panels continue to the base where there is a small circle with a dot in the centre. The necks are decorated with horizontal rings. On jug L.315 B-C.45\(^{120}\), there is a wavy line between groups of horizontal rings on the neck. The rims are decorated with either straight or wavy rings that completely encircle them.

5.2.2b Group 2B Jugs with angled spouts (Appendix 3, Table 21)

There are six complete jugs in this group. Two fragmentary ones have also been included, even though the shapes of their spouts cannot be determined. They belong in Group 2 by their

\(^{116}\) See Appendix 1, figures 60 and 62, respectively.
\(^{117}\) The actual sherd sampled is circled in the figure.
\(^{118}\) L.313 B.82. See Appendix 1, figure 48
\(^{119}\) L.311 A.35. See Appendix 1, figure 47
\(^{120}\) See Appendix 1, figure 50
5.2.3 Group 3. Bases decorated with alternating broad straight and wavy lines.

The seventeen vessels in this group can be divided into three subgroups: jugs with round mouths, jugs with angled spouts, and an amphora. All of the jugs have round bases and piriform bodies, except the amphora, which has a globular body due to the way its neck collar is attached to the shoulder. The decoration of the base is fairly standard in this group, with the number of straight and wavy lines varying according to the amount of space on the base of the vessel. The body decoration is much more variable, suggesting that the decoration of the base was not an area

121 See Appendix 1, figures 52-55
122 See Appendix 1, figure 53
123 See Appendix 1, figure 54
124 L.307 A.14, L.315 A.26, A742, L.315 A.43, and 32-27-82. See figures 56, 57, 52-55, 58, and 60, respectively.
125 L.315 A.26, A742 and L.315 A.43. See figures 57, 52-55, and 58, respectively.
126 Namely 313 B.101, 306 A.14, 315 B-C.6. Appendix 1, figures 38, 36, and 39, respectively.
127 Compare Appendix 1, figure 55 with figures 38 and 39.
where the painter expressed so much creativity. While decorating the base of a jug is not necessarily a subconscious act, the fact that it appears fairly consistent regardless of the rest of the decoration suggests that it may be characteristic of a single production group. It is for this reason that all of these vessels have been grouped together, even though Åström places them in several different groups. The fact that they were found in only a few tombs in the cemetery supports the idea that they were closely contemporary in their manufacture.

5.2.3a Group 3A Jugs with round mouths (Appendix 3, Table 22)

The jugs in this subgroup come from only three tombs in the Lapithos cemetery. Ten were found in tomb 316\textsuperscript{128}, three in tomb 320\textsuperscript{129}, and one in tomb 702\textsuperscript{130}. They are most likely contemporary with each other, which the similarity in their style would suggest. According to Åström’s typology, these jugs belong to groups III, III-IV String Hole Style, IV, and V. Although this typology appears to have a chronological component, tomb 316 contains vessels from all of these “types” of White Painted ware. While the tomb contained multiple burials, the unity of decoration, particularly of the bases of the jugs, argues for the burials being close together in time.

The vessels in this group can be further subdivided into four smaller groups: jugs with handles from rim to shoulder and flaring rims\textsuperscript{131}, jugs with handles from lower neck to shoulder and flaring rims\textsuperscript{132}, jugs with handles from rim to shoulder and pouring spouts on the rim opposite the handle\textsuperscript{133}, and jugs with handles from mid-neck to shoulder and with bevelled rims\textsuperscript{134}. Five of the jugs have lugs at the base of the neck (L.316.12, L.316.35, L.316.120, L.316.126, and L.702.70)\textsuperscript{135}. The lug on L.316.35 is the most elaborate of the group. Jugs L.316.111 and L.316.120 both have small horns on the top of their handles, and L.316.12 has a pierced lug on the top of its handle. All of the jugs have round bases except for L.316.35 and L.720.70 whose

\begin{footnotes}
\footnote{128}{L.316.12, L.316.15, L.316.35, L.316.64, L.316.107, L.316.118, L.316.120, L.316.126, L.316.178, and L.316 cupboard 2.2. See Appendix 1, figures 63-72, respectively.}
\footnote{129}{L.320.23, L.320.67, and L.320.111. See Appendix 1, figures 73-75, respectively.}
\footnote{130}{L.702.70. See Appendix 1, figure 76.}
\footnote{131}{L.316.12, L.316.15, L.316.118 and L.316.126. See Appendix 1, figures 63, 64, 68, and 70, respectively.}
\footnote{132}{L.316 cupboard 2.2 and L.320.23. See Appendix 1, figures 72 and 73, respectively.}
\footnote{133}{L.316.107, L.320.67, and L.702.70. See Appendix 1, figures 67, 74, and 76, respectively.}
\footnote{134}{L.316.35, L.316.64, L.316.120, L.316.178, and L.320.111. See Appendix 1, figures 65, 66, 69, 71, and 75, respectively.}
\footnote{135}{See Appendix 1, figures 63, 65, 69, 70, and 76, respectively.}
\end{footnotes}
bases are slightly flattened, L.316.120 which has a flat bottom that makes the whole jug tilt backwards, and L.316.64, L.316 cupboard 2.2 and L.320.23 which are cylindrical bottles with flat bases.

Elongated chequerboard bands appear as frames to the lattice panels on L.320.111. The main decoration of bottle L.316 cupboard 2.2 is a chequerboard pattern with long bands, while that of bottle L.320.23 is simply long bands of decoration intersected by thin, horizontal double lines. These two bottles could belong to Group 4 based on the decoration in the main zone of the body, but have been included in Group 3 because of their distinctive base decoration. Jug L.316.35 has a very elaborate woven pattern of multiple lines in addition to the lattice panels, and has horizontal wavy lines connecting the panels together. The bottle, L.316.64 has multiple horizontal bands with triangles and zigzag patterns making up the decoration. Jug L.316.178 also has multiple horizontal bands of decoration containing cross-hatched diamond chains and cross-hatched chequerboard patterns as well as zigzags. By its body decoration, it belongs to Group 6, but its base is decorated in the manner of Group 3. As with the two bottles discussed above, the fact that this jug qualifies for membership in more than one group suggests that the same potters and painters made vessels with different combinations of motifs. Jug L.316.178 also has a peculiar wavy line modeled in relief down the front of its neck. This sort of decoration is most common in Red Polished ware. The idea that elements of one type of ware appear in another suggests that the same potters and painters were responsible for the production of more than one type of ware. It would seem that White Painted ware was a specialized ware produced by the potters and painters who made other wares, rather than being produced by specialist potters.

5.2.3b Group 3B Jugs with angled spouts (Appendix 3, Table 23)

This group comprises eleven vessels from three tombs. There are three jugs from tomb 315, seven from tomb 316 and one from tomb 322. Six of the jugs have handles from the back

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136 See Appendix 1, figure 75
137 See Appendix 1, figures 72 and 73, respectively.
138 See Appendix 1, figure 65
139 See Appendix 1, figure 66
140 See Appendix 1, figure 71
141 L.315 A.6, L.315 B-C.18, L.315 B-C.34. See Appendix 1, figures 77-79, respectively.
of the rim to the shoulder\textsuperscript{144}, and five have handles from the neck to the shoulder\textsuperscript{145}. The bodies
of the jugs are generally piriform, although L.315 A.6\textsuperscript{146} is more globular and jugs L.316.34, L.316.55 and L.315 B-C.18\textsuperscript{147} are more elongated than the others. All of the jugs except L.315 A.6 and L.315 B-C.34\textsuperscript{148} have lugs at the base of the neck and jug L.316.55\textsuperscript{149} has lugs on either side of the neck as well. The lug on L.315 B-C.18\textsuperscript{150} has a horn on the top of it. Jug L.316.60\textsuperscript{151} has a tubular spout with a hole in its neck. It has two pierced lugs on either side of the neck hole similar to the eyelets on jug L.316.54\textsuperscript{152}. It also has a vertical pierced lug at the base of the neck. Jug L.316.54\textsuperscript{153} has similar eyelet lugs on its spout as noted in Group 1 and 2\textsuperscript{154}, while L.316.144\textsuperscript{155} shares with those jugs the vertical wavy lines on the interior of the spout in addition to the eyelets. The arrangement of the base stripes on jugs L.316.54 and L.316.150 are virtually identical, although L.316.54 is larger and therefore has more stripes\textsuperscript{156}. Jug L.316.55\textsuperscript{157} is decorated with lattice panels on the front and back, and chequerboard patterns on either side. Circles appear on either side of pendant wavy lines on both L.316.54 and L.315 B-C.34\textsuperscript{158}.

5.2.3c Group 3C Amphorae and deep bowl (Appendix 3, Table 24)

There are two amphorae and one deep bowl in this group\textsuperscript{159}. One of the amphorae has three bands of straight lines, a double wavy line, then two more bands of straight lines, giving it membership in this group when viewed from the side. The base, however, is decorated with a

\textsuperscript{142} L.316.34, L.316.54, L.316.55, L.316.60, L.316.122, L.316.144, and 316.150. See Appendix 1, figures 80-86, respectively.
\textsuperscript{143} L.322 D.41. See Appendix 1, figure 87.
\textsuperscript{144} L.315 A.6, L.315 B-C.18, L.315 B-C.34, L.316.34, L.316.122, and L.316.144. See Appendix 1, figures 77, 78, 79, 80, 84 and 85, respectively.
\textsuperscript{145} L.316.54, L.316.55, L.316.60, L.316.150, and L.322 D.41. See Appendix 1, figures 81, 82, 83, 86, and 87, respectively.
\textsuperscript{146} See Appendix 1, figure 77.
\textsuperscript{147} See Appendix 1, figures 80, 82 and 78, respectively.
\textsuperscript{148} See Appendix 1, figures 77 and 79, respectively.
\textsuperscript{149} See Appendix 1, figure 82.
\textsuperscript{150} See Appendix 1, figure 78.
\textsuperscript{151} See Appendix 1, figure 83.
\textsuperscript{152} See Appendix 1, figure 81.
\textsuperscript{153} See Appendix 1, figure 81.
\textsuperscript{154} L.315 B-C.6, L.313 B.101, and A742. See Appendix 1, figures 39, 38, and 52-55 respectively.
\textsuperscript{155} See Appendix 1, figure 85.
\textsuperscript{156} See Appendix 1, figures 81 and 86, respectively.
\textsuperscript{157} See Appendix 1, figure 82.
\textsuperscript{158} See Appendix 1, figures 81 and 79, respectively.
\textsuperscript{159} L.315 B-C.27, L.316.4, and 32-27-20. See Appendix 1, figures 88-90, respectively.
pair of straight lines from side to side, crossed by a wavy line from front to back, much in the manner of the decoration common on bowls. There are circles painted in the quadrants. Its rim is bevelled like some of the round mouthed jugs and painted with alternating pairs of oblique lines similar to the decoration on the rim of L.316.35\textsuperscript{160} in subgroup 3A. The other amphora\textsuperscript{161} has a tall cylindrical neck and very ornate handles with three piercings on each. It is decorated with multiple bands of motifs alternating between solid triangles, cross-hatched triangles and zigzags. The decorative field on the sides of the vessel is broken by two parallel lines with a wavy line between them, similar to the tankard in Group 4\textsuperscript{162}. The registers are divided by three parallel horizontal lines in the same manner as vessels in Groups 4, 5 and 6. Its body decoration places it in Group 7, but its base places it in Group 3. The deep bowl has its decorative field divided with a band of three parallel vertical lines down the front and back which run across the base. Another group of three lines crosses these from side to side and concentric circles appear in the quadrants thus formed. Such a division of the decorative field also appears on another deep bowl (A654), an amphora (L.316.104) and a bottle (L.316.79) from Group 6\textsuperscript{163}. It has unframed hatched triangles in its top register very much like the vessels in Group 9, but the lowest part of the body is decorated with three horizontal parallel lines with two wavy lines beneath that and two more horizontal parallel lines that separate the base from the body decoration as seen in jugs of Group 3. In fact, its decoration is very similar to that of the amphora L.315 B-C.27\textsuperscript{164} in this subgroup. With so much similarity with other groups in the arrangement of the decoration and in the motifs chosen, it is clear that the potters and painters of White Painted ware, although possibly specialists in the technique of White Painted ware, freely created many shapes and painted many motifs. Unlike the other vessels in Group 3, the amphorae and the bowl do not have lattice panels as part of their decoration. Only the alternation of straight and wavy lines on the lower part of the vessel remains constant.

\textsuperscript{160} See Appendix 1, figure 65.  
\textsuperscript{161} L.316.4. See Appendix 1, figure 89.  
\textsuperscript{162} See Appendix 1, figures 95-102.  
\textsuperscript{163} See Appendix 1, figures 119-121, 127, and 125, respectively.  
\textsuperscript{164} See Appendix 1, figure 88.
5.2.4 Group 4 Chequerboard patterns (Appendix 3, Table 25)

This group is heterogeneous in both shape and decorative schemes, but the members are united by the use of the chequerboard pattern in various forms.\(^{165}\) There are four tankards, two amphorae, three jugs with angled spouts, one jug with a round mouth, one with a tubular spout, one jug with the mouth missing, a deep bowl with a vertical handle, and a deep hemispherical bowl. Some of the objects can be grouped by decoration that is so similar that the artists who made them must have been in some sort of contact with each other, unless they were decorated by the same painter. Three subgroups can be formed based on the decoration: plain chequerboard, elongated chequerboard, and crossed chequerboard bands. Interestingly, the members of the groups were deposited in different tombs. Four of the vessels have been classified as White Painted III (L.322 D.36, L. 316.85, L.320.34, and L.320.48), three as White Painted IV (L.315 B-C.5, L.315 A.30, and L.316.81), three as White Painted III-V String Hole Style (L.316.93, L.320.79, and L.315 A.22) and two as White Painted V by Åström (1957:figs V, VI, VIII, XI, XIV, XV, XVII). Two (A 717 (fig. 91-94), and A 766 (fig 95-102) have been classified as White Painted IV by Frankel (1974b:57, 68, 96-97). Since some of the vessels with nearly identical patterns have been given different classifications based on the colour of the fabric, slip and paint, as well as the shape, it is clear that the classification of White Painted ware is not a simple matter. Colour is affected by firing conditions, the shapes of hand-made vessels are not standardized, and decoration can be copied by one artist from another.

5.2.4a Group 4A Plain chequerboard

The bodies of the jug A717 and the tankards in this group are roughly globular, while the bottles are flattened cylinders. The surfaces of A717 and A766 are uneven, with several indentations that probably were made by the potters’ fingers\(^{166}\). The neck of jug A717 appears to have been made by adding clay to the top of the body and moulding it with the fingers, and then a spout was pulled out of the end of the tube thus formed\(^{167}\). The bases of both the jug A717 and the

\(^{165}\) Jug 316.55 from Group 3 (see Appendix 1, figure 82) could be placed in this group too, but was classified by its distinctive base decoration. Such cross-overs between groups probably indicates a single production unit for both groups.

\(^{166}\) See Appendix 1, figures 91-92 and 98, respectively.

\(^{167}\) See Appendix 1, figures 93 and 94, respectively.
tankard A766 are flattened\textsuperscript{168}, probably by pressing the vessel onto a flat surface while it was still pliable. The rim and handle of the tankard appear to have been formed out of a single strip of clay. It was attached at the back of the vessel, and then joined to the top of the vessel in a counter-clockwise direction. The handle was then formed by lifting the clay strip from the point where it meets its beginning, then attaching it to the body of the vessel\textsuperscript{169}. Although the area of the rim where the clay strip was attached has been smoothed, a triangular space at the joint is still visible. There is also a sharp carination where the rim meets the body of the vessel\textsuperscript{170}, which supports the idea that it was added separately.

Vessels A717, A766 and L.315 B-C.5\textsuperscript{171} have their decorative fields divided vertically into quarters. On A766 the band that divides the sections is decorated with a vertical wavy line, but on the other two vessels it is left blank. The amphora L.315 B-C.5 has the vertical panels further divided into horizontal bands, but the work is not carefully planned. The bands are not even and they slope down at the point where they meet the vertical band on the side of the vessel. The tankard L.316.95\textsuperscript{172} has a horizontal division with a herringbone pattern at the joint of the neck and shoulder. Its chequerboard wraps around the vessel with no interruption. The decoration on this vessel is the most carefully planned and executed of the group. The painter(s) of A717, A766 and L.316.95 planned the design well to fit the shapes of the vessels, and the brush strokes are neat and even. It seems that L.315 B-C.5 was not as well planned, and not as carefully painted. The painter who decorated it does not appear to have been as skilled at the painters of the other vessels in this group. This person may have been an novice to the other painter(s), or may have been someone with less skill who was attempting to imitate their work. The handles on L.315 B-C.5 are similar to that on A717, and the shape of the vessel is even. While it is difficult to determine whether the same potter made both vessels, it is clear that the potting of L.315 B-C.5 is more evenly and carefully carried out than the painting.

\textsuperscript{168} See Appendix 1, figures 91 and 97, respectively.
\textsuperscript{169} See Appendix 1, figures 99-101.
\textsuperscript{170} See Appendix 1, figure 102.
\textsuperscript{171} See Appendix 1, figures 91-94, 95-102, and 103, respectively.
\textsuperscript{172} See Appendix 1, figure 104.
5.2.4b Group 4B Elongated chequerboard

The eight vessels in this group come from tombs 315, 316 and 320\(^{173}\). They are decorated with bands of plain chequerboard pattern separated by bands of broad lines, giving the impression of a woven pattern. This pattern is very regular on the deep bowl L.320.34, the amphora L.316.81, the tankard L316.85, and the bottle L.315 A.30\(^{174}\). It is regular on the neck of the tankard L.316.93\(^{175}\), but the body has an unusual pattern composed of vertical chequerboard bands that separate panels of broad horizontal strokes with wavy lines down the centre. One of the other bottles, L.320.79\(^{176}\), has horizontal bands of plain chequerboard as well as one band of broad strokes, placing it between categories A and B. Another bottle, L.315 A.22\(^{177}\), has its decorative field divided into several horizontal bands with various decorations in them. Some contain wavy lines, some have plain chequerboards and some have chequerboards made of vertical rectangles. There are also vertical elongated chequerboard bands on either side of the bottle. The other twin-necked bottle, L.320.76\(^{178}\), has vertical lattice panels, cross-hatched diamonds and horizontal and vertical chequerboard bands. The decoration on the four vessels with regular patterns is very uniform and could well be the work of the same painter, if not of painters working closely together. The decoration on the other four vessels is not as well planned or symmetrical, and appears to have been executed by a painter or painters of lesser skill. As with the amphora of category A, these vessels may be the work of novices, or by less skilled painters imitating the work of more skilled ones. Åström placed some of the members of this category into different categories based on the presence or absence of pierced lugs, but the decoration would argue in favour of them being from the same production group.\(^{179}\) Bottle L.316 cupboard

\(^{173}\) L.315 A.22, L.315 A.30, L.316.81, L.316.85, L.316.93, L.320.34, L.320.76, and L.320.79. See Appendix 1, figures 105-112, respectively.
\(^{174}\) See Appendix 1, figures 110, 107, 108, and 106, respectively.
\(^{175}\) See Appendix 1, figure 109.
\(^{176}\) See Appendix 1, figure 112.
\(^{177}\) See Appendix 1, figure 105.
\(^{178}\) See Appendix 1, figure 111.
\(^{179}\) Åström included 315 A.22, 320.79 and 316.93 in his group *White Painted III-V String Hole Style*, while 315 A.30, which has lugs down each side just like 320.79, was placed in his group *White Painted IV*, along with 316.81. It seems that when the lugs are pierced, it is string hole style, while when they are unpierced it is not.
2.2\textsuperscript{180} has a decorative scheme very similar to tankard L.316.93\textsuperscript{181}, but was placed in Group 3 due to the decoration on its base.

5.2.4c Group 4C Crossed chequerboard bands.

There are two vessels in this category\textsuperscript{182}. The pattern they share in common is made of two pair of parallel lines that cross each other. At the point of intersection, the area where the two lines meet has been left unpainted, giving the effect of a chequerboard square in the centre. A similar effect can be seen on the amphora in category B, L.316.81\textsuperscript{183}, which has a larger chequerboard square on its base formed by the intersection of broad vertical lines wrapping around the lower part of the vessel.

5.2.5 Group 5 Broad bands (Appendix 3, Table 26)

The four vessels in this group\textsuperscript{184} have broad bands similar to those in the elongated chequerboard group. One of the vessels from Group 3, L.320.23\textsuperscript{185}, could also be part of this group because of the decoration on its body, but is a member of Group 3 because of the decoration on its base. Tankard L.702.150\textsuperscript{186} has a pair of broad bands crossing in the centre of the base, very similar to L.322 D.36\textsuperscript{187} in Group 4, but the squares do not form a chequerboard. Two of the tankards in this group have vertical hatched diamonds, three below the lug on the front of L.702.144\textsuperscript{188} and one below the handle of L.702.150\textsuperscript{189}. The shapes are similar, but L.702.150 leans backwards. The handles all have horns on them. Tankard 32-27-87\textsuperscript{190} has wavy lines between the broad bands on either side. The bottle L.702.136\textsuperscript{191} has solid diamonds as well as broad bands, like the tankard L.702.150 from the same tomb. It is clear that there is a relationship between tombs 702

\textsuperscript{180} See Appendix 1, figure 72.
\textsuperscript{181} See Appendix 1, figure 109.
\textsuperscript{182} L.320.48 and L.322 D.36. See Appendix 1, figures 113 and 114, respectively.
\textsuperscript{183} See Appendix 1, figure 107.
\textsuperscript{184} L.702.136, L.702.144, L.702.150, and 32-27-87. See Appendix 1, figures 115-118, respectively.
\textsuperscript{185} See Appendix 1, figure 73.
\textsuperscript{186} See Appendix 1, figure 117.
\textsuperscript{187} See Appendix 1, figure 114.
\textsuperscript{188} See Appendix 1, figure 116.
\textsuperscript{189} See Appendix 1, figure 117.
\textsuperscript{190} See Appendix 1, figure 118.
\textsuperscript{191} See Appendix 1, figure 115.
and 804a. While there are no direct parallels for the decoration, the shapes of L.702.144 and L.702.150 would fit easily into the group of tankards from Toumba tou Skourou. It is possible that these are imported from that site.

### 5.2.6 Group 6 Hatched diamond bands (Appendix 3, Table 27)

There are ten vessels in this group: one deep spouted bowl\(^{192}\), one tankard\(^{193}\), six bottles\(^{194}\) and two amphorae\(^{195}\). The bodies of the deep bowl, tankard and amphorae are globular, while the bottles are cigar-shaped. One of the amphorae has a tall cylindrical neck\(^{196}\), while the other has a short neck\(^{197}\). Both have two horned handles. The surface of the deep bowl is uneven. It appears to have been formed by pinching, and then it was smoothed by a scraper which has left scratch marks on it\(^{198}\). A tubular spout was joined to its maximum diameter opposite the handle. It was probably made by rolling up a rectangle and joining the long sides, since it is long and narrow and there is no evidence that it was pierced by a long object to open the hole. The handle is oval in section and is attached vertically from the rim to the shoulder\(^{199}\).

One of the amphorae, L.316.104 and the deep bowl are decorated in the same manner\(^{200}\). The field on each side is divided into two vertical sections by a triple vertical line that continues across the base of the vessel. The base of the amphora is not illustrated, but it appears to have circles painted in the quadrants made by the crossing triple lines in the same manner as the deep spouted bowl and amphora L.316.6\(^{201}\). The vertical sections were then divided by sets of parallel horizontal lines, two on the bowl and three on the amphora. The bands between the lines were decorated in an identical manner with hatched diamonds. In both cases, the diamonds were

\(^{192}\) A654. See Appendix 1, figures 119-121.
\(^{193}\) L.316.25. See Appendix 1, figure 124.
\(^{194}\) L.315 A.18, L. 316.79, L.316.102, L.316.176, 32-27-92, and 32-27-207. See Appendix 1, figures 122, 125, 126, 128, 129, and 130, respectively.
\(^{195}\) L.316.6 and L.316.104. See Appendix 1, figures 123 and 127, respectively.
\(^{196}\) L.316.104. See Appendix 1, figure 127.
\(^{197}\) L.316.6. See Appendix 1, figure 123.
\(^{198}\) See Appendix 1, figure 120.
\(^{199}\) See Appendix 1, figure 121.
\(^{200}\) Compare Appendix 1, figures 127 and 119, respectively.
\(^{201}\) See Appendix 1, figures 119 and 123, respectively.
created by painting elongated “X” shapes that join each other at their terminals, then the closed spaces thus created were filled with short diagonal strokes from left to right.

Three of the bottles are divided into halves by the same triple line as the deep bowl and amphora L.316.104. One bottle, L.316.79, has the lines on either side, while the other has them on the front and back. The bottles are decorated with six horizontal bands of decoration each. On L.316.102 the hatched diamond bands alternate with zigzags, while on 316.79 there are four bands of diamonds followed by two bands of zigzags on the back, and two rows of diamonds, a row of zigzags, two more rows of diamonds and a final row of zigzags on the front. Bottle 316.102 has an animal protome on the shoulder opposite the handle. All of these vessels were found in the same tomb, and their similarity to each other suggests that they were likely produced together as a group by a small number of potters and painters who were working in the same manner. The other three bottles form a different subgroup, although their decoration consists of hatched diamonds. The decorative scheme, however, is arranged vertically rather than horizontally. These three bottles are smaller, and although the top is missing from 32-27-92 and 32-27-207, it was probably a short flaring spout as seen on L.315 A.18. The decoration is quite worn, but still visible. In all cases, the field is divided into vertical sections. There are double parallel straight lines framing the decorated field, which has a chain of diamonds, hatched on 32-27-92 and cross-hatched on 32-27-207. On 315 A.18, the double parallel lines form a zigzag on either side of the diamond chain. This bottle is almost identical to 32-27-92, but the hatching lines are made in the opposite direction. The hatching lines on 315 A.18 run from upper right to lower left, opposite to most other hatching marks, but the same as those on jug 32-27-196 from Group 8, and deep bowl 32-27-80 from Group 11. These bottles come from tombs 315 and 804 and were probably also produced by a small number of potters and painters working together.

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202 Bottles L.316.79, L.316.102, and L.316.176, and amphorae L.316.25 and L.316.104. See Appendix 1, figures 125, 126, 128, 124, and 127, respectively.
203 See Appendix 1, figure 126.
204 See Appendix 1, figure 125.
205 Åström does not mention it, although it appears clearly in the drawing on Figure XIV. Gjerstad et al. simply call it “a string-hole projection” (SCE 1, p. 119).
206 L.315 A.18, 32-27-92 and 32-27-207. See Appendix 1, 122, 129, and 130, respectively.
207 These three vessels may have been painted by the same person. This painter, working in a direction opposite to other painters, may also have been left-handed.
Amphora L.316.6 has a row of solid diamonds on its neck and a row of hatched diamonds on its body. The tankard has the same row of hatched diamonds on its neck and body, with a zigzag band in the zone on its shoulders. It makes a pair with bottle L.316.102 and may have been painted by the same person. The vessels in this group fall into two groups based on decoration, and may be the products of a limited number of painters, perhaps as few as two. A654, L.316.79, and L.316.104 and may be the work of one painter\(^{208}\), while L.316.6, L.316.25 and L.316.102 may be the work of the other\(^{209}\). Similarity between the two subgroups suggests that the two painters worked together, or were at least familiar with each other’s work.

**5.2.7 Group 7 Cross-hatched diamond chains (Appendix 3, Table 28)**

There are nine vessels in this group, all of them with their decoration organized into horizontal bands. There are two jugs\(^ {210}\), two bottles\(^ {211}\) and four amphorae\(^ {212}\), as well as a handle fragment that probably belonged to another amphora\(^ {213}\), judging by its shape and the close similarity of the shape of its handle to that of 32-27-10. Enough remains to see that it was decorated with cross-hatched diamonds. It is not possible to reconstruct much of the overall decoration of the fragment, but the body was divided from the rim with a chequerboard band. The decorative schemes fall into two main groups: those separated by horizontal chequerboard bands, and those separated by groups of three horizontal lines. The top band on the neck of L.320.24 has cross-hatched triangles, a motif also seen on jug L.316.18 and amphorae 32-27-10 and L.311 A.31\(^ {214}\). Amphora L.320.28 has a single band of cross-hatched diamonds on its shoulder and double zigzags on the lower part of its body and on its neck, almost a reverse of the decorative scheme seen on the tankard L.316.25 from Group 5\(^ {215}\). There is a great deal of similarity between Groups 6 and 7, the exception mainly being that the diamonds in Group 6 are hatched, while those in Group 7 are cross-hatched. There is no reason to assume that the painter considered

\(^{208}\) See Appendix 1, figures 119-121, 125 and 127, respectively.  
\(^{209}\) See Appendix 1, figures 123, 124, and 126, respectively.  
\(^{210}\) L.316.18 and L.320.24. See Appendix 1, figures 134 and 136, respectively.  
\(^{211}\) L.315 A.14 and L.315 A.86. See Appendix 1, figures 132 and 133, respectively.  
\(^{212}\) L.311 A.31, L.316.117, L.320.28 and 32-27-10. See Appendix 1, figures 131, 135, 137, and 138, respectively.  
\(^{213}\) 32-27-96. See Appendix 1, figure 139.  
\(^{214}\) Compare Appendix 1, figure 136 with figures 134, 138 and 131, respectively.  
\(^{215}\) Compare Appendix 1, figure 137 with figure 124.
these two motifs to be very different, and it is entirely possible that the same person painted jugs in both groups.\textsuperscript{216} The shapes of the vessels are all different, but there is some similarity in the pointed tips of the handles on bottle L.315 A.86, and amphorae L.316.117, L.320.28 and L.311 A.31\textsuperscript{217}. The same vessel types (jugs, amphorae and bottles) appear in both groups as well, suggesting that the difference between hatching and cross-hatching may not have been important to Middle Bronze Age painters. It is interesting to note, however, that cross-hatching becomes the preferred method of decorating squares, triangles and diamonds in the beginning of the Late Bronze Age when Proto White Slip ware appears.

5.2.8 Group 8 Cross-hatched triangles (Appendix 3, Table 29)

This group is defined by its most prominent decorative motif: cross-hatched triangles. It has a close relationship to Groups 7 and 9, and it is very likely that all of these vessels were the output of a small number of potters and painters. There are eleven vessels in this group: five jugs\textsuperscript{218}, one tripod jug\textsuperscript{219}, two deep bowls\textsuperscript{220} and three amphorae\textsuperscript{221}. There is a wide variety of vessel shapes in this group, although the majority of vessels have globular bodies. Jugs A713a and L.315 A.46, as well as amphora L.320.64 have biconical bodies with long, cylindrical necks\textsuperscript{222}. The jugs have rope handles, while the deep bowls both have strap handles. The amphorae have vertical handles that have been flattened. The handles of amphora L.315 A.97 were drawn into points at their tops\textsuperscript{223}. The vessels examined by the author all had dimpled surfaces. There was evidence of smoothing (fine parallel striations), but this must have been done when the pot was nearly leather-hard, as the dimples and some long indentations that may be traces of coils are still visible\textsuperscript{224}. The deep bowl A660 appears to have been pinched out of a lump of clay. Its rim and

\textsuperscript{216} Note especially the similarity between L.316.104 and A654 in Group 5 and L.320.24, L.315A.14 and L.316.117 in Group 6. See Appendix 1, figures 127, 119-121, 136, 132, and 135, respectively.

\textsuperscript{217} See Appendix 1, figures 133, 135, 137 and 131, respectively.

\textsuperscript{218} A754, A713a, L.315 A.46, L.320.88, and 32-27-89. See Appendix 1, figures 140-145, 152-157, 158, 162, and 163-165, respectively.

\textsuperscript{219} 32-27-213. See Appendix 1, figures 167-169.

\textsuperscript{220} A660 and L.320.86. See Appendix 1, figures 146-151 and 161, respectively.

\textsuperscript{221} L.315 A.97, L.320.64, and 32-27-211. See Appendix 1, figures 159, 160, and 166, respectively.

\textsuperscript{222} See Appendix 1, figures 152-157, 158, and 160, respectively.

\textsuperscript{223} See Appendix 1, figure 159.

\textsuperscript{224} This is particularly apparent on jug A754. See Appendix 1, figures 140-145.
handle were attached in the same way as the rim and handle on tankard A766. A flat strip of clay was attached to the body of the bowl, and then wrapped around it to form a rim. When the clay strip reached its point of origin, it was pulled up to form a handle, then brought down and attached to the body of the vessel.

The neck of A713a was made by rolling a rectangular slab of clay up and attaching its long ends to form a cylinder. This tube was then thrust through the top of the body of the vessel and the edges smoothed so that it would stay in place. There seems to have been no clay collar attached in the way that handles are attached to vessels. In fact, the neck appears to be slightly smaller than the opening on the body, leaving a slight ridge where the two parts join. The spout was flattened out from the top of the cylinder of the neck, and then pinched to form a pouring spout. It is not possible to determine how the handles were attached to this vessel, as the jug is intact and its long neck is narrow. The presence of clay collars on either end of it suggest that it may have been thrust through the vessel wall.

The spout of jug 32-27-89 was probably made in a similar way to that of A754, but a long, narrow object, probably a reed, was used to poke out or clean the hole through the top. A large hole was made on what is now the back of the spout and the edges pulled back to make an opening, most likely for filling the jug. Liquid would have been poured out of the tip of the spout. Several disc-shaped lugs were attached to the body of the vessel, and were punched through with some sort of sharp object after they were attached. The uneven shape of the painted triangles suggests that the decoration was applied after the lugs were attached, and some of the triangles had to be modified to fit between the lugs. The rope handle was attached by pinching it into the rim of the opening of the neck, and then it was probably thrust through the

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225 Compare Appendix 1, figures 146-150 with figures 95-102.
226 See Appendix 1, figures 156 and 157.
227 See Appendix 1, figures 154 and 155.
228 Compare Appendix 1, figures 163-165 with figures 140-145.
229 See Appendix 1, figure 165.
230 The holes all have bits of clay to the left of them (as seen when the vessel is held upright), and a channel with fine striations visible within it that runs from side to side through the hole. It is not difficult to imagine a stick or reed having been pushed through to form the holes. Their shape has been deformed through drying and firing so that they do not appear entirely round.
wall of the jug, but it is not possible to see the termination of the handle through the narrow neck. The base is round, but uneven in its profile.\footnote{See Appendix 1, figure 164.}

The rim of the amphora is carinated, but was not attached separately as it was in the case of deep bowl A660.\footnote{See Appendix 1, figures 146-151.} Its handles were made by attaching two rope handles to the surface of the vessel and then flattening the front and back of each. The ends were smoothed into the surface of the amphora to create a smooth transition. The vessel seems to have been built using coils from its base to the rim. It was well-smoothed, leaving very little trace of the coils, but there are a few very faint transverse depressions that may follow the area where one coil was laid down on top of another. The base of the vessel is round, but dimpled where the potter’s fingers shaped it.

The tripod jug is very similar in its construction to jug 32-27-89, except that it has three small feet on its base. Unlike jug 32-27-89, however, the lower lugs are lined up with the three feet instead of being beneath the handle, on the front and on either side.\footnote{Compare Appendix 1, figures 167-169 with figures 163-165.} The upper lugs are centred between the lower lugs, as seen from above.\footnote{See Appendix 1, figure 169.} The neck and spout are missing, so it is difficult to compare it with its apparent counterpart discussed above.

Four of the jugs (A713a, 315A.46, 32-27-89 and 32-27-213) and one of the amphorae (L.315 A.97) have similar decoration of cross-hatched triangles in registers.\footnote{See Appendix 1, figures 152-157, 158, 163-165, 167-169 and 159, respectively.} The squat amphora (32-27-211) has a double zigzag on its neck similar to, but neater than, that on the lower part of the jugs A754 and L.320.88.\footnote{See Appendix 1, figures 166, 140-145, and 162, respectively.} They all have similar cross-hatched triangles as their main decoration, but L.320.88 also has a row of hatched triangles making it equally at home in Group 9. The deep bowl L.320.86 has a very similar decoration to the long-necked amphora L.320.64, and they may have been painted by the same hand.\footnote{Compare Appendix 1, figures 161 and 160.} Åström placed the amphora in his String Hole Style group, obscuring its similarity to the deep bowl.
5.2.9 Group 9 Hatched triangles (Appendix 3, Table 30)

This group can be further subdivided into two subgroups: unframed hatched triangles and framed hatched triangles. In most cases, the triangles form the only decoration on the body of the vessel, and for the bowls, there is only one row of them. It is interesting that more than half of the vessels in this group came from the tombs excavated by the University of Pennsylvania Museum, and were consequently unavailable to both Åström and Frankel for their studies of White Painted ware.

5.2.9a Group 9A vessels decorated with unframed hatched triangles

The vessels in this subgroup come from four tombs: 315, 316, 320 and 804. There are five deep bowls, two hemispherical bowls and two jugs in this group. The deep bowls are all very similar to each other in both shape and decoration. Deep bowl A659 was made in the same way as deep bowl A660 and tankard A766. The rim and handle were made of a single strip of clay that was wrapped around the opening of the body, then lifted to form a loop handle. The part of the rim where the strip joins its beginning and forms the handle has been smoothed, but the joint is still visible. On deep bowl 32-27-80, the joint is not as visible, but it appears to have been made in a similar way. This method of joining the rim and handle to a vessel with a carinated rim seems to be characteristic of Lapithos, although it is not universal. It could be the work of a single potter.

One of the jugs is similar to L.320.88 of Group 8, but it has only one row of hatching, with a diamond chain below the triangles that resembles those on L.320.86 and L.320.64, also from Group 8. The decoration is similar, but the hatching on the triangles on 32-27-196 runs from top right to bottom left, unlike the hatching on most other triangles in this study except for those

\(^{238}\) 11 out of 20.
\(^{239}\) A659, L.315 A.2, L.315 A.70, L.316.132, and 32-27-80. See Appendix 1, figures 170-175, 176, 177, 178, and 181-183, respectively.
\(^{240}\) L.316.132 and L.316.162. See Appendix 1, figures 178 and 179, respectively.
\(^{241}\) 32-27-196 and 32-27-208. See Appendix 1, figures 184 and 185, respectively.
\(^{242}\) Compare Appendix 1, figures 170-175 with 146-151 and 95-102, respectively.
\(^{243}\) Compare Appendix 1, figure 184 with figure 162.
\(^{244}\) See Appendix 1, figures 161 and 160, respectively.
\(^{245}\) A nearly identical jug was found at Enkomi, tomb 20 and is currently in Stockholm. See MCBA figure VI.11.
on the deep bowl 32-27-80 also in this group. Both of these vessels were found in Tomb 804, and were likely to be the work of the same person. This painter seems to have been working somewhat outside the conventions of triangle painting at Lapithos. Two more examples of triangles hatched from top right to bottom left occur at Enkomi, but the decorative scheme seems more at home at Lapithos.

5.2.9b Group 9B vessels decorated with framed hatched triangles.

This subgroup comprises ten vessels and some fragments. All are bowls; two are deep bowls, one is a spouted deep bowl, seven are hemispherical bowls, and the sherds are likely from one or more other hemispherical bowls. The bowls vary in depth, making it difficult to decide whether they are deep bowls or not. The two that have been called deep bowls in this study both have collars, unlike the hemispherical bowls. The deep spouted bowl is nearly globular in its shape, but it does not have a collar. The handles are attached horizontally, except on the two deep bowls, the deep spouted bowl and hemispherical bowl 32-27-78, which all have vertically-attached handles. In the case of the horizontal handles, these have been formed by making a rope of clay and pressing it into the sides of the vessel near the rim. Sometimes the rope has been flattened into a strap. This seems to have been done when the vessel was leather-hard, but still pliable, as the wall of the bowl has been deformed somewhat by the pressure applied to make the handle stick. The vertical handles have not been thrust through the vessel walls as they usually are in the case of closed shapes. The spout on the spouted deep bowl has been thrust through the vessel wall and its interior end blended into the interior wall to form a smooth transition. The walls of the bowls in this group are relatively thin and smooth. There are no obvious coil joins or finger depressions to give a clue how they were manufactured. They may have been made using a mould to press them into or to shape them on (cf. Rice, 1987:124-127; Rye, 1981:81-83).

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246 These vessels were both found in Tomb 804: the jug in cupboard h, and the deep bowl in chamber A ((E. Herscher, 1978))
247 See Appendix 1, figures 1100 and 1101.
248 L.702.69 and 32-27-182. See Appendix 1, figures 194 and 212-213, respectively.
249 32-27-81. See Appendix 1, figure 207-208.
251 32-27-183. See Appendix 1, figures 214-215.
252 See Appendix 1, figures 189-191 for the attachment of a horizontal strap handle on A636.
In all cases except that of deep bowl L.702.69, the decoration consists of a single row of hatched triangles framed by a double stroke on the left side (except 32-27-73, which has a triple stroke on the left side). Deep bowl L.702.69 has a row of alternating oblique lines that make a zigzag pattern on the horizontal band beneath the triangles. The bases are generally decorated with some sort of crossed line motif with circles in the spaces, or with a strip of alternating oblique lines. The interior of the deep bowls is undecorated, but in the hemispherical bowls the interior decoration consists of various combinations of straight and wavy lines. In most cases, wavy rings encircle the rim and interior space. Sometimes there are crossing lines in the interior. The limited number of motifs used to decorate these bowls points to some standardization between shapes and decorative motifs at Lapithos.

5.2.10 Group 10 Alternating oblique lines (Appendix 3 -Table 31)

This group comprises thirteen hemispherical bowls, two deep bowls and one jug. Twelve of the hemispherical bowls have horizontal handles that have been tilted towards the vertical by approximately forty-five to sixty degrees, while two of the hemispherical bowls and deep bowl L.320.39 have vertical handles attached from their rims to the area of maximum diameter. The bowls appear to have been made in the same way as the bowls decorated with hatched triangles, the difference between them being mainly the decoration.

The interiors of most of the hemispherical bowls are decorated with wavy rings or lines, as are the bowls decorated with hatched triangles. Although the decorative schemes are very similar, none of these bowls appears to be the work of the same painter or potter. Instead, it seems possible that the idea for decorating bowls in a certain way was shared by a community of painters and potters who appear to have been familiar with each others’ work. The painter of 32-27-74 seems to have been working closely with the painters of 32-27-76, 32-27-73 and 315 B-C.35 as all four bowls have the same base decoration. It is possible the same person painted all

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253 As in the case of L.315 B-C.35, 32-27-71, 32-27-76, 32-27-78, and 32-27-162. See Appendix 1, figures 193, 197, 201-203, 204-206, and 209-211, respectively.
255 L.320.39 and L.702.98. See Appendix 1, figures 221 and 225, respectively.
256 L.702.55. See Appendix 1, figure 223.
257 L.311 A.26 and L.315 B-C.25. See Appendix 1, figures 216 and 218, respectively.
of these bowls. Similarly, the interior design of a central circle with a wavy ring around it seems to be a common way to decorate the inside of hemispherical bowls at Lapithos. An interesting group of bowls from tomb 702 is decorated in a manner more at home on Black Polished vessels from Dhenia\textsuperscript{258}. There is an example of decoration using multiple parallel lines with triple dot motifs on a sherd from Dhiorios Aloupotrypes\textsuperscript{259}. Another vessel closely resembling deep bowl L.702.98 was found at Ayia Paraskevi, and one with the same shape and with alternating oblique lines as its decoration comes from the same tomb at Ayia Paraskevi\textsuperscript{260}. Similar decoration can be found at Kazaphani and Morphou Toumba tou Skourou. The shape of this bowl is unlike others from Lapithos, but fits within the repertory of Toumba tou Skourou. It may be a product of that site. Tomb 702 appears to have had some close connection to Toumba tou Skourou, with which it was contemporary.

5.2.11 Group 11 Interlocking hatched triangles (Appendix 3, Table 32)

This group comprises one jug\textsuperscript{261}, one deep bowl\textsuperscript{262}, two hemispherical bowls\textsuperscript{263} and an animal askos\textsuperscript{264}. The hemispherical bowls in this group are similar to those in the other groups, being different only as far as their decoration is concerned. There is no reason to assume that different potters were responsible for each of the groups in this study. Likewise, the deep bowl is the same shape as other deep bowls found at Lapithos. The jug has a very uneven profile and a forward-sloping mouth. It is not as neatly made as some of the jugs from Lapithos, but similar forward-sloping mouths can be found at this site. The askos has no head preserved, but the two panniers on its back as well as the four stumpy legs would suggest it was meant to be a donkey.

Although one of the hemispherical bowls was studied by the author, the other is known to her only as a line drawing in Åström’s publication. Both have such similar decoration that the painter, and possibly the potter, of one bowl must have been aware of the work of the maker of the other bowl if it was not the same person who was responsible for both. The deep bowl has

\textsuperscript{258} See SCE IV.1A, figure CLIII.
\textsuperscript{259} See Appendix 1, figure 357.
\textsuperscript{260} Compare Appendix 1, figures 225 and 762, as well as 810 for the shape.
\textsuperscript{261} L.320.135. See Appendix 1, figure 242.
\textsuperscript{262} L.315 B-C.31. See Appendix 1, figure 241.
\textsuperscript{263} L.311 A.30 and 32-27-194. See Appendix 1, figures 239 and 243-244, respectively.
\textsuperscript{264} L.315 B-C.26. See Appendix 1, figure 240.
the same interlocking hatched triangles on its body as the hemispherical bowls. On the jug, the same pattern appears, but is arranged vertically, rather than horizontally, and is supplemented by vertical lattice panels on the front and back of the jug.

5.2.12 Flasks decorated with vertical diamond chains (Appendix 3, Table 33)

There are only two flasks in this group. The decoration is very simple and it is likely both were produced in the same production centre, although not necessarily by the same person.

5.2.13 Objects that do not conform to groups. (Appendix 3, Table 34)

There are twelve objects in this study that do not fit into the groups formed above. These will be presented here in order that it might be possible to compare them with material from other sites to determine whether they may be imports. Anyone who has studied early Cypriot ceramics knows, however, that the Cypriot potter was a very imaginative artisan who often produced unique items that defy classification. It is entirely possible that some or all of these objects may have been created at the same production centre as some of the material that can be grouped. There are eight jugs265, a hemispherical bowl266, a composite bowl267, a tankard268 and an amphora269 in this group. The composite bowls 319 B.44 have a decoration common to Ayios Iakovos, which is based on the Red-on-Red and Red-on-Black styles. It is unlike anything else from Lapithos, so it is most likely an import from Ayios Iakovos.

The hemispherical bowl is very similar to bowl AS.238 from Alambra270, and it is quite possible that both were made by the same person, likely at Lapithos where the design of lattice panels is common on jugs. Lattice panels are not often used to decorate hemispherical bowls. The bowl itself is made the same way as other bowls from Lapithos. The walls are of uneven thickness and covered in dimples from the potter’s fingers. The shape, however, is fairly even, suggesting

266 A625. See Appendix 1, figures 245-249.
267 L.319 B.44. See Appendix 1, figure 260.
268 L.316.119. See Appendix 1, figure 259.
269 L.320.109. See Appendix 1, figure 262.
270 See Appendix 1, figure 928.
that it was made by pressing the clay into or on top of a mould\textsuperscript{271}. The handle was made with a roll of clay that was attached to the side of the bowl just below the rim, and then the ends were smoothed down to create an even profile.\textsuperscript{272} The handle appears to have been attached when the vessel was leather hard, as depressions in the interior of the bowl at the points of attachment show that the clay was still pliable when the handle was pressed onto the side of the bowl.

The shape of jug A781 is reminiscent of jugs from Kythrea. The surface of the jug has long indentations that are likely evidence of the coil building technique used to create it\textsuperscript{273}. The neck was made separately from a rectangle of clay rolled on its long edge to create a cylinder. A flat line beneath the handle on the back of the neck show where the cylinder was joined together. The circumference of the neck is smaller than the shoulder of the jug, leaving a small flat rim where the two join. The inside of the neck is rough at the bottom, rather than being smoothed into the vessel walls. The neck, therefore, was most likely thrust inside the top of the vessel. The simple decoration of groups of parallel lines is also quite similar to jug A796 from Kythrea\textsuperscript{274}. It is possible that both jugs were made by the same person. The shape and decoration of this jug are alien to Lapithos, but common at Kythrea. It is likely that this jug is an import from the production centre at Kythrea.

Jug L.702.178 is similar to jug 881 from Tomb 11 at Kalopsidha, and may be an eastern import.\textsuperscript{275} Its shape is closer to Base Ring ware, and unlike other jugs from Lapithos. Tomb 702 has many vessels that were probably imported. Jug L.315 A.91 is also unlike other jugs from Lapithos, but its profile is similar to that of L.315 A.46 from the same tomb\textsuperscript{276}. They may be imported from a centre that produced Base Ring ware, perhaps Toumba tou Skourou, but tomb 315 is of an earlier date that the floruit of that ware\textsuperscript{277}. Narrow, tubular spouts such as that seen on jug L.320.66, also appear at Dhenia in a relatively high frequency. They are also present at Leondari Vouno, Ayia Paraskevi, Politiko, Klavdhia, Laxia tou Riou and Hala Sultan Tekke. It is likely they were produced at a centre in the Mesaoria.

\textsuperscript{271} See Appendix 1, figures 245-249.
\textsuperscript{272} See Appendix 1, figures 248-249.
\textsuperscript{273} See Appendix 1, figure 252.
\textsuperscript{274} See Appendix 1, figure 394.
\textsuperscript{275} Compare Appendix 1, figures 263 and 1077.
\textsuperscript{276} Compare Appendix 1, figure 255 with figure 158.
\textsuperscript{277} Tomb 315, from which this vessel came, dates from MCI-II, while Base Ring ware belongs to the Late Bronze Age, although it may have had its origins in MCIII.
The other vessels in this group all appear to be unique items. There is no reason to assume they are imported.

5.2.14 Summary

The vast majority of examples of White Painted ware come from the cemetery at Lapithos. Although some of the material at Vounous might be earlier, White Painted ware appears to have had its origins around Lapithos. The earliest vessels appear in Tombs 4, 9, 16a, 303, 306, 307, 311, 313, 322, 802A and 803B278.

Vessels bearing Lapithos styles have been found in several sites, as will be discussed below. Although there are a few objects that do not fit well within the groups established above, all of these may not be imported. It seems clear that Lapithos received White Painted ware from other sites, such as Toumba tou Skourou, Kythrea, Kalopsidha, Ayios Iakovos and a production centre located somewhere in the Mesaoria Plain. White Painted ware appears to have been a trade item between sites whether or not those sites had their own local production centres. This is evident by the presence of both open and closed vessels, indicating a desire for the pottery for its own sake and not just an interest in some other product contained within the ceramic vessels.

