The Production and Distribution of Hellenistic Ceramics from the Northeast Peloponnese at the Panhellenic Sanctuary at Nemea: A Petrographic Study

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Abstract

The Panhellenic Sanctuary at Nemea was an important political and religious feature in the landscape of the Northeast Peloponnese in the Hellenistic period (323-146 B.C.). As a small, rural sanctuary in a valley without any evidence of a permanent settlement, Nemea was dependent on the towns and cities in the vicinity for supplies and support. Located on a crossroads between the two most politically and economically important cities in the region—Corinth and Argos—Nemea serves as an ideal site for the study of ceramic distribution in the area. However, one of the most interesting aspects of Nemea is the Kiln Complex located within the sanctuary itself, demonstrating that it was independent in some respects.

This study utilises a combination of traditional ceramic study and ceramic petrography to answer questions relating to the identification and provenance of plain, coarse, and cooking wares found within the sanctuary at Nemea. By focusing the ceramic study on assemblages from two types of contexts, both domestic, from a series of houses, and industrial, from the Kiln Complex and other crafting areas, the extent of ceramic production and exchange taking place at Nemea is examined. In order to provenance many of these ceramics, extensive comparative studies were completed on ceramics excavated in Corinth and Lerna.

The results of this thesis are two-fold: the repertoire of ceramics produced in the Kiln Complex is established, and the range of plain, coarse, and cooking wares present in the sanctuary is identified. The Kiln Complex produced loomweights, lekanai, jugs, mortaria, and pithoi, in addition to a great range of Lakonian and Corinthian style tiles. In addition, many of the vessels shapes are present in the sanctuary in other fabrics find parallels outside the Nemea valley. Based on comparisons with the material from Lerna and Corinth, and the geology of the region, an argument is made for the identification of pottery wares produced in the area of Corinth and the Argolid. The analytical study demonstrates how the products of these centres were distributed widely, being found at several sites throughout the Northeast Peloponnese, including Nemea. It is suggested that several of the locally produced Nemean vessels were imitations of popular contemporary shapes produced in neighbouring centres, also present in the sanctuary. It is contended that such an integrated, analytical approach offers new insights not only into the production of ceramics at Nemea, but also the identification and distribution of ceramics produced in other centres within the Northeast Peloponnese.

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A great deal of comparative petrographic material was studied in this thesis. I would like to thank all those scholars who allowed me to look at their thin sections and ceramics. The complete list of the material studied is listed below, full references can be found in the bibliography:

-Hellenistic ceramics from Corinth, studied by Heather Graybehl, study based on material to be published by Sarah James
-Geometric to Hellenistic ceramics from Lerna, studied by Heather Graybehl, study based on material being published by Brice Erickson (*Lerna* VIII)
-Late Roman ceramics from Corinth, studied by Heather Graybehl as the subject of an M.Sc thesis at the University of Sheffield, in collaboration with Peter M. Day, study based on material in Mark D. Hammond's Ph.D dissertation (forthcoming)
-Geometric to Late Roman ceramics from the Nemea Valley Archaeological Project, studied by Samantha Ximeri as the subject of an M.Sc. thesis at the University of Sheffield, in collaboration with Peter M. Day and Heather Graybehl, study based on material in Christian Cloke's Ph.D dissertation (forthcoming)
-Greek Transport Amphorae thin sections, published by Ian Whitbread (1995)
-Neolithic to Early Modern ceramics from the Berbati Valley, published by Ian Whitbread (*et al*. 2007, 2011)
-Hellenistic to Late Roman ceramics from Sikyon, studied by Conor Trainor and included in his Ph.D dissertation (2012)
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-Mycenaean ceramics from Mycenae, Zygouries, and Korakou, studied by Debra Trusty and included in her Ph.D dissertation (forthcoming)
-Bronze Age, Archaic and Classical ceramics from Aegina, published by Areti Pentedeka and Evangelia Kiriatzi (2012, Gauss and Kiriatzi 2011)
-Hellenistic ceramics from the Athenian Agora, sampled by Susan Rotroff, based on material from her publication (*Agora* XXXIII)
-Archaic to Hellenistic ceramics from Aegina, Athens, and Corinth, published by Marie Farnsworth (1964, 1970, 1977)

Permission to reproduce images in this thesis was given by the American School of Classical Studies at Athens and the American School of Classical Studies, Corinth Excavations. I must thank Andrew Reinhard for his help with this regarding all ASCSA images. Permission to reproduce all Nemea images was given by the Nemea Excavation Archives.

Table of Contents

List of Figures

All unattributed figures by author. All other figures used with permission.

Chapter 2:

List of Tables

Chapter 1: Introduction

1.1. Introduction

The Panhellenic Sanctuary at Nemea was a site of great religious, social, and political importance in the landscape of the Northeast Peloponnese, Greece, in the Hellenistic period (323-146 B.C.). Nemea was part of the Olympic *periodos* cycle alongside Olympia, Delphi, and Isthmia as the location of the Nemean Games. The games flourished at Nemea in the Hellenistic period, as the sanctuary was rebuilt to accommodate the large numbers of visitors.

As a place of visitation, the sanctuary was a destination for travellers throughout the Greek world, as spectators for the Nemean Games, as well as pilgrims to the Temple of Zeus. However, as a small, rural site with limited resources and without a permanent settlement, the sanctuary was likely dependent upon the larger cities and towns throughout the region for support and supplies. The Hellenistic pottery from the sanctuary, which was virtually unstudied and unpublished prior to this research, provides new information about ceramic production and exchange at Nemea. This thesis investigates local ceramic production at Hellenistic Nemea through traditional ceramic study and petrographic analysis, in addition to undertaking a programme of comparative ceramic and petrographic study at other sites in the Northeast Peloponnese in order to identify ceramic productions centres located in the region, and to identify these regional ceramics in the sanctuary.

The Hellenistic Panhellenic Sanctuary at Nemea serves as the ideal location to study the production and distribution of ceramics from the Northeast Peloponnese as it borders the Corinthia and Argolid, two regions of major economic and political importance in the Hellenistic period (Figure 2.2). In

addition, the presence of a large Kiln Complex located within the sanctuary itself makes Nemea an important site for the study of locally produced ceramics. This Kiln Complex produced roof tiles in the late 4th century B.C., when the sanctuary was undergoing a large re-building programme. Prior to this study, the extent of the ceramic production taking place in the complex was unknown, as it was assumed that the complex only produced tiles. However, there was a great deal of material found in the kilns themselves, as well as throughout the rest of the sanctuary, that suggested that the repertoire of the Kiln Complex was greater than solely tiles. Thus, this study was implemented.

This thesis reveals the extent of local production taking place within the sanctuary at the excavated Kiln Complex, in addition to identifying and characterising regional and imported ceramics present at the site through ceramic petrography. The following research questions will be examined through a combination of ceramic analyses, including ceramic petrography.

1) Did ceramic production take place in the sanctuary?
2) Is it possible to identify regional and pan-Mediterranean ceramics found in sanctuary?
3) Is it possible to comment on ceramic distribution taking place within the sanctuary? In the Northeast Peloponnese?

These questions were applied to plain, coarse, and cooking ware ceramic assemblages at Nemea from domestic and industrial contexts including the Kiln Complex and a series of houses located within the sanctuary. These wares represent the least studied types of ceramics in published Hellenistic studies, which were often thrown away in the past because it was believed that no information could be derived from them. However, these wares represent a wide variety of activities which are unaccounted for in finewares—cooking, food preparation, craft production, and the storage of miscellaneous goods. In fact,

many plain and coarse wares shapes have so many functions that it is impossible to speculate on all of their uses, similar to modern utilitarian objects such as a large bowl or bucket. The ceramics in this study consist of a large range of shapes including different types of cooking pots such as *chytrai* and *lopades*, large bowls or *lekanai*, mortaria, large storage vessels or *pithoi*, jugs, amphoras, and other miscellaneous shapes in coarse or cooking fabrics. Petrographic analysis was chosen as the main analytical component of this research in order to distinguish and identify fabric groups within the range of ceramics, as well as to complete provenance studies, where possible. Plain, coarse, and cooking wares are the most ideal types of ceramics for this study, as they allow for the identification of raw materials selection and treatment, ceramic technology, and provenance studies.

In this thesis, domestic contexts from the houses relate to the housing and feeding of people, although not necessarily permanent residences. Industrial contexts relate to craft activities, specifically ceramic production, bronze casting, and marble sculpting at Nemea. These types of contexts were chosen because they reflect activities that require a great deal of plain, coarse, and cooking wares, including food and materials storage and preparation. The Kiln Complex itself is integral to the study, as it represents the site of the production of many ceramic objects. The sanctuary was home to a variety of activities, many ritual and religious in nature, and many relating to the Nemean Games. This thesis focuses on contexts that most likely represent support systems created for the visitors, be they religious pilgrims, Games officials or judges, athletes, or spectators— those contexts related to the production of commodities needed in the sanctuary.

1.2.Placing the Thesis in the Context of Previous Work

This thesis serves as the first detailed petrographic study of strictly Hellenistic ceramics from the Northeast Peloponnese. This is also the first study of a Hellenistic ceramic production centre in the region. Prior research on historical ceramics from the Northeast Peloponnese included the petrographic characterisation of a range of Archaic to Frankish wares from Corinth (Farnsworth 1964, 1970; Whitbread 1995; Joyner 2007) and a diachronic study of ceramics from all periods from the Berbati Valley (Whitbread 2011). In particular, Whitbread's Corinthian study provided an important framework within which this thesis was carried out, especially in regards to understanding the limitations of the fairly homogenous geology of the Northeast Peloponnese. He demonstrated that a variety of fabrics were produced in Corinth at the same time, with a range of vessel types being produced in a single fabric over several time periods (1995:255-346). Whitbread used petrographic analysis to complete four aims on his ceramic material which are very similar to those used in this thesis. They include describing the fabrics that are present; to characterise (or classify) the fabrics in terms of their properties and identify similarities to previously recorded fabric classes or comparative material; to interpret the technological history of the pottery in order to identify the nature of the raw materials and methods of manufacture; and to determine the likely origin of the ceramics based on the analytical results and available archaeological and geological data (Whitbread1995:28-29). While his primary focus was on amphoras, all of these aims are relevant to the ceramic assemblages at Nemea, which include both locally produced and imported pottery. This framework set an important

precedent for the types of information that could be extracted from the Nemean ceramics, and served as a guide to this thesis.

1.3. Understanding Regional Ceramics at Nemea: The Use of Comparative Material

As the characterisation and provenance studies of regional ceramics is one of the main goals of this thesis, comparative material from other sites in the Northeast Peloponnese was crucial in successfully identifying imported wares. However, it is first necessary to define the terms "local", "regional", and "imported" in this study specifically, as the terms can often be ambiguous and lack any real geographical boundaries. In this thesis "local" refers only to ceramics produced within the sanctuary itself. Currently, there is no evidence of Hellenistic ceramic production taking place in Nemea, or the Nemea Valley, outside of the sanctuary. "Regional" ceramics refer to those produced within the boundaries of the Northeast Peloponnese. The term could arguably be applied to a larger area, but for the purposes of this study, "imported" refers to any ceramics produced outside the Northeast Peloponnese. These strict definitions of commonly used words help this thesis to be as specific as possible when discussing the production and movement of ceramics.

Limited studies had been carried out on contemporary regional material, so it was necessary to conduct additional studies on ceramics from significant sites in the Northeast Peloponnese. Thus, the thesis includes petrographic analyses of ceramics from Corinth and Lerna in addition to those from Nemea. Whitbread's study of Corinthian amphoras did include a small amount of Hellenistic wares, but a more detailed study of a larger range of shapes needed to be completed in order to provide comparatives for the Nemean material. Petrographic analysis was completed on a large range of Hellenistic cooking

wares, jugs, lekanai, mortaria, and amphoras from Corinth. The results of this study were applied to the Nemean study, resulting in the identification of many fabric matches between the two sites.

Argos was one of the biggest and most politically important cities in the Hellenistic Northeast Peloponnese, and it was clear that the ceramics from there must be considered. However, Argive material from the city of Argos itself was not available for study. Instead, the small site of Lerna was used as the majority of its ceramics are Argive in origin, and the assemblages represent a wide range of vessel shapes and fabric types. It is clear that Lerna presents a glimpse into a small farmstead or tiny village under Argive control (*Lerna* VIII: forthcoming). Characterising Argive ceramics, or at the very least, popular fabrics found in the Argolid, through petrographic analysis was very important. No petrographic definitions of historical Argive wares were available prior to this study. While the ceramics from the Berbati Valley may be considered Argive, no provenance studies were completed on the material and as a result, no historical fabrics were found to be Argive. As Argive ceramics are not well published, or even well-defined, the Lerna material was crucial for developing a better understanding of the types of plain, coarse, and cooking ware available in the Hellenistic Argolid. A range of cooking wares, jugs, mortaria, lekanai, and pithoi were studied, resulting in many fabric matches found between the samples from Lerna and Nemea. Other published or previously-studied petrographic samples were used for comparative purposes, from sites such as Sikyon, the Athenian Agora, the Berbati Valley, Aegina, and the Nemea Valley.

1.4. Plan of Thesis

This study contains eights chapters which are organized thematically. Chapter 2 serves as an introduction to the history and archaeology of the Panhellenic Sanctuary at Nemea. A brief discussion of the Archaic sanctuary and the beginning of the Nemean Games is followed by a detailed history of Hellenistic Nemea, especially in relation to the greater Northeast Peloponnese. The history of excavations of the site is also considered. The Hellenistic sanctuary itself is discussed, including all major buildings present and their functions. The chapter examines the areas used in this study—the houses and various industrial contexts present in the sanctuary, and the significance of these areas to the study.

Chapter 3 places Hellenistic Nemea into the greater context of the Northeast Peloponnese and previously conducted research by exploring the relationships between Nemea and the surrounding cities and towns through extensive literature review. These ancient places include both major and minor cities and towns, based on their relationship with Nemea through archaeological, numismatic, and epigraphic evidence. The major sites include Corinth, Argos, Lerna, Kleonai, Phlious, and Sikyon. The minor sites include Isthmia, Mycenae, Pyrgouthi and the Berbati Valley, Halieis, and Stymphalos. The state of ceramic study at all these sites is also addressed.

Chapter 4 begins by assessing all relevant petrographic studies completed in the Northeast Peloponnese prior to this thesis. The chapter places the thesis into the larger research framework, and discusses how the methodology used—the combination of traditional ceramic studies (typological and chronological analyses) with intensive macroscopic fabric study and ceramic petrography

answers the research questions. Chapter 5 is a presentation of the petrographic results by fabric groups. Each group is examined and geological and provenance studies are discussed.

Chapter 6 considers all the ceramics studied in the thesis, presenting them by shape and petrographic fabric group. All comparatives, both petrographic and typological are reviewed, allowing for provenance identifications in some cases. Chapter 7 is a study of the Kiln Complex and the evidence of local ceramic production at Nemea. All aspects of the complex are reviewed, and the complex as a workshop is discussed. This is followed by the presentation of all ceramic products made in the complex, including various types of tiles, architectural terracottas, kiln furniture, loomweights, and ceramic vessels such as pithoi, lekanai, and mortaria.