There is no direct correlation between the wealth of a tomb and the presence of White Painted ware. In the University of Pennsylvania excavations, not all of the tombs of the Middle Cypriot II period, the time of the greatest quantity of White Painted ware being produced, contained these vessels (Herscher, 1978). Where White Painted ware was found, however, there was usually a great quantity of bronze, indicating its intrinsic value as a grave offering.

5.3 Vounous279

Gjerstad referred to Vounous as Kasafani in his 1926 survey of Cyprus (Gjerstad, 1926:8-9; Dunn-Vaturi, 2003:iii). The site is on the north coast of the island, about four kilometres east of Kyrenia.280

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278 See Appendix 8, Table 4.
279 See Appendix 2, map 11 for imports into Vounous.
There are two cemeteries associated with this site, and while they may be closely related, the White Painted ware from each will be treated separately here in order to isolate possible production units.

White Painted ware is thought to have originated at Vounous, probably evolving from the earlier Red on White ware of the Ovgos Valley. Stewart differentiates between the WP I A and B (Philia) and the WP IA and B ware (Stewart, 1962:224-230). He also claims that White Painted I is exclusive to Vounous, and those examples found at Lapithos must have been imported from this site (ibid). The fabric of White Painted IA is similar to that of Red Polished III, and some of the motifs found on White Painted ware also appear incised into Red Polished ware, suggesting that production units were producing both types of wares, or were at least in very close contact with each other.

**Bellapais**

**5.3.1 Group 1 White Painted I (Appendix 3, Table 35)**

The earliest examples of White Painted ware occur in this cemetery. The shapes are deep bowls\(^{281}\), bridge-spouted bowls\(^{282}\) and a jug\(^{283}\). Some of the shapes are novel, but the hemispherical shape of the bridge-spouted bowls continues from the Red Polished repertory and throughout the White Painted types. These vessels are not well published, and most of the information available for other types is not available for White Painted I. Åström began his study of Middle Bronze Age White Painted ware with White Painted II. These vessels are considered to be Philia ware, therefore outside of the typology of White Painted ware. Although White Painted I ware does not have a wide circulation outside of Vounous, it is clearly transitional between the Red Polished wares of the Early Bronze Age and the White Painted ware of the Middle Bronze Age. The shapes are out of the Red Polished repertory, and the painted designs are very similar, if not identical, to the incised patterns on Red Polished ware. The vessels in this group have been dated to EC IIIB-MC IA.

\(^{280}\) See Appendix 2, map 3.

\(^{281}\) 143.117 and 144.10. See Appendix 1, figures 266 and 267, respectively.

\(^{282}\) 54.45 and an unidentified bowl. See Appendix 1, figures 265 and 269, respectively.

\(^{283}\) A671. See Appendix 1, figure 268.
5.3.2 Group 2 Vertical lattice panels (Appendix 3, Table 36)

There are four vessels in this group: two jugs\(^{284}\), an askos\(^{285}\) and an amphora\(^{286}\). All of these objects come from Schaeffer's unpublished excavations in 1933.\(^{287}\) The jug 69.11 is similar to Group 2B from Lapithos and would be considered a member of that group if it were found there. The jug 59.1 does not have a base, but its body decoration is consistent with Groups 1, 2 and 3 of Lapithos. These jugs were probably made at Lapithos. The askos (68.29) is very similar in its decoration, both the motifs and their arrangement, to the jug L.316.118 and the amphora L.306 A.7 in Group 1 of Lapithos\(^{288}\). It was probably painted by someone who was aware of the other two vessels, and indeed, may have been the same person, judging by the similarity between the hatched triangles, which are quite wide. The amphora 68.31 is similar in shape to 32-27-211\(^{289}\) in Group 8 from Lapithos, and also to L.702.98\(^{290}\) in Group 10 from Lapithos, although L.702.98 does not have handles. The askos has no parallel for its shape at Lapithos. The vessels in this group from Vounous clearly have a great affinity with those from Lapithos. It appears that both sites shared at least one production group, either through trade between sites, or through third party distribution of pottery.

5.3.3 Group 3 Horizontal lattice panels (Appendix 3, Table 37)

There are two vessels in this group: an amphora and an askos\(^{291}\). The askos is similar in shape to 68.29\(^{292}\) in Group 2, but it has a beaked spout and the handle is attached closer to the front of the vessel. The amphora is similar in shape to 68.31\(^{293}\) in Group 2, but its neck is longer. It is also very similar to L.306 C.6\(^{294}\) in Group 1C from Lapithos and to L.315 B-C.27\(^{295}\) in Group 3C

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\(^{284}\) See Appendix 1, figures 270 and 273, respectively.

\(^{285}\) See Appendix 1, figure 271.

\(^{286}\) They have been recently published by Anne-Elizabeth Dunn-Vaturi, and were not available for the studies of Åström and Frankel [Dunn-Vaturi, 2003].

\(^{287}\) See Appendix 1, figures 21 and 41, respectively.

\(^{288}\) See Appendix 1, figure 166.

\(^{289}\) See Appendix 1, figure 225.

\(^{290}\) See Appendix 1, figures 274 and 275, respectively.

\(^{291}\) See Appendix 1, figure 271.

\(^{292}\) See Appendix 1, figure 272.

\(^{293}\) See Appendix 1, figure 42.

\(^{294}\) See Appendix 1, figure 88.
from Lapithos. The base of the amphora is painted a solid colour, and it would fit within Group 1 from Lapithos, although the amphorae in that group are decorated vertically, rather than horizontally. These vessels were probably produced by the same production centre that produced the vessels in Group 2.

5.3.4 Group 4 Elongated chequerboard bands (Appendix 3, Table 38)

The vessels in this group bear a striking resemblance to vessels from Lapithos. The jug with vertical decoration, 57a.25, finds a parallel in Lapithos group 3A, L.320.111, which has a round mouth rather than an angled one, but has a similar decoration. Two of the amphorae, 68.6 and 64.47, have decoration that would place them into Group 1 from Lapithos. Amphora 68.6 can be compared to L.322 D.86 and L.313 A.21, while Amphora 64.47 has much in common with L.313 A.114. In fact, it has the same awkward chevron pattern that appears to be an attempt at interlocking hatched triangles. The shape of the two amphorae is also quite similar. It is possible that both vessels were painted by the same person, or at least by two painters who had difficulty imitating the expert interlocking triangles found on some of the other vessels. Jugs 50 b.1 and 50b.2 are decorated in an identical way, although 50 b.1 has an angled spout, while 50 b.2 has a round mouth. Amphora 50.2 is also quite similar, although not identical. The two jugs were almost certainly decorated by the same painter, while the amphora may also have been the product of the same small group of potters and painters, possibly even of the same person responsible for the other two vessels. The two jugs are different sizes and shapes, and the paint on one is red while the other is black, but paint colour is dependent upon firing conditions as well as pigments in the slip used for decoration. The decorative motifs and their arrangement make these two jugs a matched set, and most likely the work of a single individual.

296 Compare figures 279 and 75.
297 Compare Appendix 1 figure 283 with figures 44 and 30, respectively.
298 Compare Appendix 1 figure 280 with figure 43.
299 See Appendix 1, figures 277 and 278, respectively.
300 See Appendix 1, figure 276.
301 The amphora shares the same framed chequerboard pattern as found on 50 b.2, which is uncommon.
5.3.5 Objects that do not conform to groups (Appendix 3, Table 39)

Like Lapithos, Vounous produced a number of vessels that are unique and do not fit into groups. Some of these vessels, however, are similar to vessels from Lapithos and may have been produced by the same production centre. There are seven vessels in this collection: three jugs, an amphora, a deep bowl and two hemispherical bowls. Hemispherical bowl 50b.3 is very similar to 32-27-194 and may have been made by the same painter. The shape is also similar and may even be the work of the same potter. Hemispherical bowl 50.4 has very sloppy decoration which appears to be an attempt at alternating oblique lines, for which L.315 B-C.25 may have been the model. The deep bowl 37.117 could fit into Lapithos Group 7 with L.311 A.31 and 32-27-10. The amphora 64.38 would be at home in Group 4A at Lapithos, although it is not quite identical to the decoration of the other vessels in this group. It was likely inspired by their decoration, or may have served as their inspiration, although the larger quantity of vessels decorated with all-over chequerboard patterns at Lapithos argues in favour of the production centre for these vessels being there. The decorations on jugs 56.93 and 69.1 are unique.

5.3.6 Summary

Although Vounous probably had its own production centre in the Early Bronze Age when White Painted I ware first appeared, there is no real difference between the vessels found there and those found at Lapithos. While Lapithos has the greater number by far of White Painted ware vessels in the tombs of its cemeteries, it is not known whether the production centre that supplied these vessels was at Lapithos, at Vounous, or somewhere in between. Such a question is not likely to be resolved based solely on shape and decoration.

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302 Jugs 56.93, 64.153, and 69.1. See Appendix 1, figures 287, 289 and 290, respectively.
303 Amphora 64.38. See Appendix 1, figure 288.
304 Deep bowl 37.117. See Appendix 1, figure 284.
305 Hemispherical bowls 50.4 and 50b.3. See Appendix 1, figures 285 and 286, respectively.
306 Compare figure 595 with figures 243-244.
307 Or another bowl that served as a model for both. Compare figures 285 and 218.
308 Compare figure 284 with figures 131 and 138, respectively.
309 See Appendix 1, figure 288.
310 See Appendix 1, figures 287 and 290 respectively.
5.4 Kazaphani (Vounous Site B) (Appendix 3, Table 40)\textsuperscript{311}

The cemetery at Kazaphani was called “Vounous, Site B” by Stewart (Stewart & Stewart, 1950:243-245). The tombs excavated by Stewart are all of EC II and III date, although new graves were added in the Iron Age, and a few of the Bronze Age tombs were disturbed by people digging to find vacant areas in which to construct new tombs at that time (ibid). Of the thirty tombs opened by Stewart in 1937-1938, only three contained White Painted ware (131, 137 and 157), and these had only a single object each. The spouted bowl 137.43\textsuperscript{a}\textsuperscript{312} has a decoration very similar to the incised patterns of Red Polished ware. The herringbone pattern on jug 131A.59\textsuperscript{313} may also derive from incision. The unpierced lug at the front of the jug is characteristic of later jugs at Lapithos. The hemispherical bridge-spouted bowl 157.19 is similar in decoration to objects found at Bellapais (143.117 and SCE IV.1A fig. CLVI.4)\textsuperscript{314}, and indeed, these could well have been produced by the same group of potters.

In 1963, a second site was discovered at Kazaphani-Ayios Andronikos.\textsuperscript{315} A tomb was cleared by Nicolaou and Nicolaou, and was dated by them to the end of the Middle Bronze Age and beginning of the Late Bronze Age (Nicolaou & Nicolaou, 1989). The material in this tomb is strikingly different from the early material, sharing much in common with styles from the east coast, and with the sites of Morphou Toumba tou Skourou and Stephania. This is due in large part to the fact that the material is later in date from the other material from Vounous. Because the tomb had been looted in antiquity, the grave goods were quite mixed up, making it impossible to reconstruct a burial sequence (ibid:6). The vessels were assigned to various types by Jacques-Claude Courtois based on their fabric (ibid:108). The White Painted ware from this tomb can be divided into five subgroups based on decoration. There are three vessels whose decoration is too worn to allow them to be placed with confidence into one of the subgroups, but they are included here for their shapes. The five subgroups are as follows: framed wavy line; lattice panels; cross-hatched diamonds, triangles and/or zigzags; hatched triangles, and linear decoration.

\textsuperscript{311} See Appendix 2, map 13 for imports into Kazaphani.
\textsuperscript{312} See Appendix 1, figure 292.
\textsuperscript{313} See Appendix 1, figure 291.
\textsuperscript{314} Compare Appendix 1, figure 293 with figures 266 and 269, respectively.
\textsuperscript{315} See Appendix 2, map 12 for imports into Kazaphani.
5.4.1 Group 1 Framed wavy lines (Appendix 3, Table 41)

The earliest material in the tomb falls within the group “framed wavy lines”, which would also contain the jug 131A.59 from Stewart’s excavations, although the similarity is superficial as the jug is White Painted I, while the bowls are White Painted III-IV\textsuperscript{316}. The two hemispherical bowls are almost identical in their decoration, and are most likely the work of the same painter and possibly potter. The deep bowl 2A.155 has framed wavy lines on the rim and shoulder, but has parallel vertical lines below these\textsuperscript{317}. The vertical lines are also present below the bands of decoration on the bodies of the other four vessels in this group, and also appear on other vessels from Kazaphani. The framed wavy lines are horizontal on all but the fragmentary jug 2A.89\textsuperscript{318}. The decoration on 2A.128 is half-way between wavy lines and zigzags, and is therefore difficult to classify\textsuperscript{319}. Deep bowl 2B.520 has the same zigzag pattern formed from cross-hatched triangles alternating from the upper and lower lines of the frame for the horizontal band as seen at Toumba tou Skourou on jug P.657\textsuperscript{320}. Framed wavy lines are quite common at Toumba tou Skourou, but they are not usually double. Double wavy lines occur at Lapithos on jugs\textsuperscript{321}, hemispherical bowls\textsuperscript{322}, on the base of one amphora and on the neck of another\textsuperscript{323}. They also occur at Stephania\textsuperscript{324}, Dhenia\textsuperscript{325}, Leonardi Vouno\textsuperscript{326}, Ayios Iakovos\textsuperscript{327}, Klavdhia\textsuperscript{328} and Hala Sultan Tekke\textsuperscript{329}. The double wavy line on deep bowls 2A.155 and 2B.520 is so similar to those on the tankard 2A.60 and the deep bowl 2A.405 that these vessels may all have been painted by the same person or small group of people\textsuperscript{330}. The shapes of the vessels fit well into the repertory of the production centre at Toumba tou Skourou, and it is likely they were made there.

\textsuperscript{316} Compare Appendix 1, figures 291, 296, 297 and 298, respectively.
\textsuperscript{317} See Appendix 1, Figure 296.
\textsuperscript{318} See Appendix 1, figure 294.
\textsuperscript{319} See Appendix 1, figure 295.
\textsuperscript{320} Compare Appendix 1, figure 300 and 619.
\textsuperscript{321} See Appendix 1, figures 87, 88, and 90.
\textsuperscript{322} See Appendix 1, figures 198-200, 201-203, 228-229 and 230-232.
\textsuperscript{323} See Appendix 1, figures 135 and 263, respectively.
\textsuperscript{324} See Appendix 1, figure 363.
\textsuperscript{325} See Appendix 1, figures 714 and 717.
\textsuperscript{326} See Appendix 1, figure 732.
\textsuperscript{327} See Appendix 1, figure 910.
\textsuperscript{328} See Appendix 1, figures 1175-1184, 1197-1209, and 1210.
\textsuperscript{329} See Appendix 1, figures 1231 and 1232-1240.
\textsuperscript{330} Compare Appendix 1, figures 296, 300, 308 and 313, respectively.
5.4.2 Group 2 Lattice bands (Appendix 3, Table 42)

There are two jugs\textsuperscript{331}, a tankard\textsuperscript{332} and four animal shaped askoi\textsuperscript{333} in this group. The lattice panels are usually vertical, but on the ram-shaped askos 2A.171 they are horizontal\textsuperscript{334}. Two of the bovine askoi, 2B.125 and 2B.34, have both horizontal and vertical lattice bands\textsuperscript{335}. Although they represent different animals, there is a high degree of similarity in the construction of askoi 2A.171 and 2B.34. Both have three stout legs that are square in cross-section. Their decoration appears to have been very similar as well, although 2A.171 is fragmentary. It is possible that both were created by the same person or small group of people. In all cases, the pouring spout is the tail of the animal. It is possible that some of the attributes, namely the pouring-spout tail, three legs, and even choice of animal, were culturally determined, since Middle Cypriot animal askoi across the island seem to have these things in common.

5.4.3 Group 3 Cross-hatched diamonds, triangles and zigzags (Appendix 3, Table 43)

These three motifs have been combined in this group because they usually occur together on the same vessel, making it impossible to separate them into different groups in the same way as the motifs of Lapithos could be separated. The vessels within this group have a fairly high degree of similarity and several of them were probably produced by the same potter (e.g. 2A.308 and 2B.354 with their peculiar baggy shape and neck entasis)\textsuperscript{336}, the same painter (e.g. 2B.508 and 2B.526 with the same heavy outline on the diamond shapes and fine cross-hatching)\textsuperscript{337}, or possibly both (2A.60 and 2B.511 with the same handles, bell-shaped body and combination of double wavy lines and cross-hatched lozenges or bow-ties)\textsuperscript{338}. These objects would appear to have been made by the same small ceramic production group, with potter and painters imitating

\textsuperscript{331} 2A.130 and 2B.509. See Appendix 1, figures 301 and 306, respectively.
\textsuperscript{332} 2B.521. See Appendix 1, figure 307.
\textsuperscript{333} 2A.171, 2B.34, 2B.125 and 2B.202. See Appendix 1, figures 302, 303, 304 and 305, respectively.
\textsuperscript{334} See Appendix 1, figure 302.
\textsuperscript{335} See Appendix 1, figures 301 and 303, respectively.
\textsuperscript{336} See Appendix 1, figure 304.
\textsuperscript{337} See Appendix 1, figure 303, respectively.
\textsuperscript{338} See Appendix 1, figures 311 and 314, respectively.
\textsuperscript{338} See Appendix 1, figures 315 and 320, respectively.
\textsuperscript{338} See Appendix 1, figures 308 and 316, respectively.
each other’s motifs and decorative syntax. These vessels are very similar to the vessels from Toumba tou Skourou, particularly the tankards with their distinctive high horns or thumb grips on the tops of their handles. They were most likely produced there.

5.4.4 Group 4 Hatched triangles (Appendix 3, Table 44)

There are only two vessels in this group: a deep bowl and a unique shape that Nicolaou and Nicolaou call a jug (Nicolaou & Nicolaou, 1989:70, pl.XVII.512). The shape of the deep bowl has parallels at Kazaphani (cf. 155 also from 2A, which has a handle as well), and its decoration is very similar to that found on a bowl from Lapithos tomb 804 A (32-27-81). The painting on both vessels was well-planned and neatly executed. It is likely that both were produced at Toumba tou Skourou.

5.4.5 Group 5 Straight and/or oblique lines (Appendix 3, Table 45)

This is the largest and most heterogeneous group from Kazaphani, especially for vessel shapes. There are twenty five vessels: a lid, a tripod vessel, a hemispherical bowl, three deep bowls, a deep spouted bowl, three spouted jugs, seven jugs (one with a figurine protome, one only a fragment), two tankards, three animal askoi and two rattles. While some of the objects are unique in their form, several are very similar and are likely the

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339 It would be very helpful if the colours of the fabric, slip and paint had been published. It would also be easier to determine similarity of proportions if more measurements had been provided in the publications.
340 2A.164. See Appendix 1, figure 321.
341 2B.512. See Appendix 1, figure 322.
342 Compare Appendix 1, figures 321 and 207-208, respectively. The triangles end with odd tails at the top in both cases. They look like they could be the work of the same painter, or painters familiar with each other’s work, although the potters at Lapithos did not produce such shapes.
343 2B.246. See Appendix 1, figure 339.
344 2B.499. See Appendix 1, figure 341.
345 2A.259. See Appendix 1, figure 328.
346 2A.184, 2A.191 and 2A.329. See Appendix 1, figures 326, 327, and 333, respectively.
347 2A.175. See Appendix 1, figure 325.
348 2B.341, 2B.500, and 2B.525. See Appendix 1, figures 340, 342, and 347, respectively.
349 2A.82, 2A.107, 2A.316, 2A.323, 2A.437, 2B.89, and 2B.223. See Appendix 1, figures 323, 324, 331, 332, 333, 336 and 338, respectively.
350 See Appendix 1, figure 332.
351 See Appendix 1, figure 334.
352 2A.315 and 2B.524. See Appendix 1, figures 330 and 346, respectively.
353 2A.311, 2B.39, and 2B.221. See Appendix 1, figures 329, 335, and 337, respectively.
354 2B.502 and 2B.503. See Appendix 1, figures 343 and 344, respectively.

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product of the same potter. Likewise, some of the vessels are decorated in very similar ways. The shape of the jugs 2B.223 and 2A.82\textsuperscript{355} are very similar and may be the products of the same potter. Their decoration is quite similar as well, suggesting that the same painter was responsible for both. Jug 2B.89\textsuperscript{356} is also similar to these in shape, but the painting is slightly different, although it is arranged in the same way with a broad horizontal line at the maximum diameter. The two rattles are nearly identical to each other in shape, but the decoration is slightly different\textsuperscript{357}. It is likely the same person made both of them, although it is difficult to determine whether they were painted by the same hand. The shape and decoration of these rattles is also popular at Enkomi. They could have been produced at the production centre at Kalopsidha which supplied most of Enkomi’s pottery. The three animal askoi are also very similar in shape, with the pinched spout serving as the head of the animal, as opposed to the tail as seen in the case of askoi decorated with lattice bands. The bodies are roughly the shape of ox-hide ingots with four short legs and a short tail. The painting is linear, with alternating straight and oblique lines, but it is different in each case. The three deep bowls, 2A.184, 2A.329, and 2B516 are also similar in shape, although 2B.516 has a side spout. Their decoration is divided at the maximum diameter by two or three horizontal lines. The jug with the animal protome, 2A.323, is almost certainly a product of the centre at Toumba tou Skourou\textsuperscript{358}, which was also likely responsible for the tankards in this group.

5.4.6 Vessels whose decoration has been obliterated (Appendix 3, Table 46)

There are two such vessels: a feeding bottle\textsuperscript{359} and a deep bowl\textsuperscript{360}. They are included here for their shapes, which are similar to many other vessels found at Kazaphani. The feeding bottle has parallels at Kalopsidha, which may be its place of origin. The other vessel is more difficult to place.

\textsuperscript{355} Compare Appendix 1, figures 323 and 338.
\textsuperscript{356} See Appendix 1, figure 336.
\textsuperscript{357} See Appendix 1, figures 343 and 344.
\textsuperscript{358} See Appendix 1, figures 456, 469, 471, 473, 477 and 474 (this has a man).
\textsuperscript{359} 2A.182. See Appendix 1, figure 348.
\textsuperscript{360} 2B.172. See Appendix 1, figure 349.
5.4.7 Summary
The material from Kazaphani appears to have come from other sources, rather than a local production centre. The earlier material in the cemetery may have come from either Vounous or Lapithos, while the bulk of material found in Tomb 2, both chambers A and B, appears to have been produced at Toumba tou Skourou. Several of the vessels have almost exact parallels at Stephania as well, but it is likely that the material from Stephania was also produced at Toumba tou Skourou. A few may have been produced at Kalopsisda. Whether there was a connection between the people who buried their dead in Tomb 2 and people from Stephania or Toumba tou Skourou cannot be determined based on pottery alone. Clearly the three sites had some cultural affinities, and were also trading with sites in the east.

5.5 Dhiorios Aloupotrypes (Appendix 3, Table 47)\textsuperscript{361}

There is very little material from this site, and all that has been published comes from a survey conducted by Hector Catling in 1952. This means that the vessels exist only as sherds from which dimensions such as diameter have been reconstructed. The published material is from the collection at the Ashmolean Museum. The site itself is located in the Kyrenia District not far from the site of Vounous. It is possible that, based on the similarity between the motifs of Vounous and Lapithos and Dhiorios Aloupotrypes, these sherds represent vessels made at the same production centre as those from the other two sites. There are a few differences, however, between the arrangements of the motifs at the three sites. For example, the jug 1953.1122a bears the familiar vertical lattice panels found at Lapithos, but its base is decorated in the fashion used for hemispherical bowls there. The motif of framed wavy lines between the lattice panels, however, has only been found at Kythrea. This jug may have been imported from that site. Some of the sherds bear decorations also found at Toumba tou Skourou, which may be their origin\textsuperscript{362}. Dhiorios, then, seems to have had trade relations, at least in White Painted ware, with Toumba tou Skourou, Kythrea and Lapithos.

\textsuperscript{361} See Appendix 2, map 13 for imports into Dhiorios.
\textsuperscript{362} See Appendix 1, figures 354 and 358.
The Southern Foothills

5.6 Stephania (Appendix 3, Table 48)\textsuperscript{363}

Stephania is located west of Lapithos, just at the beginning of the Kyrenia mountain range. Fourteen graves were opened there during a joint expedition in 1951 by the Ashmolean Museum and the University of Sydney (Hennessy, 1966:1). Tombs 10 and 13 are dated to the Middle Bronze Age, while Tombs 7, 12, and 14 are dated to the early Late Bronze Age.\textsuperscript{364} Pottery very similar in style to that found at Stephania has also been found at Ayia Paraskevi and Dhenia, but there are also some connections with Ayios Iakovos, particularly in tomb architecture and the mass burial in tomb 12 (ibid:50). The closest parallel for the White Painted ware of Stephania is from Morphou Toumba tou Skourou. It is likely that the production centre at Toumba tou Skourou was responsible for most of the pottery found at Stephania.

Nine examples of White Painted ware were illustrated in the field report: two jugs\textsuperscript{365}, two tankards\textsuperscript{366}, an amphora\textsuperscript{367}, the handle from an amphora or tankard\textsuperscript{368}, a hemispherical bowl\textsuperscript{369}, a deep spouted bowl\textsuperscript{370} and a tripod bowl\textsuperscript{371}. The report also mentions several sherds in addition. The two tankards and the amphora were found in Tomb 10. The shape and decoration of the tankards and the amphora is very similar to those from Toumba tou Skourou where the potters like to add plastic animal figures where one might expect lugs, and in the case of the amphora, animals replace the handles. The amphora is the same shape as the tankards, except that it has two small animal handles rather than the typical long horned handles. There is also a fragment of an amphora or tankard with an animal figurine that was found in Tomb 14 and was most likely

\textsuperscript{363} See Appendix 2, map 14 for imports into Stephania.
\textsuperscript{364} These are the only tombs containing White Painted ware. Tombs 1, 8 and 11 were empty when found.
\textsuperscript{365} 19 from Tomb 7 and 1 from Tomb 13. See Appendix 1, figures 359 and 365.
\textsuperscript{366} 5 and 14 from Tomb 10. See Appendix 1, figures 361 and 363.
\textsuperscript{367} 7 from Tomb 10. See Appendix 1, figure 362.
\textsuperscript{368} Unnumbered sherd from Tomb 14. See Appendix 1, figure 367.
\textsuperscript{369} 7 from Tomb 13. See Appendix 1, figure 366.
\textsuperscript{370} 43 from Tomb 7. See Appendix 1, figure 360.
\textsuperscript{371} 16 from Tomb 12. See Appendix 1, figure 364.
produced by the same potter or small group of potters as the vessels from Tomb 10 (ibid:45). Tomb 13 contained a jug decorated in a style reminiscent of Lapithos. It is not likely to be the work of the same potter or painter, but its shape and decoration are unlike anything else found at this site. It may have been produced by the production centre responsible for making the pottery found in Lapithos tombs, and likely by someone familiar with jug L.313B82, which has the same peculiar wavy lines with circles at the midpoint. The other jug has a bird figurine on the front and its shape is very similar to the base ring jugs found in the same tomb. Its decoration is similar to that of the spouted bowl, which was found in Tomb 7 as well. The decoration of both of these vessels is similar to vessels found at Kazaphani, as is the decoration on the tripod bowl found in Tomb 12. Other than the jug from Tomb 13, most of the pottery from Stephania closely resembles that from Kazaphani, suggesting a high degree of contact between these two sites. The pottery of both Stephania and Kazaphani, however, may have been produced at Toumba tou Skourou where both the shapes and decorations are most common.

5.7 Kythrea

The site of Kythrea consists of a village of Neolithic huts discovered by the Swedish Cyprus Expedition in 1930 (Gjerstad, Lindros, Sjöqvist, & Westholm, 1934:277-285), and an Early and Middle Bronze Age necropolis, as well as a Late Bronze Age necropolis to the west and northwest of the village (Gjerstad, 1926:7). The Bronze Age settlement has not been found, but is likely not far from the necropolis. Kythrea is located on the southern flank of the Kyrenia

372 Hennessy also notes that similar animal handles appear on a Bichrome Hand-made tankard from Tomb 2 (no.29). Not only is the clay for all of these vessels similar, but so is their technique of manufacture, leading Hennessy to posit a single production group for their production.
373 See Appendix 1, figure 365. The decoration is striking similar to the jug L.313B.82 in Group 2A above (compare Appendix 1, figure 48). The arrangement of the lattice panels and wavy lines is the same, and the peculiar small circle in the centre of the wavy line is identical. The base is not decorated in the same way, and the painting is quite sloppy compared to the Lapithos example. There is also a small lug at the front of the jug as found on pottery from Lapithos. The Lapithos jug is classified as WP II, while this one is classified as WP III.
374 See Appendix 1, figure 359.
375 See Appendix 1, figure 360.
376 See especially 2A.329 and 2B.516, Appendix 1, figures 333 and 345, respectively.
377 A tripod bowl was also found at Kazaphani (2B.499, Appendix 1, figure 341), but its feet are round rather than flat, and its decoration is mainly linear as the spouted bowl from Tomb 7.
378 Frankel did not include Stephania in his analysis, although the excavation report had been published before he wrote his thesis.
379 The material of Kythrea appears to have been influenced by Lapithos and Kalopsidha, but there were no obvious imports among the published material.
mountain range near a mountain pass. Although such a location would have facilitated trade with the northern settlements at Lapithos and Vounous to the west, it is more likely that the site was chosen because of its proximity to a source of water (Frankel, 1974b:9). All of the published White Painted ware vessels from this site are jugs, either with round mouths or with angled spouts. They also come from the same tomb, Tomb 1. The shape of the jugs is fairly uniform, especially in the category of round mouthed jugs. It is likely that despite the variety in the decorative motifs, they are all the products of a small group of contemporary potters and painters, likely working together. There is slightly more variety in the shapes of the jugs with angled spouts. Although the decoration can be found at other sites such as Enkomi and Kalopsidha, there are no real parallels for the shapes. For this reason, it is likely that there was a separate production centre making pottery for Kythrea.

5.7.1 Group 1. Round-mouthed jugs (Appendix 3, Table 49)

The round mouthed jugs have globular bodies and handles that are attached from the rim to the shoulder. Three of the jugs (A782, A783 and A798) have a small projection on the top of the handle, and two of these also have a small lug at the base of the neck, which is pierced in both cases from front to back, but not all the way through the body of the vessel. Jug A782 also has a hole in its side that appears to have been deliberately and carefully made. The hole is fairly round, and its edges appear relatively smooth, as if it were made before the pot was fired. There are no cracks around its edges. This hole does not appear to have served a purpose for the function of the vessel. Jug A798 has three holes in the knob on the top of the handle where it attaches to the rim. These holes are suggestive of a face. The knob on the top of A782 is also pierced with three holes, but these are in a vertical line. The jugs appear to have been built up

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380 See Appendix 1, figures 379-386, 387-393 and 401-412, respectively. Åström gives the provenience of jug A798 as Kythrea Tomb 1. It certainly has many similarities with other jugs from this tomb and was most likely made at the same production centre. Frankel (Frankel, 1974b), however, gives its provenience as Kalopsidha Tomb 25. He has confused it with Jug A783, for which he gives a reference to Gjerstad in error. Its decoration is a transitional style between the Pendent Line and Cross Line styles which was popular at Kalopsidha, where the Cross Line style was thought to have originated.

381 A782 and A798. See Appendix 1, figures 384 and 407, respectively.

382 See Appendix 1, figures 380 and 382.

383 See Appendix 1, figure 404.

384 See Appendix 1, figure 383.
with coils, as long horizontal or slightly diagonal depressions in their profiles would suggest\textsuperscript{385}. In the case of jug 783, the profile seems to have been perfected by scraping off excess clay. There are long flat lines across an area where the surface is indented\textsuperscript{386}. The base of A782 is fairly flat, so that the jug can stand on its own\textsuperscript{387}. The base of A798 is slightly flattened, and the jug can be balanced so that it remains upright, but the flattening is so slight that it may have been caused by standing the jug upright before it was fully dry, rather than the potter actually trying to flatten the base\textsuperscript{388}. The base of A783 is round and the jug cannot stand without support\textsuperscript{389}. The decoration of the jugs also helps to determine whether or not the flattening of the base was intentional. In the case of A782, the base is decorated as a separate entity, separated from the rest of the jug by a double ring, and painted with two crossed lines. The bases of the other two jugs are painted with the continuation of the lines from the sides of the jug, with a dot in the centre in the case of A783. All of these jugs are decorated in the Cross Line Style, but with minor variations. Jug A782 has a grid pattern over which the Cross Line Style has been superimposed\textsuperscript{390}. A multiple brush appears to have been used for the straight lines, as all seem to begin on the same plane, even though they end in different places. The uniformity of their shape would argue for their being the output of a single potter, but the variability of the decoration may indicate different painters who were familiar with each other’s work.

Jugs A775 and A777 are decorated in the Pendant Line Style, but not in the same way. The painting of A777 is much coarser than that of A775\textsuperscript{391}. Jug 775 has a longer and narrower neck that looks more like the necks of the first three jugs in this group and it may be related to them more closely, although there is no projection on the top of the handle as there is on the other jugs. It does have a slight bump on the top of the handle, but it is not decorated in the same way the others are\textsuperscript{392}. Like the other jugs in this group, jug A775 also has indentations on its surface that may be the traces of coils, as well as depressions made by the potter’s fingers. None of the jugs feels particularly heavy, but A775 is surprisingly light for its size. Its walls must be quite

\textsuperscript{385} See Appendix 1, figures 391 and 409.
\textsuperscript{386} See Appendix 1, figure 391.
\textsuperscript{387} See Appendix 1, figure 381.
\textsuperscript{388} See Appendix 1, figures 401 and 403.
\textsuperscript{389} See Appendix 1, figures 387 and 388.
\textsuperscript{390} See Appendix 1, figure 386.
\textsuperscript{391} Compare Appendix 1, figures 373 and 368, respectively.
\textsuperscript{392} See Appendix 1, figures 370 and 371.
thin, although this was not possible to measure. The surface has several large, rectangular voids that could be impressions of chaff that may have been used as temper and burned away, leaving the vessel full of voids. This would account for its lightness, but because the vessel is intact, it was not possible to see a cross-section in which the voids may have been visible. Fine inclusions are also visible on the surface of the vessels, and are very similar. There are small black, grey, red and clear inclusions as well as gold and coloured sparkling inclusions which are likely mica. The average grit density is 30 percent, but because the inclusions are tiny, the surface of the vessels feels smooth.

The base of jugs decorated with Pendent Line Style present the same problem as the Cross Line Style jugs: should the lines end there with some sort of termination point, like a circle, or should they continue back up to the shoulder in imitation of a net? Jugs A783 and A798 both have lines that loop around the base and return to the shoulder of the vessel. They appear to have been very carefully planned. In the space on the bottom of the round jug, a dot was painted on A783, but the base of A798 is too worn to know whether the same sort of decoration was applied to it. Jug A775 does not seem to have been so carefully planned. All of the lines meet at the centre of the base in a messy tangle. The painter seems to have been more concerned with how the jug looked from the side than the bottom. The decoration is neat, with evenly spaced lines, so it does not appear that the artist was careless. Jugs with flat bases, such as A782 and A796, are decorated with a circle around the base with a cross inside it. Jug A777 has the same decoration on its base, except that it has a round base, rather than a flat one. This type of decoration removes the problem of what to do with the lines that meet at the base. They simply end together at the ring. Jug A796 has the same shape as the other jugs in this group, and it has the same ring and cross decoration on its base, but its linear decoration is neither Cross Line nor Pendent Line style. Instead, it is simply decorated with three groups six of parallel straight lines that run vertically beneath the handle and on each side. Between these are groups of five diagonal lines that run from top right to lower left. Like the other vessels in this group, the lines

393 Compare Appendix 1, figures 388 and 403.
394 See Appendix 1, figure 369.
395 See Appendix 1, figure 372.
396 See Appendix 1, figures 381 and 395.
397 See Appendix 1, figure 374.
398 See Appendix 1, figure 394.
appear to have been made with a multiple brush, as they all begin together in a line. This may be a variant of Cross Line style, but the lines do not cross each other.

These jugs are all decorated in motifs and schemes typical of the eastern part of the island (Frankel, 1974a:190; 1974b:49), although Kythrea is located in the Southern Foothills region on the north coast of the island. Kythrea was probably in communication with other sites, but because all of the White Painted ware found there is nearly homogenous in shape and decoration, it seems unlikely that this pottery was imported from elsewhere, unless it was from a single source.

**5.7.2 Group 2 Jugs with angled spouts (Appendix 3, Table 50)**

There is more variability in both shape and decorative motifs in the jugs with angled spouts, but most of them are decorated in the Fine Line Style. As with the jugs with round mouths, all of these vessels come from Tomb 1. Although they are executed in very fine lines typical of the eastern part of the island, their motifs are more typical of Lapithos (Frankel, 1974b:117.1-22). Jug A710 is unique both in its shape and decoration\(^\text{399}\). Its neck has a pronounced swelling, and there are lugs both on either side of the neck where the handle joins, and also at the top next to the spout\(^\text{400}\). There are long, horizontal indentations visible near the maximum diameter of the vessel, which may be coil relics\(^\text{401}\). The neck meets the shoulder at a sharp carination, which suggests that the neck was made as a cylinder and then inserted into the body of the jug\(^\text{402}\). The neck appears to descend below the shoulder on the interior of the jug, strengthening this suggestion. The handle may also have been thrust through the vessel wall, but its termination could not be seen through the narrow neck. The decoration consists of the usual lattice panels and cross-hatched diamonds, but there is a band of dots around the maximum diameter which is echoed on the neck\(^\text{403}\). These dots were made with a hollow tool which has left impressions in the clay where the paint has flaked off. There is no other object decorated in this way among the

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\(^{399}\) See Appendix 1, figures 413-420.  
\(^{400}\) See Appendix 1, figures 417-420.  
\(^{401}\) See Appendix 1, figure 416.  
\(^{402}\) See Appendix 1, figure 418.  
\(^{403}\) See Appendix 1, figures 415 and 417, respectively.
The jug was very carefully made, with a smooth, even profile and visually pleasing proportions. The decoration was equally carefully applied and is in harmony with the shape of the jug. This is especially apparent when viewed from above.

The other four jugs have roughly piriform bodies, although that of A741 is somewhat depressed in the front. They also have round bottoms. The surface of A729 is very smooth and there are no traces of coils visible, although it is likely that the jug was made using coils. The profile is quite even and the walls appear to be relatively thin. A very small loop handle is attached at the shoulder to the base of the neck. It was made by attaching a rope of clay to the vessel, rather than by placing a disc or lump of clay on the shoulder and piercing it, as is sometimes the method used to make small handles. There is a plug of material in the aperture inside the spout which appears to be clay. If it is not post-depositional, its presence may suggest that the vessel was made specifically for the grave, as it would have been useless for pouring liquids. The decoration is very neat and well-planned. It consists of patterns created with oblique lines.

Jugs A739 and A740 are very similar in both shape and decoration. In both cases, the profile is uneven and there are horizontal indentations at the maximum diameter which are probably the remnants of coils. The shape of the jug seems to have been roughed out by building it up with coils, but the jugs were then shaved to remove excess clay. There are several scrape marks visible at the base and on the neck of each vessel. The neck of A739 was certainly made separately as a cylinder and then thrust through the opening at the top of the body of the jug. There is a very sharp transition between the neck and shoulder which shows the neck was not built up from the shoulder of the jug. This is probably also the case with A740, but the line

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404 A tankard or amphora found in fragments at Ayia Paraksevi (see Appendix 1, figures 783 and 784) has inlaid faience beads in a similar way to the dots on this jug. It is possible they are the work of the same production centre, but both are unique in the White Painted ware repertory on Cyprus.
405 See Appendix 1, figure 420.
406 See Appendix 1, figure 438.
407 See Appendix 1, figure 421.
408 See Appendix 1, figure 423.
409 See Appendix 1, figure 424.
410 See Appendix 1, figure 421.
411 See Appendix 1, figures 425 and 432, respectively.
412 See Appendix 1, figures 429 and 432.
413 See Appendix 1, figures 427, 429, 434 and 435.
414 See Appendix 1, figures 427.
has been obscured by the addition of a clay collar which was then smoothed out to make the profile more even. The excess clay was then scraped away to make the neck narrower. The spouts are different shapes, but appear to have been pulled up from the clay of the neck, and shaped with the potter’s fingers. Both are decorated with framed vertical lattice panels and framed pendent wavy lines in a style typical of Lapithos, but the bases are decorated with groups of straight parallel lines in a manner usually reserved for the bases of hemispherical bowls there.

Although there are some similarities between jug A741 and the other jugs with angled spouts from Kythrea, there are also many differences. This jug has several lugs around its neck as well as at the top and bottom of its handle. Its base is slightly flattened, so that it can stand without support, but it leans forward. The flattening may not have been deliberate. A sharp carination at the neck where it joins the shoulder suggests that the neck was formed into a cylinder and thrust through the top of the body of the jug. Horizontal indentations at the maximum diameter hint at coils that were used to form the body of the vessel. The decoration has worn off quite a bit, but some paint ghosts remain. The vessel was decorated with registers of framed hatched triangles.

Although there are many similarities between the decorations on the jugs from Kythrea and those from Lapithos, the shapes are not the same. Kythrea jugs are generally large, globular or piriform and are buff in colour. The large jugs from Lapithos are about the same size, but tend to be biconical or spherical and are made of orange clay. Although the necks and handles are often thrust through the body of the jugs at both sites, the jugs at Kythrea show signs of secondary forming techniques, such as scraping, that are not common at Lapithos. The similarities between the motifs may hint at close connections between the two sites, but it would seem that Tomb 1 at Kythrea was being supplied by a production centre other than the one at Lapithos. Also, there are several examples at Kythrea that show the use of a multiple brush. This is not the case at

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415 See Appendix 1, figure 434 and 435.
416 See Appendix 1, figures 430, 431 and 437.
417 See Appendix 1, figures 426 and 431.
418 See Appendix 1, figures 441-443.
419 See Appendix 1, figure 440.
420 See Appendix 1, figure 444.
421 See Appendix 1, figure 445.
Lapithos. Kythrea, then, has general similarities with Lapithos, but so many differences in the chaîne opératoire that it must have had its own production centre.

5.8 Krini Merra (Appendix 3, Table 51)\textsuperscript{422}

The necropolis at Krini Merra dates to the Early and Middle Bronze Ages (Frankel, 1983:108). It is located in the Kyrenia range, not far from Lapithos and Dhikomo, and close to a spring. The fertility of the area and the proximity of the spring are the likely reasons for settlement on the southern slopes of the Kyrenia range (Catling, 1962:36-37). A large fort was built at Krini Merra during the Middle Bronze Age (ibid:38). A survey of the site was carried out by Hector Catling in 1952 at which time the sherds discussed below were collected. The material, although sparse and in fragments, is quite heterogeneous, resembling that from the neighbouring areas. The hemispherical bowls are quite similar to those found at Lapithos, particularly bowl 1970.874, which would fit easily into Group 9 at Lapithos\textsuperscript{423}. A rim from a tankard or amphora bears a great resemblance to an amphora 50.2 and jugs 50b.1 and 50b.2 from Vounous\textsuperscript{424}. It is likely that there was no local production centre for White Painted ware, but instead these vessels were imported from the nearby sites of Lapithos and Vounous.

The Western Region

5.9 Morphou Toumba tou Skourou\textsuperscript{425}

The site of Toumba tou Skourou is in the Ovgos River valley in the Bay of Morphou\textsuperscript{426}. At this site, vessels have been found that span the period from the Middle Bronze Age to the Archaic period, and there is a clear transition from one type to another (i.e. from White Painted to White Slip), can be seen (Vermeule & Wolsky, 1990:9-13). The site was settled at the end of the Middle Bronze Age, perhaps by people from Lapithos (ibid). The White Painted ware from Toumba tou Skourou is strikingly similar to that from Stephania, suggesting that the same

\textsuperscript{422} See Appendix 2, map 15 for imports into Krini Merra.
\textsuperscript{423} See Appendix 1, figure 447.
\textsuperscript{424} Compare Appendix 1, figure 447 with figures 276, 277 and 278, respectively.
\textsuperscript{425} See Appendix 2, map 16 for imports into Toumba tou Skourou
\textsuperscript{426} See Appendix 2, map 2.
production centre was responsible for the pottery from both sites. White Painted ware vessels with coroplastic figures are very rare, but at Toumba tou Skourou there are several of them, suggesting that this was the source of such vessels. In addition, the design of vertical stripes on the necks of vessels is typical of Toumba tou Skourou, but is not seen elsewhere except at Magounda427, Stephania428 and Kazaphani429. The jugs from these other sites most likely came from Toumba tou Skourou.

The largest tomb is Tomb 1, which also has the greatest quantity of White Painted ware. Interestingly, 41 of the total of 52 White Painted tankards were found in this tomb, along with more than half of the hemispherical bowls found in the cemetery. Tomb 1 had three chambers and fourteen niches for infant burials. Instead of branching off of a dromos as in other Cypriot tombs, however, these chambers and niches were found in the walls of a roughly circular “chimney” with a rectangular floor. The closest parallel to such a tomb in Cyprus is Tomb 804 from Lapithos (Vermeule & Wolsky, 1990:38).430 There may have been as many as twenty-four adults buried in chamber A alone (ibid). This chamber also contained the greatest share of grave gifts431. Chamber 3 of this tomb contained a Late Minoan IA vase decorated with lilies, as well as some bone panels carved in relief in a “provincial hybrid Egyptianizing” style, a cylinder seal and some fragments of silver and gold (ibid, p.168). This shows that the site of Toumba tou Skourou was involved in international trade towards the end of the Middle Bronze Age and beginning of the Late Bronze Age.

A structure interpreted as a kiln has been discovered at Toumba tou Skourou, but it appears to date from the Late Bronze Age (Vermeule & Wolsky, 1990:38). While this is not proof that the site was a production centre in the Middle Bronze Age, the uniqueness of the pottery and its uniformity in style points to the existence of a production centre there. It is clear that the

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427 Jug 1968.1171. This is certainly an imported jug from Toumba tou Skourou. It is the only published White Painted ware vessel from Magounda.
428 Jug 19(7). It has a bird protome similar to that on P.168, but the decoration is not as neatly executed as the Toumba tou Skourou vessels.
429 Jug 2A.323. It is most likely an import from Morphou Toumba tou Skourou.
430 In contrast, most Cypriot tombs have 1-4 main chambers coming from a slanting bathtub-shaped dromos and very few have niches for infant burials.
production centre that provided the pottery found at Toumba tou Skourou was a very large one, and that it produced many different types of pottery. Because of the very close connection between shapes and motifs in the White Painted, Base Ring, White Slip and Black Slip wares, it seems likely that this production centre could have been responsible for the creation of the new wares that became dominant in the Late Bronze Age.

5.9.1 Group 1 Jugs (Appendix 3, Table 52)

There is a wide variety of shapes and decorative schemes for jugs at Toumba tou Skourou. Most of the jugs are globular or ovoid. The necks are generally cylindrical, and are usually painted with either vertical or horizontal parallel lines. Handles are joined from the rim, or top of the neck, to the shoulder of the vessel in most cases and are squeezed from clay into a long rope, rather than being cut from a flat piece of clay. Five jugs have moulded figures on them. Jugs T.I.389 and Lo II.2 both have the heads of bovines attached in front of their spouts. Jug T.I.134 had the feet of a male figure which is now missing, while jug T.III.18 has a man on one side of the spout and a bull figure on the other. Another jug from a private collection has a man’s head for its spout. Jug T.V.101 is painted in the standard Pendant Line Style and may be an import from an eastern site. Multiple jug T.VI.47 is very unusual as multiple jugs are very rare in White Painted ware. This shape is more often seen in early Red Polished ware, particularly that of Lapithos or Vounous. Jug T.V.108 is decorated with alternating oblique lines, wavy lines and circles in a fashion that would not be out of place at Lapithos or Vounous. It might be an import from one of those sites, or may have been made by someone familiar with the styles of the north coast. The most characteristic types of decoration from Toumba tou Skourou are the vertical stripes on the neck of jugs and the cross hatched triangles

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432 See Appendix 1, figures 456 and 469, respectively.
433 See Appendix 1, figure 453.
434 See Appendix 1, figure 461.
435 See Appendix 1, figure 460.
436 See Appendix 1, figure 467.
437 See Appendix 1, figure 465.
placed in opposite directions to each other on a panel so that the space between them forms a reserved zigzag\textsuperscript{438}.

5.9.2 Group 2 Bottles (Appendix 3, Table 53)

The bottles at Toumba tou Skourou are very much like the jugs, but are narrower. Jug T.V.109 is painted in Pendent Line style, but has vertical stripes on its neck, rather than the horizontal stripes common to jugs decorated in this style\textsuperscript{439}. The other bottles all have horizontal stripes and very similar decoration. They all have vertical framed wavy lines and cross-hatched zigzags. Bottles T.I.212, T.I.245 and T.VI.68 all have cross-hatched diamonds on them, while bottles T.I.212 and T.I.413 both have cross-hatched chevrons\textsuperscript{440}. All of these bottles are quite distinctive and are probably all local products.

5.9.3 Group 3 Askoi (Appendix 3, Table 54)

The three askoi from Toumba tou Skourou are all very similar and most likely the work of a small number of potters and painters, although their similarity may also be related to their use\textsuperscript{441}. All have animal heads, vertical loop handles on their backs and the spouts of all three are the animals’ tails. The spouts on the askoi are very similar to the spouts generally found on jugs at this site. It is interesting that no askoi were found in Tomb 1, even though it contained the greatest quantity of pottery found in the cemetery.

5.9.4 Group 4 Tankards (Appendix 3, Table 55)

Tankards are the most common shape at Toumba tou Skourou, and all have high horns or thumb grips on the tops of their handles. They are identical in shape to the Base Ring ware tankards at this site, and were most likely produced by the same potters responsible for making them. Most of them appear in Tomb 1, but there are also a few in tombs 4, 5 and 6, as well as in the Loizides

\textsuperscript{438}For example, see Appendix 1, figures 451, 452, 453, 456, 457, 465, 466, 473, 474, 475, 476, 479, and 480 for the vertical stripes, and figures 461, 475, 485, 525 and 572 for the reserved zigzags.

\textsuperscript{439}See Appendix 1, figure 476.

\textsuperscript{440}See Appendix 1, figures 473, 474 and 477, respectively, for cross-hatched diamonds, and figures 473 and 475, respectively, for cross-hatched chevrons.

\textsuperscript{441}See Appendix 1, figures 478-480, respectively.
Some of the decorations painted on the Toumba tou Skourou tankards and other vessels are drawn from the repertory of the people who incised decorative motifs onto the Black Slip ware there. There is a whole series of tankards with quadrupeds, which Vermeule calls “dog tankards” (Vermeule & Wolsky, 1990:362). Toumba tou Skourou tankards have been found at Enkomi, Stephania, Dhenia Kafkalla, and Kazaphani. The transfer of shapes and motifs between the Base Ring, Black Slip and White Painted wares suggests that a single production centre was responsible for the manufacture of all types of ceramic vessels at Toumba tou Skourou. Also found at this site is a group of vessels painted in the White Painted motifs, but with other colours added to the standard black or red. These foreshadow the Late Bronze age Cypriot Bichrome ware, with the tankard and jug being the most common shapes painted in this manner. Other motifs from the White Painted tradition, namely the lattice band and framed wavy line, form the design repertory of the White Slip ware of the Late Bronze Age. White Slip decoration is confined mainly to hemispherical bowls and a few tankards. Tankards tend to be part of the Bichrome or Base Ring repertory, as are jugs and other larger shapes.

There is great variety in the decoration used on tankards, although in most cases the decoration is arranged in horizontal bands with panels that contain various motifs. Unique to Toumba tou Skourou is the motif of a five-pointed star which appears on a few tankards. Tankard T.I.541 is decorated with the common motif of a cross-hatched diamond chain but its paint is applied very sloppily, perhaps by an unpractised hand. Tankard T.IV.109 is also decorated in a similar manner.

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442 See Appendix 3, Table 55 for details. There are 49 White Painted tankards, 41 of which are in Tomb 1, 3 in Tomb 4, 1 in Tomb 5, 3 in Tomb 6 and 1 in Loizides tomb 2.
443 Cross-hatched zigzags and chevrons in particular are common on Black Slip ware.
444 See Appendix 3, Table 55 for which tankards have animal figurines attached to them.
445 181 (13)
446 14 (10) and dog tankards specifically 5(10), amphora 7(10), and sherd of dog handle (14). These are certainly from Toumba tou Skourou and probably all made by the same potter/painter. (See Appendix 1, figures 363, 361, 362 and 367, respectively.
447 22(6). See Appendix 1, figure 671.
448 2A.314, 2A.60, 2B511, 2B.523, 2B.354, 2A.308, 2B.522, 2A.315, and 2B.524. (See Appendix 1, figures 312, 308, 316, 319, 314, 311, 318, 330 and 346, respectively). All of these are virtually indistinguishable from the material from Toumba tou Skourou, and are almost certainly made there. To this can be added jug 2A.323, which has the same vertical stripes on its neck.
449 Tankards T.I.184 and T.I.390D. See Appendix 1, figures 486 and 494, respectively.
450 See Appendix 1, figure 516. This may be the work of someone with underdeveloped fine motor control, possibly a child.
fashion and is not as neatly done as other tankards, although it is neater than T.I.541. Tankard T.V.27 is decorated with cross-hatched squares from the Proto White Slip repertory of motifs.

Most of the tankards have framed wavy lines at the rim and the base of the neck collar. This horizontal framed wavy line is characteristic of tankards and bowls from Toumba tou Skourou.

5.9.5 Group 5 Amphora (Appendix 3, Table 56)

There is only one amphora from Toumba tou Skourou. Although its neck is much taller than the necks of the tankards, it has been decorated in the same fashion.

5.9.6 Hemispherical bowls (Appendix 3, Table 57)

Of the thirty-three hemispherical bowls found in the cemetery, nineteen were found in Tomb 1. There is a fairly wide variety in shapes, sizes and decorative schemes, but interestingly there are several bowls that are so closely similar that it is possible to posit a single artist for their manufacture. For example, the decoration on bowls T.I.189, T.I.417, T.I.422, T.I.423 and T.I.588 is almost identical in each case, although the treatment of the centre of the base varies somewhat. Bowls T.I.426, T.III.11 and T.VI.46 are all decorated with the same thick wavy lines. Vermeule and Wolsky have nicknamed the artist who painted them “the finger painter”. Generally, the motifs used to decorate bowls are the same as those used to decorate the other shapes from this site. There does not appear to be the same distinction between motifs used for jugs, motifs used for tankards and motifs used for bowls that is seen at Lapithos.

5.9.7 Group 7 Deep bowls (Appendix 3, Table 58)

The deep bowls at Toumba tou Skourou generally do not have handles. They usually have a carinated collar and a flattened base. The motifs on the deep bowls are similar in some cases to

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451 Compare Appendix 1, figure 524 with 516.
452 See Appendix 1, figure 525.
453 T.I.131, Appendix 1, figure 530.
454 See Appendix 1, figures 535, 541, 544, 545, and 550, respectively. Vermeule and Wolsky also noticed the similarity of these bowls.
455 See Appendix 1, figures 548, 554, and 561, respectively.
those on the hemispherical bowls⁴⁵⁶, while in others, they are more like designs found on jugs⁴⁵⁷. Some of the motifs are common to other sites, such as Lapithos, but the shape of the bowls is typical of Toumba tou Skourou. They are likely all local products.

5.9.8 Summary
Toumba tou Skourou was most definitely a production centre for White Painted and other wares. Its products travelled around the island, and it seems to have imported some of its pottery as well. It would appear that both the Cypriot Bichrome ware and White Slip ware of the Late Bronze Age were invented at this site. Base Ring ware may have had its origins there too. There are clear transitional pieces that show continuity between White Painted ware and the other later wares.

5.10 Dhenia⁴⁵⁸

The site of Dhenia is located in the Ovgos River valley south of Lapithos, and at the southern end of the Vasilia mountain pass which connects the two sites together through the Kyrenia Mountain range. There are two cemeteries associated with a Bronze Age settlement, although the settlement itself has not been found. These are Mali and Kafkalla. Kafkalla is the larger and earlier of the two cemeteries and was first excavated by Gjerstad (Åström & Wright, 1963:225). The two cemeteries span the period from the Early Bronze Age into the Iron Age, and are among the largest on the island (Frankel & Webb, 2001:2-4). Material from Tomb 6 in the Kafkalla cemetery has been sampled for petrographic analysis and is further discussed in chapter four.

Much of the material found at Dhenia is quite similar in decoration to the material found at Lapithos. Stewart, Åström and Frankel all thought there were very close ties between the two sites (Åström, 1957:173; Stewart, 1962:299; Frankel, 1974a:203; 1974b:50; Frankel & Webb, 2001:4, 11), most likely trade connections between the copper-bearing Troodos foothills and the northern port at Lapithos, from which it is possible that copper was being traded for the first time off the island. Certainly, Cypriot copper was being exploited at the sites of Vasilia, Vounous and Lapithos (Knapp & Cherry, 1994:112). Frankel published the material in Australia that was

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⁴⁵⁶ See Appendix 1, figures 565, 567, 570, 571, and 573.
⁴⁵⁷ See Appendix 1, figures 564, 566, 568, 569, and 572.
⁴⁵⁸ See Appendix 2, map 17 for imports into Dhenia
salvaged by Stewart during a visit he made to the site while he was excavating at Vounous in 1937-1938. He cleared out eight tombs, most of which had been extensively looted of their more valuable objects, and he labelled these tombs A-H. Of the material he found there, Red Polished III ware dominates the assemblage, while White Painted ware makes up less than two percent (Frankel & Webb, 2001:6). It is possible that several White Painted vessels may have been taken from the tomb by looters, but it is equally possible that Dhenia was not a production centre of White Painted ware. Instead, it may have received such vessels through trade with a northern producer (ibid). More recent excavations were carried out in both the cemeteries of Kafkalla and Mali by Nicolaou and Nicolaou in the 1960s and published in 1988. The excavations at Kafkalla turned up much more White Painted ware than those at Mali. Tomb 48 at Kafkalla contained the greatest amount of grave goods, with over 290 objects found (Nicolaou & Nicolaou, 1988:71-73). The White Painted vessels comprised almost 43% of the ceramic assemblage in that tomb (ibid). Overall in the cemetery, however, the amount of White Painted ware relative to other wares such as Red Polished II and III is minimal. There may have been a special connection between the occupants of Tomb 48, the richest in the cemetery, and the northern pottery producers, or perhaps these people simply preferred the White Painted ware to other types of pottery.

**Kafkalla**

The White Painted ware from Kafkalla can be divided into groups based on decoration, although most of the published objects are quite fragmentary. The most common vessel shape found at Dhenia was the hemispherical bowl, often decorated with a variety of hatched and cross-hatched triangles and oblique lines. Similar bowls also appear at Lapithos in fairly high quantities, and have been found at Vounous, Toumba tou Skourou, Krini Merra, Boghaz, Alambra, Politiko, and Ayia Paraskevi.

Hatched triangles appear with almost the same frequency at Lapithos and at Dhenia, and could have been produced at either place. It is possible that fabric analysis could identify the source, since Lapithos is in an area that is geologically quite different from Dhenia, but the motifs and combinations of motifs are virtually indistinguishable. The bowls with hatched diamonds that

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459 The material from Tombs 6 and 48 is in the best condition, but may not be representative of the entire assemblage.
were found at Ayia Paraskevi and Krini Merra were probably imported. The bowl from Politiko\textsuperscript{460}, on the other hand, has an unusual decoration on its base and has been poorly made and painted. Its origin is difficult to determine. Interlocking hatched triangles, however, are more abundant at Dhenia and Lapithos and are generally executed better in those places. Lapithos may be the source for this variation on the hatched triangle, which also appears at Ayia Paraskevi on a jug similar to one from Dhenia, and at Alambra and Vounous. It is also possible that it originated at a production centre in the Mesaoria that was influenced by the styles of Lapithos.

Several vessels at Dhenia are decorated with alternating oblique lines, often forming multiple zigzag patterns. There are similar vessels from Lapithos, but they occur with greater frequency at Dhenia. Oblique lines occur on the bases of bowls decorated with other patterns as well. This design can be found on a bowl from Boghaz, which must have been an import.

There is very little at Dhenia that does not appear also at Lapithos. Those other objects have parallels at Ayia Paraskevi and may be the products of a pottery production centre in the Mesaoria.

### 5.10.1 Group 1 Lattice Panels (Appendix 3, Table 59)

These vessels are too fragmentary to fit them easily into the groups from Lapithos, but there are certain motifs that unify the jugs with lattice panels found at the two sites. The bases of six of the vessels have the alternating wavy rings and concentric circles characteristic of Lapithos Group 3\textsuperscript{461}, while jugs 2 from Tomb 6 and 1 from Tomb 48 have the broad concentric circles of Group 2 from Lapithos\textsuperscript{462}. Some of the vessels have vertical wavy lines between the lattice panels, and others have zigzags. A few appear to have the small empty triangle at the top of the lattice panels as has been seen on jugs L.316.107, L.316.150, L.322.D.41 and, L.702.70 from Lapithos, and 1 from Tomb 13 at Stephania\textsuperscript{463}. It is possible that such a peculiarity may

\textsuperscript{460} A634. This bowl may be the work of a novice potter and painter working at the production centre at Lapithos. It is interesting that it was found at a different site.  
\textsuperscript{461} Vessels 6 and 8 from Tomb 1, 1 and 3 from Tomb 6, 28 from Tomb 48 and 1953.845. See Appendix 1, figures 579, 581, 584, 586, 593 and 604, respectively.  
\textsuperscript{462} See Appendix 1, figures 585 and 588, respectively.  
\textsuperscript{463} See Appendix 1, figures 67, 86, 87, 76 and 365 respectively.
represent the work of a single painter. The first three groups of the Lapithos material are based on the decoration of the base, but it is likely they are all products of the same small group of potters and painters. Since most of the material from Dhenia is fragmentary, the bases are missing and it is not always possible to determine which of the three groups they fit best, but this material has much in common with the vessels of Lapithos.

Jug 65 from Tomb 48 has a side spout, unusual for jugs decorated with lattice panels. Vessel 89, also from Tomb 48, is a deep bowl with a high handle, also a shape not generally decorated with lattice panels. The object 1953.845 is a plank idol decorated in the White Painted technique. These are usually made in the Red Polished technique, making this piece rare, if not unique. It is decorated with cross-hatching, which explains its presence in this group, but it is not a vessel. It may have been painted by someone who painted jugs as the motifs used are typical of jugs. Due to its uniqueness, however, it is not possible to assign it to a production centre. It is not unreasonable, due to the close correspondence of the decoration of the vessels in this group, to assign all of them to the production centre near Lapithos.

5.10.2 Group 2 Hatched triangles (Appendix 3, Table 60)

Hatched triangles are most often used to decorate bowls, but there are also jugs in this group. The vessel G.10 is a very unusual shape, but it is decorated as if it were a hemispherical bowl. The hemispherical bowls in this group, particularly those from Tomb 48, are remarkably homogeneous in their decoration and could be the product of the same painter, or at least of a small production group in which the painters were aware of and influenced by each other’s work. Bowl 22 from Tomb 1 is very similar in its shape and decoration to bowl L.316.162 from Lapithos. Bowl 139 Tomb 48 is like both L.315 B-C.35 and 32-27-73 from Lapithos. Bowls 32-27-71, 32-27-81 and A636 (313 B.23) from Lapithos and 87, 98, and 110 from Tomb 48 all share the framed alternating oblique lines on their bases, while the base of the bowl 32-

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464 See Appendix 1, figure 595.
465 See Appendix 1, figure 597.
466 See Appendix 1, figure 604.
467 See Appendix 1, figure 608.
468 Compare Appendix 1, figures 610 and 209-211, respectively.
469 Compare Appendix 1, figures 625 and 193 and 198-200, respectively.
470 Compare Appendix 1, figures 195-197, 207-208, 186-191, 620, 622 and 623, respectively.
27-162 is like the base of jug 7 from Tomb 6 at Dhenia, with its multiple crossed lines with circles in the spaces\(^\text{471}\). All of these vessels may have been made by the same small group of potters and painters, probably working out of the production centre at Lapithos.

5.10.3 Group 3 Interlocking hatched triangles (Appendix 3, Table 61)

Interlocking hatched triangles were used to decorate deep bowls and hemispherical bowls, but there is also a jug in this group. Deep bowl 99 from Tomb 48 has a side spout, and vessel 29 from Tomb 6 is a compound vessel of two deep bowls\(^\text{472}\). This group has its parallel in Group 11 from Lapithos. Bowl 32-27-194 is very similar to bowl 71 from Tomb 48\(^\text{473}\), while jug 320.135 has both the vertical panel of interlocking hatched triangles on either side and the vertical lattice panels on the front and back that also appear on jug 5 from Tomb 6 at Dhenia, but the jug from Dhenia has a base similar to Group 2 from Lapithos\(^\text{474}\). The hatching on the vessels from Dhenia is quite uniform and even, and may represent the work of a single painter or group of painters who worked closely with each other. Deep bowl 255 from tomb 48 is not decorated with interlocking hatched triangles as the others, but with hatched triangles that have multiple framing lines on the left side\(^\text{475}\). This is an unusual method of decoration, almost a hybrid of the hatched triangles and alternating oblique lines, which may have been the inspiration for the interlocking hatched triangles.

5.10.4 Group 4 Cross-hatched triangles (Appendix 3, Table 62)

This group contains both deep bowls and jugs. The cross-hatched triangles occur on the shoulder of the vessels, but on some of the jugs there are multiple rows of them. The jugs with tubular spouts in this group find parallels in the material from Ayia Paraskevi. Two of the deep bowls with vertical handles are so similar in their shape and decoration that they are possibly the work

\(^{471}\) Compare Appendix 1, figures 209-211 and 611, respectively.

\(^{472}\) See Appendix 1, figures 634 and 630, respectively.

\(^{473}\) Compare Appendix 1, figures 243-244 and 634, respectively.

\(^{474}\) Compare Appendix 1, figures 242 and 630, respectively.

\(^{475}\) See Appendix 1, figure 638.
of the same potter and painter, or people who imitated each other’s work, although there are minor differences between them.\textsuperscript{476}

5.10.5. Group 5 Hatched diamonds and triangles (Appendix 3, Table 63)

This group has a few direct parallels from Lapithos, and also shares much in common with Group 7 in which both the triangles and the diamonds are cross-hatched. The amphora 7 from Tomb 48 at Dhenia is identical in shape to amphora L.316.104 from Lapithos, but it does not have the vertical triple line down its front and back as the amphora from Lapithos\textsuperscript{477}. The three jugs 14, 50, and 51 from Tomb 48 are decorated in an identical manner to amphora L.316.104 from Lapithos\textsuperscript{478}. It is very likely that all four of the vessels from Dhenia just mentioned were made by the same person or small group of people working together that produced the amphora from Lapithos. The deep bowl 31 from Tomb 48 may also have been produced by the same group since its decoration is quite similar to the other vessels\textsuperscript{479}. Jug L.316.18 from Lapithos is very similar to jugs 6 and 15 from Tomb 6 at Dhenia, particularly in its arrangement of a row of diamonds on the shoulder, a row of triangles below that, and another row of diamonds at the greatest diameter\textsuperscript{480}. This arrangement is also seen on the two tankards 17 and 19, also from Tomb 6\textsuperscript{481}. It is likely all of the vessels were made at the same production centre by a small group of people even though there is slight variation between hatching and cross-hatching.

5.10.6 Group 6 Cross-hatched diamonds (Appendix 3, Table 64)

The diamond chains in this group are all placed horizontally on the vessels. There are five jugs\textsuperscript{482}, four amphorae\textsuperscript{483} and two bottles\textsuperscript{484} in this group. Like Group 5, its closest parallels can

\textsuperscript{476}68 from Tomb 48 and 51.387 from Tomb 1/67. Compare Appendix 1, figures 644 and 649, respectively. It is unlikely that any particular potter or painter attempted to produce identical items. There would be variability in the shapes and decorations they created, especially when potting was seasonal or occasional work.

\textsuperscript{477}Compare Appendix 1, figures 658 and 127.

\textsuperscript{478}Compare Appendix 1, figures 659, 661, and 662 to figure 127.

\textsuperscript{479}See Appendix 1, figure 660.

\textsuperscript{480}Compare Appendix 1, figure 134 to figures 650 and 653, respectively.

\textsuperscript{481}See Appendix 1, figures 654 and 655, respectively.

\textsuperscript{482}8, 12, 13, 14, and 15a, all from Tomb 6. See Appendix 1, figures 665, 666, 667, 668, and 669, respectively.

\textsuperscript{483}14 from Tomb 1, 20 and 22 from Tomb 6, and 63 from Tomb 48. See Appendix 1, figures 663, 670, 671, and 673, respectively.

\textsuperscript{484}16 from Tomb 1 and 58 from Tomb 48. See Appendix 1, figures 664 and 672, respectively.
be found in Group 7 from Lapithos. Amphora 320.28 from Lapithos is similar to 63 from Tomb 48 at Dhenia, except that there is only a single row of cross-hatched diamonds on the Lapithos amphora, but two rows on the Dhenia one485. Jug 58 from Tomb 48 also has a very close parallel at Lapithos in jug 315 A.14 both in its shape and its decoration486. Elongated chequerboard bands appear on both the amphora 20 from Tomb 6 at Dhenia and on the jugs L.320.24 and L.315 A.86 as well as amphora fragment 32-27-96 from Lapithos and an amphora from Vounous (50.2 in Group 4)487. They must have been made by painters, and possibly potters, who worked closely together, or at least were familiar with each other’s work. Jugs 14 from Tomb 1 and 13 from Tomb 6 both have eyes on either side of the spout and are very similar in both shape and decoration488. They may be the work of the same potter and painter. This subgroup of vessels from Dhenia is the most homogeneous of the pottery groups from that site and most likely represents the work of only a few artisans.

5.10.7 Group 7 Alternating oblique lines (Appendix 3, Table 65)

This is one of the largest groups in Dhenia and is made up entirely of bowls: both deep bowls and hemispherical bowls. The hemispherical bowls are relatively deep and are an average of 10cm in diameter. Some of them have rims that are narrower than their maximum diameter. They appear to have been made by moulding them on the inside of the base of a jug, but since the author has not had the opportunity to study these vessels personally, it is difficult to be certain. The oblique lines range from a pair forming a zigzag pattern to multiple lines which either cross each other at their apices, or simply meet each other there. Some handles are horizontal, while others are vertical. Four of the deep bowls have spouts. There is so much similarity between hemispherical bowls 79, 81, 101 and 256 from Tomb 48 that they are most likely the products of a very small group of potters and painters489. The same is true for bowls 61.56 from Tomb A and 27e from Tomb 6490. The shape of the deep bowl 62 from Tomb 48 is

485 Compare Appendix 1, figures 137 and 673, respectively.
486 Compare Appendix 1, figures 672 and 132, respectively.
487 Compare Appendix 1, figures 670, 136, 133, 139 and 276, respectively.
488 See Appendix 1, figures 667 and 668, respectively.
489 Compare Appendix 1, figures 683, 684, 690, 695, and 677, respectively.
490 Compare Appendix 1, figures 674 and 679.
very similar to the shapes of deep bowls 68, from the same tomb, and 51.387 from Tomb 1/67. There is a fair amount of homogeneity among the designs on the vessels in this group and their execution that these bowls could belong to a limited number of artisans that must have been aware of the shapes and motifs of their fellow potters and painters. This group of bowls would fit well into Lapithos Group 10. There is no reason to suppose that they were made by a different production centre.

5.10.8 Group 8 Wavy lines (Appendix 3, Table 66)

The vessels in this group have straight and wavy lines as their main decoration. Two of them are only the necks of jugs whose body decoration is missing, two of them are bowls that also have an unframed lattice panel from side to side across their bases, and two have a variant of Pendant Line style decoration. The two bowls with the lattice panel decoration are very similar, and are probably the work of the same small group of potters and painters, if not the same person. The Pendant Line style seen on two of the vessels is typical of eastern production units, which suggests an eastern link for Dhenia in addition to its northern connections, whether through import or imitation. The jug with bands of wavy lines is unique. Horizontal wavy lines appear on tankard L.316.119 and amphora L.320.109 from Lapithos, but these vessels do not fit within Lapithos groups, and may therefore be imports. Horizontal wavy lines appear on vessels in Group 1 from Kazaphani and also on vessels from Stephania, although there are no exact parallels for the vessels from Dhenia at any other site. Pendant Line style appears at Kythrea in the north but there it appears on large jugs, while the two examples from Dhenia are bottles. The jug 57 from Tomb 48 has a decoration in paint that mimics an incised Black Slip amphora from Tomb 1, showing a great deal of influence between the different techniques of finishing ceramics. Two jug necks are included here because the only decoration remaining is composed of straight and wavy lines. Both have parallels at Lapithos, which is likely their

491 Compare Appendix 1, figures 680, 643 and 648, respectively.
492 B.6 and C.18. See Appendix 1, figures 699 and 700, respectively.
493 102 and 131 from Tomb 48. See Appendix 1, figures 704 and 705, respectively.
494 G.9 from Tomb G, and 73 from Tomb 48. See Appendix 1, figures 701 and 703, respectively.
495 See Appendix 1, figures 259 and 262, respectively.
496 Compare Appendix 1, figure 702 with Åström and Wright pl. I.10, no. 27
origin. The round-mouthed neck is similar to jugs L. 313 A.47, L.316.107, and L.316.126, while the neck with the angled spout is very like the necks on jugs L.316.144 and L.316.54⁴⁹⁷.

5.10.9 Group 9 Cross-hatched chequerboard patterns (Appendix 3, Table 67)

There are two vessels in this group: a tankard and a jug. While there are no direct parallels for their decoration, a cross-hatched chequerboard pattern appears on several vessels from Toumba tou Skourou, jug 8 from Tomb 9 at Ayios Iakovos, and on amphora 50.2 from Vounous⁴⁹⁸. Cross-hatched diamonds appear on a jug from Vounous (37.117), which has diamonds and cross-hatched inverted triangles. Jug 47.348 from Kalopsidha also has cross-hatched diamonds on it⁴⁹⁹. It is not possible to determine through shape and decoration whether these vessels were imported from the area of Lapithos, Vounous and Kazaphani, or from the east coast near Ayios Iakovos. They could also be products of the production centre at Toumba tou Skourou. Fabric analysis might be able to determine their origin, but it was not possible to obtain samples from any of these sites.

5.10.10 Group 10 Various linear patterns (Appendix 3, Table 68)

This group is the most heterogeneous as it comprises those vessels that do not fit into the other groups. Deep bowls 34 and 61 and tankard 22 have broad bands like some of the vessels from Lapithos⁵⁰⁰. Tankard 22 is quite similar to tankard 32-27-87, also from Lapithos⁵⁰¹. They may have been made by the same small group of potters and painters, most likely at the production centre there. Jug 46 is decorated in a similar fashion to jug L.316.21 from Lapithos, but both of these are quite similar to the vessels of Group 5 at Kazaphani, which probably came from the production centre at Toumba tou Skourou⁵⁰². The jug 61.52 and the tankard 61.53 (said to be from Dhenia) would easily fit into the groups from Kazaphani or Toumba tou Skourou⁵⁰³. The

⁴⁹⁷ See Appendix 1, figures 30, 32, 70, 85 and 81, respectively.
⁴⁹⁸ See Appendix 1, figures 944 and 276, respectively.
⁴⁹⁹ See Appendix 1, figure 1085.
⁵⁰⁰ See Appendix 1, figures 710, 712, and 709, respectively.
⁵⁰¹ Compare Appendix 1, figures 709 and 118, respectively.
⁵⁰² Compare Appendix 1, figures 711 and 256.
⁵⁰³ See Appendix 1, figures 713 and 714.
jug’s closest parallel for both shape and decoration is jug 2A.130\textsuperscript{504}. The tankard has no direct parallel, but it would fit well into the group of tankards from Toumba tou Skourou. Its shape is identical, and the decorative motifs can all be found there, except not in the same combination. These two objects may have their origin in the production centre at Toumba tou Skourou, regardless of where they were actually found.

5.10.11 Group 11 Chequerboard patterns (Appendix 3, Table 69)

The vessels in this group are all quite fragmentary, but enough remains to identify chequerboard patterns. This group finds its greatest affinity with Group 4 from Lapithos, and also Group 4 from Vounous. It is likely these five pieces all came from one of the northern production centres. There is a great deal of similarity between the vessels from Lapithos and Vounous, raising the possibility that all of the material with chequerboard patterns was produced at a single place, but it is not possible through a stylistic analysis alone to determine where that production centre was located.

5.10.12 Mali (Appendix 3, Table 70)

The White Painted ware from the Mali cemetery is quite similar to that from the Kafkalla cemetery, but there is much less of it, partly because the Mali cemetery is much smaller than the Kafkalla cemetery. The cemetery dates from the Middle to the Late Bronze Age, but it has been extensively looted since the 1930s (Frankel & Webb, 2001). Three jugs belong to Group 1 of the Dhenia Kafkalla material and resemble closely the jugs with vertical lattice panels from Lapithos\textsuperscript{505}. The four hemispherical bowls in this group have alternating oblique lines as the decoration on their upper bodies, but their bases are quite different. Bowl 1953.837 has a band of alternating oblique lines which cross each other to form cross-hatching\textsuperscript{506}, while both 1953.834 and 1953.836 have parallel lines with parallel alternating oblique lines on their bases\textsuperscript{507}. Bowl 1953.835 is unusual with a chequerboard pattern covering its entire lower

\textsuperscript{504} Compare Appendix 1, figures 713 and 301.
\textsuperscript{505} Jugs 1953.820, 1953.821, and 1953.1018. See Appendix 1, figures 720, 721, and 728, respectively.
\textsuperscript{506} See Appendix 1, figure 727.
\textsuperscript{507} See Appendix 1, figures 724 and 726, respectively.
The amphora is quite fragmentary. It has a horizontal wavy ring like some of the objects in Group 8 of Kafkalla, but it also has alternating oblique lines forming a vertical zigzag down its front. Another fragment of a jug, 1953.830, also bears a framed vertical zigzag as well as a framed pendent wavy line. Like the material from the Kafkalla cemetery, the vessels from Mali may have had their origin in a northern production centre, possibly the same one that served the Lapithos cemetery. All of the vessels in this group are fragmentary as they come from a survey conducted by Hector Catling in 1952 (Frankel, 1983:74). Some of the material sampled for petrographic analysis was collected by Dr. Catling during this survey, but it was not clear to the author whether the Dhenia material collected was from Mali or Kafkalla. Because the material is so similar, it was probably all manufactured in the same production centre or centres, making it unnecessary to specify the cemetery from which it came.

5.12.13 Summary

It would seem that the earlier material from both Dhenia cemeteries had its origin in the production centre of Lapithos, while the later material seems to have come from the production centre at Toumba tou Skourou. The production centre at Lapithos seems to have stopped producing White Painted Ware towards the end of the Middle Bronze Age, at the time that the production centre at Toumba tou Skourou began making White Painted ware. The change can be seen most clearly at Dhenia, which seems to have been receiving material from both parts of the island. The pendant line style vessels may have come from an eastern centre, although vessels decorated in this manner have been found at both Lapithos and Toumba tou Skourou. Clearly, Dhenia was well-situated for trade on the banks of the Ovgos River at the end of the Vasilia pass and not far from the Troodos Massif.

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508 See Appendix 1, figure 725.
509 See Appendix 1, figure 722.
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5.11 Leondari Vouno (Appendix 3, Table 71)

The necropolis at Leondari Vouno was excavated in 1888 by Mr. R. James, but the work was not done well, nor were the results well published (Gjerstad, 1926:4-5). The site is very close to Nicosia and likely received some of its ceramic material from the same production centre as Ayia Paraskevi, as some of the decoration on the White Painted ware is common to both sites. The vessels from Leondari Vouno appear to have been produced at the Lapithos production centre since their closest affinities are with material from that cemetery, whereas Ayia Paraskevi was also receiving material from other production centres. Jug 1888.1248 is very similar in shape to jug L.320.66 from Lapithos. It has an all-over lattice decoration, whereas the decorative field on L.320.66 has been divided into quarters. Jug 1888.1247a has a close parallel with jug C.39 from Ayia Paraskevi and probably has a common origin. Jugs 1888.1246 and 1888.1247 are similar to each other, and also to the decoration of the tankard 32-27-87 from Lapithos and another tankard (22 from Tomb 48) from Dhenia. They are likely all produced by the same small group of potters and painters. The bottle 1888.1249 may also be a product of that group. The bottles decorated in Pendent Line style, 1888.1250 and 1888.1251, are very similar to bottles from Ayia Paraskevi (C.57) and Dhenia (G.9, 73(48)). They were probably all made at the same production centre, but since this is an eastern style, it is possible they may have been either imported as a group or imitated by the same local potters and painters based on an imported prototype. Such imitations are common at Ayia Paraskevi, and are likely to be the products of a Mesaoria production centre. Leondari Vouno seems to have been receiving its White Painted ware from both Lapithos and the production centre in the Mesaoria.

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510 Compare Appendix 1, figure 732 with figure 261.
511 Compare Appendix 1, figure 731 with figure 754.
512 Compare Appendix 1, figures 729, 730, 118 and 709, respectively.
513 See Appendix 1, figure 733.
514 Compare Appendix 1, figures 734, 735, 787, 701, and 703, respectively.
515 Frankel (1983) notes that these two bottles are confused in the accession record. He gives an alternative provenience of Kouklia for them. They are most likely imported from a northern production centre.
5.12 Nicosia (Ayia Paraskevi)\textsuperscript{516}

Excavations began in the cemetery at Ayia Paraskevi in 1884-85 with the work of Ohnefalsch-Richter, and were later continued in 1894 by Myers (Gjerstad, 1926:4). The material studied by the author at the Cyprus Museum comes from these early excavations.\textsuperscript{517} The cemetery spans the period from the Early Bronze Age through to the Iron Age (Flourentzos, 1988:121-122), thus providing a good sample to study the development of various wares throughout the Bronze Age. Although there was a fair amount of White Painted ware found there, Red Polished ware is the dominant type of pottery (Hadjicosti, 1992:112).

In 1955, Stewart excavated the cemetery on Gladstone Street following reports of antiquities being uncovered during construction in that area. Unfortunately, the tombs had already been emptied by the construction workers, but the material was recovered. As a result, the vessels can only be assigned to the cemetery generally, and not to any particular tomb with certainty (Hennessy, Eriksson, & Kehrberg, 1988:9). Hadjicosti carried out excavations at Ayia Paraksevi in 1988-99, over a century after the first ones. Fifteen tombs were excavated at that time, but many had been looted heavily or destroyed by construction before the Department of Antiquities was notified of their existence (Hadjicosti, 1992). Some of the material she recovered was sampled, with her kind permission, by the author for petrographic analysis.

In 2004, the Department of Antiquities excavated another chamber tomb which dated from Middle Cypriot III to Late Cypriot IA (Georgiou, 2008:65). Some of the material published bears a striking resemblance to material from Lapithos, particularly the hemispherical bowls and the jug. The jars without handles are similar in shape to L.702.98 from Lapithos, which is decorated with alternating oblique lines instead of hatched triangles, and has the same triple dot motif in the spaces between the peaks of the zigzags formed by the oblique lines as seen on jar 132\textsuperscript{518}. Jar 2A.164 from Kazaphani is similar in shape to the jars from Ayia Paraskevi, and it also has the same tailed hatched triangles as those seen on jar 77\textsuperscript{519}. Also from Kazaphani, jar

\begin{small}
\textsuperscript{516} See Appendix 2, map 18 for imports into Ayia Paraskevi.
\textsuperscript{517} The material sampled for petrographic analysis comes from a survey by Catling in 1953, and from Tomb 11, excavated by Hadjicosti.
\textsuperscript{518} Compare Appendix 1, figure 225 and 772.
\textsuperscript{519} Compare Appendix 1, figures 321 with 771.
\end{small}
2B.512 is very much like jar 129 from Ayia Paraskevi. The motif of groups of parallel lines converging at the centre of the base of jugs and jars is also seen at Kazaphani. Jars T.V.35 and T.V.106 from Toumba tou Skourou are also similar in shape and are decorated with hatched triangles. T.V.106 has a shape very similar to jar 77 from Ayia Paraskevi, and has strokes shaped like the letter “U” in the spaces between triangles in the same position that jar 132 has triple dots. The jars found at Lapithos and Ayia Paraskevi may have been produced at Toumba tou Skourou, where deep bowls with wide collars are popular.

The decoration on jug 18, with a register of hatched triangles on the top and a register of alternating oblique lines below, finds a parallel in jug 1888.1247a from Leondari Vouno. The jug from Leondari Vouno, however, is very much like jug C.39 from Tomb 14 at Ayia Paraskevi, and is probably an import to Leondari Vouno. Hatched triangles with tails on the top can also be found at Kalopsidha on the deep bowl with a basket handle A657 from Tomb 17. This vessel is not like other material from Kalopsidha, and is likely to be an import. Excavations at Klavdhia have also produced vessels decorated with hatched triangles that have motifs placed in the spaces between the triangles. Jug A718a has star motifs between the triangles, while A751 has circles.

The material from Ayia Paraskevi is very similar to that from Kazaphani, Toumba tou Skourou, Dhenia, Leondari Vouno, Kalopsidha and Klavdhia. It shows a strong connection to Lapithos as well, but there are some variations in the Ayia Paraskevi material that suggests a local production centre (Kromholz, 1982). Some of the vessels are decorated with motifs like those of Lapithos, and even with the same decorative syntax, but in a way that is unique to Ayia Paraskevi. The vessels from the other sites that have parallels at Ayia Paraskevi are unlike the bulk of material from those sites, and could very well be imports from a production centre in the Mesaoria that served Ayia Paraskevi and Politiko. Two very interesting examples of White Painted ware have

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520 Compare Appendix 1, figures 322 and 810.
521 See Appendix 1, figures 570 and 573, respectively.
522 See Appendix 1, figures 564-573, respectively.
523 Compare Appendix 1, figures 760 and 731, respectively.
524 See Appendix 1, figure 754.
525 See Appendix 1, figures 1086-1095.
526 See Appendix 1, figures 1148-1156 and 1165-1173.
been inlaid with faience beads, a practice that seems to be unique to Ayia Paraskevi. They are also decorated with horizontal bands containing cross-hatched diamond chains, seen in Group 7 at Lapithos. The sherds belong to two different tankards or amphorae, and are decorated in the same way, likely by the same person. Hadjicosti assigns them to either the WP III-V String Hole Style, or the White Painted III-IV Latticed Diamond style (Hadjicosti, 1992:113-117).

5.12.1 Group 1 Lattice panels (Appendix 3, Table 72)

These vessels are similar to Groups 1-3 from Lapithos but none has a direct parallel there. Jugs A728 and C.40 are nearly identical and may be the work of a single potter and painter. Jug A728 appears to have been built up with coils, as some horizontal indentations next to the hole can be seen. The neck was made separately and inserted, as can be seen by the sharp join of the base of the neck and the vessel shoulder. Small pierced lugs were attached to either side of the neck near the shoulder, but they are not symmetrical. They were pierced from the back of the vessel to the front with some narrow pointed object, perhaps a reed. There is no evidence of wear from a string through these lugs, nor are they wide enough for anything thicker than a thread to pass through. They were probably only meant to be ornamental. The pot is very well-made and well-proportioned. Jug C.65 is similar to those in Lapithos Group 2, particularly L.315B-C.45, but it has triple frames instead of double on the lattice panels. Most of the vessels in this group appear to have been made by different people, but all show awareness on the part of the artisans of the manufacture of the other vessels. If they were not all made at the same production centre at Lapithos, then those responsible for their manufacture must have been aware of the styles of Lapithos, either due to their training at that centre, or through imitation of wares from that site.

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527 A jug from Kythrea has circular impressions arranged in a similar fashion to the beads. See Appendix 1, figures 412-419. It is possible that the vessels at Ayia Paraskevi may have been produced at Kythrea due to the arrangement of their decoration, but there are no other examples of faience bead inlays there.

528 Compare Appendix 1, figures 736-739 and 743.

529 See Appendix 1, figure 739.

530 See Appendix 1, figure 738.

531 Compare Appendix 1, figures 740 and 50.
5.12.2. Group 2 Hatched triangles (Appendix 3, Table 73)

In this group, some vessels have framed triangles and others have unframed ones. There are both jugs and bowls, including spouted deep bowls, deep bowls and hemispherical bowls. The jugs are either decorated with multiple bands of hatched triangles, or with a band of triangles at the shoulder and alternating oblique lines forming zigzag patterns below the maximum diameter. Jug A744 appears to have been made in the same way as jug A728, with its neck inserted into the shoulder. This is evident from the sharp joint at the shoulder but it is smooth on the inside of the neck. The base of the jug has been flattened, but it does not sit flush with a flat surface, such as a table. It was likely flattened by the jug being placed in an upright position before it was fully dried. A ring was painted around this flattened area, showing that the painter was aware of the shape of the jug, whether or not that shape was intentional. The handle may have been thrust through the wall of the jug at both the neck and shoulder, but it was difficult to see for certain on the inside of the neck. This jug shares many features with jugs made at Lapithos, but elements such as cylindrical necks and handles thrust through the vessel wall seem to be widespread in Cyprus, rather than peculiar to one site.

Jugs C.39 and C.43 are decorated in a very similar manner to jug L.702.69 at Lapithos and may have been produced by the same small group of potters and painters. The two deep bowls 3 and 7 from Gladstone Street are similar to each other and also similar to deep bowls in Group 9 from Lapithos, which may have been their origin. Jug 8 from Gladstone Street is decorated with interlocking hatched triangles similar to jug 5 from Tomb 6 at Dhenia Kafkalla. It has a similar sloping mouth to jug L.320.135 in Group 11 from Lapithos, and shares the decorative scheme with this jug although the Lapithos jug has vertical zigzags instead of vertical wavy lines between the panels. Without fabric analysis, it is not possible to know whether the jugs from all three sites were made at Lapithos or elsewhere, but stylistically they seem to be from the same production centre.

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532 See Appendix 1, figures 747-751.
533 See Appendix 1, figure 748.
534 See Appendix 1, figure 749.
535 Compare Appendix 1, figures 754, 755, and 194, respectively.
536 See Appendix 1, figures 756 and 758.
537 Compare Appendix 1, figures 759 and 629, respectively.
538 Compare Appendix 1, figure 759 with figure 242.
Many of the bowls found at Ayia Paraskevi are very similar to those decorated in a similar manner from Lapithos, which is likely to be their origin. Deep bowls 3 and 7 from Gladstone Street and 3 from Tomb 13 are very similar to bowl 104 from tomb 48 and 1953.842 from Dhenia, but also to bowls A660, L.320.86, A659, L.315.A70, L.315.A2, 32-27-80, 32-27-182 and L.320.39 all from Lapithos. Bowls 4 from Gladstone Street, 4 and 15 from tomb 13, s1 from the surface of tomb 12 and s1 from the surface of tomb 14 are not as deep, but are also well within the range of shapes and decorations for hemispherical bowls from Lapithos. Bowl s1 from the surface of tomb 14 has its decoration executed in short, uneven lines. Some of the hatching lines do not originate at the double vertical lines as they are supposed to, while other hatching lines cross over them. This bowl may represent the work of a novice. Bowls 77 and 132 from tomb 36 resemble bowl L.702.98 from Lapithos, but have much closer parallels in bowls 164, 184 and 329 from tomb 2A at Kazaphani and most particularly with the deep, handleless bowls from Toumba tou Skourou, which is the most likely source for the examples at this and all of the other sites.

5.12.3 Group 3 Cross-hatched triangles (Appendix 3, Table 74)

There are three jugs and a tankard in this group. Each of the jugs has a different shape, but all three are decorated with horizontal bands of cross-hatched triangles. Jug 58.146 (Gladstone no. 10) is similar to jug A713a from Lapithos and also in shape to jug 56.93 from Vounous. It may have come from a northern production centre. Jug 58.140 (Gladstone no. 2) is very similar in shape to jug 50b.1 from Vounous, but the Vounous jug is decorated with bands of cross-hatched diamond chains and cross-hatched zigzags. Jug C.41 finds its parallel in shape at Lapithos in jug L.320.66, and in shape and decoration in jugs 4 from Tomb 48 and 13 from Tomb 6 at Dhenia Kafkalla. It may be an import from Lapithos, along with jug 58.140. The tankard is similar to those common at Toumba tou Skourou and is likely to have been made there. Its

539 Compare Appendix 1, figures 757, 759 and 760 with figures 638, 627, 221, 212-213, 181-183, 177, 176, 170-175, 161, and 146-151, respectively.
540 Compare Appendix 1, figures 762 and 763 with figures 225, 322, 327, 334, 565 and 569-574, respectively.
541 Compare Appendix 1, figure 772 with figures 152-157 and 287, respectively.
542 Compare Appendix 1, figure 771 and 277.
543 Compare Appendix 1, figure 765 with figures 261, 640 and 667, respectively.
decoration is not common at that site, but the short, crossing horizontal lines and the uneven shape of the vessel may indicate that it was the work of a novice potter/painter.

5.12.4 Group 4 Hatched or cross-hatched diamonds (Appendix 3, Table 75)

This group contains three jugs, a bottle, two tankards or amphorae (in sherd from), and a peculiar ring vase. In most cases, the decoration is arranged horizontally in multiple bands. Jug 12 from Gladstone St. has its closest parallels in jugs 50b.1 and 50b.2 from Vounous. It is likely that these vessels all came from the same production centre although it may not have been painted the same person that made the jugs from Vounous. Jug 11 from Gladstone St. is very similar to deep bowl A654, bottle L.316.79 and tankard L.316.104 from Lapithos. It has the same arrangement of triple lines between horizontal diamond chains, but it is not as neatly executed as the examples from Lapithos. It is probably a copy of a vessel from that set, perhaps made by a novice. Jug A685 has the slip and paint colour, and the motifs of Lapithos, but its shape is unique. Although it has three feet, it cannot stand on its own. The front foot is a short stump that forces the jug to lean too far forward to remain upright, and one of the long pointed feet in the back is shorter than the other, causing the vessel to lean to the left as seen from the front. The neck appears to have been made as a separate piece, but it was not thrust through the shoulder. It tapers outward from the top of the vessel in a way not seen in any other jug from Lapithos. The handle is a twisted rope of clay, a very unusual feature in Cypriot ceramics. In decoration, its closest parallel is amphora L.322 D.86 and askos L.313 A.113 both from Lapithos. Judging by its fabric, it is probably from Lapithos, but it is the product of a potter who appears to have been working outside of the normal repertory of White Painted ware.

The bottle C.56 has its closest parallel in 315A.18 from Lapithos, although the Lapithos bottle has hatched diamonds instead of cross-hatched. It also bears a resemblance to 32-27-92 and

544 A685, 11, and 12. See Appendix 1, figures 775-782, 786, and 787, respectively.
545 C.56. See Appendix 1, figure 783.
546 24 and 51. See Appendix 1, figures 784 and 785, respectively.
547 58.132. See Appendix 1, figure 788.
548 Compare Appendix 1, figure 786 to figures 119, 125 and 127, respectively.
549 See Appendix 1, figures 775-782.
550 See Appendix 1, figure 778.
551 See Appendix 1, figures 44 and 45.
552 Compare Appendix 1, figures 783 and 122.
32-27-207, both from Tomb 804 at Lapithos\textsuperscript{553}. It was most likely produced at Lapithos, which is probably the origin of the bottle from Dhenia as well. The ring vase, a rare shape in White Painted ware, has a cross-hatched zigzag running horizontally as its main decoration\textsuperscript{554}. Its spout is typical of String Hole Style jugs, and so are its three stubby feet. Cross-hatched zigzags appear on jugs 50b.1 and 50b.2 from Vounous, tankards 2A.308, 2B.354 and 2B.522 from Kazaphani, several jugs, tankards and an amphora from Toumba tou Skourou and amphora 22 from Tomb 6 at Dhenia\textsuperscript{555}. This vessel could have come from Toumba tou Skourou based on its decoration, but its shape is reminiscent of the String Hole Style jugs from Politiko. It may have been manufactured at the production centre in the Mesaoria that made the jugs from Politiko. The fragments of amphora or tankard that are inlaid with faience are unique on Cyprus, but their decoration is similar to the other vessels from Lapithos and Vounous, as well as Ayia Paraskevi, that are decorated with cross-hatched or hatched diamond chains. As mentioned above, the excavator who found them believes they are products of a local production unit, but she bases this on their uniqueness, rather than any type of fabric analysis.

5.12.5 Group 5 Chequerboard patterns (Appendix 3, Table 76)

There is only one vessel in this group, and it is only “said to be” from Nicosia (Frankel, 1983:121). It is an animal shaped askos, and its closest parallels are the vessels from Group 4A of Lapithos and the amphora 64.38 from Vounous\textsuperscript{556}. It is most likely a product of a Lapithos production centre, which is where most of the vessels with this sort of decoration have been found. It is placed in its own group here, although it is the only member, because the decoration makes it part of a discreet group from Lapithos.

5.12.6 Group 6 Linear decoration (Appendix 3, Table 77)

There are two types of decoration using oblique lines. One is an all-over pattern covering the entire vessel, and the other is a zigzag pattern composed of alternating oblique lines. Both designs can be found on jugs, but the zigzag pattern is most common on hemispherical bowls.

\textsuperscript{553} See Appendix 1, figures 129, and 130.
\textsuperscript{554} 58.132. See Appendix 1, figure 788.
\textsuperscript{555} See Appendix 1, figures 311, 314, 318 and 671, respectively.
\textsuperscript{556} See Appendix 1, figure 288.
The all-over pattern that covers jugs C.41 and C.42, both from Tomb 14, can also be found on a jug from Kythrea (A729) and a bottle from Dhenia Kafkalla (12 from Tomb 48). Due to the rarity of such a decorative scheme, it is very likely that all of the jugs were made by the same small group of potters and painters, possibly working in the Mesaoria. A fragment of a jug (C.60) appears to be decorated with parallel vertical lines in a similar manner to the oblique patterns, but its entire decorative scheme cannot be reconstructed.

There are five vessels in this group that are decorated with linear schemes that are different from other linear groups. Bottle 58.146 has vertical lines around its circumference, with short horizontal lines in the spaces between them. Jug A733 has the triple vertical lines typical of Pendent Line Style, but lacks the wavy lines. The design of horizontal lines down the neck and on the shoulder with vertical lines dropping from the lowest ring is also used on jug A781 from Tomb 203B at Lapithos. Both jugs may have been painted at the same production centre by painters familiar with each other’s work. The bottle C.57 is decorated in the Pendent Line Style. Jug C.45 has framed wavy lines on the front and back, with the triple parallel vertical lines of jug 733 on each side. It could fit in Group 1 from Kazaphani. The miniature spouted bowl 58.139 has a wavy line at its rim with a straight line below in a similar manner to some of the bowls in Group 8 at Dhenia. The combination of straight and wavy lines is an eastern style, but at Ayia Paraskevi it is treated differently from the usual Pendent Line Style.

### 5.12.7 Summary

The material has been divided into subgroups, most of which match the groups from Lapithos, although small variations in the style of the vessels from Ayia Paraskevi may point to imitation rather than importation. While some of the White Painted vessels found at Ayia Paraskevi may have come from Lapithos or elsewhere, there seems to have been a local production centre somewhere in the Mesaoria that supplied Ayia Paraskevi and Politiko, as well as Dhenia.
three sites have some objects that do not fit into the repertory apparent at Lapithos. The amphorae or tankards with inlaid beads could have been produced at Kythrea or wherever vessels decorated with bands of cross-hatched diamonds were made, but many vessels do not have clear parallels elsewhere. Whether the production centre was located close to the Troodos massif near Politiko, or in the Mesaoria near Ayia Paraskevi could, perhaps, be determined petrographically, since these two areas should be geologically distinctive.

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5.13 Politiko (Appendix 3, Table 78)\textsuperscript{565}

The settlement of Politiko is located in the foothills of the Troodos massif at the edge of the fertile Mesaoria plain. The settlement is currently being excavated by Steven Falconer and his team, and it has produced a great deal of pottery, although the assemblage is overwhelmingly composed of Red Polished ware (Falconer, 2005). Because there was so little White Painted ware found in the Politiko area, it is unlikely to have been produced there. There are two cemeteries associated with the site: Lambertis and Chomazoudhia. Most of the White Painted sherds found by Falconer in the settlement are very tiny and hard to identify, but some whole pots were discovered in the tombs. Ohnefalsch-Richter discovered fifty Early and Middle Bronze Age tombs at Lambertis in 1889 and 1894 (Gjerstad, 1926:5), and this is the source for the vessels examined by the author. The majority of the vessels come from Tomb 38.

The hemispherical bowl appears to have been made by pressing it into or onto a mould, as the wall thickness varies considerably and there are several dents on both the interior and exterior surface from the potter’s fingers. The handle was applied before the vessel was completely dry, as can be seen by the indentation of the vessel wall at the point of attachment\textsuperscript{566}. The diameter of the rim is less than the maximum diameter of the vessel\textsuperscript{567}. The potter seems to have squeezed the vessel in at the top, which is unusual for hemispherical bowls on Cyprus.