Chapter 8 presents the interpretations and implications of the study. This includes the significance of the petrographic identifications of fabric groups, and how they influenced the identification of several regional ceramic production centres in the Northeast Peloponnese. New interpretations of the activities taking place in sanctuary based on the results are presented. Finally, the chapter concludes the study with a review of the thesis with an emphasis on its contributions to the study of Hellenistic ceramics, Nemea, and the Northeast Peloponnese, along with recommendations for future work.

This thesis is significant because it is the first detailed study of Hellenistic plain, coarse, and cooking wares from a range of sites in the Northeast Peloponnese, especially with an emphasis on petrographic and provenance studies. The methodology utilized allowed for the identification of many regional wares present at the sanctuary at Nemea, as well as at Corinth and Lerna.

As a result, it is possible to re-create possible networks of ceramic distribution throughout the Argolid and Corinthia for the first time in the history of scholarship in the area. The results have important political and economic implications for Nemea.

Chapter 2: The Panhellenic Sanctuary at Nemea

2.1. Introduction

In order to contextualise the Hellenistic ceramics from Nemea, a thorough introduction to Nemea itself must take place. While the main aims of this study are to determine if local production took place in the sanctuary, as well as to discover the extent of regional distribution taking place in the area, it is necessary to place it in the larger context of the Panhellenic sanctuary, as well as the Hellenistic period in the Northeast Peloponnese. Thus, this chapter will discuss the history of Nemea, especially in relation to the Hellenistic period. There is evidence of activity at Nemea as early as the Neolithic period and throughout the Byzantine, Frankish and early Modern periods. The types of activities taking place in the valley dramatically differ during these periods, from the prehistoric occupation of Tsoungiza, to the Late Roman and Byzantine Christian settlement in the valley. As this study is focused on activities taking place within the context of the Panhellenic sanctuary specifically, the most important history to this study is that of the sanctuary itself, from its Panhellenic inception in the 6th century B.C. until its abandonment in the 2nd century B.C.

This study will also review the history of excavations of the site. Finally, this chapter will explore the Hellenistic Panhellenic sanctuary with a discussion of the buildings present in the sanctuary and their functions. It will focus on specific areas of the site in the Hellenistic period which are of greatest importance to this study—the houses, and other domestic and industrial areas around the sanctuary. As this study involved a great deal of work on the assemblages from these areas, a discussion of the archaeology and functions of

these features will be included. By placing the study in the greater context of the sanctuary from a historical and functional perspective, the ceramics gain greater significance as indicators of social, economic, and craft activities taking place at Nemea.

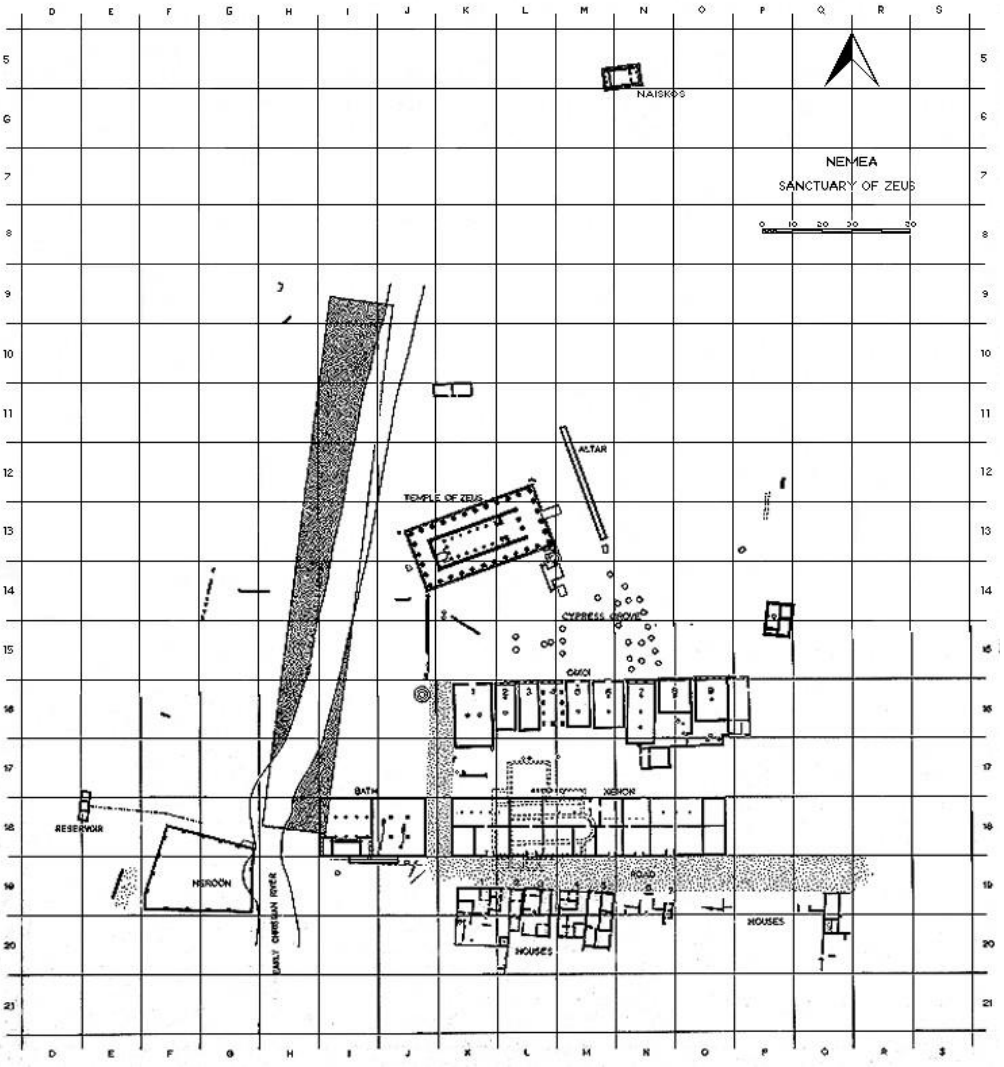

Figure 2.1: Site plan of the Panhellenic Sanctuary as it is today. Courtesy of the Nemea Excavation Archives.

2.2. Nemea: A Valley on the Border of the Corinthia and Argolid

Figure 2.2: Map of the Northeast Peloponnese. From Google Earth, site identifications added by author.

The location of Nemea is important to consider, as it is located on the border of the Corinthia and Argolid, in the eastern foothills of the Arcadian mountains (Figure 2.2). Nemea is an upland valley, approximately 333 meters above sea level (Miller 1990:9). The valley is long and narrow, only being a mile wide at the greatest east-west width (Miller 1990:10). Surrounded by mountains on all sides, Nemea is located three kilometres east of Phlious, and three kilometres west of Kleonai. In antiquity, the Nemea River ran north-south from the Gulf of Corinth, and served as a route for travellers between Corinth and Nemea, as well as those passing through on their ways to and from the Argolid (Figure 2.3). The Longopotamos River may have been the route of the ancient Corinth-Argos road, a major thoroughfare connecting the Corinthia to the Argolid (Marchand 2009:112). Nemea was closely connected to this road, which had a major stop at nearby Kleonai. In an ancient account, Strabo mentions Nemea in relation to Kleonai and the Corinth-Argos road:

"Kleonai is a little city situated on the road from Argos to Corinth

on a hill…There, too, is Nemea between Kleonai and Phlious and the sacred grove, in which the Argives are accustomed to celebrate the Nemean Games, and the location of the myth of the Nemean lion…" (8.6.19, after Marchand 2009:112).