\textsuperscript{565} See Appendix 2, map 19 for imports into Politiko.  
\textsuperscript{566} See Appendix 1, figure 818.  
\textsuperscript{567} See Appendix 1, figure 815.
The surface of jug A690 is uneven and there are a few fairly large indentations visible that may be coil relics. The neck appears to have been made as a separate cylinder that was then thrust through the vessel wall and its joint smoothed with the addition of a clay collar. Several flat, vertical facets around the neck indicate that it was shaved to remove excess clay after it was attached. The rim is round and flaring with flattened projections on each side of the handle. These flat projections also appear on jug A703 and tankard A772.

Although similar in shape, jug A703 has an elaborate horn on the top of its handle and several pierced lugs decorating its neck. The lugs were pierced with a sharp, round object, but they closed up due to shrinkage when drying and were probably ornamental rather than useful. The handle was attached to the rim by pinching it and smoothing the joint. It was not possible to determine whether it was thrust through the vessel wall at the shoulder, but the joint there appears very sharp with no evidence of smoothing out a flat handle end.

Vessel A723 is different in its shape. It has a globular body and an upright neck ending in an angled spout. Its shape is similar to vessels from Lapithos, although the clay is light brown, rather than the bright orange typical of that site. Its handle was joined before the neck was dry, as there is an indentation at the juncture. The spout was formed by pulling out a point from the neck and folding it over to form a pouring spout.

Jugs A762, A763 and A765 are covered in pierced lugs. Jugs A762 and A763 both have three short legs on their bases, while the base of A765 is flattened. Jugs A763 and A765 both have double necks. The necks of A763 appear to have been inserted into two separate holes in the top of the vessel body, but those of A765 look as if they were joined together first, then inserted as a unit, with a clay collar placed around the pair of them and smoothed into the shoulder of the vessel.

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568 See Appendix 1, figure 822.
569 See Appendix 1, figure 823.
570 See Appendix 1, figure 824.
571 See Appendix 1, figures 826.
572 See Appendix 1, figures 830.
573 See Appendix 1, figure 828.
574 See Appendix 1, figure 835.
575 See Appendix 1, figure 836.
576 See Appendix 1, figure 837, 843, and 850, respectively.
577 See Appendix 1, figures 846 and 852.
jug. The tops of the necks of A763 are covered in solid caps (one is missing) that would make it impossible to pour any liquid from them. They have filling holes on the back, but the arrangement of lugs on the front, together with the odd cap, make them appear as faces rather in the style of twin-headed plank idols in the Red Polished ware repertory. The lugs on all three jugs are placed so that the lugs of the upper ring appear evenly spaced between the lugs of the lower ring when seen from above. A string laced through these lugs would not have lined up well with the decoration, however, so it is unlikely that they were meant to work with the decorative scheme, except that the triangles were painted in such a way that they do not overlap with the lugs. The handle on Jug A763 is shaped like a wishbone, while that of jug A765 is stirrup-shaped.

The base of the tankard has been flattened, but the vessel tips backwards when placed on a flat surface. The neck of the vessel was made as a separate cylinder and joined to the body. It tapers inwards slightly at the point where it has been inserted into the shoulder. The handle was punched through the vessel wall, as can be seen on the interior where there is a lump. A clay collar was added to the exterior and smoothed into the handle and shoulder to make a smoother transition. A lug was placed at the base of the handle before the collar was quite dry making an indentation at the point where it was affixed.

The three String Hole Style jugs all have the same decorative scheme and motifs, and the two with double necks are very similar, but not identical. It seems more likely, since the handles attach in a different way and the placement of the lugs is different, that the people who made them were working together, rather than there being a single potter and painter making both. Jug A762 is similar to two jugs from Dhenia Kafkalla: 13 from Tomb 6 and 4 from Tomb 48. The decoration on the lower part of the vessel, a pair of crossed zigzags that form an open diamond chain pattern, is similar to that on the lower part of the round-mouthed jug A690 from Tomb 38.

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578 Compare Appendix 1, figures 847 and 855.
579 See Appendix 1, figures 847.
580 See Appendix 1, figures 842, 849, and 857.
581 See Appendix 1, figures 849 and 854.
582 See Appendix 1, figures 861.
583 See Appendix 1, figure 862.
584 This could not be successfully photographed, but was easily seen with a flashlight.
585 See Appendix 1, figure 864.
586 A763, A765 and A762 (the first two have double necks). See Appendix 1, figures 837, 843 and 850, respectively.
587 Compare Appendix 1, figures 837-842, 638 and 639, respectively.
at Lambertis, and also to jugs L.320.64 and L.320.86 both from Lapithos\textsuperscript{588}. The shape of jug A762, as well as the number and placement of lugs and the decoration of cross-hatched triangles found on all three jugs can also be seen on two jugs from Ayia Paraskevi\textsuperscript{589}. These jugs, as well as those from Ayia Paraskevi that resemble them, may all have been made at the same production centre somewhere in the Mesaoria.

The round mouthed jug A703 and the tankard A772 have a decorative scheme and motifs that would place them easily into Group 6 from Lapithos\textsuperscript{590}. They resemble deep bowl A654 and amphora L.316.104 with nearly identical decoration\textsuperscript{591}, suggesting the same painter, most likely working at Lapithos, was responsible for all four vessels. The deep bowl has very long and sloppy hatched triangles on its shoulder and a wavy line flanked by several straight lines. This decoration is unique, making it difficult to place it in any of the other groups. It may have been painted by a novice painter.

There is only one vessel from Chomazoudhia in this study. It has very thin walls and is well-proportioned, with an even profile. The neck is long and narrow with a flaring rim. There is a slight rim around the shoulder where the neck joins, indicating that the neck was made as a separate cylinder and thrust through the top of the body\textsuperscript{592}. An ornate lug at the front of the neck mirrors the ornate handle. Both were attached when the vessel was fairly dry as there are no indentations visible\textsuperscript{593}. The top of the handle was pierced once, while the lug has been pierced twice. Very similar pierced lugs appear on amphorae from Lapithos as well\textsuperscript{594}. Its decoration is very similar to jug A717 in Group 8 from Lapithos\textsuperscript{595}. It is covered in a combination of panels of chequerboard and panels of lattice, which are common at Lapithos. It is likely that this very fine jug was made at the production centre there.

\textsuperscript{588} Compare Appendix 1, figures 820-825, 160 and 161, respectively.
\textsuperscript{589} Compare C.41 and 58.132, Appendix 1, figures 770 and 787.
\textsuperscript{590} See Appendix 1, figures 826-831 and 858-867.
\textsuperscript{591} Compare with Appendix 1, figures 119-121 and 127.
\textsuperscript{592} See Appendix 1, figures 862.
\textsuperscript{593} See Appendix 1, figure 861 and 864.
\textsuperscript{594} Compare L.316.4, L.315 B-C.5, L.316.81, 32-27-10, 32-27-96, and L.320.64. See Appendix 1, figures 89, 103, 107, 138, 139, and 160, respectively.
\textsuperscript{595} A714, Appendix 1, figures 868-875. Compare with figures 91-94.
5.13.1 Summary

Politiko seems to have been receiving its White Painted ware from two sources, based on the decoration and shape of the vessels found there. Many of them appear to have been made at the production centre near Lapithos. This production centre supplied White Painted ware to several sites on Cyprus, particularly those on the north coast and in the river valleys. Some of the vessels, particularly the String Hole Style jugs, do not have parallels at Lapithos. Similar jugs to these have also been found at Ayia Paraskevi, and it is likely that all were made at the production centre in the Mesaoria that supplied White Painted ware to Dhenia, Ayia Paraskevi, and Politiko.

5.14 Alambra

Alambra is one of the few settlement sites of the Middle Bronze age that have yielded White Painted ware, although not in great abundance. The excavators found a great deal of pottery at the site, but 99% of it was locally made Red Polished Ware (Barlow, 1994:2, Coleman & Barlow, 1979:166; Coleman, Barlow, Mogelonsky, & Schaar, 1996:237). The remaining one percent is made up of White Painted and other wares. The White Painted wares can be dated to a relatively short period from the early part of the Middle Bronze Age, and due to their very small quantities are almost certainly imported to the site, most likely from Lapithos or Vounous. Barlow divided the material into two groups, which she called White Painted A and White Painted B. These groups were based on the colour of the fabric as well as the decoration. Although for sherds the most sensible way to group them may be by resorting to the two categories A and B, the more complete vessels can actually be matched quite closely to vessels and groups of vessels from other sites, mainly Lapithos. For the sake of comparison, the material that follows will be roughly divided into two main groups: cross-hatched and hatched designs, although cross-hatched designs appear in both White Painted A and B categories. Only those groups of sherds that can be reconstructed into vessels will be included in the tables of Appendix 3.

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596 See Appendix 2, map 4 for exports from Lapithos.
597 See Appendix 2, map 20 for imports into Alambra.
5.14.1 Group 1 Vessels decorated with cross-hatched designs (Appendix 3, Table 79)

There are several vessels in this group, mainly jugs. They are quite fragmentary, however, so it is not possible to decide which Lapithos group they belong to, but they all have parallels in the northern production centre.\(^\text{598}\) Jug AP.92 would fit into Group 2 at Lapithos, while jug C-70-2 is unique among jugs with lattice panels in that it has a cross on its base rather than the usual concentric rings or solid colour\(^\text{599}\). Also decorated with lattice panels, a hemispherical bowl finds a parallel in bowl A625 from Lapithos, although the decoration on the base is different. This is no surprise, however, as no two bowls are alike in White Painted Ware. There are sherds of jugs decorated with lattice panels, but not enough remains to reconstruct their designs.

Other jugs can be matched to vessels from Vounous and Lapithos with nearly identical designs. They are so similar that they must have come from the same production centre and were most likely painted by the same individual. Jug AP.93 has exactly the same motifs, but in a different order from the amphora 68.6 from Vounous. They must have been painted by the same person, for such striking similarity is unlikely to have been coincidental. The decoration on the amphora 64.47 from Vounous is similar, but not as well planned or executed. It may have been painted by someone familiar with the work of the painter of AP.93 and 68.6, but not as skilled. Jug AP.178, also decorated with chequerboard bands, would fit into Group 7 at Lapithos. It matches jug L.320.24 and bottle L.315A.86 in that group and is very likely the work of the same painter. Amphora 50.2 from Vounous has the same decorative syntax and motifs, but it is not as well executed. It may be the product of someone familiar with the work of the painter of the other three vessels, but perhaps not as skilled.

Bottle AP.147 bears a decoration of vertical cross-hatched diamonds and double zigzags identical to bottle 1271 from Ayia Paraskevi\(^\text{600}\). These must have been made by the same person, but it is difficult to tell whether the production centre was at Ayia Paraskevi or at Lapithos.

\(^{598}\) The Lapithos groups for vessels with lattice panels were determined largely based on the decoration of the base of the jugs. Most of the jugs from Alambra are missing their bases.

\(^{599}\) See Appendix 1, figures 876 and 882, respectively.

\(^{600}\) Compare Appendix 1, figures 867 and 745.
similar bottle, but with hatched diamonds instead of cross-hatched, was found at Lapithos (L.315A.18), which may have been the origin of the bottles. Bowl AS.275 has cross-hatched triangles, with an alternating zigzag pattern that makes a diamond chain just under the triangle frieze. This design appears on a few vessels from Lapithos, but the closest parallel is with deep bowl L.320.86, although the handle is vertical on the Lapithos bowl, and horizontal on the Alambra one.

5.14.2 Group 2 Interlocking hatched triangles (Table 80)

These vessels exist only as sherds and are far outnumbered by vessels with cross-hatching. Two hemispherical bowls have been published, both of which would fit nicely into Group 11 at Lapithos, which is likely where they originated. The design is well planned and well executed. Such interlocking triangles also appear at Dhenia, but they are much more common at Lapithos. Bowl 50b.3 at Vounous and 32-27-194 from Lapithos are decorated in a very similar manner to AS.235, while AS.258 finds a parallel in L.315B-C.31 from Lapithos which also has a double zigzag running below the band of interlocking hatched triangles. These may have been painted by the same hand.

5.15 Marki Alonia

The site of Marki is located in the foothills of the Troodos range, between Politiko and Alambra. It spans the period from the beginning of the Early Bronze Age through to the end of Middle Cypriot II. It is one of the only stratified Philia sites so far excavated on Cyprus (Frankel & Webb, 2006). White Painted (Philia) sherds accounted for less than 0.4% of the assemblage of Philia wares. White Painted II-IV ware is similarly scarce (ibid). The closest parallels for the vessels found at Marki are from Vounous, although there would appear to be some connections

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601 See Appendix 1, figure 122.
602 See Appendix 1, figure 870.
603 Compare Appendix 1, figures 870 and 161.
604 AS.235 and AS.258. See Appendix 1, figures 874 and 875.
605 Compare Appendix 1, figures 286, 243 and 874.
606 Compare Appendix 1, figures 875 and 241.
607 See Appendix 2, map 21 for imports into Marki Alonia.
with Lapithos as well. The White Painted (Philia) sherds are very small, and will not be included in this study. Dimensions and other details about the sherds have not been published, therefore this material will not be included in the tables listed in Appendix 3.

The jug P459 is very similar in the shape of its spout to jugs L.315A.26 from Lapithos, jug 1 from Tomb 6 and jugs 8 and 9 from Tomb 1, as well as jug B.6 from Tomb B at Dhenia, but the decoration of a horizontal lattice panel is more at home in Vounous. The decoration of lattice panel and interlocking hatched triangles is typical of Vounous as well, particularly as seen in the amphora 68.6. The early date of the site, as well as the number of connections with Vounous may point to Vounous or Lapithos as the source for the White Painted ware. Certainly there is too little of it at the site of Marki for there to have been a local production centre there.

The Karpass Region

5.16 Ayios Iakovos

The necropolis at Ayios Iakovos was excavated by the Swedish Cyprus Expedition in 1929 (Gjerstad, Lindros, Sjöqvist, & Westholm, 1934). Fourteen tombs were excavated, most of which contained some White Painted ware. The tombs date from MC III (Tombs 1-9, 11, 13), LC I (Tombs 10, 12, 14) and LC II (Tombs 13, 14). Other than the common hemispherical bowls, the shapes of the vessels from Ayios Iakovos are quite different from those of the north coast sites.

5.16.1 Group 1 Jugs (Appendix 1, Table 81)

There is some similarity between the jugs in this group and those from the north coast sites. The spouted jug 20 from Tomb 14, for example, resembles the spouted jugs from Kalopsidha, which

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608 Compare Appendix 1, figure 893 with figures 583, 580, 581, and 698, respectively.
609 See Appendix 1, figure 283.
610 See Appendix 2, map 22 for imports into Ayios Iakovos.
611 Tombs 8 and 10 did not have White Painted Hand-made ware, but all others did. White Painted IV is the most common type.
may be its origin\textsuperscript{612}. Similar jugs have also been found at Kazaphani, but they are probably also imported from Kalopsidha.\textsuperscript{613} Jug 9 from Tomb 2 has lattice triangles, but they are not executed in the same manner as those on the north coast. In this case, the triangles fill the entire main decorative zone as a vertical lattice panel might at Lapithos\textsuperscript{614}. Jug 8 from Tomb 9 has a decoration very similar to that found on Proto White Slip vessels.\textsuperscript{615} The double-spouted jug is unique, with its anthropomorphic handle and images of stags painted on the side of its body\textsuperscript{616}. The decoration of elongated chequerboards, vertical lattice panels, and broad concentric circles on the base, however, link it to Lapithos Group 2. Its shape is also reminiscent of jugs from Lapithos, and this may be where it was made.\textsuperscript{617} The shape and decoration of Jug 42 from Tomb 13 is similar to vessels from Kalopsidha, which may be its place of origin.\textsuperscript{618} All of the vessels in this group have parallels at other sites and are unlikely to have been local products.

5.16.2 Group 2 Amphora and deep bowls (Appendix 3, Table 82)

The amphora and one of the deep bowls are decorated in the Wavy Line Style, which has quite similar motifs and syntax to Red-on-Red or Red-on-Black ware.\textsuperscript{619} The other deep bowl (38 from tomb 13), has a band of cross-hatched triangles and wavy lines, both motifs found at Lapithos, but not in the same arrangement as on vessels of north coast origin. The Wavy Line style vessels are most likely local products painted by painters who produced Red-on-Red and Red-on-Black ware. This decoration on White Painted ware did not travel outside of Ayios Iakovos, suggesting that there was a production centre there. The other deep bowl is probably not local, but it does not fit into the repertory of Lapithos either. It may have been made in a production centre that imitated north coast wares.

\textsuperscript{612}See Appendix 1, figure 907.
\textsuperscript{613}Particularly 2B.341, 2B.500 and 2A.182. It also has linear decoration in a similar manner. Such jugs have also been found at Enkomi.
\textsuperscript{614}See Appendix 1, figure 904.
\textsuperscript{615}Compare Appendix 1, figure 905 and SCE IV.1C Fig. LXXIX.
\textsuperscript{616}1 (6). See Appendix 1, figure 903.
\textsuperscript{617}The question of its origin may be answered at least in part through chemical testing and ceramic petrography, but it is not possible at the current time to take samples of the clay from either Lapithos or Ayios Iakovos. It is also not possible to carry out destructive analysis on this particular jug.
\textsuperscript{618}Compare Appendix 1, figure 8906 with jugs 2A.82 and 2B.223 from Kazaphani (Figures 323 and 338).
\textsuperscript{619}See Appendix 1, figures 908 and 909. These wares are peculiar to the Karpass peninsula, and are both painted wares, like White Painted. Astrom [MCBA] considers the Wavy Line Style to be the White Painted version of the Red on Red and Red on Black styles. The fragment from Tomb 4A (MCBA fig. XII.9) is decorated with interlocking hatched triangles much like the hemispherical bowls from Lapithos (Appendix 1, figure 914).
5.16.3 Group 3 Hemispherical bowls (Appendix 3, Table 83)

Most of the hemispherical bowls are decorated in the Wavy Line Style as the amphora and deep bowl above. Bowl 84 from Tomb 6 has two lattice panels that cross each other, which is unique for hemispherical bowls, but such narrow lattice panels can be found in White Painted VI ware, and on Bichrome Wheelmade ware. These bowls, with so much in common with other Karpass wares, are probably made somewhere nearby. If they are not from the immediate vicinity of Ayios Iakovos, they may be coming partly from the Karpass peninsula and partly from Kalopsidha.

5.17 Galinoporni (Appendix 3, Table 84)

The site of Galinoporni has yielded very little White Painted ware. The main ceramic tradition of the Karpass peninsula, where Galinoporni is located, is Red-on-Red or Red-on-Black. The White Painted Wavy Line Style, which originates in the Karpass region, is based on these two traditions. The five objects in this group are all from the Ashmolean Museum collection, and all are fragmentary. Four sherds from the Cyprus Museum were sampled for petrographic analysis in this study as well. All of the vessels from the Ashmolean Museum are jugs. None of the jugs has a tomb number given in the publications. The Pendant Line Style jug 1953.832 may have been produced at Kythrea or Kalopsidha, while the shapes of 1953.225 and 1953.855 are reminiscent of the small Cross-Line Style jugs of Kalopsidha. The vessel 1953.860 is similar in its decoration to the amphora L.316.117 from Lapithos, which may be its origin. There is so little White Painted ware at Galinoporni that it is unlikely to have been a production centre. Galinoporni appears to have been trading with several sites on the north coast, as well as with other sites in the Karpass region and in the east.

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620 See Appendix 1, figure 917. For examples of White Painted VI ware see SCE IV 1C fig. XLI.12 and fig. XLIII.9.
621 See Appendix 2, map 23 for imports into Galinoporni.
622 See Appendix 1, figure 924.
623 See Appendix 1, figures 923 and 925.
624 Compare Appendix 1, figures 926 and 135, respectively.
The Eastern Area

5.18 Kalopsidha

The site of Kalopsidha was excavated in 1959 along with the site of Ayios Iakovos by the Swedish Cyprus Expedition. The site is located southwest of Enkomi and consists of a number of tombs as well as a Bronze Age settlement. It is one of the very few settlement sites from the Bronze Age whose excavations have produced White Painted ware in any quantity. The stratigraphy of the site spans the period from Early Cypriot III to Late Cypriot I. Although White Painted ware was found in all of the trenches, there are really only two trenches that produced much pottery: trenches 3 and 9. Trench 3 contained the walls of a house dating to Middle Cypriot III (Åström, 1966:40-48). Although trench 9 contained more pottery and other finds, it did not have any architectural remains. It appears to have been a dump, so its stratigraphy is not reliable (ibid:48-49). The trenches were of uniform size, each five meters by one meter, and the layers were ten centimetres deep. Trench three was eight meters long, but was excavated in the same manner with ten centimetre layers (ibid:37). Unfortunately, most of the material from this site is in the form of sherd rather than complete vessels, as is to be expected from settlement material.

Åström isolated several new styles of White Painted ware at Kalopsidha, many that are mainly restricted to this site and are therefore thought to have been produced there. These styles are: WP III-V Broad Bands (1966:81), WP III-IV Alternating Broad Bands and Wavy Lines (ibid), Transitional WP Pendant Line and Cross Line (ibid:83), four new styles of Cross Line (ibid:83-87), WP V Eyelet (ibid:87), WP V Zigzag (ibid:88), WP Tangent Line (ibid:89-90), WP V Framed Broad Band (ibid:90), WP V Coarse Linear (ibid:90-92), and WP VI Soft (ibid:92). He also traced the development of the Cross Line Style out of the Pendant Line Style by looking at some vessels that are decorated with both crossed lines and wavy lines as also seen on a jug from Kythrea Tomb 1 (Åström, 1957:66). The huge quantities of vessels painted in the Cross Line Style that have been found at Kalopsidha would suggest that this site, rather than Kythrea, is

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625 See Appendix 2, map 24 for imports into Kalopsidha.
626 Even more unfortunately, the material excavated from Kalopsidha was deposited in the Famagusta District Museum and is inaccessible for study by western scholars.
where the new style was invented.\textsuperscript{627} Certainly Åström felt that there was evidence from site C, excavated by Myres, to indicate that pottery production took place there (Åström, 1966:49, 138). Although Åström saw a general trend towards a greater number of vertical lines and fewer transverse lines over time, it is possible that the differences were also due to different production groups: individual painters or groups of painters. The jugs are fairly uniform in shape and size, although there is a larger variety with more globular bodies and longer necks, and a smaller, baggier variety with wider and shorter necks. The handles all seem to be attached from the rim to the shoulder, although many of the jugs have their handles missing. Although there is more variety in the decoration than in the shape, several of the jugs are so similar as to suggest mass production.\textsuperscript{628} Cross Line style pottery was also found on the mainland, particularly at Ras Shamra, where Merrillees thought the potters of Kalopsidha had established themselves in a trade emporium (Merrillees, 1965:146-147). Several eastern styles of White Painted ware from the end of the MC III period and beginning of LC I were found in the Levant and Egypt, demonstrating strong trade links between Cyprus and the east Mediterranean (Catling, 1966b:44; Maguire, 1990; 2009b). Catling thought that the eastern part of Cyprus was controlled by Kalopsidha towards the end of the Middle Bronze Age, mainly because this site has no clear destruction horizon but shows only a gradual abandonment (1966b:45). The settlement at Kalopsidha appears to have been abandoned at about the same time that Enkomi was established. There was still some occupation of the area of the settlement around Trench 9, but for the most part, the Middle Cypriot houses seem to have been deserted. Whether or not there is a connection between the abandonment of Kalopsidha and the establishment of Enkomi is unclear (Åström, 1966:140).

This site also produced a great quantity of what Åström classified as White Painted VI styles from the beginning of the Late Bronze Age. These are the last styles in the White Painted tradition. Kalopsidha had both White Slip I and Base Ring I wares as well, but there were no Proto White Slip or Proto Base Ring wares found. Åström though that the reason for the absence of these transitional wares was that they were invented elsewhere, most likely in the northwest or

\textsuperscript{627} There were 21,021 counted sherds in this style from the Swedish excavation [Astrom 1966, p. 83].
\textsuperscript{628} Mass production is used here in the sense that several were made at the same time, which would yield greater uniformity in size and shape.
central part of the island (Åström, 1966:141). 629 White Painted Wheel-made ware, however, appears to have had its beginnings at Kalopsidha, where its decoration looks like a deteriorated version of Åström’s Style 4 of the Cross Line Style.

In order to try to make sense of the material from this site, the vessels have been organized based on the styles isolated by Åström. It is possible that different production groups produced different styles, but it is equally possible that the same group of potters and painters could have produced different styles. Although Åström traced a chronological development of the styles, the material is treated here as if it were contemporary mainly due to the fact that the whole or nearly whole vessels were recovered from tombs with multiple burials and that the “layers” do not represent true strata since they were arbitrary ten centimetre passes. In the case of Trench 9, from which most of the pottery came, the vessels were jumbled due to ancient disturbances.

5.18.1 Group 1 Pendent Line Style

Pendent Line style, although present at Kalopsidha, exists only in sherd form from Trench 9630. It was not found in any of the tombs so far excavated. In most cases, there is a single wavy line between groups of three or four straight vertical lines, but there are a few cases with double wavy lines.

5.18.2 Transitional Pendent Line and Cross Line Style

There are a few variants with crossed lines and wavy lines that caused Åström to posit a transitional style between Pendent Line and Cross Line style, giving strength to his argument that the latter was derived from the former. These sherds mainly come from layers 61, 67 and 68, which is later than most of the sherds in Group 1631. There is also a sherd from layer 12B which is much later than the others632. Unless it made its way to the surface through the action of ploughing or from animal disturbances in the soil, its presence in such a late layer may show continuity of the decoration making it contemporary with the latest Cross Line Style.

629 White slip ware probably had its origins at Morphou Toumba tou Skourou. Base Ring may have been invented there too.
630 See Appendix 1, figures 927-936, respectively.
631 See Appendix 1, figures 937-942, respectively.
632 See Appendix 1, figure 937.
5.18.3 Group 3 Cross Line Style

The Cross Line Style is the most common style of White Painted ware found at Kalopsidha, and is used almost exclusively to decorate jugs. As mentioned above, it was most likely invented there and then spread to other parts of Cyprus. Åström traced the development of the style from the sherds and partial vessels from this site. Although these sherds come from different layers, it seems likely that they represent different production groups, either painters or groups of painters, all working in a common tradition but with different skill levels and ideas for the arrangement of the lines. The earliest examples resemble net bags wrapped around the small jugs. It is possible that this was the intention behind the style originally. Later variants add vertical lines between sets of crossed lines. In the final forms of the style, it resembles the Coarse Linear Style which may be a degenerate version of the Cross Line Style, or perhaps an imitation of that style by painters with limited motor skills, perhaps children. The earliest examples of White Painted Wheel-made ware are decorated in the same manner and it is often difficult to tell the late hand-made versions apart from the early wheel-made ones.

5.18.3a Group 3A Style 1 (Appendix 3, Table 85)

Style 1, also called the Close Net Style (Åström, 1966:84-85), is composed of variations on the crossed lines. The simplest version, 1A, is a number of crosses placed side by side, and often attached to a ring around the shoulder of the vessel. In version 1B, the crosses overlap but do not intersect with each other at the top. In a variant of this style, there is a long arc of parallel lines that covers the pot from the base, over the shoulder, and back to the base. It is crossed by groups of parallel straight lines. Version 1C has the crosses overlapping at top and bottom and

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633 With the exception of amphoriskos 879, but it has the same globular body shape as the jugs. It also appears on tankards sometimes.
634 This is especially true if the potter has used a tournette or slow wheel to finish the pot, thus giving the characteristic rilling pattern on the interior of the neck which would lead one to deduce the use of a wheel in the formation of the vessel.
635 See Appendix 1, figure 943.
636 See Appendix 1, figure 944.
637 See Appendix 1, figure 945.
intersecting there to create a chequerboard pattern, but without filled-in squares\textsuperscript{638}. In most cases, the painter is careful with the arrangement of the crosses from the shoulder to the lower part of the vase, but apparently is unconcerned with what happens at the termination of the lines on the base of the jug. Although none of the vessels appears to have been made by the same hand, there must have been some sharing of ideas among a group of painters since there seem to be only three or four variations for the arrangement of the lines. The fact that there are so many examples for each of the Cross Line Style varieties of jug suggests that this style was not only prominent at Kalopsidha, but most likely originated there.

Most of the jugs decorated in Cross Line style are quite small, with their maximum diameters near their bases. They appear to have been made using coils, as there are some horizontal and diagonal depressions that appear to be coil joins\textsuperscript{639}. The surface appears to have been smoothed with water or a clay slurry, leaving fingerprints under ridges such as the rim of the vessel\textsuperscript{640}. There are rills visible on the inside of the neck on vessel A791 that are characteristic of wheel formation, but these could also have been made if the vessel had been finished on a tournette, or even if the vessel had been turned in the potter’s hands since the jug is so small\textsuperscript{641}. The bases of the jugs are round and betray no signs of having been attached to a potter’s wheel, so it is unlikely they were formed using rotative kinetic energy\textsuperscript{642}. The necks are quite narrow, so it is not possible to see for certain whether the handles were attached by thrusting them through the vessel wall. A clay collar, smoothed to make a smooth transition between the lower handle and body of the vessel, hints that it was attached in that manner\textsuperscript{643}. The handle itself appears to have been made from a roll of clay that was then squeezed into shape\textsuperscript{644}. The upper part of the handle was squeezed against the rim and smoothed out\textsuperscript{645}.

\begin{itemize}
\item See Appendix 1, figure 946.
\item See Appendix 1, figures 954, 977-978.
\item See Appendix 1, figure 954.
\item See Appendix 1, figure 957, 963.
\item See Appendix 1, figures 953, 960, and 976.
\item See Appendix 1, figures 955, 959, 979-980.
\item See Appendix 1, figure 956.
\item See Appendix 1, figure 957, and 979-980.
\end{itemize}
5.18.3b Group 3B Style 2 (Appendix 3, Table 86)

The main difference between styles 1 and 2 is that the groups of lines in Style 1 are all straight, while in Style 2 they curve over the shoulders of the vessel, and in some cases, also over the base. Unlike the vessels decorated with Style 1, some of these vessels appear to have been made or decorated by the same individual. There is also remarkable homogeneity in the arrangement of the design, suggesting that the painters were aware of each other’s work. The shapes of the jugs 211, 217, 221, 222, 230 and 899 are so similar that they could have been made by the same potter. Likewise, jugs 200 and 239 may have been made by the same person, although not necessarily the potter who made the other jugs. The shapes and decoration of the jugs of Style 2 are more standardized than those of Style 1.

5.18.3c Group 3C Style 3 (Appendix 3, Table 87)

Style 3 jugs are characterized by crossed lines framed by groups of vertical lines. The shape of the jugs is more uniform than in the first two styles. Jugs 198 and 236 both have ovoid bodies, while jugs 212, 235 and the one found in layer 70 are more globular. Jugs 10, 189, 190, 197, 217, 220, 221, and 225 are oval. These similar jugs may be the work of three or four potters, while the decoration seems to be more variable, suggesting a production group in which different people were responsible for potting and painting. The style of decoration is very similar to that used in Bichrome Wheel-made ware, and may have been inspired by this ware (Åström, 1966:85), although it can be seen to be a variant of the earlier Cross Line styles.

5.18.3d Group 3D Style 4 (Appendix 3, Table 88)

Åström’s Style 4 is not truly a Cross Line style in that very few of the lines actually cross each other. The jugs are very similar in size and shape. Jugs 201 and 224 are similar in both shape

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646 See Appendix 1, figures 984, 985, 986, 987, 989, and 991, respectively.
647 See Appendix 1, figures 983 and 990, respectively.
648 Compare Appendix 1, figures 998, 1007, 1000, 1006, and 1008, respectively.
649 See Appendix 1, figures 992, 994, 995, 997, 1001, 1002, 1003, and 1004, respectively.
650 It should be noted that the heights are variable in the tables because the vessels are fragmentary and in most cases the neck is not preserved. Diameter may have been a more useful measurement for comparison, but unfortunately this dimension was not given in the publication.
and decoration and may be the work of the same potter and painter. This style is somewhat transitional between Cross Line and Coarse Linear styles. It also may be the work of inexperienced painters imitating Cross Line Style jugs.

5.18.3e Group 3E Vertical and horizontal crossed lines (Appendix 3, Table 89)

There is a single tankard published from Kalopsidha (A801) which Frankel (1974b:70, 97) considers to be decorated in a variant of the Cross Line style. In shape it is similar to the tankard A766 from Lapithos tomb 50. Although the tankard is shaped like a wide-mouthed jar, there seems to be a marked lack of them at Kalopsidha, raising the possibility that this vessel may be an import. It appears to have been built up using coils and the collar and neck were built with coils like the rest of the body, rather than being made as a cylinder and inserted or attached to the shoulder the way most tankards are made. The handle was made as a separate rectangular strap and was punched through the wall of the vessel, leaving a bump on the interior that was smoothed out. Like other tankards, particularly those from Toumba tou Skourou, this vessel has a flattened base upon which it can stand on its own, but it tends to tilt backwards. The decoration roughly follows the contour of the flat part of the base, demonstrating a consciousness of the shape on the part of the painter.

5.18.4 Group 4 White Painted VI Coarse Linear Style (Appendix 3, Table 90)

The Coarse Linear style appears to be a variant of the Cross Line style, particular style 4. It is used to decorate both juglets and bowls, often of small dimensions. The bowls exist only as sherds from various layers. They are generally round in shape and are decorated with broad crossed lines on the interior and exterior (Åström, 1966:90-92). The jugs, although fragmentary, were better preserved, making it possible for Åström to divide them into two groups: those without obvious necks, and those with necks (ibid). They are all quite crudely shaped, so it is

651 See Appendix 1, figure 1010 and 1012.
652 Compare Appendix 1, figure 1015 with figure 95.
653 See Appendix 1, figures 1022.
654 This cannot be seen in the photographs but Appendix 1, figure 1021 shows the clay collar around the base of the handle that was put there in order to strengthen the joint. It has been smoothed out to make a neat transition with the shoulder of the tankard.
655 See Appendix 1, figures 1017
not easy to make this distinction in all cases. Since they are all quite different from each other, it is not likely there was a specific production group or potter making them. There is a vague similarity in the decoration of jugs 9, 101, 154 and 174, but this may be due to copying. The Coarse Linear Style, which does not appear in Middle Bronze Age layers, occurs only at Kalopsidha, and was thought by Åström to have been a local style (ibid:92). It may instead have been the work of potters and painters with limited motor control, possibly children, who were learning the craft.

5.18.5 Group 5 White Painted VI Soft Triglyphic Style (Appendix 3, Table 91)

The Soft Triglyphic Style is also a Late Bronze Age style used mainly to decorate jugs, although there was at least one bowl and a figurine also decorated this way (Åström, 1966:92-93). The fabric is very soft and usually buff, although some sherds are green. In many cases the neck and handle, as well as the body, appear to have been trimmed with a flat instrument (ibid). The word “soft” in its name refers to the softness of the fabric, which is characteristic of the vessels of this style. The decoration is similar to the Coarse Linear Style. Most of the vessels decorated with the Soft Triglyphic style were quite fragmentary and only a few of them have any information published about them. Not all of the illustrated sherds, therefore, will be represented in the table in Appendix 3. This style may have originated at Kazaphani or Morphou Toumba tou Skourou where it is more abundant.

5.18.6 Group 6 White Painted V Tangent Line Style (Appendix 3, Table 92)

The Tangent Line Style, used only to decorate jugs, is also a local style from Kalopsidha and is related to the Cross Line Style (Åström, 1966:89-90). It seems to have been very popular at Kazaphani as well, but without fabric analysis it is not possible to determine whether there was a single source or multiple sources for its production. A jug decorated in this style was also found in Tomb 1 at Kythrea (A796 above), but its shape is the same as the other jugs from Kythrea, not like the jugs found at Kalopsidha, suggesting it was not a product of an eastern production.

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656 See Appendix 1, figures 1025, 1029, 1032, and 1033, respectively. Not all information is given for all of the jugs. In the tables in Appendix 3, the missing information is marked N/A, meaning it is not available. As with other jugs, only the height is given. Since most of the jugs are only partially preserved, the variability in the preserved height cannot really be used to compare the relative sizes of the vessels.
centre. Gjerstad also found a nearly complete jug in his excavations.\textsuperscript{657} It was found in Trench 3, along with the fragment 1073 of a jar or amphora\textsuperscript{658}. The bowl and the three other jugs in this group all have simple linear decoration. One of the jugs, 186, also has a wavy line reminiscent of the Pendant Line Style\textsuperscript{659}. The bowl was found near some pithoi and has been interpreted as a scooping bowl by Åström (ibid).

5.18.7 Group 7 White Painted V Zigzag Style (Appendix 3, Table 93)

The Zigzag style is an eastern style, most likely centred at Kalopsidha, used to decorate bowls, most commonly the hemispherical bowls with carinated shoulders (Åström, 1966:88). Although Åström separates bowls with zigzag decoration from other White Painted V bowls, the zigzag is really a sharp-angled version of the wavy line, and occurs on bowls in the same position as the wavy lines. Because much of the material recovered is in the form of sherds, not all of the objects illustrated here will be recorded in Appendix 3. The bowl 47.361 is in the Nicholson Museum in Australia and although its provenience is not given, it is most likely to have been manufactured by the same Kalopsidha production centre responsible for some of the other sherds in this group.

The bowls in this group are different from the hemispherical bowls from other sites. In particular, they tend to have wishbone handles, which are most often found on Base Ring or White Slip bowls. Some of them also have fairly sharp carinations at their maximum diameters, which is characteristic of Base Ring bowls\textsuperscript{660}. The handles are made by attaching two short ropes of clay to the rim, then pinching their ends together to form a point\textsuperscript{661}. The walls are relatively thin and the surface of the vessel is quite smooth on both A665 and A667. It is not possible to determine whether they were made using coils, or perhaps with a mould. The rim appears to have been made by turning the top of the vessel outwards slightly to make it flare\textsuperscript{662}.

\textsuperscript{657} See Appendix 1, figure 1052.
\textsuperscript{658} See Appendix 1, figure 1048.
\textsuperscript{659} See Appendix 1, figure 1085.
\textsuperscript{660} See Appendix 1, figures 1059, 1060 and 1066.
\textsuperscript{661} See Appendix 1, figures 1058, 1064, 1065.
\textsuperscript{662} See Appendix 1, figures 1054-1058, 1060-1065.
5.18.8 Group 8 White Painted V Eyelet Style (Appendix 3, Table 94)

This group is based on a decorative scheme which includes one or more circles with one or more dots in the centre of them. It occurs on jugs and bowls and the vessels tend to have thin walls. There is a wide variety of fabric and paint colours. Examples of this style have been found in Syria as well as at Enkomi, Ayios Iakovos, Milia and Livadhia, all in the eastern part of the island (Åström, 1966:87-88). Since the only vessels found in this style with any certain provenience have been found at Kalopsidha, it is most likely, according to Åström, that they were made there (ibid:88). The vessels are represented by sherds, and no dimensions have been given in the publication. They will not be included in the table in Appendix 3. The eyelets on the nearly complete bowl from layer 71 appear on the interior of the bowl. On another bowl, less well-preserved, the eyelets appear on the exterior along with framed zigzags and cross-hatched triangles.

5.18.9 Objects that do not conform to groups (Appendix 3, Table 95)

There are three published objects that do not fit into the above groups. These objects, two jugs and a basket-handled deep bowl, are probably imports. The shape and decoration of jug C.59 from Tomb 11 are quite similar to jugs in the String Hole Style found at Ayia Paraskevi. The other jug, 47.348, is said to be from Kalopsidha, but it is unlike the other vessels found there. The basket-handled jug is unique in its shape, but its decoration of hatched triangles is similar to the decoration used on the north coast and central part of the island. It is possible that it was made there. The deep bowl, A657, is quite unusual in that it has a basket handle. This handle is joined to the inside of the rim on both sides. A similar basket handle was attached to a spouted jug at Enkomi, but this is decorated in the Coarse Linear Style and could have been produced at Kalopsidha. The bowl appears to have been built up using coils, which are evident

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663 Additional specimens of this style can be seen in Åström’s MCBA fig. XVI.14,15. These vessels have no certain provenience.
664 See Appendix 1, figure 1083.
665 See Appendix 1, figure 1082.
666 See Appendix 1, figure 1084.
667 See Appendix 1, figure 1085.
668 See Appendix 1, figures 1086-1095.
669 See Appendix 1, figure 1122.
in indentations on the rim and on the exterior\textsuperscript{670}. The deep bowl is decorated in a manner similar to hemispherical bowls from Lapithos, with framed hatched triangles. Its base is decorated with groups of parallel lines in a fashion also found on hemispherical bowls from Lapithos. The handle has alternating oblique lines applied the same way as they are on jug handles from that site. It is possible that this deep bowl was imported from Lapithos, or at least that its decoration was inspired by designs from that production centre.

\textbf{5.19 Enkomi\textsuperscript{671}}

The site of Enkomi has been of great interest to scholars since its discovery over a century ago. It has been excavated by British, Swedish and French archaeologists. There is both a cemetery and a settlement, but the site dates to the beginning of the Late Bronze Age, which means that there is very little in the way of White Painted ware and it is all very late in the sequence. Tomb 11 is the earliest tomb at Enkomi, and it seems to date to the Middle Bronze Age, judging by the presence of Tell el-Yehudyeh ware (Schaeffer, 1936:68-69). The presence of large quantities of Syrian pottery and imitations of Syrian types led Schaeffer to posit the presence of Syrians, possibly Hyksos, at both Kalopsidha and Enkomi (ibid:69-70). The presence of Middle Cypriot wares in the Late Cypriot levels at Enkomi could be explained two ways: either the Middle Cypriot wares continued to be made in Late Cypriot I (Åström, 1957:12), or the material was carried up from lower levels during reconstruction of the destroyed building (Dikaios, 1969:442-443). The material from Enkomi is very similar to that from Kalopsidha and it is likely that Enkomi’s White Painted ware was produced at the production centre at Kalopsidha. Several sherds from the excavations by the Swedish Expedition were sampled for petrographic analysis.

\textbf{5.19.1 Group 1 Cross-hatched designs (Appendix 3, Table 96)}

There are a few sherds decorated with cross-hatching, either lattice panels or geometric shapes filled in with cross-hatching. A small fragment from a bowl shows an early form of the ladder pattern that is so common on White Slip bowls, demonstrating the influence of White Painted

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{670} See Appendix 1, figures 1090, 1093, and 1094.
\item \textsuperscript{671} See Appendix 12, map 25 for imports into Enkomi.
\end{itemize}
\end{footnotesize}
ware on the motifs of White Slip ware\textsuperscript{672}. These sherds are really too small to suggest a production centre since the design itself cannot be convincingly reconstructed.

5.19.2 Group 2 Hatched triangles (Appendix 3, Table 97)

There is one sherd and a jug decorated with hatched triangles, and two with interlocking hatched triangles. The hatched triangle is painted from right to left, rather than the typical left to right manner. These resemble the triangles from Lapithos Tomb 804 (32-27-196 and 32-27-80)\textsuperscript{673}. Since cupboard h of Tomb 804, where the vessel from Lapithos was found, is dated to MC III, it is possible that they were painted by the same person. The interlocking hatched triangles on the other two sherds are very neatly executed and are framed with broad double lines unlike most other interlocking hatched triangle patterns. Crewe has included one of these sherds (2257/1) in her White Painted Wheel-made group, and the other (2297/3) in the group she calls White Painted ware of uncertain manufacturing technique (Crewe, 2007:fig. A1.25)\textsuperscript{674}. The decoration, however, is identical on both sherds, and very close to that seen on vessels from Lapithos, Ayios Iakovos, Dhenia \textit{Kafkalla}, Alambra, and Marki.\textsuperscript{675} It appears, therefore, that the introduction of the wheel on Cyprus had little effect on the painted decoration of White Painted ware, although this ware did not survive for long after the wheel came into use. The heavy double lines that frame the interlocking hatched triangles are similar to those used to frame bands of decoration at Kazaphani and Stephania. There are no direct parallels for the decoration on these sherds, making it difficult to suggest a production centre for them. Interestingly, a good example of this type of decoration can be found in Tomb 6 at Enkomi on the collar of a steatite amphora where the pattern is incised rather than painted.\textsuperscript{676} Details on the handles of this amphora betray a metal prototype which may have been the inspiration behind the painted decoration, rather than a ceramic example from a northern production centre.

\textsuperscript{672} See Appendix 1, figure 1096.
\textsuperscript{673} Compare Appendix 1, figure 1100 and 1101 with figures 184 and 181-183, respectively.
\textsuperscript{674} See Appendix 1, figures 1102 and 1103, respectively.
\textsuperscript{675} Lapithos has the greatest number of vessels decorated in this manner, followed by Dhenia, where it appears on hemispherical bowls. The other sites had small quantities and had likely imported the vessels from a northern production centre.
\textsuperscript{676} See Schaeffer 1936 pl. XXXV.3, fig. 41.68, p. 81.
5.19.3 Group 3 Cross-hatched diamonds and zigzags (Appendix 3, Table 98)

There is one bottle in this group that finds a parallel for its double side lugs in a bottle from Leondari Vouno (1888.1249), and parallels for its decoration at both Lapithos (L.316.176, L.316.179, L.316.102 and L.315A.86) and especially Vounous (50b.1 and 50b.2). It is most certainly an import from a northern production centre, most likely that at Lapithos.

5.19.4 Group 4 Cross-Line Style (Appendix 3, Table 99)

Most of the vessels in this group are small ovoid or globular jugs very similar in style and decoration to the Cross-Line Style jugs from Kalopsidha, which is most likely their place of origin. The patterns of lines are quite variable, with no two being alike enough to assign them to a single producer. One of the vessels is decorated in what Åström calls Style 1, one is decorated in Style 2, and three are decorated in Style 3. Jug 4.963 from Tomb 5 is decorated in a linear style that is based on Cross-Line style and finds a parallel in tankard A801 from Kalopsidha. They were probably all manufactured at Kalopsidha.

5.19.5 Group 5 Linear patterns (Appendix 3, Table 100)

Some of the vessels in this group are decorated simply with groups of vertical lines, while others bear a decoration that Åström calls Soft Triglyphic style. Parallels can be found at Kalopsidha, Kazaphani and Toumba tou Skourou. The Soft Triglyphic style appears to have had its origin at Kazaphani, and it is possible that some of the vessels at Enkomi may have been imported from a production centre near that site. A number of other vessels are decorated in the Coarse Linear style of Kalopsidha. Jug 100 from Tomb 13 finds a parallel in both shape and decoration in jug 20 from Tomb 14 at Ayios Iakovos, while jug 1 is quite similar except that it

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677 Compare Appendix 1, figure 1104 with figures 732, 128, 125, 126, 133, 277 and 278, respectively.
678 3 from Tomb 11. See Appendix 1, figure 1108.
679 211. See Appendix 1, figure 1110.
680 4.935, 291 and 19.60. See Appendix 1, figures 1105, 1107 and 1109, respectively.
681 Compare Appendix 1, figures 1106 and 1015-1023.
682 Vessels decorated in the Soft Triglyphic style are: 2, 4.969, 5.037, 5.193, 176 and 43. See Appendix 1, figures 1111, 1112, 1113, 1115, 1118 and 1120, respectively.
683 Jugs 5.047, 100, and 1, as well as rattles 148, 81 and 1887/6. See Appendix 1, figures 1114, 1116, 1122, 1117, 1121 and 1123, respectively.
has a basket handle on top instead of the usual handle from rim to shoulder. This basket handle is attached to the inside of the rim in the same manner as the handle on deep bowl A657 from Tomb 17 at Kalopsidha. The other jugs of this shape, 5.193 and 176 are painted in the Soft Triglyphic style. Jug 176 from Tomb 13 finds a close parallel in jug 2B.500 from Kazaphani. The three other jugs in this style, 5.037, 4.969 and 43 from tomb 19 are very close in both shape and decoration to jugs from both Kazaphani and Kalopsidha. The tankard 181 is similar to the tankard 2A.316 from Kazaphani. In addition to the jugs and the tankard, there are also three rattles in this group. They are similar to the rattle 2B.503 from Kazaphani, all shaped like cats, and with faces painted on them. Rattle 148, however, has only a single eye hole in the centre of its head. These strange little objects have balls of clay inside them that rattle when shaken, but their purpose is not known. The fact that there are so many parallels from Kalopsidha and Kazaphani suggests that there was a strong connection between these sites and Enkomi. Much of the material from Kazaphani, however, has close parallels at Morphou Toumba tou Skourou as well as at Kalopsidha. It may not have had its own production centre, but may have acted as a conduit in the trade network through which White Painted wares flowed between the northwest and the eastern part of the island in the beginning of the Late Bronze Age.

5.19.6 Group 6 Wavy lines (Appendix 3, Table 101)

There are a few sherds and one vessel that have wavy lines in their decoration. In most cases there is not enough material to reconstruct a decorative scheme, but there are some similarities between these objects and pottery from Stephania and Toumba tou Skourou. It is possible that at least some of these vessels were made at the production centre at Toumba tou Skourou, which may have been one of the principle suppliers of White Painted ware to Enkomi, along with Kalopsidha.

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684 Compare Appendix 1, figures 1116, 907 and 1122, respectively.
685 See Appendix 1, figures 1091-1093.
686 Compare Appendix 1, figures 1118 and 342.
687 Specifically jugs 2B.223 and 2A.82 from Kazaphani, which it matches almost exactly (see Appendix 1, figures 338 and 323). Compare also to 12 and 30 from Kalopsidha, and jug 42 from Tomb 13 at Ayios Iakovos, which is another direct parallel (See Appendix 1, figures 1038, 1039 and 906).
688 Compare Appendix 1, figures 1119 and 331.
689 Compare Appendix 1, figures 1117, 1121 and 1123 with figures 343 and 344.
690 See Appendix 1, figure 1117.
5.19.7 Summary
The site of Enkomi does not appear to have produced its own White Painted ware. Much of its assemblage is composed of the linear styles popular at Kalopsidha, which is probably the origin of most of its pottery. In addition, there is a fair amount of White Painted ware that resembles that found at Toumba tou Skourou, Stephania and Kazaphani. Of those sites, the most likely production centre is Toumba tou Skourou. Enkomi seems to have been well-connected through trade, at least in White Painted pottery, with both its neighbours in the east and with the major production centres of the north and northwest.