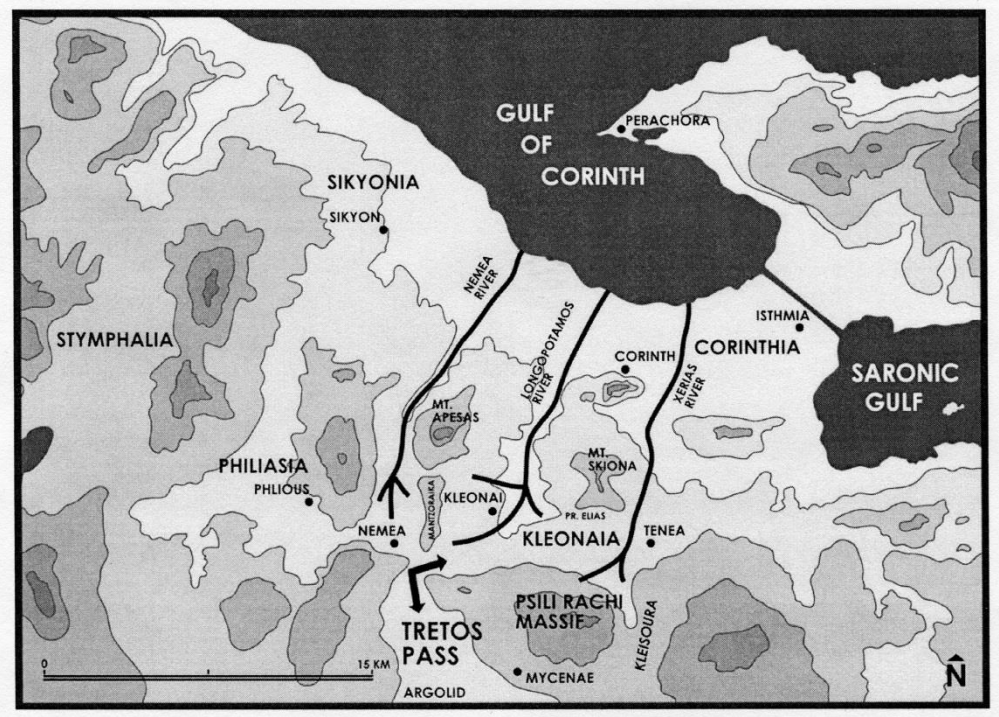

Figure 2.3: Map showing passages into Nemea and Kleonai Valleys via the Nemea, Longopotamos, and Xerias Rivers, and Tretos Pass. From Marchand 2009:110. Courtesy of the American School of Classical Studies at Athens.

Nemea was well-connected to the Corinthia through Kleonai, and easily accessible to the Argolid via the Tretos Pass. This access is important, as it connected Nemea to the rest of the Northeast Peloponnese, politically and economically.

2.3. The History of the Panhellenic Sanctuary at Nemea

Nemea is perhaps best known for the Nemean Games, the youngest Panhellenic athletic festival to take part in the Olympiad cycle alongside Olympia, Delphi, and Isthmia. The Nemean Games first came to the sanctuary in 573 B.C., and were held biennially, in the same years as the Isthmian Games

(Miller 2004:12-13).[1] The Temple of Nemean Zeus was most likely built in the first half of the 6th century B.C. (Miller 1988:143). Unlike Olympia and Delphi, whose games were founded after long histories of pilgrimages and offerings as early as the 9th century B.C., the building of the temple and the founding of the games at Nemea seem to be closely connected (Morgan 1993:36). Shelton suggests that the festivals may have helped finance the building of the temple, a very expensive addition to the sanctuary (2014:pers.comm.). The site was initially controlled by Kleonai, then an independent city-state. It appears that the Panhellenic Sanctuary at Nemea was partly a political creation, based on the want of a large festival in the area. The cult of the child-hero of Nemea, Opheltes-Archemoros, began in the first half of the 6th century B.C., further illustrating this point (Bravo 2006:11). Argos was involved at some level, even if just to overshadow the control of Kleonai, and eventually took control of the games, moving them to Argos.[2] This is demonstrated in the myth of Opheltes himself, which is closely tied to Argive myth, and serves as an origin story of sorts for Argive involvement at Nemea.[3]

The myth of Opheltes begins with Lykourgos, a king in Nemea, who bore a son, Opheltes, with his wife Eurydike after a long period of infertility. After the birth of Opheltes, Lykourgos travelled to Delphi to ask how he could ensure the health and happiness of his son. The Pythian oracle told him that the baby was not allowed to touch the ground until he learned to walk. Once back in

[1] The date of 573 B.C. is attributed to Eusebius, Chronicorum Canonum II (Schoene 1866: 94, Miller 1977:20).
[2] Several ancient sources, including Pindar and Xenophon, mention Nemea under the control of Kleonai (the former) and Argos (the latter). Several inscriptions have been found at Nemea that also mention the control of the sanctuary (Geagan 1968). Please see Miller 1988:144 for a discussion of Archaic control of the sanctuary.
[3] Please see Bravo 2006:81-163 for an in-depth discussion on all the ancient sources of the Opheltes myth, including all ancient references to Opheltes. The primary sources of the myth include Athenaios (Simonides Fr. 48) and Bakchylides (Bakchylides, *Ep.* 9.1-24) (after Bravo 2006:85). It is also partially preserved in *Hypsipyle* by Euripides (Miller 1988:142).

Nemea, Lykourgos acquired a slave woman named Hypsipyle to look after Opheltes, with strict instructions not to let the baby touch the ground. One day, as Hypsipyle carried Opheltes around Nemea, she saw the Seven Champions, Argive warrior heroes, on their way from Argos to Thebes. Hypsipyle led them to a stream for a drink of water, and placed Opheltes on a bed of wild celery as she helped them drink. A serpent bit Opheltes as he touched the ground, and he died. The Seven Champions renamed Opheltes 'Archemoros', meaning 'beginner of doom'. In an attempt to placate the gods, the Seven Champions held funeral games, the founding of the Nemean Games, with the judges (*Hellanodikai*) dressed in black as a sign of mourning. The prize for the games was a wreath of wild celery (Miller 1990:26). This became the practice at the Nemean Games throughout their history, with all judges wearing black, and all victors awarded a wreath of wild celery. *Seven against Thebes* was a Panhellenic tragedy by Aeschylus, preserving the legacy of the Argive heroes, as well as Argos' involvement in the founding of the Nemean Games. Thus, the myth of Opheltes is seen as an institutional myth created by Argos to insert the Nemean festival and cult of Opheltes into a network of cult sites that express Argive identity (Bravo 2006:83).

The sanctuary was heavily used in the Archaic and early Classical periods between the 6th and early to mid-5th centuries B.C. with a combination of festivals, the Nemean Games, and religious pilgrimages (*Nemea* III:14).[4] The Archaic sanctuary was fairly small with relatively few buildings, including the *oikoi*, and the Heroön (discussed below). A long altar was placed in front of the temple for sacrifices, and the area immediately surrounding these features, the

[4] The Archaic period dates to 630-478 B.C., while the Classical period dates to 478-366 B.C., and the Hellenistic period dates from 336-146 B.C.