5.20 Milia (Appendix 3, Table 102)

The cemetery of Milia is located between Ayios Iakovos and Enkomi. There is very little White Painted ware from the site published. Excavations of the Bronze Age necropolis were carried out by the Swedish Cyprus Expedition, while Schaeffer excavated the Iron Age tombs there (Schaeffer, 1936:59). The jugs are similar to the Coarse Linear and Soft Triglyphic styles found at Kalopsidha, Kazaphani, and Toumba tou Skourou, and are certainly imported into Milia. The spouted bowl is decorated in a manner similar to vessels from Stephania, particularly to tankard 5 from Tomb 10 which has an identical framed cross-hatched zigzag pattern. The shape of the spout has a parallel at Kazaphani (2B.510). The most likely source for this vessel, as well as those similar ones found at Stephania and Kazaphani, is the production centre at Toumba tou Skourou where such decoration is common on many vessel shapes.

5.21 Boghaz (Famagusta) (Appendix 3, Table 103)

The site of Boghaz is on the coast to the east of Ayios Iakovos. There is very little White Painted ware published from this site, and each vessel is unique, suggesting that there was no local production centre. The three amphorae in this group are similar in shape with similar

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691 See Appendix 2, map 26 for imports into Milia.
692 Compare Appendix 1, figures 1133 and 361.
693 See Appendix 1, figure 299.
694 See Appendix 2, map 27 for imports into Boghaz.
695 The excavation of the site, if one was carried out, does not appear to have been published. All of the vessels included in this study were purchased from dealers by various museums. Most of the material was purchased from a dealer named Kolokasides.
handles and may have been produced together, although they are not similar enough to be the
product of a single potter or painter. Although Åström classifies the amphora 408 as White Painted V (1957:fig. XVIII.8), Webb considers it to be Proto White Slip (Webb, 1997:90, fig. 408). Such difficulty in classification highlights the fact that the transition from White Painted decoration to White Slip was gradual. Amphora 408 has parallels for its cross-hatched squares in an amphora from Ayios Iakovos (8 from Tomb 9), and in a deep bowl from Dhenia (13 from Tomb 48). Amphorae 407 and 61.93 both have cross-hatched diamonds as their main decoration. On 407 they are separated by framed wavy lines, while on 61.93 they are separated by simple horizontal lines. The base of 407 and the interior of the rim of both vessels are decorated with groups of wavy lines reminiscent of Red-on-Black and Red-on-Red ware from the Karpass region. This suggests the location of the production centre may have been near Ayios Iakovos where such a cross-over in motifs was common. The division of the field by wavy lines on 407 is similar to that on a tankard from Kazaphani (2B.511), but the Kazaphani example has double wavy lines. Jar 61.92 would fit into Kazaphani Group 2, although there are no direct parallels for its shape. It is also quite similar to vessels from Toumba tou Skourou in its decoration, but the shape is unique. Whether the amphorae and jar were products of Toumba tou Skourou, or of an eastern production centre, there can be no doubt that their decoration was influenced by the north-western site.

The deep bowl NS 61 is unique in its decoration of a chain of hatched diamonds, a motif usually not seen on bowls. The hatched diamond chain, however, is common at Lapithos and Dhenia and is not unknown at Ayia Paraskevi. The shape of the handle is similar to that of L.702.69 from Lapithos, although knobs of various shapes are quite common on the vertical handles of vessels from Dhenia. The hemispherical bowl (LS 707) would also be at home in Dhenia. The bottle, however, is decorated in a very simple linear pattern common to most of the eastern sites. It would appear that Boghaz was connected to the eastern sites such as Ayios Iakovos, the western site of Toumba tou Skourou, and sites around the Kyrenia range such as Kazaphani and Lapithos. Such connections could have been direct or indirect.

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696 61.93, 407 and 408. See Appendix 1, figures 1140, 1141 and 1142, respectively.
697 Compare Appendix 1, figures 1142, 905 and 706, respectively.
698 See Appendix 1, figures 1141 and 1140, respectively.
699 See Appendix 1, figure 1138.
700 See Appendix 1, figure 1136.
The Larnaca Region

5.22 Arpera (Appendix 3, Table 104)\textsuperscript{701}

There are two cemeteries from the Bronze Age at Arpera: one from the Early Bronze Age located at Mosphilos, and one from the Late Bronze Age at Ayios Andhronikos. Markides explored both of these cemeteries in 1914 and Gjerstad discovered an associated settlement near the Late Bronze Age cemetery in 1924 (Gjerstad, 1926:14). There is very little White Painted ware from these cemeteries. The material recorded here is from the Liverpool Museum, and although the provenience is given, there is no information concerning the excavation itself, or whether the vessels were purchased from a dealer (Mee & Steel, 1998:1). Jug C251 is fragmentary and its decoration has worn off. As reconstructed, it bears a pattern of crossed alternating oblique lines that is usually found on bowls rather than jugs\textsuperscript{702}. Its shape, however, is very close to the shape of Cross-Line Style jugs from Kalopsidha. It is likely that this jug is decorated in the Cross Line style and it is probably from the production centre at Kalopsidha responsible for such jugs as 173, 242, 264, and A787 from that site\textsuperscript{703}. Jug C229 bears a striking resemblance to several jugs from Kazaphani (2A.82, 2A.107, 2B.89, and 2B.223), and also to two from Enkomi (4.969 and 5.037)\textsuperscript{704}. All of these jugs were probably made together at the production centre at Morphou Toumba tou Skourou. The feeding bottle C226 also finds its parallels at Kazaphani (2B.500) and Enkomi (2 from Tomb 3 and 5.193)\textsuperscript{705}. It may have been produced in the same place as the jugs. The two bottles do not have direct parallels, but share some common features with bottles from other sites. C240 is similar to a bottle from Ayia Paraskevi (C.56) and one from Alambra (AP.147), as well as three from Lapithos (315A.18, 32-27-92 and 32-27-207)\textsuperscript{706}, while C222 is similar to bottle 32-27-207 from Lapithos, and 26 from Tomb 6 at Dhenia\textsuperscript{707}. These bottles may all have been made at the production centre at Lapithos, where they are most common. Arpera does not appear to have produced its own White

\textsuperscript{701} See Appendix 2, map 28 for imports into Arpera.
\textsuperscript{702} See Appendix 1, figure 1147.
\textsuperscript{703} Compare with Appendix 1, figures 964, 968, 971, and 975-981, respectively.
\textsuperscript{704} Compare Appendix 1, figure 1145 with figures 323, 324, 336, 338, 1112, and 1113, respectively,
\textsuperscript{705} Compare Appendix 1, figure 1144 with figures 342, 1111 and 1115, respectively.
\textsuperscript{706} Compare Appendix 1, figures 1146 with figures 782, 878, 122, 129 and 130, respectively.
\textsuperscript{707} Compare Appendix 1, figure 1143 with figures 130 and 658, respectively.
Painted ware, but seems to have looked north to Toumba tou Skourou and Lapithos to trade for ceramics.

5.23 Klavdhia (Appendix 3, Table 105)\textsuperscript{708}

The tombs of Klavdhia date to the Late Bronze Age, and although some were excavated by Welch in 1899, these excavations were not well published at the time. In 2003, Kjell Malmgren undertook a project to attempt to publish the material in the British Museum, Cyprus Museum, Ashmolean Museum and also in the collections in Sweden\textsuperscript{709}. Only objects assignable to specific tombs were included in this publication (Malmgren, 2003:21). In addition to the material published by Malmgren, six jugs were studied by the author at the Cyprus Museum.

Jug A718a is unique in many ways, but its shape is reminiscent of jug A710 from Kythrea, and 12 from Tomb 1 at Dhenia\textsuperscript{710}. It is also shares both decoration and shape with jug C278, also from Klavdhia, and jug C.43 from Ayia Paraskevi\textsuperscript{711}. The jug is ovoid in shape, with a smooth profile. There is a swelling of the neck, which tilts back slightly at the top\textsuperscript{712}. The base is round and is decorated in the same fashion as the bases of hemispherical bowls at Lapithos, Dhenia, Ayia Paraskevi, and Kalopsidha, although the likely source for most of these bowls is Lapithos. Although the neck is too narrow to see inside, it appears that the handle was thrust through the wall of the neck and shoulder, and then smoothed out with the addition of a clay collar around both ends\textsuperscript{713}. There is a pierced lug at the front of the vessel at the base of the neck, and another one at the base of the handle. The holes are well-rounded. At the top of the handle is a knob that has been shaped like a human face\textsuperscript{714}. Jug C278 has a similar body shape, but its handle is topped with a pointed knob, rather than a human face. Although it has a pierced lug on the front at the base of the neck, it does not have one at the base of the handle\textsuperscript{715}. Both jugs are painted with registers of framed hatched triangles, possibly with the use of multiple brushes. They may

\textsuperscript{708} See Appendix 2, map 29 for imports into Klavdhia.
\textsuperscript{709} See Malmgren, 2003.
\textsuperscript{710} Compare Appendix 1, figures 1148-1156 with figures 413-420 and 583, respectively.
\textsuperscript{711} See Appendix 1, figures 1214 and 755, respectively.
\textsuperscript{712} See Appendix 1, figure 1148.
\textsuperscript{713} See Appendix 1, figure 1143.
\textsuperscript{714} See Appendix 1, figures 1154 and 1155.
\textsuperscript{715} See Appendix 1, figure 1214.
have come from a production centre in the Mesaoria that also provided White Painted ware to Dhenia, Ayia Paraskevi and Politiko.

Jug A722 is relatively small, with an ovoid body, but its profile has a sharp carination near the base\textsuperscript{716}. The base is heavy and thick, most likely made by flattening a ball of clay. The body may have been built up using coils, but the vessel has been smoothed well, obliterating any sign of coils, other than the transition between the bottom and body of the jug. The neck makes a smooth transition with the shoulder of the vessel, but on the interior, rough edges can be seen that penetrate the shoulder, indicating that it was probably made as a separate cylinder and thrust through the vessel body. The handle was probably attached in the same manner. It makes a gentle arc with the spout\textsuperscript{717}. The channel of the spout appears to have been made by moulding the clay around the potter’s finger\textsuperscript{718}.

Jug A751 is larger, but its shape is similar. It does not have a sharp carination at its base, but has a very smooth profile\textsuperscript{719}. It appears to have been built up using coils, as long, diagonal or horizontal indentations suggest\textsuperscript{720}. The neck and handle appear to have been made separately and thrust through the vessel wall to attach them\textsuperscript{721}. A long tubular spout may have been formed with a tube of clay, but the hole was cleared by inserting a long, pointed object through the tip. A piece of clay that was pushed through the tube remains visible on the interior of the neck hole\textsuperscript{722}. The neck hole was made by pulling the neck open and rounding out the hole.

A722 and A751 are decorated in a nearly identical manner, quite likely by the same person who also seems to have decorated jug C.51 from Ayia Paraskevi and deep bowl A659 from Lapithos\textsuperscript{723}. The base decoration on A722 is similar to the decoration on the bases of vessels from Lapithos and Ayia Paraskevi, but it is most popular at Lapithos, which is probably its source\textsuperscript{724}. A variant of the base decoration with wavy lines instead of straight and circles in the

\textsuperscript{716} See Appendix 1, figures 1157-1163.
\textsuperscript{717} See Appendix 1, figures 1157-1158.
\textsuperscript{718} See Appendix 1, figure 1157, 1158, 1162.
\textsuperscript{719} See Appendix 1, figures 1165-1173.
\textsuperscript{720} See Appendix 1, figure 1171.
\textsuperscript{721} See Appendix 1, figure 1172.
\textsuperscript{722} See Appendix 1, figure 1173.
\textsuperscript{723} Compare Appendix 1, figures 1157-1163, 1165-1173, 752 and 170-175, respectively.
\textsuperscript{724} Compare Appendix 1, figure 1150 with figures 119, 171, 210 and 220 from Lapithos and 757 from Ayia Paraskevi.
interstices appears on hemispherical bowls 32-27-76 and L.315B-C.35. It is very likely that these jugs came from the same production group at Lapithos that was manufacturing hemispherical and deep bowls. The base of A751 finds parallels in bowls from Lapithos, Dhenia and Ayios Iakovos\textsuperscript{725}, but there are so many variations of crossed lines, and wavy lines at Lapithos, that it is possible both of these jugs were produced there.

An upright tubular spout is found on jugs A751, A752, A755 and C298\textsuperscript{726}. This type of spout can also be found on jugs from Lapithos, Dhenia, Ayia Paraskevi, Politiko and possibly Alambra (the spout is broken, but may have been tubular)\textsuperscript{727}. There are variations in body shape and the angle of the spout, as well as in the decoration of the vessels. Although it is possible that all were produced at a single site, such as Lapithos or the production centre in the Mesaoria Plain, it is also possible that the function of such a jug may have dictated the shape of the spout\textsuperscript{728}. A752 is decorated in what appears to be interlocking hatched triangles. This is unusual for a jug, but it is not well-done and may have been the work of an inexperienced painter. It is similar to a tankard from Laxia tou Riou\textsuperscript{729}. A755 is decorated in Pendent Line Style with double wavy lines, which may have been made with a double brush, although they are not precisely parallel along their entire lengths\textsuperscript{730}. The Pendent Line Style is common at Kalopsidha, but this jug has no direct parallels in the repertory of that production centre. Its base is painted a solid colour typical of vessels from Lapithos, but the Pendent Line Style is not found there. This vessel may have been produced by the production centre in the Mesaoria that supplied Politiko and Ayia Paraskevi, where there are other variations on “standard” styles that are unique. Unusual variants of Pendent Line style jugs were also found at nearby Hala Sultan Tekke, where they are most probably imports, perhaps from the same source as those found at Klavdhia\textsuperscript{731}. Jug C298 is similar to L.320.79 from Lapithos\textsuperscript{732}. It has roughly the same shape and it also has the same type of pierced lugs along its narrow sides. Although it is difficult to see in the published photograph,

\textsuperscript{725} Compare Appendix 1, figure 1157 with figures 179 from Lapithos, 610 from Dhenia and 904 from Ayios Iakovos.
\textsuperscript{726} See Appendix 1, figures 1165, 1174, 1175 and 1216, respectively.
\textsuperscript{727} See Appendix 1, figures 83, 112, 134, 140, 163, and 261 from Lapithos; 589, 639, 640, 661, and 731 from Dhenia; 751 and 764 from Ayia Paraskevi; 836 from Politiko and 876 from Alambra.
\textsuperscript{728} A narrow opening at the end of a long tube would have made the liquid flow out in a thin stream. Perhaps these jugs, all small, were used to dispense a precious (or potent) liquid.
\textsuperscript{729} See particularly Appendix 1, figure 1228.
\textsuperscript{730} See particularly Appendix 1, figure 1170.
\textsuperscript{731} Compare A725 and A726, Appendix 1, figures 1220 and 1221-1229.
\textsuperscript{732} Compare Appendix 1, figures 1216 and 112.
it appears to have the same type of single or double pierced lug at the neck as can be found on L.316.18 and L.320.66, both from Lapithos and 1888.1250 from Leondari Vouno, but probably made at Lapithos.\textsuperscript{733}

Jug A758 is in the String Hole Style common at Politiko Lambertis, and, in fact, looks like a poor copy of the same type of jugs from that site.\textsuperscript{734} It is similar to jug 11 from Ayia Paraskevi in its sloppy copying of other painters’ work.\textsuperscript{735} It may have been made by a novice, or a painter who was not as comfortable with the brush as his or her colleagues. Because it imitates vessels found in Politiko and Ayia Paraskevi, it may have originated at the production centre in the Mesaoria that supplied those sites. Jug A806 finds its parallels at Kazaphani in jugs 2A.130, which shares its shape and the decoration of strips of vertical lattice, and 2B.526 which is very similar in shape, but has a side spout.\textsuperscript{736} Since the decoration is unique, it is not easy to find an exact match for this vessel, but it may have been produced in the Mesaoria where circles are common motifs.

5.23.1 Summary

It seems unlikely that Klavdhia had its own production centre for White Painted ware. It seems, instead, to have been receiving objects from northern production centres, such as Lapithos, through exchange. A few of the vessels may have been produced in the Mesaoria area where there appears to have been a production centre in operation that imitated the wares from other sites, but made variations of what could be considered the standard repertory of those sites, if one can assume there was a degree of standardization.

5.24 Laxia tou Riou (Appendix 3, Table 106)\textsuperscript{737}

There are only two vessels from Laxia tou Riou in this study. One is a jug with a tubular spout, decorated with hatched triangles, and the other is a tankard decorated with hatched diamonds and

\textsuperscript{733} See Appendix 1, figures 134, 261 and 734, respectively.
\textsuperscript{734} Compare Appendix 1, figures 1185-1196 with jug 47.348, figure 1085.
\textsuperscript{735} See Appendix 1, figure 785.
\textsuperscript{736} Compare Appendix 1, figures 1197-1209 with figures 301 and 320, respectively.
\textsuperscript{737} See Appendix 2, map 30 for imports into Laxia tou Riou.
a complex pattern of interlocking hatched triangles. The excavation of the site was carried out by Myres in 1897 (Frankel, 1974b:72), but most of the material found was Red Polished ware. Unfortunately, the excavation was not well-published.

The jug has hatched triangles like those found in Group 9 at Lapithos. It resembles jug 7 from Tomb 6 at Dhenia as well, but the shape is not the same. The body of the vessel is globular and its surface has long diagonal depressions that may indicate it was built up using coils. The neck was made with a tapering cylinder and was inserted into the opening at the top of the body of the jug. A sharp carination at the shoulder suggests this method of neck attachment. A hole was made in the top of the neck and its rim was flattened out. A strap handle was thrust through the wall of the vessel in the fashion common for Cypriot jugs in the Middle Bronze Age. This jug fits within the repertory of Lapithos, and may have come from the production centre near that site.

The tankard has hatched diamonds separated by triple horizontal lines on its neck like the tankard L.316.25 from Lapithos, and has interlocking hatched triangles on its lower body like vessels in Group 11 from Lapithos, but the combination of these two motifs is unique. Hatched diamond chains and interlocking hatched triangles also occur at Vounous and Dhenia. The sloppy way in which the hatched triangles have been executed finds a parallel in a jug from Klavdhia. Laxia tou Riou may have received its pottery from the same source as Klavdhia, and although the motifs resemble those popular at Lapithos, it is difficult to say with certainty that they were produced there. They tend to be less carefully executed and more like imitations of Lapithos styles than actual imports. The source may be the production centre in the Mesaoria that served Ayia Paraskevi and Politiko where other sloppy renditions of Lapithos styles can be found.

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738 Jug A757 and tankard C.76. See Appendix 1, figures 1218-1227 and 1228, respectively.
739 See Appendix 1, figure 611.
740 See Appendix 1, figure 1224.
741 See Appendix 1, figure 1225.
742 See Appendix 1, figures 1226-1227.
743 See Appendix 1, figure 1225.
744 Compare Appendix 1, figures 1228 and 1174.
5.25 Hala Sultan Tekke (Appendix 3, Table 107)\(^{745}\)

The British Museum sponsored excavations at Hala Sultan Tekke in 1897/1898, but these have not been published (Åström, Bailey, & Karageorghis, 1976:1-4). The tombs they excavated contained material from the Late Bronze Age, including several sherds of Mycenaean pottery (ibid). Furumark excavated the site from 1947-1948, then the Department of Antiquities began work there in 1948, at which time Middle Bronze Age material was found.\(^{746}\) The shapes and decorations on these vessels fit into the groups at Lapithos, Vounous (particularly Kazaphani), Toumba tou Skourou, and Dhenia. Surprisingly, Cross Line Style, so dominant in the assemblage of Kalopsidha in the northeast, is entirely absent even though there are Late Bronze Age styles such as Base Ring and White Slip present at Hala Sultan Tekke.

Jugs A693 and A695 have bases decorated in the fashion of Group 3 of Lapithos, although their bases are slightly different in having multiple wavy lines\(^{747}\). Jug A693 is similar to 32-27-85 with its multiple framed lattice panel and wavy lines, while Jug A695 is more like jug L.303 B.9 which has multiple framed lattice panels and zigzags\(^{748}\). The neck is unique with alternating solid and empty squares, thicker than the typical chequerboard bands. Jug A759 has the same peculiar hatching from upper right to lower left, and in some cases horizontal, that can be found on vessels 32-27-196 and 32-27-80 from Tomb 804 at Lapithos\(^{749}\). The amphora A846 has handles identical in shape to amphora L.316.4 from Lapithos, but its handles are not pierced\(^{750}\). Its decoration could fit into Group 7 at Lapithos, but is closer to the deep bowl 13 from Tomb 48 at Dhenia with its pattern turned 45 degrees forming diamonds instead of squares\(^{751}\). The bottle A859 has a similar arrangement of string holes to bottle L.320.79, but is without parallel for its decoration\(^{752}\). The bottle A853 fits into Group 6 at Lapithos and is nearly identical in its decoration to the bottle L.316.102, although its shape is different\(^{753}\). The two jugs A808 and A810 are typical of jugs with trefoil mouths painted in the Soft Triglyphic style from Kazaphani.

\(^{745}\) See Appendix 2, map 31 for imports into Hala Sultan Tekke.

\(^{746}\) The material in this study was found in those excavations. See p. 35-50 in Astrom et al. 1976.

\(^{747}\) See Appendix 1, figures 1229 and 1230.

\(^{748}\) Compare Appendix 1, figure 1229 with 61 and figure 1230 with 28.

\(^{749}\) Compare Appendix 1, figure 1241 with figures 184 and 181-183, respectively.

\(^{750}\) Compare Appendix 1, figure 1252 with figure 89.

\(^{751}\) See Appendix 1, figure 706.

\(^{752}\) Compare Appendix 1, figures 1254 and 112.

\(^{753}\) Compare Appendix 1, figures 1253 and 126.
Jug A808 is very similar to 2B.89\(^{754}\), which has finer lines than most others of this style, while jug A810 can be compared to 2A.82 to which it is nearly identical, as well as 5.037 and 4.969 from Tomb 5 at Enkomi, and C229 from Arpera\(^{755}\). It is likely that the source for all of these jugs was Toumba tou Skourou. The shape of jug A795 is similar to that of jugs A782, A783 and A798 from Kythrea, but its decoration is more like Group 5 from Kalopsidha, particularly jug 18082 and the sherd 1073, as well as the sherd 2503/2 from Enkomi\(^{756}\). The fabric appears to be closer to the Kythrea jugs, but without analyzing the fabric petrographically or chemically it is not possible to say with certainty where this jug was made. The two bottles A878 and A887, as well as the two jugs A725 and A726 all have the same decoration and were probably all painted by the same person\(^{757}\). The shapes are also identical between the bottles and between the jugs. The same person probably made both bottles, and the same person probably made both jugs, although this could have been two different people. It is possible that all four vessels came from the same hands. In addition to these four vessels from Hala Sultan Tekke, there are also two bottles from Leondari Vouno (1888.1250 and 1888.1251) that are identical, and one from Ayia Paraskevi (C.57) that has only two straight lines between the wavy ones\(^{758}\). The former were probably the work of the same potter and painter as this group, while the latter may also be from the same production unit. The jugs are similar to A755 from Klavdhia, but that jug has a continuous wavy line and the base is painted a solid colour\(^{759}\). It is probably the work of a different painter. It is unlikely, with the extreme heterogeneity of the White Painted ware at Hala Sultan Tekke, that there was a local production centre. Instead, the site seems to have been receiving pottery from the north coast, particularly Lapithos and Kythrea, as well as from Toumba tou Skourou and Kalopsidha. Some of the pottery may also have come from the production centre in the Mesaoria that was supplying Ayia Paraskevi and Politiko.

\(^{754}\) Compare Appendix 1, figures 1250 and 336.
\(^{755}\) Compare Appendix 1, figure 1251 with figures 323, 1113, 1112 and 1145, respectively.
\(^{756}\) Compare Appendix 1, figures 1242-1249 with figures 379-386, 387-393, 401-412, 1053, 1052 and 1124, respectively.
\(^{757}\) Compare Appendix 1, figures 1255, 1256, 1231, 1232-1240, respectively.
\(^{758}\) See Appendix 1, figures 734, 735 and 798, respectively.
\(^{759}\) See Appendix 1, figures 1175-1184.
5.26 Xylotymbou-Katapetra

This site is represented by four vessels: an askos, a double-necked jug and two bowls. The Askos is decorated with an overall lattice decoration. Its shape and decoration are unique in the White Painted repertory, but the overall lattice panel appears on a bowl from Lapithos. The shape is similar to another askos from Vounous. It may have been produced at Lapithos. The double-necked jug is decorated in a manner most popular at Dhenia, but also found at Lapithos. The interestingly shaped handles are reminiscent of a small jug from Politiko. This vessel may have been made at the production centre in the Mesaoria. The deep bowl is similar to deep bowls from Toumba tou Skourou, which may be where this one was made. The hemispherical bowl is decorated in a unique way. The interior has a double wavy line with straight lines between them, making a wavy ladder pattern that resembles a snake. There are four groups of wavy lines on either side of it. It is possible that this bowl was also made at Toumba tou Skourou where Proto White Slip ware has been found with ladder designs, and also where groups of wavy lines are popular. It is difficult to determine the origin of unique objects based solely on the examination of shape and decoration in a photograph.

The Northwest Region

5.27 Linou

There are only two published White Painted vessels from this site. The bottle finds its closest parallel in bottle L.315 A.86 from Lapithos, but its decoration is very common both at Lapithos and Vounous. It was most likely made in the production centre of Lapithos. The jug

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760 Too little information about these vessels has been published to allow for the construction of a table for this site.
761 Compare Appendix 1, figure 1257 and 245-249, respectively.
762 Compare Appendix 1, figure 1258 with figures 650-655.
763 See figures 131 and 134.
764 Compare with A714, Appendix 1, figure 868.
765 Compare with A714, Appendix 1, figure 868.
766 Too little information about these vessels has been published to allow for the construction of a table for this site.
767 Compare Appendix 1, figures 1261 and 133, respectively.
has no parallel for its decoration, but shares the alternating straight and wavy lines with both the jugs decorated with vertical lattice panels from Lapithos and the Pendant Line Style jugs at Kythrea and Kalopsidha. Both vessels are likely to be imports from Lapithos.\textsuperscript{768}

5.28 Magounda \textit{Polis tis Chrysokhou} (Appendix 3, Table 108)\textsuperscript{769}

Magounda is located in the Western part of Cyprus, south of Morphou Bay. The vessel from Magounda most closely resembles jugs from Morphou Toumba tou Skourou in its decoration. There is also another jug with an animal figure on the front in the same manner, this time from Stephania (19 from Tomb 7)\textsuperscript{770}. It is most likely that this jug was imported from Toumba tou Skourou where all of the jugs of this type were probably made.

The Southwest Region

There is only one site in the southwest that has White Painted ware, but it is in such low quantities that it is certainly imported from other parts of the island.

5.29 Kouklia (Appendix 3, Table 109)\textsuperscript{771}

Kouklia is about half way between the Akrotiri peninsula and the modern town of Paphos. Although the Troodos massif forms a formidable barrier to trade, the site is not far from the shore and most likely received traded goods from the east and north by sea rather than by land. There are only two published white painted ware vessels from Kouklia\textsuperscript{772}. The animal-shaped askos is similar to one from Lapithos (L.315B-C.26) which has two objects on its back making it look like a donkey with panniers, although its neck is excessively long\textsuperscript{773}. The other vessel has a very close parallel in decoration and shape from Enkomi (3 from Tomb 20), but it may have been

\textsuperscript{768} See Appendix 2, Map 32 for imports into Linou.\
\textsuperscript{769} See Appendix 2, map 34 for imports into Magounda.\
\textsuperscript{770} Compare Appendix 1, figure 1263 with figure 359.\
\textsuperscript{771} See Appendix 2, map 35 for imports into Kouklia.\
\textsuperscript{772} Askos 1888.1252 and jar 1888.1313. See Appendix 1, figures 1264 and 1265, respectively.\
\textsuperscript{773} See Appendix 1, figure 240.
produced near Kalopsidha where the framed broad bands are popular\textsuperscript{774}, but its shape is very similar to vessels from Toumba tou Skourou.

5.30 Discussion

White Painted ware, in general, is very heterogeneous in both shape and decoration, but there are some recurring combinations of design motifs that are popular at certain sites, but are absent at others. Some shapes, as well, seem to be specific to some places. There are certain motifs, such as hatched triangles and alternating oblique lines that are more common on shapes such as bowls, but less frequent on other shapes. Some of these differences occur through time, but some are also contemporary, showing a degree of regional preference for specific shapes and decorative schemes. Although possible production centres can be suggested for the sites that produce greater quantities of certain shapes and/or combinations of motifs, it would be better to be able to use fabric analysis to determine where the production centres were in relation to the geology of the island.\textsuperscript{775} It would appear there were at least seven distinct production centres creating White Painted ware throughout the Middle Bronze Age on Cyprus, although not all of them were contemporary with each other. The decision of whether or not a site may have produced its own pottery was determined by whether there were unique styles there that have not been found elsewhere, and where there was overlap between sites, the site with the highest number of vessels in a particular style was considered to be the production centre of that style. It is recognized that there is a high degree of speculation in such a determination, but it is also hoped that tools such as petrographic and chemical analysis of sherds and soils from the sites where White Painted wares are found would be able to strengthen the hypotheses advanced below.

Vounous is the earliest centre of production, and is thought to be the place where this pottery was first made, although the White Painted II ware that defines the beginning of the Middle Bronze Age period probably originated at Lapithos (Äström, 1957:232; Stewart, 1962:231-232; Frankel, 1974b:15-17). The production centres isolated in this study, in chronological order with some overlap, are as follows: Vounous Bellapais (ECI-MC II), Lapithos (EC II-MC III), Ayios

\textsuperscript{774} See Appendix 1, figure 1125.
\textsuperscript{775} It was not possible to sample material from every site, especially those sites that are located in the northern part of Cyprus.
Iakovos (EC III-LC II), Kythrea (MC II-III), Politiko (MC II-III), Kalopsidha (MC III-LCI), and Morphou Toumba tou Skourou (MCIII-Archaic). It should be borne in mind that all of these production centres are based on material found in Tombs and settlements and not on the presence of kilns, raw materials or other signs of ceramic production, with the sole exception of Toumba tou Skourou, but there was no White Painted ware found associated with the kiln (Vermeule & Wolsky, 1990:39).

5.30.1 The production centre at Vounous Bellapais

The earliest material found in the cemetery at Bellapais is that of the Philia Culture. Åström did not consider the White Painted (Philia) material to be part of the White Painted ware of the Middle Bronze Age, partly because it dates to the beginning of the Early Bronze Age (EC I), and partly because its motifs do not continue in the repertory of Vounous, nor do they spread to other parts of the island. It seems to be a local development of the Chalcolithic Red-on-White ware. Lattice panels are very common at Vounous, but in nearly every case the jugs and amphorae at this site are found in much greater abundance at Lapithos, where they may have been produced. It is difficult to isolate a “Vounous” style separate from a “Lapithos” style, after the initial White Painted I style. The two sites are not very far apart and were contemporary with each other, raising the possibility that the production centre for much of their pottery was between them rather than at one or the other. Unique to Vounous, however, is the deep bowl with two horse riders. In the tradition of the Red Polished coroplastic figures, this could have been locally produced, although it does share a pattern of horizontal lattice panels and chequerboard bands with a number of vessels from both sites. While it is reasonably safe to assume that Vounous had its own production centre for the Early Bronze Age, it is possible that production of White Painted ware shifted to Lapithos in the Middle Bronze Age.

776 This production centre seems only to have supplied Vounous, unless one considers the vessels similar to Lapithos vessels to have been local products.

777 An examination of the connection between Red-on-White, White Painted (Philia) and White Painted ware is beyond the scope of this thesis, but there are common motifs, and all are painted in red or black on a light coloured ground.
5.30.2 The production centre at Lapithos

Although White Painted I wares (Philia and WPA and WPB) do not appear at Lapithos, the most common shapes and decorative schemes and motifs for the rest of the White Painted tradition begin there. Nearly all of the jugs decorated with vertical lattice panels, both with round mouths and angled spouts, were found in the Tombs at this site. The few found at other sites, such as Vounous, Dhenia and Alambra may have been produced at Lapithos as well, especially such jugs as 69.11, 59.1, and 57a.25. Jug 1 from Tomb 6 at Ayios Iakovos may also have been produced at Lapithos, although the anthropomorphic handle and the animal motifs are unique. The base and neck decoration are typical at Lapithos. Lapithos jugs have also been found at Stephania, Dhenia (Kafkalla and Mali), Politiko, Ayia Paraskevi, Alambra, Hala Sultan Tekke, Enkomi, Boghaz, Ayios Iakovos and Galinoporni. Although they are divided into groups in this study based on the decoration of their bases, they are variations on a theme and can be viewed as the output of a single production centre, but made by different potters and decorated by different painters. It is not possible, given the inability to precisely date any of these vessels, to determine whether the variability in potter/painter skill is due to a number of individuals working in a single centre close together in time, to a few individuals continuing to produce a certain pattern and/or vessel shape over time, or people producing pottery in different places (i.e. their homes) but influenced by each other’s work.

Another very recognizable style at Lapithos employs the chequerboard either as an all-over pattern or in bands. The all-over chequerboard pattern can be found on vessels at Vounous, Ayia Paraskevi, and Politiko (Chomazoudhia). Chequerboard bands are found in combination with other motifs, often framing lattice panels or used as dividing elements in horizontally arranged designs. This design occurs with high frequency at Lapithos, and it is likely that this is where it originated. It can also be found at Vounous, Krini Merra, Dhenia, Ayia Paraskevi, and

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778 See Appendix 2, map 4 for the sites in which products of the Lapithos production centre have been found.
779 See Appendix 1, figures 272, 269 and 278, respectively.
780 See Appendix 1, figure 903.
781 Hala Sultan Tekke has been dated from MCIII-LCIIIC. If the style did not continue at Lapithos until the very end of the Middle Bronze Age, these jugs must have been “antiques” when they made their way to the Larnaca region, unless they were copied from earlier vessels.
782 50.2, 50b.1, 50b.2, 64.107, 64.138, and 68.6 (50.2, 50b.1 and 50b2 are part of another style, but have chequerboard bands as well). See Appendix 1, figures 276, 277, 278, 281, 282 and 283, respectively.
Alambra. There is also a very peculiar arrangement of motifs that must have come from the same production centre. Lattice bands, hatched or cross-hatched diamonds, zigzags, chequerboard bands and sometimes interlocking hatched triangles are arranged in different ways on jugs, amphorae and other shapes. Although they are all different, they are recombinations of the same small group of design elements and are likely to be the work of very few painters, and possibly potters. Most of the vessels decorated in this manner were found at Lapithos, which is probably where they were made. There are also vessels with this style of decoration from Vounous, and Alambra.

Another distinctive combination of motifs occurs on several vessels from Lapithos. The motifs include hatched and cross-hatched squares, diamonds and zigzags as well as a few other linear patterns, generally arranged in horizontal bands. The shapes vary much more than the decorative motifs. The cross-hatched squares, arranged in a chequerboard fashion, continue in the Proto White Slip ware of the beginning of the Late Bronze Age. Their origin may have been Lapithos in the end of the Middle Bronze Age. They also appear at Toumba tou Skourou, where the White Slip repertory is almost entirely present on White Painted vessels. It is possible that the original impetus for these designs came from Lapithos, but was developed at Toumba tou Skourou. There are also examples of this arrangement of motifs from Vounous, Ayios Iakovos, Galinoporni, Dhenia Kaflalla, Ayia Paraskevi, Politiko, Alambra, Enkomi, Boghaz, Klavdhia, and Hala Sultan Tekke. This group is heterogeneous as

783 1970.889a. See Appendix 1, figure 450.
784 20(Tomb 6), SF.7, A.60, E.4. See Appendix 1, figures 671, 715, 716, and 717, respectively.
785 12 Gladstone Street. See Appendix 1, figure 786.
786 AP.93, AP.178, sherds. See Appendix 1, figures 877, 879.
787 L.306 C.6, L.313 A.114, L.322 D.86, L.313 A.113. See Appendix 1, figures 42, 43, 44, and 45, respectively.
788 64.47, 68.6. See Appendix 1, figures 280 and 283, respectively.
789 AP.93. See Appendix 1, figure 877.
790 Groups 6 and 7
791 50.2, 50b.1, and 50b.2 (the two from tomb 50b are most certainly painted by the same hand). See Appendix 1, figures 276, 277 and 278, respectively.
792 8 (tomb 9), but it is different from the others. It is a copy of the motifs, but clearly not from the same production group. See Appendix 1, figure 905.
793 1953.860. See Appendix 1, figure 926.
794 Groups 5 and 6
795 Group 4
796 A703, A772. See Appendix 1, figures 826-831 and 858-867, respectively.
797 AP.178. See Appendix 1, figure 879.
798 C.55. See Appendix 1, figure 1104.
far as the specific motifs are concerned, as well as the skill in the execution of the decoration. It is possible they represent several different production groups, but the inspiration for the motifs may have been a single source. A number of vessels, however, are similar enough to have come from the same production group most likely at Lapithos, and possibly even represent the work of the same painter and potter. Other variants may be imitations made by other production groups.

Also most likely from Lapithos is the group with cross-hatched diamonds, often with zigzags, that appears on a number of vessels from that cemetery. These are also found at Vounous, Galinopori, Dhenia, Ayia Paraskevi, Alambra, Kalopsidha, Boghaz, Arpera, Klavdhia, and Hala Sultan Tekke. The jug from Kalopsidha is very similar to that from Klavdhia and may have been produced by the same production group. The amphora from Hala Sultan Tekke has rows of cross-hatched diamonds without divisions like the jug from Kalopsidha which may be related to it. Similar diamonds occur on an amphora from Lapithos, which has handles almost the same shape as well (32-27-10), and on another amphora with a shorter neck (311A.31). The three amphorae from Boghaz are similar to each other and may be the work of the same potter/painter. The wavy lines in the interior of the rim would place these at Ayios Iakovos where such a motif occurs. It is not impossible that Ayios Iakovos was the source for the vessels from Klavdhia, Kalopsidha and Hala Sultan Tekke, although the lattice diamonds

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799 NS 61, 61.93 (influence also from Ayios Iakovos), 407, 408. See Appendix 1, figures 1138, 1140, 1141 and 1142, respectively.
800 A758 (possibly from Politiko). See Appendix 1, figures 1185-1196.
801 A853. See Appendix 1, figure 1253.
802 Specifically A654, L.316.25, L.316.79, L.316.102, L.316.104, L.316.176, and from Lapithos (Appendix 1, figures 119-121, 124, 125, 126, 127,128); 31, 50, 51, 14, 7 and possibly 12, 14, 8, 13, 58, 63 and 15 from Dhenia (Appendix 1, figures 658, 659, 660, 661, 662, 663, 665, 666, 667, 668, 672, 673); A703 from Politiko (Appendix 1, figures 826-831) and A853 from Hala Sultan Tekke (Appendix 1, figure 1253).
804 50.2, 50b.1, and 50b.2 (See Appendix 1, figures 276, 277 and 278, respectively).
805 A789 (See Appendix 1, figures 952-958).
806 22 (See Appendix 1, figure 610).
807 24, 51, 12 Gladstone St. (See Appendix 1, figures 783, 784 and 786, respectively).
808 AP.93, AP.147 (vertical) (See Appendix 1, figures 877 and 878, respectively).
809 47.348 (See Appendix 1, figure 1085).
810 61.93, 407. (See Appendix 1, figures 1140 and 1141, respectively).
811 C222, C240 (both vertical) (See Appendix 1, figures 1143 and 1146, respectively).
812 A758 (See Appendix 1, figures 1185-1196).
813 A846 (See Appendix 1, figure 1252).
have not been found there. Instead, it is more likely that the vessels of those three sites came from Lapithos and the production centre near Ayios Iakovos that supplied Boghaz found inspiration through the imported vessels.

The distinctive combination of cross-hatched diamond chains and horizontal chequerboard bands occurs on three vessels from Lapithos and one from Alambra. The Alambra jug is decorated in a manner so similar to jug L.320.24 that the two must be the work of a single painter, most likely working at Lapithos. A variation on this theme that has zigzag bands alternating with the cross-hatched diamonds occurs on two vessels from Vounous which could very well be the work of the same potter/painter. Similar to these, but probably not made by the same person, although certainly by someone aware of his or her work, is a jug from Ayia Paraskevi, and a very poorly executed version of it from the same site. These may both have been produced by the production centre in the Mesaoria that served Politiko and Ayia Paraskevi as well. A production group at Lapithos may have been responsible for a unique variation on the cross-hatched diamond theme which has faience beads embedded in the linear bands separating the rows of diamonds (Hadjicosti, 1992:113-117). This vessel may also have been made at Kythrea where there is a jug with a horizontal band filled with dots instead of beads. Nearly identical bottles decorated with vertical cross-hatched diamonds and zigzags were found at both Ayia Paraskevi and Alambra. They were most likely made by the same potter/painter who may have been working at Lapithos. A unique ring vase decorated with a cross-hatched zigzag is covered in string holes and provided with three short feet very much like the jugs from Politiko Lambertis, which may have been its source.

The production unit at Lapithos set many trends in the decoration of White Painted ware. This is not surprising considering its early date and its longevity. Lapithos also boasts the greatest percentages of White Painted ware found in some tombs, even though it is not ubiquitous. There are several vessels found at Lapithos that were probably made elsewhere, and, in turn, there are many vessels found at other sites whose origin is probably Lapithos. Clearly this site was very well connected in the trade network of Middle Bronze Age Cyprus.

814. L. 315 A.86, L.320.24, and 32-27-96 (See Appendix 1, figures 133, 136 and 139, respectively).
815. AP.178 (See Appendix 1, figure 879).
816. 50b.1 and 50b.2 (See Appendix 1, figures 277 and 278).
817. 12 Gladstone St. (See Appendix 1, figure 786).
818. 11 Gladstone St. (See Appendix 1, figure 785).
5.30.3 The production centre at Ayios Iakovos

Several of the vessels from Ayios Iakovos are painted with motifs borrowed from Red-on-Red and Red-on-Black wares. These two wares are restricted to the Karpass region, and it seems quite likely that the production centre that made the White Painted ware found at this site was also responsible for producing the other two wares. Some of the other material from Ayios Iakovos, however, may have been imported from other production centres such as Toumba tou Skourou, Lapithos, Vounous and Kalopsidha. Other than the amphorae from Boghaz mentioned above, there seems to have been very little influence from Ayios Iakovos on White Painted ware in general, and the vessels produced here seem to have stayed close to home.

5.30.4 The production centre at Kythrea

The existence of a production centre at Kythrea is based on the unique shape of the jugs found there. They are quite globular and often have lugs pierced through their tops but not all the way through the vessel wall. Other jugs are more ovoid in shape, have angled spouts and low maximum diameters. Generally, the jugs from Kythrea are made of a hard, buff fabric and are fairly light for their sizes. The decorative motifs and combinations of motifs are influenced by several different production centres, and sometimes even combine the motifs from different styles on the same vessel. The globular jugs are all decorated in the linear styles typical of the eastern part of the island: Cross Line Style and Pendent Line Style. The decorations are variations of those styles, however, and none fits within the schemes of Kalopsidha where the style probably originated. The ovoid jugs have motifs similar but not identical to those from Lapithos. Jug A710 has small dots of paint reminiscent of the inlaid faience beads of Ayia
Paraskevi\textsuperscript{826}. It would appear that the production unit at Kythrea took inspiration from several sources, but produced its own variations of the designs.

5.30.5 The production centre in the Mesaoria\textsuperscript{827}

Politiko has some vessels that would fit within the assemblage from Lapithos\textsuperscript{828}, but a group of String Hole Style jugs is unique to this site\textsuperscript{829}. Two of them have double spouts, and all have roughly the same arrangement of pierced lugs. They are all decorated with rows of cross-hatched triangles. It seems quite likely that these were all made by the same small group of potters and painters. Ayia Paraskevi also has several vessels that most likely came from Lapithos or Vounous, as well as a few that may have come from Toumba tou Skourou\textsuperscript{830}, but there are a few vessels that do not fit into the repertory of other contemporary production centres\textsuperscript{831}. These may have been produced by a different production centre that may have been associated with Politiko, Ayia Paraskevi, or some other site that was in close contact with them and supplied both with White Painted ware.

5.30.6 The production centre at Kalopsidha\textsuperscript{832}

The settlement of Kalopsidha produced quite a few sherds of Pendent Line style, which may have originated here or at Kythrea where this style is also abundant. It is almost certain that the Cross Line style was first produced at Kalopsidha where it is possible to trace its development. Its presence at Kythrea is more likely due to inspiration from painters from Kalopsidha. The zigzag style is unique to Kalopsidha, but is really a pointed version of the wavy lines seen at other sites. The eyelet style is also unique. The jugs decorated in the Soft Triglyphic style may have originated at Kalopsidha and have been sent to Kazaphani where identical jugs were found.

\textsuperscript{826} Compare Appendix 1, figures 413-420 with figures 783 and 784.
\textsuperscript{827} See Appendix 2, map 5 for sites where vessels manufactured at the production centre in the Mesaoria have been found.
\textsuperscript{828} A634, A690, A703, A772. See Appendix 1, figures 815-819, 820-825, 826-831, and 858-867, respectively.
\textsuperscript{829} A703, A762, A763, A765, and A714. See Appendix 1, figures 826-831, 837-842, 844-848, 850-857, and 868-875, respectively.
\textsuperscript{830} Deep bowls 77 and 132, both from Tomb 36. See Appendix 1, figures 761 and 762.
\textsuperscript{831} C.51, 24 (11), 51 (12), 58.132 (which resembles the jugs from Politiko), and 58.142. See Appendix 1, figures 752, 783, 784, 787 and 797, respectively.
\textsuperscript{832} See Appendix 2, map 8 for sites where vessels manufactured at the production centre at Kalopsidha have been found.
The jugs at Kalopsidha are quite fragmentary, but they seem to be quite similar in both shape and decoration to those found at Kazaphani. There are also a few jugs at Toumba tou Skourou decorated in the Soft Triglyphic style, which may be imports from Kalopsidha. The Coarse Linear style may have developed at Kalopsidha from the later versions of the Cross Line style. It is not very complex, making it unnecessary to assign it to a particular production group. With all of the similarities in the wares not decorated with Cross Line and Pendent Line style between Kazaphani and Kalopsidha, it is safe to assume there was a fairly strong connection between the two sites.

5.30.7 The production centre at Morphou Toumba tou Skourou

One of the very few Bronze Age kilns found on Cyprus has been discovered at Morphou Toumba tou Skourou, and although it was used in the Late Bronze Age, there is no reason to assume that pottery production did not take place there in the end of the Middle Bronze Age too. There is a range of wares from the Middle Bronze Age well into the Iron Age at this site, and it is possible to see influence between them. White Painted shapes also occur in Black Slip ware, White Painted motifs continue into the White Slip repertory. There are two very distinctive types of vessels that come out of this production unit, and these have been found at Stephania, Kazaphani, Dhenia and Enkomi as well. The tankards have a very specific shape with tall neck collars, globular bodies and a high horn or thumb grip on the tops of their handles. This shape is similar to Base Ring ware tankards. Many have ornate lugs or even animals modeled on the front where the neck and body join. Although there is a fair degree of variability in shape and decoration, they are likely the output of a single production unit, made and painted by different people who were aware of each other’s work. The other very typical vessel is the jug with figures moulded on it. The jugs of Toumba tou Skourou usually have vertical stripes on their necks, which is different from the more usual horizontal bands typical of White Painted ware. Often there are figures of birds, animals or people attached to them, which is more common in Red Polished ware than in White Painted. There are a few examples from other sites, but these were most likely made at Toumba tou Skourou. Jug 2A.323 from Kazaphani has an anthropomorphic figurine, while there is a bird on the front of jug 19 from Stephania. A jug with

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833 See Appendix 2, map 9 for vessels exported from the production centre at Toumba tou Skourou.
a bull’s head on the front and a design very similar to the jug from Kazaphani was found at Magounda. These probably all came from the production centre at Toumba tou Skourou.

The early material from Kazaphani resembles both White Painted from Vounous, and Red Polished ware. The Soft Triglyphic style may have originated at Toumba tou Skourou or at Kalopsidha, but was certainly more popular at Kazaphani than at Stephania. Several tankards from Kazaphani are quite similar in shape to those at Toumba tou Skourou, particularly the thumb grip on top of their handles. Bowl 2B.516 from Kazaphani is almost identical to bowl 43(7) from Stephania, and was probably made by the same potter and painter working at Toumba tou Skourou. The design of oblique lines on these bowls also appears on bowl 2A.316, tankard 2A.323, and jug 2A.329, probably all the work of the same individual. This design is close to the groups of lines that form the Soft Triglyphic style. There are several jugs painted in this style. A cat-shaped rattle is also decorated in a manner similar to the jugs, and some animal-shaped askoi have a linear pattern reminiscent of this style. There is another cat-shaped rattle decorated in the Coarse Linear style, but its shape is almost identical to the other one. These objects appear at Enkomi as well, and may all have been produced at Kalopsidha. The Soft Triglyphic style also appears at Enkomi and Kalopsidha, as well as the northern and western sites. It would appear that the production centre at Toumba tou Skourou was as active as that at Kalopsidha and that there must have been an important trade route for pottery and probably other items as well, that had at least one node at Kazaphani.

834 131A.59, 137.43a, and 157.19 (See Appendix 1, figures 291, 292 and 293, respectively).
835 2A.60, 2A.308, 2A.314, 2B.354, 2B.522, 2B.523, 2A.316, and 2B.524 from Kazaphani (see Appendix 1, figures 308, 311, 314, 318, 319, 331, and 346, respectively); 5(10) and 14(10) from Stephania (see figures 361 and 362, respectively), but this shape is most common at Toumba tou Skourou, where these tankards were probably made.
836 Compare Appendix 1, figures 345 and 360.
837 Compare Appendix 1, figures 331, 332 and 333, respectively.
838 2A.82, 2A.107, 2B.89, 2B.223, and 2B.500. See Appendix 1, figures 323, 324, 336, 338 and 342, respectively.
839 2B.502. See Appendix 1, figure 343.
840 2A.311, 2B.39, and 2B.221. See Appendix 1, figures 329, 335 and 337, respectively.
841 Those at Enkomi are 148, which has one eye, but the body is the same shape, and 1887/6 which is more bulbous. See Appendix 1, figures 1117 and 1123, respectively.
5.31 Conclusion

The earlier wares, both Red Polished and White Painted, show influence from Anatolia. White Painted ware seems to have developed from Red Polished and Red-on-White ware. Later influences came from contemporary wares such as Black Slip, Red-on-Red and Red-on-Black, depending on what type of pottery was popular in the different regions where White Painted ware was being produced. Finally, the decorations and shapes of White Painted ware, particularly those from Toumba tou Skourou, influenced White Slip and Cypriot Bichrome ware, while the shapes of some of the White Painted wares, particularly at Toumba tou Skourou, were influenced by, or borrowed from, the Base Ring ware shapes. In some cases, even the fabric used for White Painted and some of the other wares was indistinguishable, at least in hand specimen (Eriksson, 2008:58).

White Painted ware appears to have had its beginning at Vounous Bellapais, but then Lapithos seems to have eclipsed that site as a production centre for the ware. Lapithos was one of the most important sites in the Early and Middle Bronze Age, as the great wealth and presence of foreign exotica in its cemetery would suggest. The production centres for White Painted ware all played important roles, particularly in trade, in the Middle and Late Bronze Ages. During MC III, the floruit of White Painted ware, six production centres were operating around the island. Only Bellapais had gone out of use, but it is possible that this site was receiving its pottery from Lapithos throughout the Middle Bronze Age. At this time, the shapes and motifs showed definite regional preferences. Even so, no site has produced an entirely homogeneous assemblage. Imports that fit very well into the repertory of other sites, as well as imitations that are not as neatly executed, or are composed of combinations of motifs that do not occur on the vessels of the site where the motifs are most at home, appear almost everywhere. It is quite possible that in many cases, they represent the work of potters and painters who are learning the craft.

Kalopsidha and Toumba tou Skourou had only begun to produce White Painted ware in the end of the Middle Bronze Age and beginning of the Late Bronze Age, while the centres at Lapithos, Kythrea and Politiko were going out of production. The dominant influence during the Middle Bronze Age was Lapithos, but this changed at the beginning of the Late Bronze Age to Toumba.

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842 See Appendix 8, Table 2.
tou Skourou in the northwest, and Kalopsidha in the east. Production of White Painted ware shifted towards the end of the Middle Bronze Age to the east, where the main influence in pottery was coming from the Levant, and to the northwest which was in contact with the Aegean. Kalopsidha developed White Painted Wheel-made ware, while Toumba tou Skourou developed White Slip ware, Cypriot Bichrome and probably also Base Ring ware. All of these wares spread uniformly across the island and were found in the Levant and Egypt as well (Merrillees, 1965:146-147; Maguire, 1990; 2009b). Pottery production on Cyprus in the Late Bronze Age was not as regionally distinctive as it had been in the earlier part of the Middle Bronze Age. Although copper production and its development is very important in the understanding of urbanization on Cyprus, a study of the Middle Bronze Age production centres, then, can provide information on the development of intra-island trade networks that laid the foundation for Cyprus’ rise to importance in the Eastern Mediterranean during the Late Bronze Age.843

843 Assuming Cyprus was Alashyia and an important source of copper.
Chapter 6

Fabric groups and their relationship to production centres

6.1 Introduction
The two previous chapters presented a stylistic analysis of published material with known provenience and a petrographic analysis of 68 sherds from the Cyprus Museum in Nicosia, the Sheffield University teaching collection, and the University of Pennsylvania Museum in Philadelphia. In this chapter, an attempt will be made to place the sherds used to make thin sections into the production centre groups created in Chapter 5. The sherds will be presented by site in the order of the sample numbers given in the concordance. Some of the sherds do not have sufficient decoration to allow the reconstruction of the decorative scheme. They are definitely White Painted ware because of the surface finish. Each sherd will be presented with a discussion of its decoration, when possible, and its fabric. Parallels for the decoration will be sought amongst the production centre groups, then provenance will be suggested for each sherd. A discussion of the relationship between the fabric groups and the production centres established in Chapter 5 will follow.

6.2 Alambra

6.2.1 Alambra 1 AS 303
This rim sherd is most likely from a bowl or a very wide-mouthed vessel. The interior is painted red, indicating that it was an open shape. This sherd has been published by Coleman and Barlow (Coleman, Barlow, Mogelonsky, & Schaar, 1996:pl. 42) as F311. Based on the decoration, the most likely source for this sherd is the production

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844 A single sherd from Milia was sampled, but since this site did not produce a significant quantity of White Painted Ware this sample was not used in the analysis.
845 See Appendix 6 for a summary of fabric group, shape and production centre for each sherd sampled.
846 See Appendix 6
847 See Appendix 1, figure 880 row 1.2. The reconstructed hemispherical bowl AS.238, also in figure 880, shows this sherd as part of a completed vessel. Appendix 1, figure 1266 is the actual sherd with the cut side at the bottom edge.
848 See Appendix 5
centre at Lapithos, where lattice panels are very common, although there are a few vessels from Vounous with the same pattern\textsuperscript{849}.

### 6.2.2 Alambra 2 AS 425

Before the sherd was cut to make the thin section, a section of a lattice panel was visible on it\textsuperscript{850}. It is a body sherd with very little curvature, indicating that it was part of a fairly large vessel, most likely a jug. The broad line has unpainted space below it, suggesting that it was a band around the base of the jug, rather than part of a solid-coloured base. This sherd belongs to fabric group 2, which also contains sherds from Ayia Paraskevi, Dhenia, and Galinoporni. The colour of the paint and surface, as well as the fine lines of the framed lattice panel, points to Lapithos as the possible production centre of this vessel. Its decoration is similar to jugs from Lapithos\textsuperscript{851}, Vounous\textsuperscript{852}, Dhenia\textsuperscript{853}, Alambra\textsuperscript{854} and Hala Sultan Tekke\textsuperscript{855}, but, as discussed in the previous chapter, these are either imports from Lapithos or imitations of Lapithos styles.

### 6.2.3 Alambra 3 AS 439

This sherd belongs to Barlow’s White Painted B group. It is a body sherd most likely from a bowl. It is decorated with interlocking hatched triangles and has a double zigzag beneath the triangles. The sherd is published by Coleman and Barlow (ibid).\textsuperscript{856} Very few examples of vessels with this sort of decoration have been found, so it is difficult to say with certainty where this vessel may have been produced. It belongs to fabric group 2, as the previous sherd. Interlocking hatched triangles and zigzags are common decorative motifs on bowls from Lapithos, which is most likely the source of this bowl. Examples of similar decoration have been found at Lapithos\textsuperscript{857} and Dhenia\textsuperscript{858}.

\textsuperscript{849} Compare L.306 C.6, L.322 D.86 and A625 from Lapithos (Appendix 1, figures 42, 44 and 245-249, respectively); and 68.31, 64.32b, 64.47, 64.107 and 68.6 from Vounous (Appendix 1, figures 272, 275, 280, 281 and 283, respectively).

\textsuperscript{850} See Appendix 1, figure 1267.

\textsuperscript{851} Compare L.315 A.26, 32-27-82, L.316.126 and L.316.144 (Appendix 1, figures 57, 60, 70 and 85, respectively).

\textsuperscript{852} Compare 69.11, Appendix 1, figure 273.

\textsuperscript{853} Compare 8 (tomb 1) and 2 (tomb 6), Appendix 1, figures 581 and 585, respectively.

\textsuperscript{854} Compare AP.92, Appendix 1, figure 883.

\textsuperscript{855} Compare A693 and A695, Appendix 1, figures 1229 and 1230, respectively.

\textsuperscript{856} Appendix 1, figure 872, F297 (row 2.1), figure 880 (reconstructed bowl showing sherd).

\textsuperscript{857} Compare L.311 A.30, L.315 B-C.31, L.320.135 and 32-27-194. See Appendix 1, figures 239, 241, 242, and 243-244, respectively.

\textsuperscript{858} 71, tomb 48. See Appendix 1, figure 634.
6.2.4 Alambra 4 AS 561
This body sherd has very low curvature, thus it may be part of a flask rather than of a jug. It is decorated with cross-hatched diamond chains between chequerboard bands. This sherd is also a member of fabric group 2, and has been published by Coleman and Barlow (ibid:pl.46) as F658. Comparisons for the decoration have been found at Lapithos, and Vounous.

6.2.5 Alambra 5 AS 604
This sherd is a body sherd with slight curvature. The interior is reduced, which suggests the vessel was closed. The sherd may be part of a jug or an amphora. It is decorated with a solid colour and stripes that run parallel to the solid-coloured section. It should probably be oriented with the coloured part to the bottom, as is common on jugs from Lapithos. While there is little to judge from in the way of decoration, it is possible that it is part of a jug that would fit into Lapithos Group 1. It is a member of fabric group 2. Given its decoration and its fabric, this vessel was probably manufactured at the production centre of Lapithos.

6.2.6 Alambra 6 AS 781
This is a body sherd with moderate curvature. It is most likely part of a small jug or flask. Its decoration is classic Pendant Line Style. Petrographically, it belongs in fabric group 3, along with sherds from Ayia Paraskevi, Dhenia, and Enkomi. Not only is it mineralogically similar to most of the samples from Enkomi, but its decoration is also an eastern style. Similar decoration can be found on vessels from Leondari Vouno, Kythrea, Ayia Paraskevi, Kalopsidha, Klavdhia, and Hala Sultan Tekke. Of these possibilities, the sherd is most
likely to have come from Kythrea, which is contemporary with the latest use of the cemeteries at Alambra.\textsuperscript{872}

6.2.7 Alambra 7 AS 301
This body sherd is decorated with a lattice panel and a band of cross-hatched triangles, and has been published as F315 by Coleman and Barlow (ibid: pl. 42).\textsuperscript{873} It is painted red on the interior of the vessel, which indicates that it was an open shape, probably a bowl. The design of interlocking hatched triangles and lattice panels often appears on jugs and amphorae especially at Vounous. It is possible that this bowl could have been made at the same production centre that manufactured the larger closed vessels. It is in fabric group 2. Although the fabric and colour of the paint can be found at Lapithos, the combination of lattice panels and interlocking hatched triangles is very unusual, especially for bowls. The only example of this combination of motifs next to each other occurs on an amphora from Vounous\textsuperscript{874}. The motifs themselves can be found at Lapithos, however, which is probably the source of this vessel, and of the amphora from Vounous as well.

6.2.8 Summary:
Most of the sherds from Alambra belong to fabric group 2, which can be placed geologically in the Mesaoria Plain and north coast regions. Stylistically, the decoration on the sherds is typical of Lapithos and perhaps Vounous. Unfortunately, no samples could be taken from material found at Vounous, so it is not possible to know whether a single production centre created vessels for both areas, or whether the fabric from the vessels found at Vounous was different from that of Lapithos vessels, perhaps indicating that there were separate production centres. The fabric of the sherd with Pendent Line Style decoration is compatible with the geology of the north coast, but the same minerals can also be found in the Larnaca Bay area on the east coast where this design is more at home. The sherd is a member of fabric group 3, which is mainly composed of sherds from Enkomi, strengthening the case of an eastern origin for the vessel from which it came. The five sherds from Alambra in group 2 are remarkably homogeneous in both

\textsuperscript{870} Compare A755. See Appendix 1, figures 1175-1184.
\textsuperscript{871} Compare A725, A726, A878 and A887. See Appendix 1, figures 1231, 1232-1240, 1255 and 1256, respectively.
\textsuperscript{872} See Appendix 8, Table 2.
\textsuperscript{873} See Appendix 1, figure 880. The sherd is shown in row 2.4, while the reconstructed vessel AS.238 shows the sherd.
\textsuperscript{874} 68.6, Appendix 1, figure 283. 

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their fabric and their decoration, and it is quite likely that all had a common source, namely the production centre at Lapithos. The single sherd which is an outlier contains minerals compatible with a north coast origin and may be a representative of another Lapithos fabric. Unfortunately, only five sherds could be obtained from this site, so it is not likely that all possible fabrics from the north coast are represented in this study. Chronologically, a north coast origin makes sense, since Lapithos was the most active production centre on Cyprus during the lifetime of the Alambra settlement and cemetery from which the sherds came.

6.3 Ayia Paraskevi

6.3.1 Ayia Paraskevi 2006.7
This highly curved body sherd is probably from a small closed shape, perhaps a jug or flask. The sherd is a member of fabric group 3, which also contains sherds from Alambra, Dhenia, and Enkomi.\textsuperscript{875} It is decorated in red paint with parallel stripes\textsuperscript{876}. It is too small to reconstruct its decoration, but hatched triangles or Cross-Line Style would be compatible with a design composed of several parallel fine lines. Cross-Line Style has not been found at Ayia Paraskevi, but several vessels published from that site bear decorations that have groups of parallel lines.

6.3.2 Ayia Paraskevi 2006.8
This flat body sherd is most likely from the base of a bowl, but it could also be from a thin-walled vessel of the Cross-Line Style\textsuperscript{877}. Cross-Line Style vessels, however, tend to be fairly small and thick-walled. There are usually groups of four or more parallel lines. The thin section was quite thick and it was not possible to produce good images. Mineral determination was also hampered by the thickness of the slide, making it impossible to assign the sherd to a fabric group with any certainty. The decoration and shape of this vessel are common at Lapithos\textsuperscript{878}, which is likely its source.

\textsuperscript{875} See Appendix 5.
\textsuperscript{876} See Appendix 1, figure 1273.
\textsuperscript{877} See Appendix 1, figure 1274.
\textsuperscript{878} Compare 32-27-162, L.316.133 and L.320.39. See Appendix 1, figures 209-211, 220 and 221, respectively.
6.3.3 Ayia Paraskevi 2006.9
This body sherd is decorated with a lattice design, which appears to be framed\(^{879}\). A diagonal line can be seen joined to the exterior line of the frame. Its curvature suggests that it was part of a juglet. Mineralogically, it belongs to fabric group 4, which also contains sherds from Dhenia\(^{880}\). Its decoration and highly polished surface finish argue in favour of an origin at Lapithos, although it may be an imitation of a Lapithos style made by the production centre in the Mesaoria\(^{881}\).

6.3.4 Ayia Paraskevi 2006.13
This highly curved body sherd is most likely from a jug, tankard, amphora or bowl, although the undecorated interior may be more suggestive of a closed shape. It is decorated with a framed panel of cross-hatched triangles\(^{882}\). It belongs to fabric group 1, which has sherds from Ayia Paraskevi, Dhenia, Enkomoi, Galinoporni and Politiko\(^{883}\). The decoration of cross-hatched triangles is common at Lapithos\(^{884}\) and Dhenia\(^{885}\), but is also found at Politiko\(^{886}\), Alambra\(^{887}\) and Klavdhia\(^{888}\) as well as at Ayia Paraskevi\(^{889}\). The jugs from Politiko also tend to be quite small, while this sherd seems to belong to a fairly large vessel. This sherd may come from a vessel manufactured in the Mesaoria, but with affinity to Lapithos styles.

6.3.5 Ayia Paraskevi 2006.30
This rim sherd is highly curved and has the remains of a handle that was attached horizontally and positioned at approximately a forty-five degree angle. The handle was thrust through the wall of the bowl, and then the end was smoothed over. It is from a hemispherical bowl. The decoration consists of a pattern of alternating oblique lines on the body, and thin parallel lines

\(^{879}\) See Appendix 1, figure 1275.
\(^{880}\) See Appendix 5.
\(^{881}\) Framed lattice panels are the most common decoration on jugs from Lapithos.
\(^{882}\) See Appendix 1, figure 1276.
\(^{883}\) See Appendix 5.
\(^{885}\) Compare 4(48), 49(48), 53(48), 59(48), 68(48), 82(48), 1953.838, 1953.840, 1953.841, 51.387, and 6(6). See Appendix 1, figures 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, and 651, respectively.
\(^{886}\) Compare A690, A762, A763, and A765. See Appendix 1, figures 820-825, 837-842, 843-849, and 850-857, respectively.
\(^{887}\) Compare A5.275, Appendix 1, figure 881.
\(^{888}\) Compare C298, Appendix 1, figure 1216.
\(^{889}\) Compare C.41, 58.140 and 58.146. See Appendix 1, figures 770, 771, and 772, respectively.
below the line at the maximum diameter, most likely crossing in the centre of the base. The interior does not appear to have been decorated\textsuperscript{890}. The sherd belongs to fabric group 3, which also contains samples from Alambra, Dhenia and Enkomi. The shape and decoration are popular at Lapithos\textsuperscript{891} and Dhenia\textsuperscript{892}, and is not uncommon at Ayia Paraskevi\textsuperscript{893}. The source of this sherd is probably the Mesaoria, although the decoration may have been inspired by hemispherical bowls from Lapithos.

\textbf{6.3.6 Ayia Paraskevi 1}

This rim sherd is quite flat in profile, indicating that it comes from a vessel with a fairly large opening. Because the curvature is more pronounced from side to side than it is from top to bottom, it is probably from an amphora or tankard. The design of cross-hatched squares in a chequerboard pattern is similar to Proto White Slip ware\textsuperscript{894}. This sherd belongs to fabric group 1, which is compatible with the geology of the Mesaoria Plain, or the Western Region. It contains mainly very fine quartz inclusions, suggesting that the clay was well-levigated in order to remove most of the minerals of the coarse fraction. The thin walls of the vessel require a fine clay paste with few inclusions (Rice, 1987:227-228; Rye, 1981:17). The closest parallel for the decoration of a thickly-outlined cross-hatched chequerboard pattern comes from Dhenia\textsuperscript{895}, but the thick outline of the latticed squares is typical of vessels from Toumba tou Skourou, which could be the place of origin for the vessel\textsuperscript{896}. Without petrographic samples from Toumba tou Skourou, it is not possible to assign the vessel with certainty to that production centre.

\textbf{6.3.7 Ayia Paraskevi 2}

This body sherd is slightly curved on both axes. It may be part of a jug or other fairly large vessel. The design is quite unusual, with a horizontal lattice panel with dots in the interstices, 

\textsuperscript{890} See Appendix 1, figure 1277.
\textsuperscript{892} Compare 27e(6), 72(48), 79(48), 91(48), 97(48), 101(48), 106(48), 109(48), 111(48), 1953.834, and 1953.836. See Appendix 1, figures 678, 681, 682, 686, 688, 689, 690, 692, 693, 694, 723, and 725, respectively.
\textsuperscript{893} Compare 1953.1033a, 1953.1033d, 61b, 61c, and 70. See Appendix 1, figures 797, 798, 800, 801, and 802, respectively.
\textsuperscript{894} See Appendix 1, figure 1278.
\textsuperscript{895} Compare 13(48), Appendix 1, figure 706.
\textsuperscript{896} Compare T.V.27 for the outlined cross-hatched chequerboard squares (Appendix 1, figure 525). See other vessels with squares and diamonds for the thick outline.
and parallel lines abutting the panel and perpendicular to it\(^{897}\). There is no parallel for dotted lattice designs, making it very difficult to assign this sherd to a production centre based on its decoration. Its fabric belongs to group 7, which contains only samples from Dhenia and Ayia Paraskevi. Group 7, along with group 4, appears to represent Mesaoria fabrics.

### 6.3.8 Ayia Paraskevi 3

This body sherd is slightly curved and most likely comes from a large closed vessel, such as a jug. It bears a decoration of two registers of latticed triangles with no lines between them. The brush strokes are quite fine and the lattice is painted carefully to give the effect of a fine mesh\(^{898}\). The fabric belongs to group 2, along with sherds from Alambra, Dhenia, and Galinoporni. While the decoration appears on vessels from Lapithos or Vounous\(^{899}\), this vessel is decorated in the Fine Line Style, which was popular at the end of the production life of Lapithos. It is more likely that it was the product of a centre in the Mesaoria, although a lack of sufficient petrographic samples from all parts of the island makes attribution uncertain.

### 6.3.9 Ayia Paraskevi 4

The curvature of this body sherd suggests it came from a bowl or flask. It has been painted with a complex design composed of straight and wavy lines\(^{900}\). Framed double wavy lines are common at Kazaphani, but there is no exact parallel to the design on this sherd at that site. The closest parallel comes from Dhenia\(^{901}\), which suggests it may have been produced at the Mesaoria production centre that appears to have supplied Dhenia, Politiko and Ayia Paraskevi at the end of the Middle Bronze Age. The sherd belongs to fabric group 1, which contains sherds from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni and Politiko.

### 6.3.10 Ayia Paraskevi 5

This body sherd with moderate curvature is most likely part of a large jug. The decoration consists of alternating parallel straight lines and multiple zigzags\(^{902}\). The sherd is part of fabric group 3, which has members from Ayia Paraskevi, Alambra, Dhenia and Enkomi. The

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\(^{897}\) See Appendix 1, figure 1279.

\(^{898}\) See Appendix 1, figure 1280.

\(^{899}\) Compare 32-27-89 from Lapithos and 37.117 from Vounous. See Appendix 1, figures 163-165 and 284, respectively.

\(^{900}\) See Appendix 1, figure 1281.

\(^{901}\) Compare Appendix 1, figure 1282.

\(^{902}\) See Appendix 1, figure 1283.
decorative scheme is unusual for White Painted ware, but something similar occurs at Toumba tou Skourou, although the fabric appears to be more typical of the eastern region\(^{903}\). Without either petrographic samples from Toumba tou Skourou or clay samples from both the western and eastern regions, it is not possible to determine with certainty the origin of this vessel.

6.3.11 Ayia Paraskevi 6
This highly curved sherd is part of the base and lower side of a jug. It is decorated with an elongated chequerboard pattern as well as a fine lattice panel seen to the upper right in the first image, and it has two straight lines across its base that cross at the centre\(^{904}\). The fabric belongs to group 1, which also has sherds from Dhenia, Enkomi, Galinoporni and Politiko. The decoration is most popular at Lapithos\(^{905}\), which is probably the origin of this vessel\(^{906}\). A few similar vessels have also been found at Vounous\(^{907}\), Dhenia\(^{908}\), and Politiko\(^{909}\), and there is one other from Ayia Paraskevi\(^{910}\), but these are all likely to have been imported from Lapithos.

6.3.12 Ayia Paraskevi 7
This body sherd has a pronounced curvature and is likely from a jug. The decoration combines fine lattice work with open spaces that form a secondary pattern. This sherd also belongs to fabric group 1. It may have come from Morphou Toumba tou Skourou where such secondary patterns are found\(^{911}\). A sherd from Dhiorios Aloupotrypes bearing similar decoration is likely to have come from Toumba tou Skourou as well\(^{912}\). Since no sherds from this site were available to be sampled for this study, it is not possible to characterize the fabric from that site, although


\(^{904}\) See Appendix 1, figure 1284.

\(^{905}\) Compare L.316.55, A717, A766, L.315 B-C.5, L.316.95, L.315 A.30, L.316.81, L.316.85, L.316.93, L.320.34, and L.320.79. See Appendix 1, figures 82, 91-94, 95-102, 103, 104, 106, 107, 108, 109, 110, and 112, respectively.

\(^{906}\) Group 1 does not contain any samples from Lapithos, but since Lapithos was the most prolific of the centres producing White Painted ware in the Middle Bronze Age and only five samples were used in this study, it is not surprising that all possible fabric groups find representation there.

\(^{907}\) Compare 64.38, Appendix 1, figure 288.

\(^{908}\) Compare H.8 and 1953.835, Appendix 1, figures 719 and 725.

\(^{909}\) Compare A714, Appendix 1, figures 868-875.

\(^{910}\) 1884.107. See Appendix 1, figure 788.

\(^{911}\) Compare T.III.17, T.III.18, T.I.413, T.I.179, T.I.407, T.V.27 and T.V.105. See Appendix 1, figures 459, 461, 475, 485, 509, 525, and 572, respectively.

\(^{912}\) Compare 1953.1127d, Appendix 1, figure 354.
geologically the area around Morphou Bay is quite similar to that of both the north coast and the river valleys.\footnote{See Appendix 2, map 1.}

\subsection*{6.3.13 Ayia Paraskevi 8}
This body sherd has a moderate curvature and is likely part of a bowl. The walls of the vessel are relatively thin. It is decorated with framed hatched triangles that are part of a frieze of triangles with a border composed of at least three parallel horizontal lines.\footnote{See Appendix 1, figure 1286.} The lines are very fine and neatly drawn. The sherd belongs to fabric group 4, which also has sherds from Dhenia in it. The vessel may have been produced at Lapithos, but the fabric appears to be typical of the Mesaoria. The production centre there appears to have provided pottery for Dhenia, Politiko and Ayia Paraskevi.\footnote{Compare Appendix 1, figures 170-215 (Lapithos), 447 (Krin Merra), 570 and 573 (Toumba tou Skourou), 605-627 (Dhenia), 747-769 (Ayia Paraskevi), 1086-1095 (Kalopsisdha), 1100-1101 (Enkomi), 1148-1163, 1165-1173, 1214 (Klavdha) and 1218-1227 (Laxia tou Riou). There are too many examples to list them all separately.} The fact that the decoration is Fine Line Style points to production at the end of the Middle Bronze Age or beginning of the Late Bronze Age, making the Mesaoria production centre the more probable source for this sherd. Such fine brush-work is also typical of Toumba tou Skourou.

\subsection*{6.3.14 Ayia Paraskevi 9}
This body sherd is fairly flat and may be part of a tankard, amphora, flask or large, thin-walled jug. It is decorated with an elongated chequerboard pattern separated by a group of parallel horizontal lines.\footnote{See Appendix 1, figure 1286.} It belongs to fabric group 1. The vessel it comes from was likely made at Lapithos where this type of decoration is most abundant.\footnote{For comparisons, refer to notes 61-66 above.} Although there are no samples from Lapithos in fabric group 1, the minerals present in the samples in this group are compatible with the geology of the north coast. Since only five samples could be secured for this study, it is unlikely that all of the possible fabrics in use at Lapithos are represented by those samples.

\subsection*{6.3.15 Summary}
The sherds from Ayia Paraskevi that were sampled in this study fall into fabric groups 1, 2, 4 and 7, showing a relatively high diversity of fabric types and possibly ceramic sources. Although
many of the vessels resemble products from the Lapithos production centre\(^{918}\), the material from Ayia Paraskevi is decorated in later styles, such as WP V, WP VI and Fine Line Style. Several of the sherd appear to have been produced by a centre in the Mesaoria which was supplying Politiko and Dhenia with their White Painted wares, as well as providing some of the material found at Ayia Paraskevi\(^{919}\). Some of the vessels are decorated in styles that have parallels in Toumba tou Skourou and may have been produced there and imported into Ayia Paraskevi\(^{920}\).

The site of Ayia Paraskevi is located in the middle of the Mesaoria plain, south of Lapithos, and east of Dhenia and Toumba tou Skourou. The pottery from Lapithos may have come directly into Ayia Paraskevi, but it also may have come through Dhenia, which was geographically well-placed on a river and at the foot of a mountain pass through the Kyrenia range. It is clear from the many different styles of decoration on the sherds from any of the sites that White Painted ware tended to be traded from other sites, even into those areas that were probably producing their own. Production centres also appear to have been copying the products of other centres too, making it very difficult to assign provenance for any vessel with certainty based solely on decoration. There is no direct correlation between fabric group and possible origin for decorative motifs in this group.

### 6.4 Dhenia

#### 6.4.1 Dhenia 2006.39

This body sherd is too small to make a positive identification of the vessel’s decorative scheme, but enough remains to determine that it had parallel lines that crossed each other where they met in the form of a shallow “V”. This decoration is common on jugs as well as bowls and can be found placed horizontally or vertically on the vessel. The closest parallels for double lines in a zigzag pattern are found at Lapithos\(^{921}\), Dhenia\(^{922}\), Ayia Paraskevi\(^{923}\), Alambra\(^{924}\), Kalopsidha\(^{925}\),

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\(^{918}\) These are vessels 2006.7, 2006.8, 2006.9, 6, and 9. See Appendix 1, figures 1273, 1274, 1275, 1284, and 1286, respectively.

\(^{919}\) Vessels 2006.13, 2006.30, 2, 3, 4, and 8 appear to come from the Mesaoria production centre, although 8 may have been produced at Toumba tou Skourou. See Appendix 1, figures 1276, 1277, 1279, 1280, 1281, and 1286, respectively.

\(^{920}\) These are vessels 1, 5, 7 and possibly 8. See Appendix 1, figures 1278, 1283, 1285, and 1286 respectively.

\(^{921}\) Compare L.315 A.18, L.316.6, L.316.25, L.316.79, L.316.102, 32-27-211, L.315 B-C.25, L.320.135 and L.320.66. See Appendix 1, figures 122, 123, 124, 125, 126, 166, 218, 242, and 261, respectively.
Boghaz\textsuperscript{926}, Arpera\textsuperscript{927}, Klavdhia\textsuperscript{928} and Hala Sultan Tekke\textsuperscript{929} although the vessels from the eastern sites are probably products of Lapithos or the Mesaoria. The double zigzag often occurs in conjunction with hatched triangles, which although not present on this sherd, are typical of the Lapithos and Mesaoria production centres. This sherd belongs to fabric group 6, which contains sherds from Dhenia and Lapithos. Although the dark, glossy surface of the sherd suggests that the production centre at Lapithos was responsible for the manufacture of the vessel from which it came, it is possible that it was made at the production centre in the Mesaoria that supplied Dhenia, Politiko and Ayia Paraskevi.

6.4.2 Dhenia 2006.44
This sherd has a fairly high curvature, suggesting that it came from a small vessel, most likely a bowl. It is decorated with a row of hatched triangles with a double line on the left edge of each triangle. The row of framed hatched triangles is separated from the base by a single line. Below this line is a group of 6 parallel oblique lines. Similar decoration has been found on vessels from Lapithos\textsuperscript{930}, Toumba tou Skourou\textsuperscript{931}, Dhenia\textsuperscript{932}, Ayia Paraskevi\textsuperscript{933} and Klavdhia\textsuperscript{934}, although it is most likely that the vessel was made either at Lapithos or the Mesaoria production centre where hatched triangles are common. The sherd belongs to fabric group 7, which contains samples from Ayia Paraskevi and Dhenia, and is probably a Mesaoria fabric. Because of its high content of volcanic inclusions, it may have been produced by a centre close to the Troodos. Unfortunately, too few samples from Lapithos were analyzed petrographically to know whether

\textsuperscript{922} Compare 16(6), 4(48), 1953.841, A.59, 61.56, G.7, 62(48), 81(48), 86(48), 93(48), and 1953.837. See Appendix 1, figures 612, 641, 649, 675, 676, 677, 680, 684, 686, 688, and 727, respectively.
\textsuperscript{923} Compare C.56 and A714, Appendix 1, figures 782 and 868-875, respectively.
\textsuperscript{924} Compare AP.147 and AS.258, Appendix 1, figures 878 and 886.
\textsuperscript{925} Compare C.59, Appendix 1, figure 1084.
\textsuperscript{926} Compare LS707, Appendix 1, figure 1136.
\textsuperscript{927} Compare C240, Appendix 1, figure 1146.
\textsuperscript{928} Compare A758, C329, and A757. See Appendix 1, figures 1185-1196, 1217, and 1218-1227, respectively.
\textsuperscript{929} Compare A695 and A853, Appendix 1, figures 1230 and 1253.
\textsuperscript{930} Compare L.316.162, L.313 B.23, 32-27-71, 32-27-78 and 32-27-162. See Appendix 1, figures 179, 192, 195-197, 204-206, and 209-211, respectively.
\textsuperscript{931} Compare T.V.35, Appendix 1, figure 570.
\textsuperscript{932} Compare G.10, 22(1), 7(6), 520 and 5(6). See Appendix 1, figures 608, 610, 611, 629 and 630, respectively.
\textsuperscript{933} Compare 14(13), 18(36) and 134(36), Appendix 1, figures 753, 760 and 764, respectively.
\textsuperscript{934} Compare A718a, Appendix 1, figures 1148-1156.
such a fabric could have its origins there.\textsuperscript{935} The light coloured clay, together with the fine lines of the decoration in dark brown paint would suggest that the Mesaoria is the more likely source, however.

\textbf{6.4.3 Dhenia 2006.57}
Due to the fairly low curvature of this sherd, it is most likely from a large vessel or from the base of a bowl. It is decorated with a group of seven parallel straight lines, to which a group of six parallel straight lines is attached obliquely. Stylistically, such an arrangement of lines can be found at Lapithos\textsuperscript{936}, Kazaphani\textsuperscript{937}, Dhenia\textsuperscript{938}, Ayia Paraskevi\textsuperscript{939}, Kalopsidha\textsuperscript{940} and Klavdia\textsuperscript{941}, although it is much more common at Lapithos and in the Mesaoria. It should be noted that this decoration is common on the base of hemispherical bowls, but the base decoration on the bowls from Dhenia has not been well published. According to its fabric, it is in group 6 which is represented by samples from Dhenia and Lapithos. Although Lapithos is certainly a possible source based on the decoration, this vessel may also have come from the production centre in the Mesaoria.

\textbf{6.4.4 Dhenia 2006.58}
This body sherd has a fairly high curvature and is likely part of a small bowl. It is decorated with interlocking hatched triangles, which is a common motif for bowls, but it can also be found on jugs and other shapes. Parallels for the decoration can be found at Lapithos\textsuperscript{942}, Vounous\textsuperscript{943}, Dhenia\textsuperscript{944}, Alambra\textsuperscript{945}, and Marki Alonia\textsuperscript{946}. The dark orange slip with the red paint is typical of

\textsuperscript{935} Certainly the volcanic inclusions are more likely to be present in clays taken from close to the pillow lavas of the Troodos Massif, but there are small pockets of diabase also present in the Kyrenia Range, so the presence or absence of volcanic material cannot safely be used to rule out northern production centres.

\textsuperscript{936} Compare 32-27-182, L.311 A.26, L.322 D.33,, L.702.99, and L.702.153. See Appendix 1, figures 212-213, 216, 222, 226, and 227, respectively.

\textsuperscript{937} Compare 2A.184, Appendix 1, figure 326.

\textsuperscript{938} Compare 1953.834, Appendix 1, figure 724.

\textsuperscript{939} Compare 14(13), C.39, and C.42. See Appendix 1, figures 753, 754, and 800, respectively.

\textsuperscript{940} Compare A657, Appendix 1, figures 1086-1095.

\textsuperscript{941} Compare A718a, Appendix 1, figures 1148-1156.

\textsuperscript{942} Compare L.311 A.30, L.315 B-C.26, L.315 B-C.31, L.320.135, and 32-27-194. See Appendix 1, figures 239, 240, 244, 242, and 243-244, respectively.

\textsuperscript{943} Compare 68.6 and 50b.3, Appendix 1, figures 283 and 286.

\textsuperscript{944} Compare 27(6), 29(6), 71(48), 77(48), 99(48), 100(48), 104(48), 255 (48), and 28(50). See Appendix 1, figures 631, 633, 634, 632, 635, 636, 637, 638, and 639, respectively.

\textsuperscript{945} Compare AP.93, AS.235, AS.258 and miscellaneous, unnumbered sherds. See Appendix 1, figures 877, 885, 886 and 887, respectively.

\textsuperscript{946} Compare 65.96A, 85B and 85E. See Appendix 1, figures 890, 891 and 892, respectively.
earlier Lapithos vessels. This sherd is part of fabric group 2, which also contains sherds from Alambra, Ayia Paraskevi, and Galinoporni. The most likely source for this sherd is the production centre at Lapithos, based on its decoration, although there are no samples from Lapithos in fabric group 2.

6.4.5 Dhenia 2006.63
This sherd is decorated on both sides, indicating that it came from the inside of a bowl, most likely from the centre of the base. The exterior has a group of four lines, with at least one line intersecting them obliquely. The interior has a pair of parallel lines with two pairs of parallel lines that meet them at right angles, but do not cross them. This arrangement of lines in the interior of a bowl is found at Lapithos and Dhenia. This sherd belongs to fabric group 4, which contains sherds from Ayia Paraskevi and Dhenia. The decoration both on the interior and exterior is most common at Lapithos, although it should be noted that most of the hemispherical bowls published from Dhenia were shown only from the side, so there may be many more parallels than those listed here. The vessel may have been produced at Lapithos, although it may also have been manufactured at the production centre in the Mesaoria which produced bowls with very similar decoration.

6.4.6 Dhenia 1
This sherd is relatively flat in the centre, and curves up at the top edge as seen in the second photograph. It is the base of a fairly large bowl or jug. The decoration is composed of a group of five parallel straight lines from one side to the other, with two groups of parallel lines (one of five, one of six) that meet the first group at right angles. The base is separated from the sides by a double ring. The sides are decorated with alternating oblique lines. Only the decoration on the base and the very bottom of the sides can be reconstructed. Parallels for this type of

947 See Appendix 1, figure 1292.
948 For interior decoration, compare L.320.65, L.315 B-C.35, 32-27-71, and 32-27-78 (the decoration is very worn, but appears to be similar). See Appendix 1, figures 180, 193, 195-197, and 204-206, respectively. For exterior decoration, compare L.313 B.23, 32-27-71, 32-27-78 (the decoration is very worn on the exterior, too), L.311 A.26, L.315 A.94, L.315 B-C.25, L.322 D.33, L.702.99, and L.702.153. See Appendix 1, figures 192, 195-197, 204-206, 216, 217, 218, 222, 226, and 227, respectively.
949 Compare 1953.836 for both the interior and exterior decoration. See Appendix 1, figure 726.
950 See Appendix 1, figure 1293.
decoration can be found at Lapithos\textsuperscript{951}, Leondari Vouno\textsuperscript{952}, and Ayia Paraskevi\textsuperscript{953}. This sherd belongs to fabric group 4, along with other sherds from Dhenia and Ayia Paraskevi. This bowl was probably produced in the Mesaoria.

6.4.7 Dhenia 2
This sherd has a fairly high curvature from top to bottom as seen in the photograph. It is probably from the lower part of a juglet. The decoration consists of two pairs of parallel straight lines with a double zigzag in the space between them. It is difficult to determine the correct orientation for this sherd. It could be a vertical or a horizontal panel. Similar decoration to that found on this sherd can also be found on vessels from Lapithos\textsuperscript{954}, Dhenia\textsuperscript{955}, Ayia Paraskevi\textsuperscript{956}, Arpera\textsuperscript{957}, Hala Sultan Tekke\textsuperscript{958}, and Politiko\textsuperscript{959}. This sherd belongs to fabric group 1, with samples from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni and Politiko. Although fabric group 1 does not contain sherds from Lapithos\textsuperscript{960}, the decoration on this sherd appears frequently at that site. It is likely that this sherd was manufactured at the production centre in the area of Lapithos, although it is also possible that it was made in the production centre of the Mesaoria.

6.4.8 Dhenia 3
This sherd has a moderate curvature and is likely part of a bowl. The decoration consists of groups of parallel alternating oblique lines that cross each other to form small lattice squares. These oblique lines are framed between two single parallel lines. Such decoration can be found on vessels from Lapithos\textsuperscript{961}, Dhiorios\textsuperscript{962}, and Dhenia Mali\textsuperscript{963}. Although alternating oblique lines are not uncommon as decoration on White Painted ware, they very seldom cross each other,

\textsuperscript{951} Compare L.316.133, L.320.39, L.322 D.33, and L.702.55. See Appendix 1, figures 220, 221, 222, and 223, respectively. There may be further parallels at Dhenia, but since the bases of hemispherical bowls are not shown in the publications, it was not possible to compare these.

\textsuperscript{952} Compare 1888.1247a, Appendix 1, figure 731. This vessel was probably manufactured at Lapithos.

\textsuperscript{953} Compare 61b, 61c, and 70, all from Tomb 36. See Appendix 1, figures 807, 808, and 809, respectively.

\textsuperscript{954} Compare 32-27-20, L.316.25, L.316.79, and L.320.28. See Appendix 1, figures 90, 124, 125 and 137, respectively.

\textsuperscript{955} Compare 16(6), Appendix 1, figure 612.

\textsuperscript{956} Compare 58.143, Appendix 1, figure 796.

\textsuperscript{957} Compare C240, Appendix 1, figure 1146.

\textsuperscript{958} Compare A853, Appendix 1, figure 1253.

\textsuperscript{959} Compare A714, Appendix 1, figure 868-875.

\textsuperscript{960} With only 5 sherds sampled from Lapithos, it is certain that not every fabric type from that site was sampled.

\textsuperscript{961} Compare 32-27-71 and L.315 B-C.25. See Appendix 1, figures 195-197 and 228.

\textsuperscript{962} Compare 1953.1127a, Appendix 1, figure 351.

\textsuperscript{963} Compare 1953.837, Appendix 1, figure 727.
except in the Cross-Line Style. This particular sherd, however, is not decorated in Cross-Line Style as there is a clear border on either side of the zigzag pattern created by the alternating oblique lines. This sherd belongs to fabric group 2 along with other sherds from Alambra, Ayia Paraskevi, Dhenia, and Galinoporni. The vessel from which this sherd came was probably made either at Lapithos or in the Mesaoria, like the majority of the sherds from Dhenia appear to have been. Certainly the decoration, as well as the orange slip and red paint, would be at home in either place.

6.4.9 Dhenia 4
This rim sherd has fairly thin walls and is probably part of a hemispherical bowl. The profile is rounded with a lip that turns outward. The decoration consists of a row of hatched triangles with a double line on the left-hand side of each one. This is separated from the lower decoration by a double line. Beneath this line, two parallel wavy lines descend at a ninety degree angle, and are framed by two sets of parallel straight lines964. Nearly identical decoration can be found on vessels from Lapithos965, which is the most likely place of origin for this bowl. Similar decoration also occurs on other bowls from Dhenia966 and one from Ayia Paraskevi967. This sherd belongs to fabric group 1, to which samples from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni and Politiko also belong. Based on the decoration and also on the buff-coloured fabric and brown decoration on both this sherd and the vessels from the University of Pennsylvania Museum’s excavations at Lapithos, this sherd is almost certainly from that production centre, even though none of the sherds from Lapithos belong to group 1.

6.4.10 Dhenia 5
The sampled sherd came from the base of a jug decorated with cross-hatched squares in the style of Proto White Slip ware, although the surface finish is typical of White Painted ware968. Vessels decorated in this style can be found at Lapithos969, Vounous970, Ayios Iakovos971, Ayia Paraskevi972.

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964 See Appendix 1, figure 1296.
966 Compare 28(6) and 87(48). See Appendix 1, figures 614 and 620.
967 Compare 4 Gladstone Street, Appendix 1, figure 757.
968 See Appendix 1, figure 1297.
969 Compare L.316.178 and L.316.176. See Appendix 1, figures 71 and 128.
970 Compare 56.93, Appendix 1, figure 287.
971 Compare 8(9), Appendix 1, figure 905.
Toumba tou Skourou\textsuperscript{972}, Dhenia\textsuperscript{973}, Klavdhia\textsuperscript{974}, and Boghaz\textsuperscript{975}. This sherd belongs to fabric group 2, which has members from Alambra, Ayia Paraskevi, Dhenia, and Galinoporni. Although this design appears frequently in the repertory of Proto White Slip ware, it has several parallels from Lapithos, both cross-hatched squares, and cross-hatched diamonds, which are really squares turned on their corners. Such decoration also appears at Toumba tou Skourou. The fabric group is compatible mineralogically with the geology of either area.

6.4.11 Dhenia 6
This body sherd is from the side of a hemispherical bowl. It is decorated with alternating oblique lines\textsuperscript{976}. Vessels decorated in a similar manner can be found at Lapithos\textsuperscript{977}, Dhenia\textsuperscript{978}, and Ayia Paraskevi\textsuperscript{979}. This sherd belongs to fabric group 4, which contains samples from Ayia Paraskevi and Dhenia. The design is typical of hemispherical bowls at both sites, as well as at Lapithos, so it is possible that this sherd came from a vessel made at either the Mesaoria or the Lapithos production centre. Taking into consideration the decorative scheme, the orange clay and red paint, it is most likely that the vessel from which this sherd came was produced at Lapithos, since most of the Mesaoria vessels are made of buff clay and painted with brown or black paint. Soil samples from both sites may help to determine the provenance of this sherd.

6.4.12 Dhenia 7
This body sherd has a moderate curvature and is decorated on both sides. The exterior shows the point of a chevron next to a solid band of colour, while the interior has a wavy line and a dot. The solid band is perpendicular to a double line at one of the narrow ends of the sherd\textsuperscript{980}. The dot could be from the centre of a shallow bowl, or placed in one of the quadrants created by intersecting straight lines that are not present on this sherd. The wavy line likely encircles the interior of the bottom of the bowl. It is difficult to reconstruct the design with certainty. The

\textsuperscript{972} Compare T.V.27, Appendix 1, figure 525.
\textsuperscript{973} Compare 13(48) and 15(48). See Appendix 1, figures 706 and 707.
\textsuperscript{974} Compare C290, Appendix 1, figure 1215.
\textsuperscript{975} Compare 408, Appendix 1, figure 1142.
\textsuperscript{976} See Appendix 1, figure 1298.
\textsuperscript{977} Compare L.311 A.26, L.315 A.94, L.315 B-C.49, L.320.39, and 32-27-203. See Appendix 1, figures 216, 217, 219, 221, and 236-238, respectively.
\textsuperscript{978} Compare 72(48), 79(48), 81(48), 97(48), 101(48), 111(48), and 256(48). See Appendix 1, figures 682, 683, 684, 689, 690, 694, and 695, respectively.
\textsuperscript{979} Compare 61b, 61c, 70 and 129, all from Tomb 36. See Appendix 1, figures 807, 808, 809, and 810, respectively.
\textsuperscript{980} See Appendix 1, figure 1299.
base of the vessel appears to have a band of decoration in the centre, with other decoration on either side of it. No exact matches could be found in the published material, but decoration with similar components on the exterior of bowls has been found at Lapithos\textsuperscript{981} and Dhenia\textsuperscript{982}, while similar designs to the interior have been found at Lapithos\textsuperscript{983}. The interior is difficult to reconstruct as it depends on the orientation of the body sherd. All that can be said with certainty is that the decoration is composed of wavy lines and at least one dot. If the dot is near the outer edge of the bowl, this placement is without parallel in the published material. The sherd is a member of fabric group 1, with sherds from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni and Politiko. Although it is not possible to find an exact parallel for the decoration, the orange fabric and the parallels for arrangement of parts of the decoration would suggest it was made at Lapithos.

6.4.13 Dhenia 8
This body sherd has a fairly high curvature and is painted on both the interior and exterior surfaces. It is probably part of a hemispherical bowl. The decoration is complex, with alternating oblique lines within a frame and a group of straight lines parallel to the frame above or below it. To the left in the lower image on the left, there is a line that divides the upper part of the vessel from the lower, from which a group of parallel straight lines runs obliquely. The interior has an uneven, thick red line that runs roughly in the same direction as the alternating oblique line panel\textsuperscript{984}. The intersection of these lines may be a combination of interlocking hatched triangles and parallel straight lines meeting on the base of the bowl. Some similar examples have been found at Lapithos\textsuperscript{985}, Vounous\textsuperscript{986}, Dhenia\textsuperscript{987} and Alambra\textsuperscript{988}. This sherd belongs to fabric group 1, which also has sherds from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni and Politiko. Like the previous vessel, this could be the product of a Lapithos production group based on its decoration and the colour of its fabric, although one cannot rule out the possibility that it was produced in the Mesaoria. The production centre in the Mesaoria,

\textsuperscript{981} Compare 32-27-81, L.311 A.26, and L.315 B-C.25. See Appendix 1, figures 207, 216, and 218, respectively.
\textsuperscript{982} Compare 25(6), 61.56, and 27e(6). See Appendix 1, figures 657, 676, and 679, respectively.
\textsuperscript{983} Compare A636 and L.322 D.33. See Appendix 1, figures 186-191, and 222, respectively.
\textsuperscript{984} See Appendix 1, figure 1300.
\textsuperscript{985} Compare L.311 A.26, L.311 A.30, and 32-27-194. See Appendix 1, figures 216, 239, and 243-244, respectively.
\textsuperscript{986} Compare 50b.3, Appendix 1, figure 286.
\textsuperscript{987} Compare 27(6) and 71(48). See Appendix 1, figures 631 and 634.
\textsuperscript{988} Compare AS.235, Appendix 1, figure 885.
however, does not seem to have produced many bowls, but seems to have specialized in jugs. Stylistically, this bowl would be more at home at Lapithos, which is probably where it was made.

6.4.14 Dhenia 9
This body sherd is decorated on both sides and has a moderate curvature. It has parallel oblique lines that meet a straight line, and another pair of parallel lines that are at a slight angle to the straight line. On the interior are two wavy lines that appear to cross each other, probably at the centre of the inside of the bowl. A similar arrangement of lines can be found on vessels from Lapithos, Krini Merra, and Dhenia. This sherd belongs to fabric group 2, which includes sherds from Alambra, Ayia Paraskevi, Dhenia and Galinoporni. Based on the orange fabric and red paint, and the decoration on this sherd, it seems most likely that the vessel from which it came was manufactured at the production centre at Lapithos, even though there are no samples from Lapithos in fabric group 2.

6.4.15 Dhenia 10
This body sherd has a high curvature on both axes and is probably part of a small flask or other closed shape. The design has parallel, non-crossing zigzags bordered on either side by a broad line. This pattern may be repeated more than once on the vessel, but very little remains of the decoration on the other side of the broad line. Examples of this type of decoration have been found at Alambra, Toumba tou Skourou and Ayia Paraskevi. This sherd is a member of fabric group 3, which contains sherds from Alambra, Ayia Paraskevi, Dhenia, and Enkomi. The decoration is not very popular at any site, but the colour of the paint and fabric would suggest a provenance of Lapithos for the manufacture of this sherd, even though fabric group 3 seems to represent an eastern fabric. Without clay samples, it is difficult to know whether similar fabrics can be found in different parts of the island.

989 See Appendix 1, figure 1301.
991 Compare 1970.874, Appendix 1, figure 447.
992 Compare G.10, 22(1), 28a(6), 139(48), 79(48) and 14(13). See Appendix 1, figures 608, 610, 615, 625, 683, and 753, respectively.
993 See Appendix 1, figure 1302.
994 Compare AP.147, Appendix 1, figure 878.
995 Compare T.I.183, Appendix 1, figure 454.
996 Compare C.56, Appendix 1, figure 782.
6.4.16 Summary
The cemeteries of Dhenia seem to have been supplied with White Painted ware from Lapithos in the early part of their use, but later they were receiving material from a more local production centre somewhere in the Mesaoria, and possibly also from Toumba tou Skourou. The cemetery at Kafkalla was in use from MCI-LCIII (Åström & Wright, 1963:240-241, 275-276), which overlaps chronologically with both the Lapithos production centre and the Mesaoria production centres. Dhenia appears to have maintained its connection both with the north coast and with the other sites in the Mesaoria. Geographically, this makes sense, since Dhenia is at one end of a mountain pass that connects it to Lapithos, which was a likely port for the export of copper from the Troodos range (Frankel & Webb, 2001). The site of Politiko is nearby, and Ayia Paraskevi is not far away, making it likely that there was at least some trade in ceramics and other goods between the three sites. The Mesaoria production centre’s styles seem to have been derived from Lapithos styles, but with some differences, especially in the lack of slip and the use of lugs for decoration. Material from Ayia Paraskevi is similar to that from Lapithos and to the vessels found at Dhenia and Politiko that are different from the material from Lapithos. It is very likely that a second production centre began making ceramics in the middle of the Middle Bronze Age that supplied Dhenia, Politiko and Ayia Paraskevi with White Painted ware. Due to its position between the copper mines and the shore, Dhenia itself could have received goods, including White Painted ware, from virtually anywhere on the island, but its fabrics seem to point to only two sources: the Mesaoria and the north coast, even though imports from the eastern and western regions remain a possibility.