Sacred Square, was paved (*Nemea* III:14). In the late fifth century, ca. 415-410 B.C., there was a violent episode at Nemea that may have destroyed much of the site. Excavation at various parts of the site revealed that architecture was burned, and a layer of debris was found, including iron spear points and butts (Miller 1990:61). The pottery from this debris layer was dated to 425-400 B.C. While there is no attested battle at Nemea during the Peloponnesian War, Thucydides records military manoeuvring in Nemea and is environs in 419/8 and 415/4 B.C. (5.58-60, 6.95; Miller 1990:61). Miller interpreted the archaeological remains to be directly related to this attested military presence in the valley, and deduced that a battle must have taken place in the sanctuary, effectively destroying it, resulting in the Nemean Games being moved to Argos (*Nemea* III:14). The sanctuary was thought to have lain dormant for almost a century in the Classical period between the late 5th and late 4th centuries B.C. based on Miller's interpretations (1977:20).[5] The Games continued at Argos throughout this time, and it is thought that the sanctuary was essentially abandoned. Very little material from the early to mid-4th century B.C. has been found in the sanctuary excavations.

The beginning of Hellenistic Nemean history begins in 338-336 B.C., when Philip II of Macedon forms the League of Corinth, and establishes Panhellenic sanctuaries as meeting places for the League (*Nemea* III:17; Tomlinson 1972:146). The League of Corinth was a confederation of Greek city-states, including Corinth and Argos, in addition to the majority of cities throughout Arcadia, Thrace, Attica and the Cycladic Islands. The League functioned as a way for Philip to control the Greek city-states and to encourage

[5] More recent work at Nemea, directed by Shelton, suggests that this is not true and some activity did take place in the sanctuary in the late Classical period. More work needs to be carried out before a definitive statement can be made.

them to join him in his plans to invade Persia to punish the Persians after their invasion and destruction of Greece in the Persian Wars (Bradford 1992:152-154). Entry to the league required the city-states to pledge to the oath of the League, which stated that all members will abide by the League and retain peace among themselves, as well as with Philip and Macedon (Rhodes 2007:268). The League of Corinth decreed the Panhellenic sanctuaries to become peaceful meeting places. This is a perhaps the most important time in the history of Nemea, as it is believed that this agreement led to the rebuilding at Nemea, which may have been inactive for almost a century prior to the 330s B.C. Miller suggests that the rebuilding may have been funded by Macedonian money (*Nemea* III:16; Miller 1981:62; 1988:162-163). This rebuilding period included the construction of the Temple of Zeus over the Archaic temple, as well as the rebuilding of the oikoi and the Heroön. At the same time was the construction of a series of new buildings, including the bath house, the *xenon*, and the houses (discussed below).

This period in the early Hellenistic period was prosperous for the site, although political turmoil was taking place in the surrounding area in the Northeast Peloponnese, especially at the large cities of Corinth and Argos. The history of the Northeast Peloponnese in the Hellenistic period is a complex story of Macedonian rule, tyrants, battles over control, and Roman conquest. In contrast, the history of Nemea is relatively simple—at least the history known from literary and epigraphic sources. In many cases, the known history of Nemea is supported by the archaeology from the remains of the site, but an in-depth analysis of the history of the Corinthia and Argolid demonstrates that Nemea may have been affected by the contemporary events happening in the neighbouring cities. Thus, the history of the Northeast Peloponnese is crucial to form a better

understanding of the history of Nemea. It is only through the consideration of the important historical events in the area that the significance of the history of Nemea becomes apparent. Further, the history demonstrates how Nemea's most important function was to serve as a political tool, with the Games reinstated and abandoned continuously, depending upon the agenda of those in charge of the area over time.

In 323 B.C., Argos and Sikyon, along with many other Peloponnesian cities including Elis, Messenia, Troizen, and Epidauros joined Athens in the Lamian War against the Macedonians (Tomlinson 1972:148). Athens and its allies fought against Macedonian power, in hopes of securing their freedom. While the League of Corinth ensured that peace would continue amongst the member city-states, it placed Macedon as the leading power over the League. Miller (1982:103) argues that Kleonai may have also taken part in the Lamian War as an ally of Macedonia, due to the moving of the Nemean Games from Argos to Nemea in 338 B.C. Prior to the rebuilding of the sanctuary, the Nemean Games were held in Argos for over a century. Argos may have been upset with losing the games to Nemea, while Kleonai may have benefitted economically from their return (Miller 1982:103-107).[6] The Macedonians won the Lamian War in 322 B.C., and Antipater, the king of Macedon at that time, subjected all the cities that were formally part of the League of Corinth to direct Macedonian rule (Will 1984:33). While these cities were allowed to function with some level of autonomy under Macedonian rule before the war, the end of the Lamian War removed all freedoms of democracy from these city-states, effectively rendering them to be the subjects of Macedon. At some time after this, Kleonai was

[6] Please see section 3.2.4 on Kleonai for further explanation regarding the economic benefit of holding the games in Nemea to Kleonai. Please see Miller 1982 for his interpretation of Kleonai's role in the Lamian War.

politically incorporated with Argos, a move that Miller speculates may have been a direct result of their role in the war (1982:108). Antipater installed garrisons at Argos, Sikyon, and Corinth to keep control of the region (Tomlinson 1972:148; Lolos 2011:71).

Antipater was succeeded by Polyperchon in 319 B.C., a former officer of Philip II, who was noted for his military talents rather than political ability (Will 1984:40). However, there was a growing coalition that was vying for control of the Greek world, led by two of Alexander's generals, Antigonus and Ptolemy, in addition to Antipater's son Cassander (Roberts 1983:183). Polyperchon hoped to win over the Greek city-states by declaring them independent and restoring the pre-Antipater democracy. All garrisons were removed and replaced by the democratic governments previously in place (Lolos 2011:72). He exiled the local leaders who were loyal to Antipater, confiscated all their property, and sentenced some to death, renewing the "Freedom of Greece" (Tomlinson 1972:149; Roberts 1983:183). However, by 316 B.C., Argos became allies with Cassander, and a Macedonian garrison was installed there once again. It is unclear exactly what happened during this time, but by the end of the year, Polyperchon had been stripped of almost all of the cities, with the exception of Corinth and Sikyon (Tomlinson 1972:149; Roberts 1983:184; Lolos 2011:72). Tomlinson (1972:149) portrays this as a time of great political strife.

Cassander ruled the Peloponnese in the same way as Antipater, installing Macedonian dominance over the cities and removing their democratic freedom.

In 307 B.C., Antigonos sent his son Demetrios Poliorketes to take over Cassander's cities by force, and once again instil the freedom of democracy to these areas (Tomlinson 1972:151; Roberts 1983:186; Will 1984:55). Poliorketes

began by liberating Athens from Cassander, then moving southwest to the Northeast Peloponnese. By 303 B.C., he freed Argos, captured Corinth and its harbors, and freed all the Achaean cities (Tomlinson 1972:151; Will 1984:56). In Sikyon, he destroyed the lower city, and refounded it on the higher ground of the acropolis, renaming it "Demetrias". Poliorketes then installed garrisons at Argos, Corinth, and Sikyon (Tomlinson 1972:151; Lolos 2011:72). He also built a fleet to be stationed in Corinth, reviving the city as a naval port (Roberts 1983:187). In 302 B.C. he re-established the League of Corinth, a revival of Philip II's confederation of the city-states, and was proclaimed hegemon of Greece at the Isthmus of Corinth. However, this revival was short lived, as his father Antigonos was defeated at the Battle of Ipsos in 301 B.C., while Poliorketes was attacked by a coalition of his rivals (Roberts 1983:187). Poliorketes was forced to disband the League, although he kept control of Argos, most of Arcadia, Sikyon, Corinth, and the north section of the Isthmus. He gave control of Corinth and Sikyon to his son, Antigonos II Gonatas (Lolos 2011:74). In 297 B.C. Poliorketes became king of Macedon after the death of Cassander, and was at the peak of his power (Roberts 1983:188; Will 1984:64). Poliorketes, followed by his son, Antigonos II Gonatas continued ruling the Northeast Peloponnese as the kings of Macedon until the 270s. However, it appears that Sikyon had escaped Macedonian rule by 272 B.C. (Lolos 2011:73). Exactly when or how is unclear. Gonatas retained control of Argos and put his friend Aristippos in control, where he reigned as a tyrant until 229 B.C. (Tomlinson 1972:154). It must have been a peaceful and prosperous time, as the Nemean Games returned to Argos 271 B.C., where they would remain for the rest of the Hellenistic period, aside from two sporadic one year revivals at Nemea (*Nemea* III:17). This period under

Macedonian rule continued until 251 B.C., when a new ambitious tyrant, Aratos of Sikyon, entered Sikyon into the Achaean League.

Aratos was the son of Cleinais, who had ruled Sikyon in the 260s as a friend of Gonatas until he was murdered by Abantidas, who then became the tyrant of Sikyon (Walbank 1984:243). After the assassination of his father, Aratos lived in Argos with family friends until he was an adult and decided to reclaim control of Sikyon (Tomlinson 1972:156). Aratos besieged Sikyon, driving out Abantidas and allowing 600 exiles to return to the city (Walbank 1984:244). In 251, under his command, Sikyon joined the newly reformed Achaean League in an attempt to stabilize the city politically and economically. The entrance of Sikyon made the League a stronger force, which previously contained at least eleven cities. The strengthening of the League made it a greater challenge to the Macedonian rule of Corinth and Argos (Tomlinson 1972:156; Walbank 1984:244). Aratos also made an alliance with Alexander, son of Gonatas' half-brother Krateros, who was ruling Corinth on behalf of Macedon. However, Alexander attempted to free Corinth from Macedonian rule in the early 240s and was defeated by the garrisons from Corinth and Argos (Tomlinson 1972:156). In 243, after the defeat of Alexander, Aratos captured Acrocorinth and liberated the city from Macedonian rule. He then planned on killing Aristomachos, the ruler of Argos, and forcing Argos to join the Achaean League. However, this plan failed as no one in Argos was willing to help Aratos (Tomlinson 1972:157).

Aratos withdrew from Argos, but captured Kleonai in 235 B.C. At this time, the Nemean Games returned to Nemea for one cycle, which became the last known event held at the sanctuary under Greek rule. Kleonai joined the Achaean

League, signalling that it was free of Argive control (*Nemea* III:17). Argos marched on Kleonai to reclaim it, but were taken by surprise by Aratos' forces and defeated. Aristippos II, then ruler of Argos, was chased to Mycenae and killed (Tomlinson 1972:157). Aristomachos, the brother of Aristippos II, took control of Argos and continued to rule as a pro-Macedonian tyrant, despite Gonatas' death in 239 B.C. and the fact that Macedonian control of Greece was in a decline. In 229 B.C., he made a deal with Aratos and other members of the Achaean League, and Argos and Phlious officially joined the League upon payment of fifty talents (Lolos 2011:75; Tomlinson 1972:158).

In the 220s, the Achaean League battled with Kleomenes III of Sparta, who won control of Argos, Kleonai, Phlious, and Corinth, as well as many other cities through the Northeast Peloponnese. He ended his siege at Sikyon in 224 B.C., where he ravaged the city until withdrawing once Aratos secured Macedonian help against the Spartans (Lolos 2011:75). All the cities were returned to the Achaean League. By 218 B.C., peace had been restored, and Philip V, then king of Macedon moved the Achaean League meetings to Sikyon. However, this period of Macedonian control over the Achaean League also signifies that the cities of the Corinthia and Argolid returned to being under the power of Macedon (Roberts 1983:207).

The period after 218 B.C. is characterized by Macedonian rule under Philip V, until the Second Macedonian War in 197 B.C., in which the Romans, a growing power in the Aegean, with Achaean assistance, defeated Philip and removed Macedonian rule from Greece (Roberts 9186:211). Corinth was given to the Achaean League, and Titus Flamininus, the leader of the Roman forces in the Peloponnese, declared at the Games in Isthmia that the Greek states were free,

and would remain free (Roberts 1983:211). However, Rome became the leading power in Greece, expecting it to follow its demands and receive permission for any activity, thus rendering itself to be the ruling state. The Achaean League began to challenge the Romans in an attempt to liberate themselves in the early 140s. The Roman forces proved to be much stronger, with greater armies. Under the command of L. Mummius, the Roman armies crushed the Achaean forces and sacked Corinth in 146 B.C. Corinth was destroyed and razed to the ground, and the entire population was subjected to mass execution and enslavement (Roberts 1983:217-219). Most of the territory in the Corinthia was given to Sikyon, along with control of the Isthmian Games (Lolos 2011:77). There is evidence that Mummius made contact or visited Nemea in 146 B.C. (*Nemea* III:17). The destruction of Corinth, as well as the Achaean League, led to Roman domination of the Northeast Peloponnese, and thus, the end of the Hellenistic period. It is unknown what happened in Nemea after 146 B.C. There is little evidence of early Roman activity, thus, the sanctuary may have been abandoned.

2.4. The History of Excavations

Although the first detailed excavations of the site took place in the 1920s, Nemea had a rich history of early travellers who recorded their impressions of the valley and the temple. The earliest group of visitors, the Society of the Dilettanti from London, excavated a small trench in front of the Temple of Zeus in 1766 (Miller 1990:13). The effort was abandoned, but visitors came to the site throughout the 19th century, often recording their experiences. At this time Nemea was an uninviting swampy valley, apparently too foreboding for many early tourists, as an English visitor in 1805 laments, "The splendour of religious pomp, and the busy animation of gymnastic and equestrian exercises, have been

succeeded by the dreary vacancy of a death-like solitude", after noting that all the inhabitants were afflicted with violent colds and coughs (Dodwell 1819:209-211, after Miller 1990:13). The valley was drained by French engineers in 1883, allowing for archaeological exploration to take place. The French School at Athens undertook excavations of the temple and the basilica in 1884 and 1912, but little work was carried out, and the French ceded the rights to excavation to the American School of Classical Studies at Athens in 1924 (Miller 1990:14). The site of Nemea was first formally excavated by Carl Blegen between 1924 and 1926 in an American School of Classical Studies campaign sponsored by the University of Cincinnati. Aided by Bert Hodge Hill, Blegen focused these excavations around the temple and the surrounding area, including the structures that are now known as the oikoi (treasury houses), the bath house, the xenon (hostelry), the basilica, the Heroön (hero shrine), and the stadium, as well as the prehistoric site of Tsoungiza (Blegen 1925, Blegen 1926, Blegen 1927, Miller 1975:145-147). After three excavation seasons, the site was abandoned once again, until Charles K. Williams II directed work on the site in 1962 and 1964. In 1962, he further explored the architecture and function of the xenon (1964:201-202). In 1964, he excavated in the xenon, and uncovered the South Kiln; as well as two oikoi (Nemea Excavation NB 1964, I, II; Miller 1990:16). Excavations ceased again, and there was no activity at the site for another ten years.

In 1973, the University of California, Berkeley, under the auspices of the American School of Classical Studies at Athens, sponsored the first large-scale excavations at Nemea under the directorship of Stephen G. Miller. This was a pivotal time for the site, which including the purchase of a great deal of private land around the site and stadium, and continued excavation, directed by Miller,

in the years 1974-1986, 1989-1991, 1995, 1997-2001 (*Nemea* II:10, Bravo 2006:3). The archaeological site of Nemea was unearthed at this time, as the excavations more fully exposed and explored the main features of the site, and the Nemea Museum was built to house all the finds, as well as to display them to the public.

In 2005, Kim Shelton took over the directorship of Nemea after Miller retired. Excavations once again took place at Nemea for three years, between 2010 and 2012. These excavations focused on the prehistoric and early historic activity in the western part of sanctuary. Shelton has also facilitated several study seasons, which aim to refine the ceramic typologies and chronologies of the site, and continue to date.