6.5 Enkomi

6.5.1 Enkomi 1 3219-10 A
This body sherd has very little curvature and is undecorated on its interior surface. It is most likely part of a large closed vessel. The clay is light brown with a thin white slip covering the exterior. The paint is reddish brown. The design consists of a wavy line with dots in the curves, an unusual design for White Painted ware. The “Eyelet Style”, found at Kalopsidha and so

997 See Appendix 4, table 2.
998 See Appendix 1, figure 1303.
named by Åström (Åström, 1966:87-88), has dots and curved lines in various combinations. Something quite similar appears at Vounous, although the Vounous example is much earlier chronologically. The only exact match for this decoration occurs at Enkomi on a unique shape. The bow-tie motifs and the arrangement of the decoration in horizontal panels are reminiscent of the tankards from Toumba tou Skourou. This sherd belongs to fabric group 3, which contains sherds from mainly from Enkomi but also from Alambra, Ayia Paraskevi and Dhenia. The vessel from which this sherd came was most likely produced at the production centre that supplied Kalopsidha as well as Enkomi, although it is also possible that it was produced at Toumba tou Skourou. Not enough of the decoration remains in order to be able to place this sherd into the repertory of either site.

6.5.2 Enkomi 3 3256 B
This small body sherd is fairly flat in profile. Its thickness suggests that it was part of a large object, most likely a jug. It is decorated with thick and thin parallel lines in the manner of the White Painted V framed broad band style of decoration (Åström, 1966:90), which has been found at Kalopsidha, Hala Sultan Tekke, and Toumba tou Skourou. It belongs to fabric group 3, along with the previous sherd. The vessel represented by this sherd was most likely produced at the production centre at Kalopsidha, since that is where the closest parallels for the decoration have been found.

6.5.3 Enkomi 4 3256 C
This sherd is quite small and its decoration is difficult to reconstruct. It consists of a broad line with three or more parallel, straight, thin lines next to it. The design could be very similar to that of Enkomi 3 3256 B above. It also belongs to fabric group 3. Like Enkomi 3 3256 B, this vessel may have been produced at Kalopsidha where White Painted V styles were popular. The fabric is micaceous in the examples from Kalopsidha (ibid:80-93), and this particular sample is also high in mica content.

999 Compare 144.10, Appendix 1, figure 267.
1000 Compare 3(20), Appendix 1, figure 1125.
1001 Compare 1073 and 18082, Appendix 1, figures 1052 and 1053.
1002 Compare A795, Appendix 1, figures 1242-1249.
1003 Compare Lo.II.2 and Lo. II.6, Appendix 1, figures 469 and 471.
1004 See Appendix 3, tables 5 and 6, sample 38.
6.5.3 Enkomi 5 2987 A
This body sherd is decorated in the Pendant-Line Style (Åström, 1957:26-30, fig. IX), and is likely part of a jug\textsuperscript{1005}. Parallels for this decoration have been found at Kythrea\textsuperscript{1006}, Toumba tou Skourou\textsuperscript{1007} and Kalopsidha\textsuperscript{1008}. The odd way in which the broad horizontal lines seem to have been painted over the thin parallel vertical lines is repeated on Cross-Line Style jugs from Kythrea, suggesting that the production centre near Kythrea was the origin for this jug. The jugs painted in Pendant-Line Style at Kythrea are large and globular in shape. Those from other places, such as Kalopsidha, tend to be smaller and generally have thicker walls. This sherd has very low curvature, so it is probably part of a fairly large vessel, arguing in favour of its being manufactured by the production centre at Kythrea. This sherd belongs to fabric group 3 like the other sherds from Enkomi mentioned above. The lack of petrographic samples from Kythrea makes it impossible to say with certainty whether this vessel was produced there, but its decoration has its closest parallel in the jug from that site.

6.5.5 Enkomi 6 2987 B
This body sherd is probably part of a jug. It is decorated with three broad, parallel, horizontal bands, with four fairly thick, parallel, vertical lines that run perpendicular from the top of the three horizontal bands. It is not possible to reconstruct the decoration accurately, but such an arrangement of bold lines can be found at Lapithos\textsuperscript{1009}, Stephania\textsuperscript{1010}, Kythrea\textsuperscript{1011}, Toumba tou Skourou\textsuperscript{1012}, Ayios Iakovos\textsuperscript{1013} and Magounda\textsuperscript{1014}. The Lapithos jug does not fit in with the repertory of designs from that site and may have been imported\textsuperscript{1015}. The other jugs were likely produced at Toumba tou Skourou where there are many parallels for the Tangent Line Style

\textsuperscript{1005} See Appendix 1, figure 1306.
\textsuperscript{1006} Compare A775, Appendix 1, figures 368-372.
\textsuperscript{1007} Compare T.V.101, Appendix 1, figure 464.
\textsuperscript{1008} Compare sherds from layers 10CCC and 71. See Appendix 1, figures 927 and 933, respectively.
\textsuperscript{1009} Compare A781, Appendix 1, figures 250-253.
\textsuperscript{1010} Compare 19(7), 43(7), 5(10), 7(10), and 14(10). See Appendix 1, figures 359, 360, 361, 362, and 363, respectively.
\textsuperscript{1011} Compare A796, Appendix 1, figures 394-400.
\textsuperscript{1012} Compare T.I.134, T.I.247, T.I.411, Lo.II.3, and T.V.53. See Appendix 1, figures 453, 455, 457, 479, and 571, respectively.
\textsuperscript{1013} Compare 202 and 234. See Appendix 1, figures 1049 and 1050.
\textsuperscript{1014} Compare 1968.1171, Appendix 1, figure 1263. This is certainly an import, since it is the only published piece of White Painted ware found at the site.
\textsuperscript{1015} The shape of the jug from Lapithos is very similar to those from Kythrea, which may have been its origin. Since the production centre at Kythrea operated from MC II-III, it is more likely to have been the source of this jug than Kalopsidha, which operated from MC III-LCI. The Lapithos cemetery was in use from EC II-MC III.
decoration of this sherd. The sherd also belongs to fabric group 3, which contains sherds from the Mesaoria as well. The decoration, however, suggests an origin at Toumba tou Skourou. There were no petrographic samples taken from that site, which is in the northern part of the island. The minerals in the sample are consistent with the geology of the western region, as well as the eastern region and river valleys of the Mesaoria\textsuperscript{1016}.

6.5.6 Enkomi 7 2987 C
This sherd is very small and its decoration is difficult to reconstruct. There is a broad line or solid area, with two parallel, thin lines next to it\textsuperscript{1017}. The decoration is very much like that of the previous sherd. The sherd has very little curvature, but it could be part of almost any large vessel, open or closed. It belongs to fabric group 3, like most of the sherds from Enkomi. Although it is likely that Enkomi received the majority of its pottery from the nearby production centre at Kalopsidha, it is not possible to know this with certainty until petrographic samples can be obtained from that site. The fabric is compatible with the majority of sherds from Enkomi, so it is quite likely that it came from an eastern production centre.

6.5.7 Enkomi 8 2987 D
There is very little of the decoration visible on this body sherd. Although the paint is worn, it is possible to see the termination of a broad, likely horizontal, line, with the terminations of two thin lines running parallel to the broad line, and the terminations of two or three thin, parallel lines that run perpendicular to it\textsuperscript{1018}. It is not possible to reconstruct the design based solely on these lines, but Broad Band style decoration found on vessels from Kalopsidha would be compatible with the arrangement of lines on this sherd\textsuperscript{1019}. The sherd belongs to fabric group 3, which is composed mainly of sherds from Enkomi, with some from the Mesaoria as well. It is quite likely that the vessel from which this sherd came was manufactured at the production centre of Kalopsidha.

6.5.8 Enkomi 9 2987 E
This body sherd has a moderate curvature and is undecorated on the interior, suggesting that it came from a jug or other large, closed shape. The decoration consists of a broad horizontal line,

\textsuperscript{1017}See Appendix 1, figure 1308.
\textsuperscript{1018}See Appendix 1, figure 1309.
\textsuperscript{1019}See Appendix 1, figures 1052 and 1053.
or solidly painted area, with a thin line parallel to it, from which groups of straight lines, with at least one wavy line, are drawn perpendicularly. The design is most likely a variant of Pendent Line Style (Åström, 1957:26-30, fig. IX), found at Kythrea and Kalopsidha, although the vessels from these places tend to have their whole surfaces covered with vertical lines. The closest parallels for this combination of straight and wavy lines come from Toumba tou Skourou, Kalopsidha, and Klavhdia. Without petrographic or soil samples from Kalopsidha and Toumba tou Skourou, it is not possible to determine whether a particular vessel came from the production centres there, making it very difficult to suggest a place of origin for sherds decorated with unique designs such as this one. The sherd also belongs to fabric group 3, which, although it contains mostly samples from Enkomi, contains some from sites in the Mesaoria Plain as well. It is possible, due to the presence of volcanic rock fragments in the fabric, and the straight and wavy lines in the decoration, that this sherd may have come from the production centre in the Mesaoria.

6.5.9 Enkomi 11 3957 B
This small sherd is decorated with a unique design of a pair of wavy lines with dots between them. It is fairly flat, and likely is part of a closed vessel, as the interior is undecorated. Although wavy lines are quite common, dots are not found frequently in the White Painted repertory. The closest parallel for this design is from Kalopsidha, although it is not possible to reconstruct the rest of the design. The sherd belongs to fabric group 3, making the production centre at Kalopsidha the likeliest origin for this vessel.

6.5.10 Enkomi 12 3219-B A
This flat body sherd is likely from a large, closed vessel such as a jug. It is decorated with a group of three parallel straight lines, with no other decoration in the immediate vicinity of the lines. It could be part of a jug decorated with Pendant Line or Cross Line Style (Åström, 1957:26-30, 63-66, fig. IX), or it could be framing lines for several other designs. It is not really

1020 See Appendix 1, figure 1310.
1022 Compare sherds from layers 67A, 71 and 72. See Appendix 1, figures 928, 929, 931, 932, 935, and 936, respectively.
1023 Compare A898, Appendix 1, figure 1211.
1024 See Appendix 1, figure 1311.
1025 Compare C.52, Appendix 1, figure 1077.
1026 See Appendix 1, figure 1312.
possible to reconstruct the design based on only three lines. The sherd belongs to fabric group 3, which is made up mostly of sherds found at Enkomi. By the fabric alone, this sherd would appear to be of eastern origin, perhaps from the production centre near Kalopsidha which seems to have supplied most of the White Painted ware found at Enkomi. This production centre specialized in linear patterns, particularly Cross-Line Style, which makes it a likely candidate for the provenance of this sherd.

6.5.11 Enkomi 13 3219-B B
Like the previous sherd, this one is flat and likely part of a large, closed vessel. Its decoration is composed of at least five fine, parallel straight lines. There is a wavy line with dots in the curves that runs parallel to the group of straight lines\textsuperscript{1027}. Although there is no direct parallel for this design in the published material, the combination of wavy lines and dots can be found at Enkomi\textsuperscript{1028} and Vounous\textsuperscript{1029}, although the example from Vounous is not contemporary with this sherd. The sherd belongs to fabric group 3, as do most of the sherds from Enkomi. Like sample Enkomi 1 3219-10 A, it was probably made at the production centre at Kalopsidha.

6.5.12 Enkomi 14 3219-B C
This body sherd is decorated with a broad line, flanked by parallel, fine lines. These are intersected by another group of parallel, straight lines with either a broad line, or an area of solid paint next to them\textsuperscript{1030}. It is similar to vessels decorated in the Tangent Line Style, like the sample Enkomi 3 3256 B above\textsuperscript{1031}. This sherd also belongs to fabric group 3. Its place of manufacture was probably the production centre at Kalopsidha where there are designs featuring framed broad bands.

6.5.13 Enkomi 16 4108 B
This small body sherd is decorated with a group of fine, straight, parallel lines to which another group of three fine, straight, parallel lines is joined perpendicularly. There is also part of a broad line next to the group of three parallel lines\textsuperscript{1032}. It is probably decorated in the same manner as

\textsuperscript{1027} See Appendix 1, figure 1313.
\textsuperscript{1028} Compare C.52 and 3(20), Appendix 1, figures 1077 and 1125, respectively.
\textsuperscript{1029} Compare 144.10, Appendix 1, figure 267.
\textsuperscript{1030} See Appendix 1, figure 1314.
\textsuperscript{1031} Kalopsidha: 1073 and 18082, Appendix 1, figures 1052 and 1053; Hala Sultan Tekke: A795, Appendix 1, figures 1242-1249; and Toumba tou Skourou: Lo.II.2 and Lo.II.6, Appendix 1, figures 469 and 471.
\textsuperscript{1032} See Appendix 1, figure 1315.
Enkomi 14 3219-B C and Enkomi 3 3256 B, a style popular in the eastern part of Cyprus in the early part of the Late Bronze Age\(^{1033}\). The sherd belongs to fabric group 3, along with most of the other sherds from Enkomi. Although there are no thin section samples from Kalopsidha in this study, based on the decoration, that production centre is the most likely place of manufacture for this vessel, as seems to be the case for most of the material found at Enkomi.

6.5.14 Enkomi 17 2283 A
This body sherd is decorated in the Pendent Line Style (Åström, 1957:26-30, fig. IX) with groups of two or three straight, parallel lines with single wavy lines between them\(^{1034}\). Examples of this style have been found at Kythrea\(^{1035}\), Toumba tou Skourou\(^{1036}\), Kalopsidha\(^{1037}\) and Klavdhia\(^{1038}\). The sherd belongs to fabric group 3, which appears to be an eastern fabric. Like the sherd Enkomi 5 2987 A, also decorated in the Pendant Line Style, it was probably made in the production centre at Kalopsidha, although Kythrea remains a possibility, since it was not possible to obtain samples from either of these sites for comparison of the fabrics.

6.5.15 Enkomi 18 2283 B
This flat body sherd is decorated with a very broad line, framed by three fine, straight, parallel lines\(^{1039}\). The design is probably also Tangent Line Style (Åström, 1966:89-90), the same as sherds Enkomi 3 3256 B, Enkomi 4 3256 C, Enkomi 14 3219-B C, and Enkomi 16 4108 B\(^{1040}\). Like those sherds, it was probably also made at Kalopsidha. It belongs to fabric group 3, which also suggests an eastern origin.

6.5.16 Enkomi 19 2283 C
This body sherd is decorated with a broad line, flanked by three parallel straight lines. Although it is not possible to reconstruct the original design with certainty, it is likely decorated with the Tangent Line Style (Åström, 1966:89-90) in similar manner to sherds Enkomi 3 3256 B, Enkomi

\(^{1033}\) See note 189 above for comparisons.
\(^{1034}\) See Appendix 1, figure 1316.
\(^{1035}\) Compare A775, Appendix 1, figures 368-372.
\(^{1036}\) Compare T.V.101 and T.V.109, Appendix 1, figures 464 and 476.
\(^{1037}\) Compare sherds from layers 67A, 70, 71 and 72. See Appendix 1, figures 928, 929, 930, 931, 932, 933, 935, and 936, respectively.
\(^{1038}\) Compare A898, Appendix 1, figure 1211.
\(^{1039}\) See Appendix 1, figure 1317.
\(^{1040}\) See note 189 above for comparisons.
4 3256 C, Enkomi 14 3219-B C, Enkomi 16 4108 B, and Enkomi 18 2283 B. It belongs to fabric group 3. The vessel from which the sherd came was probably manufactured at the production centre near Kalopsidha.

**6.5.17 Enkomi 20 2283 D**

This body sherd is decorated with a broad line on one side of which are three straight, parallel lines, and on the other side of which a single line can be seen running obliquely from the broad line. This oblique line appears to touch or cross another oblique line running in the opposite direction and also attached to the broad line. While it is not possible to reconstruct the entire design, lines meeting each other in a similar fashion can be seen on vessels from Kazaphani, Toumba tou Skourou, Kalopsidha, Enkomi, Galinoporni, and Politiko. The sherd belongs to fabric group 1, which includes sherds from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni, and Politiko. It may have been produced at the same production centre at Kalopsidha that seems to have provided Enkomi with most of its White Painted ware, but it could also have come from the area of Toumba tou Skourou, where linear patterns were common at the time that Enkomi was established. Without petrographic or soil samples from Kalopsidha and Toumba tou Skourou, it is not possible to be more precise in the determination of the provenance of this sherd.

**6.5.18 Enkomi 21 2511**

This body sherd is quite thick and gritty compared to the other samples from Enkomi. It is decorated with a thick band of paint, or a section of solid colour, with crossed lines next to it. These crossed lines may be arranged in a lattice panel, although it appears that they form a crossing double zigzag, or two crossing wavy lines between two thick lines. Decoration similar to this can be found on a jug from Dhenia, and on three jugs from Kazaphani, but

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1041 Compare Appendix 1, figure 1318 with figures 1304, 1305, 1314, 1315, and 1317. See note 189 above for comparisons at other sites.

1042 See Appendix 1, figure 1319.

1043 Compare 2A.89, 2A.82, 2A.107, 2B.223, and 2B.500. See Appendix 1, figures 294, 323, 324, 338, and 342, respectively.

1044 Compare Lo.II.2, Appendix 1, figure 469.

1045 Compare 12, 30, and a sherd from layer 32. See Appendix 1, figures 1038, 1039, and 1044.

1046 Compare 2(3), 4.969, 5.037, 5.193, 176(13), 181(13) and 43(19). See Appendix 1, figures 1111, 1112, 1113, 1115, 1118, 1119, and 1120, respectively.

1047 Compare 71(10), Appendix 1, figure 1134.

1048 See Appendix 1, figure 1320.

1049 Compare 61.52, Appendix 1, figure 713.

1050 Compare 2B.520, 2B.521, and 2B.526. See Appendix 1, figures 300, 307, and 320, respectively.
there is no exact parallel to the scheme on this sherd. The sherd belongs to fabric group 3, like so many of the other sherds from Enkomi. While it is possible that the vessel was manufactured locally, it is also possible that it was imported from Toumba tou Skourou.

6.5.19 Summary
The production centre at Kalopsidha appears to have been supplying Enkomi with most of its White Painted ware, although a few pieces may have been coming from Kythrea, the Mesaoria or Toumba tou Skourou. The proximity of Enkomi to Kalopsidha would facilitate the acquisition of ceramics from the production centre there. Other objects could easily have come as trade items, since Enkomi was a major trade centre at the beginning of the Late Bronze Age (Keswani, 1993:74; 2004:2, 136-139; Knapp, 2008:133; Knapp & Cherry, 1994:137-138). Enkomi and Toumba tou Skourou were both prominent urban centres at this time, and although the former traded mainly with the Aegean, while the latter focused its enterprises on the Levant and Egypt (Keswani, 1993:74; 2004:2, 136-139), there is no reason to exclude the possibility of a trade connection between them. Unfortunately, most of the sherds sampled were very small and had very little decoration that could be reconstructed. Since most of them bore only straight and/or wavy lines, the overall decoration could have been any number of designs popular at several sites in the Late Bronze Age. The limited repertory of motifs at this time period only makes attribution based on decoration more difficult. Without petrographic or soil samples from either Kalopsidha or Toumba tou Skourou, it is not possible to determine where the sherds found at Enkomi were made. The paucity of White Painted sherds argues against a local production centre, but Kalopsidha seems the strongest candidate for the source of most of Enkomi’s pottery as evident in Chapter 5.

6.6 Galinoporni

6.6.1 Galinoporni 1
This sample was taken from the base of the neck of a jug. It is decorated with horizontal bands in the manner of many jugs from several different sites\(^{1051}\), but the closest parallels for both the shape of the neck and the colour and number of bands can be found at Lapithos\(^{1052}\), Kythrea\(^{1053}\),

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1051 See Appendix 1, figure 1321.
1052 Compare L.316.15 and 32-27-196. See Appendix 1, figures 64 and 184, respectively.
Ayia Paraskevi\textsuperscript{1054} and Kalopsidha\textsuperscript{1055}. This sherd is a member of fabric group 1, which contains sherds from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni, and Politiko. The necks on the jugs from Kalopsidha tend to be shorter and wider than this one. The best comparison for the shape of the neck, as well as the attachment of the handle at the rim, is the group of jugs from Kythrea. It is possible that the vessel from which this neck came was manufactured at the production centre at Kythrea, but since no samples were taken of material from that site, it is not possible to match the fabric.

6.6.2 Galinoporni 2
This body sherd is from a large jug. It is decorated in the Tangent Line Style (Åström, 1966:89-90) with a broad band framed by two parallel, thin, straight lines. From this band, four thin, straight, parallel lines run perpendicular on either side. There are two parallel lines in the space next to one of these groups of four lines\textsuperscript{1056}. This design is very similar to that found on Enkomi 3, 14, 16, 18 and 19\textsuperscript{1057}. This sherd belongs to fabric group 2, which contains samples from Alambra, Ayia Paraskevi, Dhenia, and Galinoporni. Based on the decoration of this sherd, it is likely that the vessel was made in the same place as the vessels from Enkomi, namely at Kalopsidha.

6.6.3 Galinoporni 3
This body sherd is probably from near the base of a relatively large Cross-Line Style or Pendent Line Style jug (Åström, 1957:26-30, 63-66, fig. IX).\textsuperscript{1058} Examples of this style of decoration have been found at Kythrea, Kalopsidha, and Enkomi, although most of the examples from Kalopsidha and all of those from Enkomi are small, squat juglets. The nearest parallel for this sherd is a jug from Kythrea\textsuperscript{1059}, which may be its source. There are also examples of Pendent Line Style with multiple parallel straight lines at Toumba tou Skourou\textsuperscript{1060} and Kalopsidha\textsuperscript{1061},

\begin{footnotesize}
\textsuperscript{1053} Compare A775, A777, A782, A783, A796, and A798. See Appendix 1, figures 368-372, 373-378, 379-386, 387-393, 394-400, and 401-412, respectively.
\textsuperscript{1054} Compare C.65, Appendix 1, figure 739.
\textsuperscript{1055} Compare 203, 240, 241, 242, 264, and 228. See Appendix 1, figures 947, 949, 967, 968, 971, and 988, respectively.
\textsuperscript{1056} See Appendix 1, figure 1322.
\textsuperscript{1057} See note 189 for a list of comparisons from other sites.
\textsuperscript{1058} There is a wavy line present among the straight lines. It most closely resembles the jug A775 from Kythrea.
\textsuperscript{1059} Compare A775, Appendix 1, figures 368-372
\textsuperscript{1060} Compare T.V.101, Appendix 1, figure 464.
\textsuperscript{1061} Compare sherds from layers 10CCC and 71. See Appendix 1, figures 927, 931, 932, and 933.
\end{footnotesize}
but they are different in character. This sherd is also in fabric group 2, which is compatible with
the geology of the north coast as well as the western region and the Mesaoria. In the absence of
petrographic samples from Kythrea, it is not possible to make a firm attribution, but based on
decoration and the shape of the vessel, it is likely that the production centre at Kythrea was
responsible for the manufacture of this vessel.

6.6.4 Galinoporni 4
This rim sherd is probably from a bowl or other open shape. It is decorated on its interior with
two very broad wavy lines. This sort of decoration, particularly on bowls, is typical of Ayios
Iakovos1062. The Wavy Line Style derived from the Red-on-Red or Red-on-Black Styles that are
specific to the Karpass region (Åström, 1957:30-32) where Galinoporni is located. The fabric of
this sample is unlike that of any other in this study, suggesting that it represents another fabric
group for which there are no other samples. Although there are no petrographic samples from
Ayios Iakovos, this vessel was almost certainly produced there, based on its unusual decoration.

6.6.5 Summary
The site of Galinoporni, located on the Karpass peninsula, seems to have been receiving its
pottery from the Karpass region (Ayios Iakovos), the eastern region (Kalopsidha), and the north
coast (Kythrea). For all four sherds, the clay matrix appears green in crossed polars and the
inclusions are fairly small, although the minerals vary in type. The potters seem to have been
treating the clay in a similar manner, processing it to make it fine, probably to create the thin
walls typical in vessels found at this site. Although there may be two or three different
production centres providing pottery to Galinoporni, they all seem to be firing the vessels at
higher temperatures than those reached at centres such as Lapithos or Vounous. This may be
partly due to chronology, since these four samples appear to come from vessels dating to MC III
or later.

1062 Compare 8(1), 9(2), 3(4A), 51(6), 58(6), 127(6), and 39(13). See Appendix 1, figures 911, 912, 913, 915, 916,
918, and 921, respectively.
6.7 Lapithos

6.7.1 Lapithos 69-35-50
The sherd that was sampled was a non-joining sherd belonging to the jug numbered 69-35-50 in the University of Pennsylvania Museum’s collection. It is decorated with the standard framed lattice panels so typical of Lapithos, and has a multiple zigzag in the space between panels\textsuperscript{1063}. This design can be found mainly at Lapithos\textsuperscript{1064}, although there is one specimen from Dhenia\textsuperscript{1065} and another from Hala Sultan Tekke\textsuperscript{1066}. The jug from Dhenia is probably imported from Lapithos where lattice panels are most common. The jug from Hala Sultan Tekke is different in shape from those at Lapithos, and is also later in time, so there is not likely to be any connection between the two. Tomb 802A, from which the sherd came, was in use from ECIIIB until MCII (Herscher, 1978:21-58), whereas Hala Sultan Tekke is a Late Bronze Age site (Åström, Bailey, & Karageorghis, 1976:37). The fabric of this sample is different from the other fabrics in this study, but the minerals in it are compatible with the geology of the north coast. Based on its decoration and fabric, this sherd was certainly part of a vessel made at the production centre at Lapithos.

6.7.2 Lapithos 32-27-2139
This sherd is part of a jug decorated with lattice panels and wavy lines.\textsuperscript{1067} This design is one of the most popular on jugs from Lapithos. Such a design has been found at Lapithos\textsuperscript{1068}, Vounous\textsuperscript{1069}, Dhenia\textsuperscript{1070}, Ayia Paraskevi\textsuperscript{1071}, Alambra\textsuperscript{1072}, Klavdhia\textsuperscript{1073}, and Hala Sultan

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\textsuperscript{1063} See Appendix 1, figures 1325 and 1326. The sampled sherd is shown in figure 1326 in row 1.3 in the photograph on the left, and is the subject of the photograph on the right.
\textsuperscript{1064} Compare A675, L.303 B.9, and L.320.25. See Appendix 1, figures 21-23, 28, and 59, respectively.
\textsuperscript{1065} Compare 10(48), Appendix 1, figure 592.
\textsuperscript{1066} Compare A695, Appendix 1, figure 1230.
\textsuperscript{1067} The sampled sherd is circled in the image of fragments.
\textsuperscript{1068} Vessels with similar body decoration and base decoration are L.315 A.29, L.315 B-C.45, L.315 cupboard i, A742, L.315 A.26, L.315 A.43, 32-27-82, and 32-27-85. See Appendix 1, figures 49, 50, 51, 52-55, 57, 58, 60, and 61, respectively. For similar body decoration, but different bases, compare A678, L.311 A.13, L.315 B-C.6, 32-27-59, L.311 A.35, L.316.12, L.316.15, L.316.107, L.316.120, L.316.126, L.320.67, L.316.34, L.316.122, L.316.144, L.316.150, and L.322 D.41. See Appendix 1, figures 24-27, 37, 39, 40, 47, 63, 64, 67, 69, 70, 74, 80, 84, 85, 86, and 87, respectively.
\textsuperscript{1069} Compare 59.1 and 69.11, Appendix 1, figures 270 and 273.
\textsuperscript{1070} Compare 6, 7, 8, 9, and 12 from Tomb 1; 1, 2, and 3 from Tomb 6; 2 from Tomb 48 and 1953.820 and 1953.821. See Appendix 1, figures 579, 580, 581, 582, 583, 584, 585, 586, 589, 720 and 721, respectively.
\textsuperscript{1071} Compare A728, C.65, 58.144, 58.145, and C.40. See Appendix 1, figures 736-739, 740, 741, 742 and 743, respectively.
\textsuperscript{1072} Compare AP.92 and C-70-2, Appendix 1, figures 876 and 882.
Although most of these vessels were probably produced at Lapithos, the example from Klavdhia is different from all the others in that the lattice panel continues all the way up the spout. As with the previous sherd, the example from Hala Sultan Tekke is too late to have been a product of Lapithos, but could be an imitation from the Mesaoria production centre. Without more petrographic samples, it is not possible to do more than compare the decoration and speculate based on that. The sherd belongs to fabric group 6, which contains samples from Dhenia as well as Lapithos. Because Lapithos has the greatest number of jugs decorated with lattice panels in various combinations with zigzags, wavy lines and other motifs, the production centre there is the most like source for this vessel.

6.7.3 Lapithos 32-27-208

The sherd sampled came from the body of a small jug decorated with registers of hatched triangles. The jug had a spout that was attached by thrusting it through the top of the body of the jug, then putting a clay collar around the join to make the profile smooth. Only a small piece of the handle survives, but it was likely attached in a similar manner. The vessel was covered in a fine white slip, and then painted with reddish brown paint. Jugs with similar decoration have been found at Dhenia, Ayia Paraskevi, Klavdhia, and Laxia tou Riou. The sherd belongs to fabric group 5, which is represented only by samples from Lapithos. Although there are no exact parallels for this small jug and its decoration, unframed hatched triangles are quite common at Lapithos, especially on small shapes like bowls. They do not often occur in registers, however. Triangles in registers are most common at Politiko, but they are generally cross-hatched. The paint on Mesaoria vessels, however, tends to be dark brown to black, rather than red. Based on the decoration and the fabric, as well as the colour of the surface and paint on the vessel, it is more likely that this jug was produced locally at the production centre at Lapithos.

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1073 Compare A730, Appendix 1, figure 1164.
1074 Compare A693, Appendix 1, figure 1229.
1075 See Appendix 1, figure 1329.
1076 Compare 7 and 16, both from Tomb 6. See Appendix 1, figures 611 and 612.
1077 Compare A744 and C.43, Appendix 1, figures 747-751 and 755.
1078 Compare A718a, A751, and C.278. See Appendix 1, figures 1148-1156, 1165-1173, and 1214, respectively.
1079 Compare A757, Appendix 1, figures 1218-1227.
6.7.4 Lapithos 32-27-183
This undecorated body sherd came from a group of sherds labelled “32-27-183”, but may not be from the same vessel.\footnote{The two images on the right in figure 1330 are of the decorated sherds that were in the group.} The other sherds from this group belong to bowls, and this one probably does too, although it is not possible to say whether it belongs to one of the same bowls represented in the group of sherds. The other sherds are from bowls decorated with hatched triangles, a motif very popular at Lapithos, but also found at Dhenia and Alambra\footnote{See Appendix 1, figure 1330.}. The sherd was quite friable, so the slide is thicker than some of the other thin sections from Lapithos, making it too difficult to assign the sample to a fabric group. Based on the decoration of the other sherds in the group, it seems that the vessel from which this sample came was probably manufactured locally at the production centre near Lapithos.

6.7.5 Lapithos 32-27-233
This sherd is part of a bowl or amphora that has been preserved only in the form of a few non-joining sherds. The sampled sherd appears in row 3.1 in the image of the entire lot of sherds. The decoration consists of framed hatched triangles in at least one register and there are multiple parallel lines crossing each other on the base\footnote{See Appendix 1, figure 1331.}. Examples of this sort of decoration appear on vessels of various shapes from Lapithos\footnote{Compare L.316.162, Appendix 1, figure 179.}, Kazaphani\footnote{Compare 2A.164, Appendix 1, figure 321.}, Toumba tou Skouro\footnote{Compare T.V.61, T.V.35 and T.V.106. See Appendix 1, figures 463, 570, and 573, respectively.}, Dhenia\footnote{Compare 22(1) and 7(6). See Appendix 1, figures 610 and 611.}, Ayia Paraskevi\footnote{Compare C.43, 77, 132, 133 and 134. See Appendix 1, figures 755, 761, 762, 763, and 764, respectively.}, and Klavdhia\footnote{Compare A718a, Appendix 1, figures 1148-1156.}. This sherd belongs to fabric group 5, which appears to be a Lapithos fabric. The most likely source for this vessel, then, is the production centre at Lapithos.

6.7.6 Summary
The production centre at Lapithos was the longest-lived and most prolific centre manufacturing White Painted ware in the Middle Bronze Age. Many of the sherds found at sites such as Alambra, Dhenia and Ayia Paraskevi were probably from vessels made near Lapithos. With such a long time-span for production and with such a great variety in shapes and decorations of vessels, it is certain that the potters at Lapithos must have had a large repertory of paste recipes.
as well. Unfortunately, since the site is located in the northern part of Cyprus and the excavations took place before ceramic analysis was in vogue, it was difficult to find sherds to sample. The Cyprus museum had only whole pots from the excavation, and the Swedish museum was closed when the fieldwork for this study was undertaken. The only available material was at the University of Pennsylvania Museum, and permission could be secured to sample only five sherds. This tiny sample cannot be representative of the fabrics of the production centre at Lapithos.

6.8 Politiko

6.8.1 Politiko 2006.66
This body sherd is decorated with three broad stripes\textsuperscript{1089}. It is not possible to reconstruct its decoration, but such broad bands can be found at Lapithos, where they occur on the bases of jugs. Broad bands also occur on jugs decorated in the Tangent Line Style, but it is not possible to determine whether this sherd is from such a jug. The fabric of this sample is without parallel in this study, and likely represents a separate fabric group. Without more of the decoration, it is not really possible to determine the provenance of this sherd. Without a greater number of petrographic samples against which to compare the fabric, it is not possible to link this sherd to any production centre based on mineralogy either. Its fabric is coarser than most of the sherds from Politiko, but similar to that of 2006.85. They may have been produced at the same production centre which could be in the Mesaoria, based on the minerals present in the sample.

6.8.2 Politiko 2006.85
This body sherd is relatively flat. It bears no slip and its fabric is quite coarse compared to other White Painted sherds. It is decorated with a group of four parallel straight lines, but the complete decoration cannot be reconstructed\textsuperscript{1090}. Such an arrangement of lines is common in the Tangent Line Style (Åström, 1966) which is found at Kazaphani, Toumba tou Skourou, Kalopsidha, Enkomoi, and Hala Sultan Tekke. Parallel lines occur in other styles as well, but the coarse fabric is unusual for sites such as Lapithos, Vounous, Dhenia and Alambra. This sherd also appears to be the sole representative of its fabric group. The volcanic inclusions in the

\textsuperscript{1089} See Appendix 1, figure 1332.
\textsuperscript{1090} See Appendix 1, figure 1333.
fabric are not very decomposed, which may indicate that the clay was taken from close to the pillow lavas, making the production centre in the Mesaoria a likely source for the vessel.

6.8.3 Politiko 1
This body sherd is decorated with interlocking hatched triangles. Its moderate curvature suggests it is part of a bowl. Interlocking hatched triangles decorate some of the jugs and bowls of Lapithos, Vounous, Dhenia, Alambra, Marki Alonia, Enkomi, and Klavdhia. The examples from Enkomi and Klavdhia are different from those of Lapithos, Vounous, Dhenia, and Alambra, and are not likely from the same production centre even though there is some similarity in the pattern. The sites are later in date as well. The examples from Marki Alonia look as if they come from a vessel similar to 68.6 from Vounous, which may have been manufactured at Lapithos. The sampled sherd from Politiko is a member of group 1, which has sherds from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni and Politiko. Although there are more vessels decorated with interlocking triangles in the southern and central river valley sites, these are virtually indistinguishable in fabric and paint colour from those of Lapithos. The mineral content of the sherd is compatible with the geology of Lapithos, although it does not resemble any of the five sherds sampled from that site.

6.8.4 Politiko 2
This rim sherd is from a bowl and is decorated with a row of unframed hatched triangles. This type of decoration can be found at Lapithos, and Dhenia, although framed hatched triangles are much more common. Hatched triangles appear on hemispherical bowls as well as jugs and deep bowls, but this sherd, with its low curvature and the presence of a rim on its long side, is clearly from a hemispherical bowl. The sherd is a member of fabric group 1, which

1091 See Appendix 1, figure 1334.
1093 Compare 68.6 and 50b.3, Appendix 1, figures 283 and 286.
1094 Compare 27 (6), 77(48), 29(6), 71(48), 100(48), 104(48), 255(48), and 28(50). See Appendix 1, figures 1335.
1095 Compare AP.93, AS.238, AS.235, AS.258 and a group of miscellaneous sherds. See Appendix 1, figures 877, 880, 885, 886, and 887, respectively.
1096 Compare 65.96A, 85B, and 85E. See Appendix 1, figures 890, 891, and 892, respectively.
1097 Compare 2257/1 and 2297/3, Appendix 1, figures 1102 and 1103.
1098 Compare A752 and C.76, Appendix 1, figures 1174 and 1228.
1099 See Appendix 1, figure 1335.
1100 Compare 32-27-20, L.316.162, and L.320.65. See Appendix 1, figures 90, 179, and 180, respectively.
1101 Compare 96(48) and 1953.1009, Appendix 1, figures 621 and 627.
contains samples from Ayia Paraskevi, Dhenia, Enkomi, Galinoporni and Politiko. The decoration on this sherd, however, suggests that the bowl was made at the production centre near Lapithos. Mineralogically, the fabric is also compatible with the geology of Lapithos. It is clear that more samples from Lapithos are necessary in order to determine whether vessels that superficially resemble the products from that site also have similar fabrics.

6.8.5 Politiko 3
This sherd preserves part of the rim of the bowl, indicated on the photograph. It is decorated with interlocking hatched triangles in a band around the circumference of the bowl, with a group of straight parallel lines running obliquely from the frame of the panel of the decoration. Bowls with similar decoration have been found at Lapithos, Vounous, Dhenia, and Alambra. The sherd is part of fabric group 1, as were the previous two sherds. Although the design of interlocking hatched triangles appears to be most popular at Dhenia, based on the colour of the fabric and paint, it is likely that this bowl was made at the production centre at Lapithos.

6.8.6 Summary
Although the very distinctive String Hole Style (Åström, 1957:34-48, fig. XI) vessels from Politiko were likely made locally, most of the vessels sampled for petrographic analysis seem to have been made at Lapithos. The two sherds from the Sheffield teaching collection, which were picked up in a survey by Hector Catling, have a very different fabric from the three sherds from the Cyprus Museum. This fabric, rich in relatively fresh volcanic inclusions, is probably a local Politiko fabric made from clay derived from the Troodos massif. It is reddish in colour, and may have been used to make Red Polished ware as well. There were too few samples available for thin-sectioning in order adequately to characterize the fabric of any of the possible production centres, therefore it is not possible to know with certainty whether the

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1102 See Appendix 1, figure 1336.
1103 Compare L.311 A.30 and 32-27-194, Appendix 1, figures 239 and 243-244.
1104 Compare 50b.3, Appendix 1, figure 286.
1105 Compare 27(6), 71(48), 99(48), 104(48), 255(48) and 28(50). See Appendix 1, figures 631, 634, 635, 636, 638 and 639, respectively.
1106 Compare AS.235, AS.258 and a group of miscellaneous sherds. See Appendix 1, figures 885, 886, and 887, respectively.
1107 This is discussed in detail in chapter 4. The reason a production centre is suggested for Politiko is because these small String-Hole Style vessels that are typical of that site are not found elsewhere.
1108 Compare Appendix 1, figures 1332 and 1333 with figures 1334, 1335 and 1336.
production centre in the Mesaoria was deliberately copying styles from Lapithos, or whether these vessels were imported directly from that site. Some styles appear only at Politiko and are likely to be local products, but other styles are very similar to those found at Lapithos. Certainly, those sherds numbered Politiko 1, 2 and 3 would be at home in the repertory of the Lapithos potters and painters of White Painted ware. It would seem, then, that Politiko was receiving its White Painted ware from at least two sources: the production centre at Lapithos, and another production centre somewhere in the Mesaoria that seems to have been supplying vessels to Dhenia and Ayia Paraskevi as well as Politiko. This production centre seems to have been fairly close to the Troodos massif, judging by the fabric of Politiko 2006.66 and 2006.85.

6.9 Discussion
None of the groups of samples from any particular site is homogeneous in its fabric.\footnote{See Appendix 5. Note that group 6 contains only one sherd from Lapithos. All of the other fabric groups contain material from at least two sites.} This makes it very difficult to associate any fabric with any particular site on Cyprus, although in most cases general regional associations can be made. The most common element next to quartz in the thin sections is micrite. Micrite precipitates from seawater, but can also be formed by underwater organisms (Mackenzie & Adams, 1994:110-111). The island of Cyprus formed on the ocean floor and was lifted through tectonic activity (Alcicek, Ten Veen, & Özkul, 2006, Roberston, 1977). As a consequence, most of the island is covered in carbonate rocks created through sedimentation. Micrite, a form of calcite, is therefore ubiquitous on the island and is not a good indicator of provenance.

Serpentinized basalt and other volcanic inclusions are likewise quite frequent in the landscape of Cyprus. In those areas, such as the eastern Mesaoria, where there are no volcanic rocks outcropping, the major rivers, the Pedieos and the Yialias, carry these minerals from the Troodos massif and from the basalt outcrops of the Kyrenia Range. Although difficult, it is not impossible to distinguish different fabric groups. In general, these groups correspond well with the origins suggested through a stylistic study of the material that has been published. In most cases, where there is some discrepancy, for example at Lapithos\footnote{One of the thin sections from Lapithos is quite different from all of the other thin sections but the minerals present are still consistent with the geology of the area. There are only 5 thin sections from Lapithos, making it impossible to characterize the entire range of fabrics that were likely present in the vast quantity of White Painted vessels from that site.}, this could be resolved
through the acquisition of a greater number of samples to be used for petrographic analysis. Soil samples taken from areas near the production centres determined in Chapter 5 would also help to create comparisons for the mineral composition of fabrics.

Several sherds appear greenish in both plane polarized and cross polarized light. Although the colour could be partly attributed to firing conditions, it is also possible that green colour of the clay is due to a high concentration of bentonite (Bear, 1960:108). Although it is present in the Southern River Valleys, bentonite is not found farther west than Politiko (ibid), and may help to locate the Mesaoria production centre that was providing White Painted wares to Politiko, Ayia Paraskevi and Dhenia.

Lapithos has the greatest variety in both shape and decoration among the sites thought to be producing White Painted ware. The production centre there was producing White Painted wares throughout the entire Middle Bronze Age. It is not likely that the five samples in this study could be representative of the paste recipes used during the entire production life of that site. Because of its location in the Kyrenia Range, the clays could contain the same minerals found virtually everywhere on the island where White Painted ware has been found.

In order to try to associate the six fabric groups determined through the petrographic analysis summarized in Chapter 4, it is necessary to examine the decoration of each of the sherds sampled and to consider the shapes of the original vessels where possible. The stylistic analysis of Chapter 5, which included the published White Painted vessels with good provenience, as well as a number of unpublished vessels with good provenience personally examined by the author\footnote{1111 Some of them unpublished, but all with good provenience, having come from scientific excavations.}, determined that there were seven distinct production centres for White Painted ware in operation over the course of the Middle Bronze Age.\footnote{1112 Vounous and Lapithos may have started in EC I and II respectively, while Ayios Iakovos, Kalopsidha, the centre in the Mesaoria and Morphou Toumba tou Skourou all continued into the Late Bronze Age.} An attempt has been made above to suggest a possible provenance for each of the sherds analyzed in Chapter 4. The collection of sherds of each fabric group will now be examined together to try to understand how many production centres may be represented by similar fabric. Ideally, each fabric group would belong to a unique production centre, but that is clearly not the case. Although each fabric group is
heterogeneous, there are some trends which suggest that a more thorough petrographic analysis could yield fruitful results.\textsuperscript{1113}

6.9.1 Fabric Group 1 Quartz with sedimentary material (no volcanic rock fragments)\textsuperscript{1114}
The sherds in this group come from Ayia Paraskevi\textsuperscript{1115}, Dhenia\textsuperscript{1116}, Enkomi\textsuperscript{1117}, Galinoporni\textsuperscript{1118} and Politiko\textsuperscript{1119}. The fabric contains very few inclusions other than quartz. Although the most common mineral is quartz, there are very few inclusions in this fabric. The sherds from Dhenia and Enkomi contain a fair amount of mica in their coarse fractions, as do a few of the sherds from Ayia Paraskevi. Geologically, the areas of the north coast and the Mesaoria plain are very similar, making it difficult to distinguish between them minerallogically. Most of the sherds in this group appear green both in hand specimen and under the microscope. This could be due to the presence of bentonite, although without chemical testing, this remains speculative. It is not only possible, but likely, that this fabric group represents more than one production centre using very similar clays.

Stylistically, the sherds in fabric group 1 fit within the repertories of the northern sites of Lapithos\textsuperscript{1120}, Toumba tou Skourou\textsuperscript{1121}, and Kythrea\textsuperscript{1122}, as well as the Mesaoria\textsuperscript{1123}. Dhenia received pottery from the production centres at Lapithos as well as a production centre located in the Mesaoria Plain, most likely situated near the pillow lavas or close to a river flowing from the Troodos Massif. Ayia Paraskevi received pottery from Lapithos, Toumba tou Skourou and from

\textsuperscript{1113} Should the political situation on Cyprus change and it becomes feasible to carry out geological prospection for clay beds in the north, it might be worthwhile attempting to create a database of various clay samples. New excavations may also provide more sherds for analysis, particularly from Lapithos, Kythrea, Kalopsidha and Morphou Toumba tou Skourou.

\textsuperscript{1114} See Appendix 3, tables 1 and 2, and Appendices 3 (1.1 and 1.2), and 5.

\textsuperscript{1115} Ayia Paraskevi 2006.13, 1, 4, 6, 7, and 9. See Appendix 1, figures 1276, 1278, 1281, 1284, 1285, and 1286, respectively.

\textsuperscript{1116} Dhenia 2, 4, 7 and 8. See Appendix 1, figures 1294, 1296, 1299 and 1301, respectively.

\textsuperscript{1117} Enkomi 20. See Appendix 1, figure 1319.

\textsuperscript{1118} Galinoporni 1, Appendix 1, figure 1321.

\textsuperscript{1119} Politiko 1, 2 and 3. See Appendix 1, figures 1334, 1335, and 1336, respectively.

\textsuperscript{1120} Ayia Paraskevi 2006.13, 2006.30, and 6; Dhenia 2006.57, 2, 4, 7, and 8; and Politiko 1, 2, and 3. See Appendix 1, figures 1276, 1277, 1284, 1290, 1294, 1296, 1299, 1300, 1334, 1335, and 1336, respectively.

\textsuperscript{1121} Ayia Paraskevi 1, 2(which may be from Kalopsidha or Toumba tou Skourou), and 7; and Enkomi 20. See Appendix 1, figures 1278, 1279, 1285, and 1319, respectively.

\textsuperscript{1122} Galinoporni 1 and 3. See Appendix 1, figures 1321 and 1323.

\textsuperscript{1123} Ayia Paraskevi 4; and Dhenia 2006.39 and 2006.44. See Appendix 1, figures 1281, 1288, and 1289, respectively.
the Mesaoria production centre. Politiko imported White Painted ware from Lapithos, but it may also have received vessels from the Mesaoria production centre that were decorated in Lapithos fashions, but made with a greenish-white clay not seen in the Lapithos repertory. Galinoporni received at least part of its supply from Kythrea. There is a chronological component to the groups as well. The material coming out of Toumba tou Skourou and Kythrea is generally later than that coming from Lapithos and the Mesaoria production centre.1124

Because the composition of the clay is similar in several parts of the island, Fabric Group 1 may represent four separate production centres, but all are located in the north-western part of the Mesaoria up to the north coast.

6.9.2 Fabric Group 2 Sedimentary inclusions with very few volcanic rock fragments1125

This group comprises samples from Alambra, Ayia Paraskevi, Dhenia and Galinoporni. Although the fine fraction is dominated by micrite, this group also has the highest number of forminifera per sample among the sherds in this study. It is very likely that the clay used to make the vessels represented by the sherds in this group was derived from the Lapithos Formation, which is mainly composed of foraminiferal limestone. Most of the samples appear quite sparkly due to the high amount of micrite present in the fine fraction. The fact that so much micrite is present may indicate a lower firing temperature for the vessels in this group than that of group 1 where very little micrite was present. The highly altered state of the igneous inclusions present in the thin sections may indicate water transport, or perhaps metamorphism. Considering the nearly ubiquitous presence of the Lapithos Formation in the northern and eastern part of Cyprus, it is likely that more than one production centre is represented by the sherds in this group. The similarity of the clays used to make White Painted ware may be a result of potters deliberately choosing clay with specific properties, and this type of clay may be found in several parts of the island (Frankel, 1981:96; Frankel, Hedges & Hatcher, 1976:40).

1124 This argument is based on the style of the sherds.
1125 See Appendix 3, tables 3 and 4, and Appendices 4 (2.1 and 2.2), and 5.
1126 Alambra 2, 3, 4, 5, and 7. See Appendix 1, figures 1267, 1268, 1269, 1270, and 1272, respectively.
1127 Ayia Paraskevi 3. See Appendix 1, figure 1280.
1128 Dhenia 2006.58, 3, 5, and 9. See Appendix 1, figures 1291, 1295, 1297, and 1301.
1129 Galinoporni 2 and 3. See Appendix 1, figures 1322 and 1323.
The sherds in this group bear decoration that resembles the output of Lapithos, but also Kythrea, Toumba tou Skourou, and Kalopsidha. All of the sherds from Alambra bear decorations that are consistent with the repertory of the production centre at Lapithos. The sherd from Ayia Paraskevi is decorated in the Fine Line Style, suggesting that it is chronologically later than the Alambra sherds, but its mineralogy is consistent with the north coast, or with the Central River Valley region. Three of the sherds from Dhenia are decorated in a manner common at Lapithos\textsuperscript{1130}, while the fourth has a greater resemblance to the output of the production centre at Toumba tou Skourou\textsuperscript{1131}. Both sherds from Galinoporni are decorated in styles from Kythrea or Kalopsidha and could be from either production centre.

While this fabric group appears to belong to the north coast as well as the eastern part of the island, there is also a chronological difference between the sherds attributable to the north coast, particularly Lapithos, and the later production centres of Toumba tou Skourou and Kalopsidha. The similarity in fabric is likely due to the selection of clays derived from limestones that can be found in many places on the island.

6.9.3 Fabric Group 3 Sedimentary inclusions and volcanic rock fragments\textsuperscript{1132}

The sherds in this group come almost exclusively from Enkomi\textsuperscript{1133}, although there are also samples from Alambra\textsuperscript{1134}, Ayia Paraskevi\textsuperscript{1135} and Dhenia\textsuperscript{1136}. Most of the sherds have a large amount of micrite in them, in addition to quartz and also contain several volcanic rock fragments. The inclusions in the coarse fraction of this group are large and fairly abundant, giving the fabric an appearance of gravel under the microscope. This may be due to the addition of sand temper, but it is also possible that the clay itself was fairly coarse. Most of the sherds have low curvature, suggesting that they belong to larger vessels. It is possible that the potter either chose gritty clay, or added sand temper in order to make the vessel walls strong enough to support the weight of the upper part of the jugs (Rice, 1987:227-228; Rye, 1981:17-21).