2.5. The Panhellenic Sanctuary: Buildings and Functions

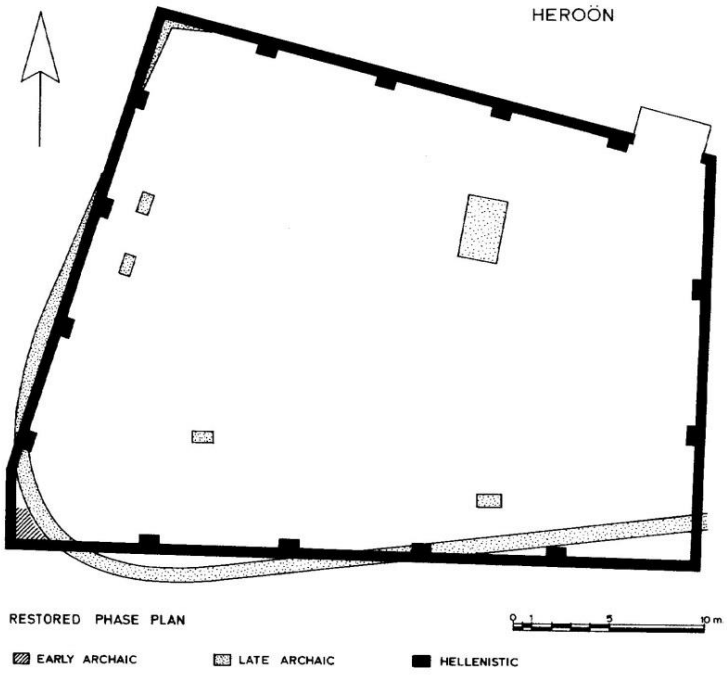

Figure 2.4: The Heroön. After Miller 1990:105. Courtesy of the Nemea Excavation Archives.

The myth of Opheltes was honoured through the construction of the Heroön in the second quarter of the 6th century B.C., although there is evidence of activity relating to hero worship at the site predating the construction (Bravo 2006:11). The Heroön is a structure in the western part of the site with an irregular rectangular shape constructed of rubble walls (Figure 2.4). The structure was open, with no roof. It was in use throughout the early and late Archaic periods (Miller 1990:108). The Heroön may have contained a false "altar" or "tomb" of Opheltes, as well as his father Lykourgos, commemorating the baby through a fake construction which many visitors most likely believed to be real (Miller 1988:143). There is a great deal of archaeological evidence that offerings were made there on a regular basis (Miller 1990:108, Bravo 2006:11-30). The Heroön was rebuilt in the Hellenistic period, where it continued to receive offerings throughout its use life.

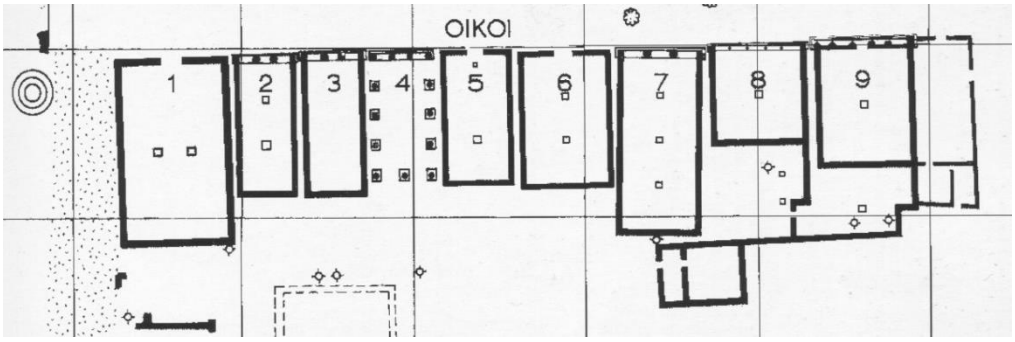

Figure 2.5: The Oikoi, as rebuilt in the Hellenistic period. After Miller 2004:137. Courtesy of the Nemea Excavation Archives.

A series of buildings just south of the Temple, the oikoi, were first built in the Archaic period, then later rebuilt in the early Hellenistic period. The oikoi, meaning 'houses' in ancient Greek, were a series of nine rectangular structures built very closely together side by side, and aligned facing the temple (Figure 2.5). The front facades were most likely ornate, while the sides and backs were left plain. The front entrances may have served as the southern *temenos* of the

sacred boundary of the sanctuary (Miller 1990:119). The oikoi were rebuilt in the late 4th century B.C., making it difficult to determine when they were first built. Based on the excavations, Miller suggests that they are all roughly dated to the first half of the 5th century B.C., making them contemporary with the temple and Heroön (1990:120). The use of the oikoi is unknown. Miller compared them with treasury houses from Olympia based on architectural similarities. However, no preserved offerings were found. Thus, Miller speculates that the oikoi may have served a variety of purposes, including storerooms, embassies, meeting halls, or dining establishments (1990:120). The varied excavation history of the oikoi, explored by Blegen, Williams, and Miller, makes it difficult to reconstruct the buildings and their assemblages in order to undertake a more detailed analysis of their use. Two inscriptions, most likely dated to the Hellenistic period, were found on the site, which are translated to "of the Rhodians" and "of the Epidaurians". These may be related to the oikoi, as a type of name plate for cities that held oikoi at the site (Miller 1990:67-71, 164-167).

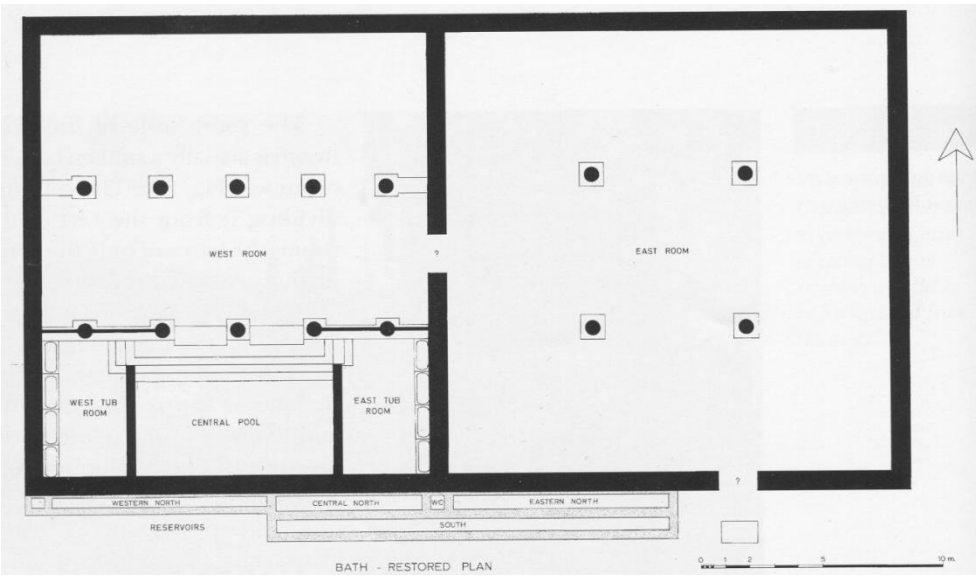

Figure 2.6: The Bath House. After Miller 2004:120. Courtesy of the Nemea Excavation Archives.