\textsuperscript{1130} Dhenia 2006.58, 3, and 9.  
\textsuperscript{1131} Dhenia 5.  
\textsuperscript{1132} See Appendix 3, tables 5 and 6, and Appendices 4 (3.1 and 3.2) and 5.  
\textsuperscript{1133} Enkomi 1, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 16, 17, 18, 19, and 21. See Appendix 1, figures 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, and 1320, respectively.  
\textsuperscript{1134} Alambra 6. See Appendix 1, figure 1271.  
\textsuperscript{1135} Ayia Paraskevi 2006.30 and 5. See Appendix 1, figures 1277 and 1283, respectively.  
\textsuperscript{1136} Dhenia 10. See Appendix 1, figure 1302.
The decoration on the sherds in this group mainly resembles vessels from Kalopsidha. Two of the sherds from Enkomi are decorated in Pendent Line Style\textsuperscript{1137}, as is the sherd from Alambra. These vessels may have been made at Kythrea. Two sherds have a wavy line with dots in the curves\textsuperscript{1138}, which is unusual in the White Painted repertory and therefore it is not easy to determine their origin. In both cases, very little of the decoration of the vessel is represented on the sherd, making it impossible to reconstruct the decorative schemes. Another sherd has a pair of wavy lines with dots in the space between the lines\textsuperscript{1139}. These sherds could have come from Kalopsidha or from Toumba tou Skourou where there are several unusual motifs. The fabric, however, is more suggestive of an eastern origin.

Based on both the decoration on the sherds in this group, and the geology of the island, it seems quite likely that Fabric 3 is an eastern fabric. Even though there is a fairly high amount of micrite in the fine fraction of this group, the fabric looks quite different due to the larger inclusions in the coarse fraction. The clay may be derived from a similar source as that used in fabric group 2, but the potters may have added sand temper, which would account for the gravelly appearance of many of the thin sections.

6.9.4 Fabric Group 4 Micaceous\textsuperscript{1140}
This group contains samples from Ayia Paraskevi\textsuperscript{1141} and Dhenia. Although this fabric contains many of the same minerals as the other fabrics in this study, it is dominated by mica and quartz in both the coarse and fine fractions. Geologically, such a high amount of mica in association with quartz is typical of the Dhikomo Formation found in the Kyrenia Range (Ducloz, 1972:9-11), making Lapithos or Kythrea likely sources for the vessels in this group. Unlike Fabric Group 7, which also contains samples from Ayia Paraskevi and Dhenia, this group has sedimentary inclusions such as micrite and calcite, which are missing from the fabric of Group 7.

Stylistically, most of the vessels in this group are decorated in a manner consistent with the designs found at Lapithos. The two vessels from Ayia Paraskevi may have been produced at

\begin{footnotes}
\item[1137] Enkomi 5 and 17. See Appendix 1, figure 1306 and 1316, respectively.
\item[1138] Enkomi 1 and 13. See Appendix 1, figures 1303 and 1313, respectively.
\item[1139] Enkomi 11. See Appendix 1, figure 1311.
\item[1140] See Appendix 3, tables 7 and 8, Appendix 4 (4.1 and 4.2), and Appendix 5.
\item[1141] Ayia Paraskevi 2006.9 and 8. See Appendix 1, figures 1275 and 1286, respectively.
\end{footnotes}
Toumba tou Skourou or Kythrea where painted ceramics were decorated with very fine lines\textsuperscript{1142}. These vessels are probably later in date than the other vessels in this group.

Fabric group 4 is most likely a northern fabric. The clay has probably been derived from the Kyrenia Range, which is present near the production units of Toumba tou Skourou in the west, as well as Lapithos, Vounous, and Kythrea on the north coast.

6.9.5 Fabric Group 5 Micaceous with no volcanic rock fragments\textsuperscript{1143}
There are only two members in this group, both from Lapithos.\textsuperscript{1144} One of the vessels is a small jug and the other is a deep bowl. In both cases the fabric is light in colour. Quartz and mica are the dominant minerals present in the fabric and there are neither foraminifera nor micrite chunks. Volcanic rock fragments are also absent. The clay used to make these vessels was not derived from the same foraminiferal limestones as the other vessels from Lapithos, but it is most likely from the north coast. Certainly the decoration on both vessels is quite common at Lapithos.

6.9.6 Fabric Group 6 Micritic fabric with sedimentary inclusions and volcanic rock fragments\textsuperscript{1145}
There are three members in this group: two from Dhenia\textsuperscript{1146} and one from Lapithos\textsuperscript{1147}. Although the most common mineral in these samples is quartz, they also contain substantial amounts of foraminifera and micrite, likely derived from the Lapithos Formation, in addition to volcanic rock fragments. The volcanic rock fragments are most abundant in the sherd from Lapithos, but the jug from which that sherd came is decorated in a typical Lapithos fashion with panels of cross-hatching separated by vertical wavy lines. It is almost certainly a product of the Lapithos production centre, as the other two bowls from Dhenia likely are. This fabric, although it contains volcanic rock fragments, is probably a northern fabric.

\textsuperscript{1142} Ayia Paraskevi 5 and 8. See Appendix 1, figures 1283 and 1286, respectively.
\textsuperscript{1143} See Appendix 3, tables 9 and 10, Appendix 4 (5.1 and 5.2), and Appendix 5.
\textsuperscript{1144} Lapithos 32-27-208 and 32-27-233. See Appendix 1, figures 1329 and 1331, respectively.
\textsuperscript{1145} See Appendix 3, tables 11 and 12, Appendix 4 (6.1 and 6.2), Appendix 5, and Appendix 6.
\textsuperscript{1146} Dhenia 2006.39 and 2006.57, both from the group of sherds collected in H. Catling's survey. See Appendix 1, figures 1288 and 1290, respectively.
\textsuperscript{1147} Lapithos 32-27-2139. See Appendix 1, figures 1327-1328.
6.9.10 Fabric Group 7 Volcanic rock fragments and quartz, but no sedimentary material.\textsuperscript{1148}
There are two samples in this group: one from Ayia Paraskevi\textsuperscript{1149} and one from Dhenia\textsuperscript{1150}. Like most Cypriot fabrics, quartz is the dominant mineral present, but there are also several volcanic rock fragments as well. The clay used to make these vessels was probably derived from volcanic rock, perhaps the pillow lavas of the Troodos Massif, making this a Mesaoria Plain fabric. The decoration on the sherd from Ayia Paraskevi is unique, but the decoration of the bowl from Dhenia is common both at Lapithos and in the Mesaoria. The absence of sedimentary material in this fabric makes the north coast an unlikely source.

6.9.11 Samples that do not correspond to the other fabric groups
There are five samples that do not fit into the established fabric groups. These most likely represent other fabrics for which each is the sole sample in this study. One of these comes from Alambra\textsuperscript{1151}, one from Galinoporni\textsuperscript{1152}, one from Lapithos\textsuperscript{1153}, and two from Politiko\textsuperscript{1154}. The sample from Galinoporni may represent a Karpass fabric, since the sherd is decorated in a manner common on Red-on-Red and Red-on-Black ware, both Karpass wares. The sample from Lapithos is probably representative of a different Lapithos fabric, as the decoration is very common there. The two from Politiko are similar to each other. Politiko 2006.66 has a dark clay and a lighter clay, the dark one of which closely resembles the fabric of Politiko 2006.85. It is not surprising that there are so many samples that do not correspond to the seven groups of chapter 4 since the 69 samples in this study cannot be an accurate representation of all of the fabric groups in use in the Middle Bronze Age on Cyprus, even for a specialized ware like White Painted Ware.

6.10 Conclusion
While there is little direct correspondence between the fabric groups and the sites from which the samples come, some interesting conclusions can be drawn from this study. The fabric groups

\textsuperscript{1148} See Appendix 3, tables 13 and 14, Appendix 4 (7.1 and 7.2), Appendix 5 and Appendix 6.
\textsuperscript{1149} Ayia Paraskevi 2, Appendix 1, figure 1280.
\textsuperscript{1150} Dhenia 2006.44, Appendix 1, figure 1289.
\textsuperscript{1151} Alambra 1, Appendix 1, figure 1266.
\textsuperscript{1152} Galinoporni 4, Appendix 1, figure 1324.
\textsuperscript{1153} Lapithos 69-35-50, Appendix 1, figures 1325-1326.
\textsuperscript{1154} Politiko 2006.66 and 2006.85. See Appendix 1, figures 1332 and 1333, respectively.
themselves tend to cluster around certain geological areas of Cyprus\textsuperscript{1155}. First, the fabric groups will be discussed from the point of view of geological sources, and then each of the sites from which samples were taken will be discussed in order to understand local production and importation. Finally, the relationships between the production centres established in Chapter 5 and the sites where White Painted ware was found will be discussed.

\textbf{6.10.1 Fabrics of the Mesaoria}

Groups 1, 4, 7 and samples 8d and 8e all appear to be made of clay taken from the Mesaoria, while the fabric of group 3 may also be found in the Mesaoria. Group 1 is dominated by samples from Ayia Paraskevi, Dhenia and Politiko, all in the Mesaoria. The sample from Enkomi bears a decoration that would be at home in Toumba tou Skourou, which may be its origin. The sherd from Galinoporni is decorated in a style typical of Kythrea, or perhaps Lapithos, but the Mesaoria production centre(s) seem to have imitated Lapithos and Kythrea styles quite regularly. It is likely that this fabric is from the Mesaoria. Group 4 also appears to be a Mesaoria fabric with all of its member samples coming from Ayia Paraskevi and Dhenia. The decoration on the sherds, however, is also typical of Lapithos, which may be where the vessels were made. Fabric 4, therefore, could be either from Lapithos or the Mesaoria. Group 7 has two samples: one from Ayia Paraskevi and one from Dhenia. The decoration on the sherd from Ayia Paraskevi is very unusual and is probably a product of the more experimental Mesaoria production centre.\textsuperscript{1156} The bowl from Dhenia is decorated in a style common at both Lapithos and in the Mesaoria. The two sherds from Politiko in Group 8 do not have any characteristic decoration, but the fabric contains so many fresh volcanic rock fragments that it is certainly from an area very close to the pillow lavas. The Mesaoria, then, appears to have had at least four or five different fabrics, although similar fabrics may also be found on the north coast or in Morphou Bay. The similarity between fabrics could be partly due to the potters’ choice of particular clay to make White Painted ware.

\textbf{6.10.2 Fabrics of the North Coast}

North coast fabrics are derived from the Kyrenia Mountain Range and tend to be dominated by limestone and sedimentary material, although there are some outcrops of basalt in some parts of

\textsuperscript{1155} See Appendix 2, map 3.
\textsuperscript{1156} As discussed in Chapter 5, the styles of the production centre at Lapithos remain similar over a long period of time, while those of the Mesaoria show much greater variation and experimentation in both shape and decoration.
the range. Group 2 is dominated by samples from Alambra and Dhenia, but the styles are most at home in Lapithos, which is probably the source of most of the vessels in this group. The two vessels from Galinoporni may have been produced near Kythrea, but the geology in both areas is very similar. Group 5 only has sherds from Lapithos in it, and the decoration is also typical of this site. Group 6 contains sherds from both Dhenia and Lapithos, but the decoration on them points to production at Lapithos, although it is still possible that the two samples from Dhenia were produced in the Mesaoria. The sherds from Alambra and Lapithos that are in the group of outliers were probably also both made at Lapithos. Without petrographic samples or soil samples from Kythrea, and Toumba tou Skourou, it is not really possible to know whether there were different fabrics from those sites, but the decoration on the sherds can offer some clues when compared with the material from all the north coast sites as discussed in Chapter 5. Lapithos appears to have had at least six different fabrics, some with volcanic rock fragments that could have been taken from near basalt outcrops or near a river that carried such material.

6.10.3 Fabrics of the Eastern Region
Fabric group 3 appears to be an eastern fabric. Seventeen of the eighteen samples from Enkomi fall into this group as well as one from Alambra, two from Ayia Paraskevi, and one from Dhenia. The sherd from Alambra is decorated in the Pendant Line Style, which is an eastern style. It is probably an import. The two from Ayia Paraskevi may be local products, or could be from Toumba tou Skourou, according to their decoration. The sherd from Dhenia could also be from Toumba tou Skourou. It would appear that very similar clays are present in the eastern and north-western parts of the island, although soil samples from these two areas would be necessary in order to make such an argument with certainty.

6.10.4 Fabrics of the Karpass Region
A single sherd from Galinoporni represents the Karpass Region. The decoration on the sherd is typical of Ayios Iakovos and such a scheme is not found outside this area. The fabric of this sherd contains volcanic rock fragments as well as sedimentary material and is compatible with the geology of the region.

1157 See Appendix 2, map 1.
6.10.5 Fabrics found at Alambra
Alambra seems to have received the bulk of its White Painted pottery from Lapithos, although one sherd seems to have been imported from the east. Other than the Pendant Line Style sherd, however, the samples from Alambra are mostly quite early, dating to MC II or III. There are three fabric groups represented at the site: groups 2, 3 and 8a. Groups 2 and the sherd 8a are north coast fabrics, while group 3 is eastern, but similar clay may also be found in the Mesaoria.

6.10.6 Fabrics found at Ayia Paraskevi
The samples from Ayia Paraskevi fall into five groups: groups 1, 2, 3, 4 and 7. Groups 1, 3, 4 and 7 are probably local fabrics and the decoration on the sherds is also consistent with local production. Group 2 is a north coast fabric, but the decoration on the sherd is a very fine cross-hatched triangle pattern that is more likely to have been produced in the Mesaoria. It seems that Ayia Paraskevi was receiving its pottery from a local Mesaoria production centre.

6.10.7 Fabrics found at Dhenia
Dhenia seems to have been receiving its White Painted ware from different sources. Groups 1, 2, 3, 4, 6 and 7 are all represented at this site. Most of the vessels sampled came from the Mesaoria, but several appear to have been produced on the north coast. The sherd in Group 3 is actually decorated in a style more typical of the Mesaoria or Lapithos than of the eastern production groups and was probably produced locally, rather than imported from the east. Most of the decorative motifs found at Dhenia are typical of Lapithos which probably served as a source of inspiration as well as of pottery. It is also possible that potters from Lapithos established themselves in the Mesaoria as there is very little difference between the styles produced in both areas.

6.10.8 Fabrics found at Enkomi
Virtually all of the sherds from Enkomi were produced locally. The single sherd that is in Group 1 has a decoration composed of lines that could have been produced at Toumba tou Skourou although very little of the decorative scheme can be reconstructed from this sherd. As much as Group 3 is an eastern fabric, Enkomi is dominated by this fabric group. Soil samples would help to verify this claim, but stylistically this group fits into the repertory of Kalopsidha and Enkomi.
6.10.9 Fabrics found at Galinoporni
The four sherds sampled from Galinoporni fit into three fabric groups: group 1, 2, and 8b. The sherds in groups 1 and 2 all appear to be from the north coast, possibly Kythrea, based on their styles. The outlier sherd in group 8 is most likely from Ayios Iakovos where its peculiar decoration is common. Galinoporni seems to have been receiving its pottery from nearby on the north coast as well as to its south at Ayios Iakovos.

6.10.10 Fabrics found at Lapithos
Lapithos seems to have been producing its own pottery for the most part. Groups 5, 6 and 8 are represented in the samples. Group 5 is most definitely a Lapithos fabric as both sherds in the group come from there and are decorated in the most common style for jugs at that site. The sherds in groups 6 and 8 are also decorated in the same way. None of the sherds from Lapithos that were examined in the petrographic analysis appears to have been imported, although Lapithos probably imported at least some of its White Painted ware.\textsuperscript{1158}

6.10.11 Fabrics found at Politiko
Most of the sherds from Politiko were probably produced at Lapithos based on both their fabric (group 1) and their decoration. Two of them, however, both in group 8, are clearly quite different. The fabric contains several fresh volcanic rock fragments and probably came from an area near the pillow lavas in the Mesaoria. The decoration is inconclusive, as it is composed only of groups of broad lines, but it is most likely that these two sherds were produced near the site. Politiko, then, appears to have had at least two sources for its White Painted ware: one on the north coast, probably at Lapithos, and another local source in the Mesaoria. The clay used by the Mesaoria production centre that produced these two vessels was different from that used to produce other vessels thought to come from the Mesaoria. This may indicate a distinct production centre at Politiko, or perhaps just the use of another clay bed. Soil samples near the Mesaoria sites may help to resolve this problem.

6.10.12 Relationships between production centres and sites where White Painted Ware has been found
As determined stylistically in Chapter 5, there were seven production centres responsible for the manufacture of White Painted ware in the Middle and early Late Bronze Age. These are not

\textsuperscript{1158} See the discussion in Chapter 5.
meant to be considered as specific production groups, but rather as areas from which the material came. Within the area, the clay sources and the styles were similar and potters were probably aware of each other’s work, but there is no reason to imagine them as working together in a common place. The seven sources of White Painted ware were Vounous, Lapithos, Ayios Iakovos, Kythrea, the Mesaoria Plain, Kalopsidha and Toumba tou Skourou. Vounous was the source of White Painted I ware, which is not considered by most scholars to have been part of the greater White Painted ware repertory. White Painted II began at Lapithos, and the material from Vounous from that time forward is very similar to that from Lapithos and was likely made there. Lapithos itself was not only producing the bulk of its own White Painted ware, but also received some from all of the other production centres. Toumba tou Skourou produced its own pottery on a very large scale, but also had some vessels from Kythrea, Kalopsidha and the Mesaoria. Kazaphani was getting pottery mainly from Toumba tou Skourou, but also from the Mesaoria and Kalopsidha, while Kalopsidha made its own pottery for the most part, but also received wares from Toumba tou Skourou and the Mesaoria. Milia seems to have been receiving its White Painted ware from Toumba tou Skourou and from Kalopsidha, but it is possible that the material from Toumba tou Skourou was actually coming to Milia via Kalopsidha along with that site’s own local pottery. Arpera seems to have been trading with Kalopsidha and the Mesaoria. Ayia Paraskevi received its White Painted ware from Lapithos, and also from Kythrea, Toumba tou Skourou and a production centre somewhere in the Mesaoria Plain. It is possible that some of the vessels in Lapithos styles but with their designs executed in a sloppy manner may have been produced in the Mesaoria as imitations of vessels from Lapithos. There are also many similarities between the White Painted ware of Ayia Paraskevi and that of Hala Sultan Tekke and Toumba tou Skourou, suggesting either similar sources or similar taste among the consumers, or both. Krini Merra and Politiko were receiving material from Lapithos, and also from the production centre in the Mesaoria. Most of the White Painted ware at Stephania was produced at Toumba tou Skourou, but there were

1159 See Appendix 2, Map 10.
1160 See Appendix 2, Map 16.
1161 See Appendix 2, maps 12 and 24, respectively.
1162 See Appendix 2, map 26.
1163 See Appendix 2, map 28.
1164 See Appendix 2, map 18.
1165 Or they may have been the work of inexperienced potters. See Minar and Crown on novice potters.
1166 See Appendix 2, maps 15 and 19, respectively.
also a few vessels from Lapithos\textsuperscript{1167}. Dhenia and Klavdhia both received vessels from Lapithos, Toumba tou Skourou and the Mesaoria. Laxia tou Riou seems only to have been receiving wares from the Mesaoria\textsuperscript{1168}. Kouklia, Linou, Xylotymbou and Magounda had so little White Painted ware that there is unlikely to have been actual trade in ceramics with the production centres making White Painted ware. Kouklia, Xylotymbou and Magounda have pottery that fits within the repertory of Toumba tou Skourou\textsuperscript{1169}. Xylotymbou has vessels that may have been made at either the Lapithos or Mesaoria production centre, but further fabric studies would be required in order to determine the origins of these unique objects. Linou seems to have received its White Painted ware solely from Lapithos. Enkomi was receiving most of its White Painted ware from Kalopsidha, but some of it may have come from Toumba tou Skourou, which is very interesting since Enkomi and Toumba tou Skourou were the two main urban centres on the island in the Late Bronze Age (Vermeule & Wolsky, 1990: 7).\textsuperscript{1170} There are also a few vessels that may have come from Lapithos, a site that was a major centre in the Middle Bronze Age, but was declining while Enkomi became more powerful. Boghaz was receiving pottery from Lapithos, Toumba tou Skourou and Ayios Iakovos, while Galinoporni seems to have been trading with Lapithos, Toumba tou Skourou, Ayios Iakovos and Kalopsidha\textsuperscript{1171}. Finally, Hala Sultan Tekke was receiving its White Painted ware from Lapithos, Toumba tou Skourou, Kythrea, the Mesaoria and Kalopsidha\textsuperscript{1172}.

When these are isolated as they are on the maps referred to in the last paragraph, the connections between them and the six production centres become clear. Lapithos has the greatest number of connections, receiving material from all of the other production centres in addition to producing nearly all of its own White Painted ware. It is followed by Hala Sultan Tekke in its connectivity, which has material from all of the production centres except for that at Ayios Iakovos. Ayia Paraskevi and Galinopori have the next highest number of connections, having material from four different production centres each\textsuperscript{1173}. Kazaphani, Dhiorios, Toumba tou Skourou, Dhenia,

\textsuperscript{1167} See Appendix 2, map 14.
\textsuperscript{1168} See Appendix 2, maps 17, 29, and 30, respectively.
\textsuperscript{1169} See Appendix 2, map 31, 32 and 33.
\textsuperscript{1170} See Appendix 2, map 25.
\textsuperscript{1171} See Appendix 2, maps 27 and 23, respectively.
\textsuperscript{1172} See Appendix 2, map 31.
\textsuperscript{1173} For Ayia Paraskevi, these are Lapithos, Kythrea, Toumba tou Skourou and the production centre in the Mesaoria. For Galinopori they are Lapithos, Toumba tou Skourou, Ayios Iakovos and Kalopsidha.
Boghaz, Xylotymbou and Klavdhia all have three connections each, and Stephania, Krini Merra, Politiko, Ayios Iakovos, Kalopsidha, Enkomi, Milia and Arpera each have two connections. Only Vounous, Marki, Laxia tou Riou, Linou, Kouklia and Magounda were receiving their White Painted ware from a single source. Although there are definitely regional trends in styles, the vast majority of sites preferred to have material from multiple sources. The sites receiving their wares from a single source all had very little White Painted ware, and in the case of the first three, were receiving it from Lapithos in the early part of the Middle Bronze Age before the other production centres began making this type of pottery. It is interesting that three of the sites with the greatest number of connections are on the coast, while the fourth is in the centre of the island half-way between the copper-bearing Troodos Massif and a major mountain pass in the north. It is not likely coincidental that sites that were major nodes for trade also received pottery from all over the island. It is not surprising that Lapithos had trade connections with all of the other production centres since it seems to be the site where the style originated \(^{1174}\), but interestingly, it seems to have imported White Painted wares from each of those sites as well.

From the point of view of the production centres themselves, the centre in the Mesaoria exported White Painted wares to the highest number of sites, although the geographic region appears to have been fairly restricted to the centre of the island \(^{1175}\). This site exported White Painted ware all around the Mesaoria as well as on the northwest and southeast coasts \(^{1176}\). It is possible that there was more than one production centre in the Mesaoria, but the decoration seems to have been common among the sites. The second-highest exporter is Toumba tou Skourou, which exported pottery to all parts of the island except for the Karpass Peninsula \(^{1177}\). These two sites are followed by the production centre at Lapithos, which although it was in operation longest, sent its wares to fewer sites than the other two \(^{1178}\). Lapithos styles, however, were imitated by the other production centres which often used Lapithos motifs in novel combinations or on different shapes. As far as influence is concerned, Lapithos outshines all other sites. The

\(^{1174}\) That is White Painted II ware. White Painted I appeared first at Vounous, but its motifs did not continue (Paul Astrom, 1957).
\(^{1175}\) The production centre at Vounous seems to have only produced White Painted I. The White Painted II and later types found there are indistinguishable from the White Painted ware vessels found at Lapithos. When White Painted ware as Åström defined it began in production, it seems to have been coming out of Lapithos. For this reason, the production centre at Vounous is not being considered here.
\(^{1176}\) See Appendix 2, map 5.
\(^{1177}\) See Appendix 2, map 9.
\(^{1178}\) See Appendix 2, map 4.
production centre at Kalopsidha has the next highest number of export sites, and like Toumba tou Skourou, it is one of the few sites that produced White Painted ware for export to Egypt and the Levant (Maguire, 1992:119). The production centre at Kythrea did not produce much White Painted ware, but its pottery traveled from the northwest to the southeast coasts. Finally, the production centre at Ayios Iakovos seems to have kept most of its products close to home, although it did send pottery as far west as Lapithos and as far East as Galinoporni. The styles are so similar to the Red-on-Red and Red-on-Black styles that it is likely the same potters produced both wares. A better understanding of the trade network that included Ayios Iakovos may be reached through the study of these other pottery types.

An interesting trend develops when one considers the chronology of the six production units. All of the White Painted ware being made at the end of the Early Bronze Age was being manufactured at Lapithos. This production centre continued in operation until the end of the Middle Bronze Age. In the early part of the Middle Bronze Age, only Lapithos and Ayios Iakovos were producing White Painted ware. This means that early sites had to have received their pottery from one of these two. Ayios Iakovos had a very restricted distribution, so nearly all of the White Painted ware of the early part of the Middle Bronze Age was coming from Lapithos. The production centres at Kythrea and in the Mesaoria began to make White Painted ware in the middle of the Middle Bronze Age, and their products show a high degree of influence from Lapithos. The centre in the Mesaoria has the greatest distribution of White Painted ware, even though the production centre itself was only in operation from the Middle to the beginning of the Late Bronze Age. Lapithos, Kythrea and the Mesaoria production centres stopped producing White Painted ware in the beginning of the Late Bronze Age. At the beginning of MC III, the production centres of Kalopsidha and Toumba tou Skourou began to make pottery. These two sites were both coastal, and both major exporters both around the island and across the water to the mainland. The main production of White Painted ware, then, shifted from Lapithos on the north coast, to the Mesaoria, then to the northwest and southeast coasts. This pattern in ceramic production and distribution is also reflected changing settlement patterns inter-

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1179 See Appendix 2, map 8.
1180 See Appendix 2, map 6.
1181 See Appendix 2, map 7.
1182 Such a project is beyond the scope of this thesis.
1183 See Appendix 8, Table 2.
site trade connections, and the increasing importance of copper in the Cypriot economy (Catling, 1962:138-146; Keswani, 1993:76-79; Knapp, 2008:134-149). Such similarity is unlikely to be a coincidence.

The petrographic analysis, then, reinforces some of the conclusions drawn about the production centres isolated in Chapter 5. Lapithos and the Mesaoria appear to be the main sources of White Painted ware, although Enkomi appears to have been receiving almost all of its pottery from a nearby production centre at Kalopsidha. Without more samples from the other production centres, however, only tentative suggestions can be made about their output. Clay selection is only a small part of the chaîne opératoire, leaving most of the choices available to the potters to be drawn from other parts of the production sequence. Placing the production of White Painted ware within the greater context of its use and deposition will help to answer some of the questions about the social, political and economic landscape of Middle Bronze Age Cyprus.
Chapter 7

Conclusions

7.1 Introduction
The manufacture of White Painted ware was chosen as a case study because this ware is easily identifiable in contrast to the more ubiquitous monochrome wares on Cyprus. It also has a limited repertory of shapes and decorative motifs that show regional distribution, making it easier to group together to suggest possible production centres and spheres of artistic influence. Unfortunately, White Painted ware is not found in great quantities in the southern part of the island and is entirely absent from most southern sites, making this study more of a reflection of pottery production in the northern and eastern parts of Cyprus, rather than the island in general.

During the Early Bronze Age, and throughout the Middle Bronze Age, Cyprus had two different political and socio-economic systems in operation, divided into north and south by the Mesaoria Plain. The northern settlements tended to be arranged hierarchically, judging by the differential wealth found in the cemeteries, while the southern settlements appeared to be more egalitarian with little differentiation in architecture or burials (Peltenburg, 1996:27). White Painted ware, moreover, has been found at most of the more powerful and influential sites of the Bronze Age, particularly those that seem to have been involved with copper production and distribution, such as Lapithos, Toumba tou Skourou, and Enkomi.

The study of ceramic production in this thesis attempts, as far as possible, to follow the chaîne opératoire approach to material culture studies pioneered by French scholars. To date, this approach has seen little application on Cyprus where art-historical approaches tend to dominate ceramic studies. There are many benefits to this approach. Firstly, each individual vessel, rather than the entire class of pottery as a group, is the object of study. In looking at the individual pot as a product of the potter, the focus is placed on the creative process and the choices made by the person who manufactured the artefact. Secondly, the choices made by the potter are at least partly influenced by social factors, making the reconstruction of the society in which the potter worked possible. Thirdly, the communities of practice of the Bronze Age potters can be studied through similarities and differences between shapes and decorative motifs and schemes.
Fourthly, related to the previous point, it is possible to identify new members of the community of practice through their less skilled work. Finally, the identification of communities of potters in various places on Cyprus facilitates tracing the spread of techniques and styles across the island.

7.2 Choosing and preparing the clay
The potters chose calcareous clay to make White Painted ware. The monochrome ware was made from clay derived from igneous rocks, which was generally dark red in colour. They used this clay in suspension in order to make the slip they used to paint the decoration on the White Painted ware (Barlow & Idziak, 1989:74-75. Because the potters were deliberately choosing clay that was light in colour and had the desired properties for use in manufacturing this specialized pottery, it is not surprising that there is a high degree of similarity in the mineral composition of the clay used in different parts of the island to make the vessels of this ware (Frankel, 1981:96; Frankel, Hedges, & Hatcher, 1976:40).

Cypriot potters of the Middle Bronze Age appear to have used the clay as it came from the ground, perhaps sieving to remove larger particles, but probably did not add temper (Barlow, 1994:52). Fabric group 3 suggests the addition of sand temper in the Late Bronze Age, but the inclusions may also have been present in the clay which was chosen for its coarseness. The fabric is only weakly bimodal and some of the larger grains are rounded.1184 The presence of multiple fabric groups at a particular site could be the result of the use of more than one clay bed, or perhaps it reflects a high degree of heterogeneity within the clay bed itself. Lapithos appears to have had several different fabrics, but this production centre was active for over two hundred years. The presence of different clay beds in the Mesaoria style group could be an indication of more than one production centre, but the similarity in decoration of the vessels from Politiko, Ayia Paraskevi and Dhenia makes it difficult to be more precise than the identification of a regional group. Some of the vessels in this group contain higher amounts of volcanic rock fragments than others, arguing for the use of a clay bed situated near the Troodos Massif where the pillow lavas are found. The transition between the pillow lavas and the chalks and limestones in that area is very sharp. Clays derived from igneous rock could be in very close

1184 Rounded grains could mean that the larger particles were weathered as part of the clay bed, but it could also mean that the potter added sand rather than crushing rock for temper. This is not a strong argument for the addition or non addition of temper.
proximity to clays derived from sedimentary rocks, so that a production centre near the Troodos Massif could have produced vessels with very different fabrics, at least in theory.

Although it was not possible to assign each fabric group to a specific production centre, regional patterns could be discerned. The Mesaoria had a number of different fabrics, partly because of imported vessels, but also due to geological variety. Some Mesaoria fabrics contained more volcanic rock fragments than others. This area also had a higher degree of variation in motifs and decorative syntax than the north or east coasts. The Mesaoria potters appear to have experimented in shapes, decorations and clay paste recipes. The north coast production centres, which include Lapithos, Kythrea and Toumba tou Skourou, may have had several paste recipes, but only material from Lapithos could be studied petrographically, and only five sherds could be obtained, one of which was too friable to make a good thin section. Without the ability to secure more samples from northern sites, very little can be said about the clay recipes used by potters there. Based on the motifs and the decorative syntax, however, exports from these sites have been identified among the sherds from other sites that were sampled. Through these imported sherds, a small picture of the various north coast fabrics could be pieced together. Most north coast fabrics were found to be high in limestone and low in volcanic rock fragments. The fabrics of the eastern region contain both volcanic rock fragments and sedimentary material. The volcanic rock fragments were most likely carried by river as they were well-rounded and much decomposed.

The potters were probably using local clay to produce their pottery, although they were clearly choosing clay with specific properties. The sherds matched to areas of regional preference also had fabrics that were consistent with the local geology. Although there were few samples analyzed, the results are quite promising. If it were possible to secure more sherds for analysis from all of the areas thought to have production centres, it may be possible to match fabrics to specific production centres. Soil samples from the areas surrounding the production centres may help to establish a more precise location of the pottery-manufacturing villages.

7.3 Choosing forming techniques and shapes
White Painted ware of the Middle Bronze Age was made by hand mostly using the coil-building technique, although small vessels may have been made by pinching the shape from a ball of
clay.\textsuperscript{1185} In the case of some of the bowls from Lapithos, in particular, they may have been made by pressing over or into a mould such as the base of a broken jug. These bowls are covered in facets made by the potter’s fingers and the rim profile is uneven, suggesting that the shape was fashioned using pressure and was not smoothed to make the walls of even thickness. The added attributes, such as handles, necks and spouts, were formed separately and thrust through the vessel walls in the case of jugs. The handles of bowls were sometimes done this way, but horizontal handles were often just pinched onto the rim of the vessel. Clay collars were usually added to hide the joint of handles and necks. Open spouts were pinched from the end of the neck, possibly after the neck was attached to the vessel\textsuperscript{1186}, while tubular spouts appear to have been formed by rolling a rectangular piece of clay into a tube and sealing the seam.\textsuperscript{1187} Special shapes such as askoi, rattles, figurines and multiple vessels were not available to the author for study, so no comments can be made about their method of construction.

As with decoration, there were regional preferences for shapes. Most White Painted vessels are fairly small, in contrast with some of the Red Polished ware jugs which could be very large. The repertory of shapes includes jugs, bowls, amphorae, tankards, deep bowls with or without spouts, askoi, and a few special shapes such as rattles and figurines. Not every shape, however, is found at each site. Kythrea, for example, had only jugs, and most of these were quite large for White Painted ware vessels.\textsuperscript{1188} Jugs from Kythrea also tend to be quite light for their size, suggesting that the walls were quite thin compared to Lapithos jugs of the same dimensions. The most popular shape at Toumba tou Skourou was the tankard in the angular style of Base Ring ware. These are peculiar to this site and those found elsewhere are most likely imports from the production centre there. Bowls were also popular, but less than the tankards. Kalopsidha seems to have concentrated production on small jugs that were painted in the Cross Line Style. These range in size from six to twelve centimetres in height, but their dimensions are too variable for them to be considered mass-produced on a large scale. The Coarse Linear Style seems to be confined to Kalopsidha as well, and may represent the work of novice potters and painters attempting to produce Cross Line Style jugs. Small String Hole Style jugs seem to be the main product of the Mesaoria production centre, although some String Hole Style vessels may also

\textsuperscript{1185} This is based on observations of 53 vessels in the Cyprus Museum from several different sites.
\textsuperscript{1186} They often have fairly high curvature but do not appear to have been laid on a flat surface to harden and dry.
\textsuperscript{1187} Seams are often visible as flat areas on the underside of the spout.
\textsuperscript{1188} The largest was 24.5cm tall (A710), while the smallest were each 15.5cm in height (A729, A739, and A740).
have been manufactured at Lapithos. The Lapithos potters had the greatest variety of shapes, with relatively large jugs and hemispherical bowls being their main output. Many of the interesting askoi and other special shapes seem to have originated in the north coast production centre as well. Although there were local preferences for certain shapes, there was still a great deal of influence between sites. Some of the shapes for White Painted ware were drawn from the repertories of other wares, such as Red Polished (at Lapithos and Vounous), and Base Ring (at Toumba tou Skourou). It does not appear that there were specialist potters making White Painted ware, but instead the same potters made several different types of pottery.

7.4 Choosing motifs and decorative syntax
The early White Painted ware from Vounous, particularly the White Painted I ware, has motifs borrowed from the Red Polished ware repertory of that site. The designs on Red Polished ware, however, are incised rather than painted, and most of them are angular. The zigzags tend to be discontinuous oblique lines that meet at the apices, whereas the White painted zigzags are continuous lines without breaks. When they are discontinuous, they meet each other as groups rather than individual lines, such as the alternating oblique line pattern seen on hemispherical bowls.

The motifs at Lapithos were drawn from the earlier incised traditions, but were modified, perhaps due to the ability to create more flowing lines with a brush than through incision. The wavy line was introduced there, and became one of the most popular motifs on White Painted ware, particularly in combination with lattice panels. Hatched triangles were also very popular, particularly on bowls, although they are not unknown on jugs. Cross-hatching was used in several shapes, such as triangles, squares and diamonds, but the panels seem to be exclusive to Lapithos and are found mainly on the early vessels. The decorative field on jugs from Lapithos is usually divided into vertical or horizontal bands.

At Kythrea, the field is either divided into horizontal bands, or else it is covered in a linear pattern such as Pendant Line or Cross Line Style. The Cross Line Style at Kythrea is different from that of Kalopsidha, both in the size of the vessel decorated and in the overlay of another

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1189 See Appendix 1, figures 265, 268, 290, 291, and 292. The shapes are also typical of Red Polished ware from Vounous.
1190 See Appendix 1, for example, the jug in figure 194, the base of the bowl in figure 196, and the vessels in Group 10 from Lapithos (figures 216-244).
linear pattern in conjunction with it. There is also a hybrid of Pendant and Cross Line Style which made Åström believe this site was the place of origin for the latter.

Most of the vessels from Toumba tou Skourou have their decorative fields divided into horizontal bands, although some small bottles and jugs have vertical panels. The horizontal panels on the tankards are usually further divided into vertical components. Where the hemispherical bowls at Lapithos have a band of principal decoration around their outside rims, the base appears to be the focus for decoration on the bowls at Toumba tou Skourou, and it is divided into wedges of four or eight motifs. There are also bowls that look similar to those from Lapithos as well. Deep bowls are mainly decorated with horizontal panels of motifs. The typical decoration at Lapithos is the lattice panel, while at Toumba tou Skourou lattice decoration appears on many shapes. One of the more unique patterns at this site is the placement of cross-hatched triangles in such a manner than an outline of a reserved zigzag is created.

The production centre in the Mesaoria shows a strong preference for decoration arranged in horizontal registers, usually chains of diamonds or triangles. The shapes are mainly small jugs and their surface, including the neck(s) is covered with the design. Many of the vessels are covered in small vertical lugs around which the design is executed.

Kalopsidha potters tended not to divide the surface of the vessel, but created linear designs that covered the entire thing. It is likely that the Cross Line, Tangent Line and other linear styles originated at the production centre there. Ayios Iakovos, on the other hand, drew inspiration for the decoration of its White Painted ware from the repertory used to decorate Red-on-Red and Red-on-Black ware. It imported vessels from the north coast and possibly Kalopsidha, but its own production does not seem to have been influenced by other places.

7.5 The organization of production
During the course of this study, most particularly in the stylistic analysis that forms the basis of chapter 5, several vessels were identified that appear to have been made by potters and painters of less skill than others from the same site. In some cases, the vessel shape was well-formed,

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1191 See Appendix 1, figures 379-393.
1192 See Appendix 1, figures 401-412.
1193 See Appendix 1, figures 473-477 for vertical panels.
1194 See Appendix 1, figures 555, 556, 557, 558, 559 and 562, for example.
1195 See Appendix 1, figures 459 and 461, for example.
while the painting did not appear to be carefully applied. Sometimes the vessel shape was as irregular as the painted lines. More curiously, some of the vessels appeared to be painted more carefully in some parts than on others. All of these characteristics have been described by Crown, studying pottery of the American Southwest, as the work of children learning to become potters (Crown, 2007; Crown, 2001:452-454). Evidence of inexperienced potters and painters can be seen on vessels that show some evidence of a more expert potter or painter providing a model to be followed or some assistance, and also on vessels that appear to be entirely the work of novices.

Several vessels bear decoration that does not appear to have been entirely created by the same hand. In some cases the motifs are similar, but not as neatly executed on some parts of the pot as on others. In other cases, the bands of decoration on one side, although similar, do not line up with those on the other side. There are different degrees of competency in the execution of the design, suggesting the work of people at various stages of hand-eye coordination and motor control, or with different levels of skill in planning and execution of design sequences. Sometimes the vessel itself appears to be well-made, but the motor skills of the painter appear to be less developed than those of the potter. Perhaps these vessels were made by established potters who then gave them to those learning the craft to paint. There are also a few vessels that seem to have been made mainly by someone with little skill, but that have parts, such as handles or spouts, made by someone with more skill. In these cases, the more experienced potter may have been assisting the learner with parts of the process that were difficult. Finally, several vessels are neither well-made nor well-decorated. These may be the work of novice potters and painters of varying degrees of skill. Although one might not conclude that new potters were

1196 For example, L.316.4, L.316.79, L.316.106 from Lapithos; 64.153 and 2B.39 from Kazaphani, but probably made at Toumba tou Skourou; 1(13) from Stephania, but probably also made at Toumba tou Skourou; and T.V.27 from Toumba tou Skourou; See Appendix 1, figures 89, 125, 258, 289, 335, 365, and 525.

1197 For example, A781 and L.316.21 from Lapithos; 2A.329, 2B.39, 2B.221, 2B.246, 2B.499, 2B.502 and 2B.503 from Kazaphani; 1(13) from Stephania; T.1.541 from Toumba tou Skourou; 58.145 and 11 Gladstone Street from Ayia Paraskevi; 291(5), 3(11), 2(3), 5.047, 5.193, 100(13), and 148(13) from Enkomi; and 71(10), A752, and A806 from Klaivdia. See Appendix 1, figures 250-253, 256, 333, 335, 337, 339, 341, 343, 344, 365, 516, 742, 785, 993, 996, 1108, 1109, 1112, 1115, 1116, 1117, 1134, 1123, 1174, and 1197-1209, respectively.

1198 See, for example, 19(7) from Stephania; and A667, and A665 from Kalopsidha. See Appendix 1, figures 359, 1060-1065, and 1054-1058, respectively.

actively taught by experienced potters in a formal sense, it is clear that there must have been some sort of coaching or correction of their work as the evidence of vessels with some parts well executed and others not so well done would indicate. The vessels that have been painted by more than one person may be the result of the experience painter creating a model of a design for the novice to copy or complete.

The fact that novices were being instructed in the art of creating ceramics by an experienced potter does not mean that potters were organized into formal production groups. It is also possible that these learners were children learning from their parents in their pottery-producing homes. These anomalous pieces discussed above were isolated in this study while trying to attribute White Painted ware vessels to different production centres. In some cases, the motifs or shapes fit into the repertories of a certain centre, but the painting is not as neat as other vessels from that centre. In other cases, the designs were too novel to attribute to any of the production centres. Some novel designs were neatly executed and display the painter’s creativity, but other designs were random lines without structure. It is possible that all of the vessels in Åström’s Coarse Linear Style are attempts at Cross Line Style made by children or novices with poorly developed motor skills and hand-eye co-ordination. It would be interesting to undertake a study similar to Kamp’s in which she measured the ridge width of finger prints on the vessels to determine whether they were made by children (2001:434). The work of these novice potters and painters must have had some value, as all of these pieces were fired and most of them were found in tombs.

7.6 Consumer preferences
All of the production centres seem to have imported at least some of the White Painted ware found at them, but the majority of the vessels found at those sites appear to be local products. In some cases, the other sites where White Painted ware has been found seem to have been importing their pottery from the nearest production centre. This is true of Vounous, whose source was the only production centre making White Painted ware in the early period, Dhiorios, possibly the works of Vermeule’s “finger painter”; T.I.426, T.III.11, and T.VI.46 from Toumba tou Skourou; 61.56, 19(1), 27(6), and 1953.837 from Dhenia; 8 Gladstone Street, and A733, 58.139 from Ayia Paraskevi; A634 from Politiko; P13355, P15578 and 15691 from Marki Alonia; Åström’s “Coarse Linear Style” and also 1001(3) from Kalopsidha; and A722, A755, and A758 from Klavdhia. See Appendix 1, figures 30, 52-55, 76, 78, 90, 103, 105, 109, 112, 131, 138, 140-145, 146-151, 186-191, 207-208, 223, 224, 230-231, 233-235, 257, 265, 284, 285, 286, 290, 322, 326, 327, 328, 548, 554, 561, 675, 677, 680, 727, 759, 789-794, 795, 815-819, 900, 901, 902, 1009-1014, 1051, 1157-1163, 1175-1184, and 1185-1196, respectively.
Stephania, and Arpera. There are also sites that imported their pottery from the nearest production centre, in addition to another centre that was either near the coast or along a possible trade route. In these cases, the trade in White Painted ware may have been part of a larger trade in other products including, probably, copper. Some sites were receiving their pottery from centres in a north-south line across the Mesaoria, while others imported along an east-west line. A few coastal sites received pottery from production centres near the coast or from Kalopsidha, which exported much of its wares to the coastal site of Enkomi. Although the shapes that were imported were both open and closed, indicating a desire for the pottery itself rather than as a container for other products, White Painted ware is unlikely to have been the sole product traded. It does not occur in very great numbers at any of the sites into which it was imported. The largest quantities were found in the major production centres, but not all of the ceramics found there were locally produced.

Most of the White Painted vessels in this study were found in tombs, but many come from settlement sites as well. Such a distribution indicates that the purpose of this ware was not strictly mortuary. Although the imported pieces at production centres, particularly at Lapithos, were found in tombs, this does not mean that it was imported for that purpose. It is possible that family members from distant parts of the island brought contributions to the grave from their homes, or that the dead person had acquired these pieces in life and wished to be buried with them (Frankel, 1974a:204). Although Frankel suggests that the distribution of White Painted ware in the cemetery at Lapithos indicated the use of family tombs, due to the similarity of shapes and decorations, he did not explain why some families preferred certain shapes or motifs (Frankel, 1981:96). In his model, the family made its own pottery, but it is difficult to imagine that every family was making both the common Red Polished and the special White Painted ware that was found at Lapithos. In addition, there were similar vessels to those of some of the Lapithos tombs found at other sites, a fact that cannot be easily explained in the same way. It seems more likely that the village had numerous potters who specialized in making White Painted ware, rather in the modern pattern presented by Ionas (2000). Without settlement material to compare with tomb material, it is not possible to know whether imported White

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1200 For example, Krini Merra, Dhenia, Politiko, Alambra, Marki, and Boghaz.
1201 For example, Klavidhia and Hala Sultan Tekke.
1202 For example Kazaphani, Kalopsidha, and Milia.
1203 For example, Galinoporni, Enkomi, Kouklia, and Magounda.
Painted ware was used in daily life, or chosen specifically for the grave. A clearer picture of the distribution of this class of ceramics may emerge as more settlement sites in the north, particularly those associated with pottery production, are excavated.

### 7.7 Limitations of this study

This study raises several interesting questions, but not all of these can be easily answered. There appears to be some relationship between shape and decoration of pottery and paste recipes. The fabric groups corresponded well with the geological location of the production centres suggested by the decoration on the sherds that were sampled. Unfortunately, only sixty-eight sherds were available to be made into thin sections. The samples came mainly from the Cyprus Museum in Nicosia, but very few sherds were kept from the earlier excavations. In many cases, the material from sites excavated in the north was kept in northern museums and became inaccessible to scholars after 1974. Whole pots had been sent to Nicosia, but it was not possible to make thin sections from these. Samples came from very few sites, and not from all of the production centres isolated by the stylistic analysis. No soil samples were taken, either, making it impossible to relate the fabric types to the ground. This may have been possible in parts of the Mesaoria, but the location of this production centre cannot be determined based on fabric alone. It is also possible that there was more than one production centre in this region, although the styles of these centres must have been quite similar. The other production centres are in the north where prospection was not possible. If and when the political climate on Cyprus changes, and work in the north becomes possible, the petrographic analysis can be expanded and clearer conclusions drawn.

Another problem encountered in the study of White Painted ware is its popularity with museums around the world. The published corpus represents many different museums, making it impossible for the author to see much of the material discussed in chapter 5. The largest corpus of material was that studied by Åström and divided between the Cyprus Museum and the Medelhavsmuseet in Stockholm. Sadly, the Swedish museum was closed for several years while this study was undertaken. The shortened hours of the Cyprus Museum also meant that it was not possible during the study season there to examine as many pots as planned. The result of this problem is that the observations in Chapter 5 are based mainly on published photographs and line drawings. Caution must be used when drawing conclusions from such secondary material,
but it is doubtful that observations of the physical pottery would change much of what was accomplished through the study of publications. The observations of forming techniques, however, were limited to the pottery directly examined and measured by the author. Such detailed observations require the examination of actual pottery and this study would certainly benefit from an increase in the number of pots available.

7.8 New directions for research
Although it was possible to recognize several different fabrics that were used to make White Painted ware, more samples from other sites would allow for a greater understanding of the types of clays chosen by potters to make this ware. If more petrographic samples could be taken of pottery from each of the production centres, and compared to soil samples, this would help to confirm the location of these centres. It would also be interesting to examine other types of wares made in the same centres to see whether the potters used similar clays for all of their products, or chose clay specifically to make the more specialized pottery\textsuperscript{1204}. More samples may also help to determine how many different clay sources were used by potters, and how far they may have been willing to travel to procure their raw materials.

The stylistic analysis would certainly benefit from an ability to examine the technology of production of the published material. In many cases, the publications listed only the height or diameter of the vessel, and many were available only as line drawings. It would be best if several different measurements could be made, and also if the surface could be examined for tool marks and forming traces. One cannot reassemble the chaîne opératoire from line drawings, or even small black and white photographs.

The most interesting discovery in this study and one that bears following up, is the work of novice potters and painters, with or without guidance by experienced potters. There are many vessels that appear to have been made by someone with very limited fine motor skills, and also with the inability to plan design syntax well. In several cases, either the potting, part of the decoration, or both, appear to have been executed by someone with more skill than the person who did part of the decoration. In order to continue this part of the study, it would be necessary to examine the pots that have been published that are discussed above. An examination of other

\textsuperscript{1204} So far, this has only been done by Barlow (Barlow, 1994; Barlow & Idziak, 1989), but only four sherds of White Painted ware were made into thin sections.
wares may also yield fruitful results, since it appears that at all of the centres producing White Painted wares, other wares were also made, most likely by the same potters. It may be possible, then, to understand how potters learned their craft. In this way, the emphasis of the study of Cypriot pottery can be moved away from the pot and its role in creating a typology for chronological purpose, towards an understanding of the potter and his or her role in society.
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