The bath house, the xenon, and the houses are all structures that relate to providing goods and services to visitors, perhaps to the athletes, *Hellanodikai* (judges), and *Theodoroikoi* (officials) connected to the Nemean Games. The bath house, built in the last third of the 4th century B.C., is one of the earliest bathing complexes known in the Greek world (Figure 2.6, Miller 1990:117). It is a two room structure, with the West Room containing a sunken central pool with two chambers with four tubs each on either side. The East Room contained four support beams; its use is unknown. The pool was not heated like later Roman baths, and the water came from an aqueduct that was connected to a spring just east of the site. The bath house had a small reservoir system to keep the pool and tub rooms adequately supplied with water (Miller 1990:110-117). The bath house was most likely used by the athletes, but may have been used by visitors as well.

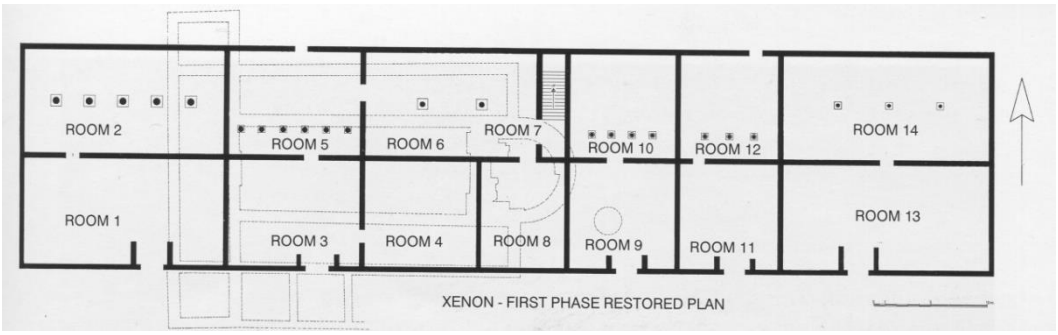

Figure 2.7: The Xenon. After Miller 2004:111. Courtesy of the Nemea Excavation Archives.

The xenon, also built in the late 4th century B.C., served as a type of hotel or hostelry. The building most likely had two stories, and contained a series of rooms interpreted by the excavators to be for sleeping, cooking, and dining. A hearth was found in room 4, along with a makeshift stand made of reused tiles to support a cooking pot over the fire (Miller 1990:97-100). The layout of the ground floor of the xenon rooms suggests that some of them may have served as

apartments, with separate rooms for sleeping and cooking/dining. These areas have also been interpreted as a possible dining establishment, or an official building used to house supervisors of the festival (*Nemea* I:184-187).

2.6. Areas of Primary Focus: The Houses

The primary goal at the onset of this study was to analyse Hellenistic ceramic assemblages from Nemea in a way that allowed for the meaningful extraction of plain, coarse, and cooking wares for petrographic study. This involved the detailed study of excavation notebooks, looking for well-dated and stratified deposits with functions relating to the storage, preparation and consumption of food, as well as the production of ceramics and other crafts.

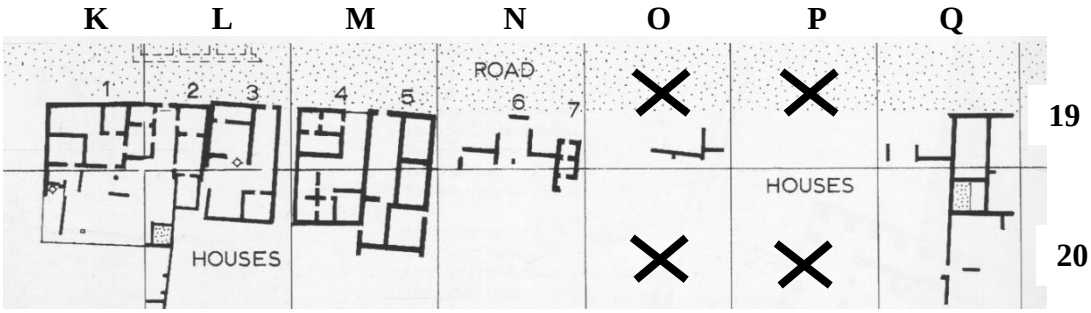

Figure 2.8: The Houses. The squares that contain an "X" are unexcavated. After Miller 2004:94. Courtesy of the Nemea Excavation Archives.

The houses are situated in squares K-Q-19,20. The entire site of Nemea is divided into 20 x 20 meter squares, as illustrated above in Figure 2.8. Squares O19, O20, P19 and P20 were never excavated. The architecture recorded in square O19 was visible on the surface. This study focuses on squares K19, K20, L19, and L20, in order to focus on houses 1, 2, and 3. Square K19 was excavated in 1985 and 1997. Square K20 was excavated in 1978 and 1981. Square L19 was excavated in 1980, 1984, and 1985. Square L20 was excavated in 1978 and 1981. Due to the varied excavation that took place in this 40 x 40 meter square area over nineteen years, it is difficult to recreate contextual and stratigraphic evidence in these houses. However, it was attempted in an effort to learn more

about the assemblages found within, and the activities that took place in the structures. To date, the preliminary excavation reports and the site guide are the only publications that discuss the houses. These reports do not go into any detail relating to the assemblages from the houses, or the architecture of the structures.

The structure in squares K19, K20, L19, and L20 was referred to as the Corner House during excavation, beginning in 1978. This is presumably because it is the western most house in the row, forming a corner. The plan demonstrates that the Corner House was detached from the structure deemed to be Houses 4 and 5 in squares M19 and M20, but the relationship between the two buildings is unknown (Figure 2.8).[7] As seen in Figure 2.8, Miller assigns numbers to certain sections of the structures, seen above. He maintains that the structures were divided into as many as seven "houses", despite only two complete, detached buildings being uncovered, as well as the incomplete remains of an unknown number of structures (1990:75-76). There is no record of an architect who specialises in domestic structures studying the buildings. While it is not possible to confirm or deny his identification, the assemblage study and recent publications on the study of domestic architecture suggest otherwise (Nevett 1999, Westgate *et al.* 2007).

[7] Time constraints did not allow for the study of the houses in squares M19, M20, N19, N20, Q19, or Q20. Future study is necessary in order to fully characterise the houses and understand their relationships to one other, both architecturally and functionally. These squares have not been studied since their excavation.

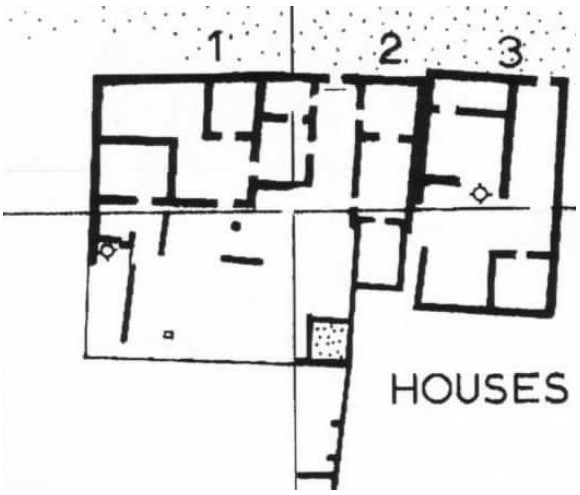

Figure 2.9: The Corner House. From top left, clockwise: squares K19, L19, L20, K20. After Miller 2004:94. Courtesy of the Nemea Excavation Archives.

The excavation reports give little information. The house was constructed out of a variety of materials that vary from rubble walls built with mudbrick and tile to large, re-used blocks. It contains a series of rooms, connected by a long passageway which terminates in a large courtyard in the south-west part of the house (Figure 2.9, Miller 1988:10). The house contains a well on the western side, which has not been excavated to date. Miller states that the house was built in the second half of the 4th century B.C. based on foundation deposits, and it remained in use throughout the first half of the 3rd century B.C. Additionally, Miller believed that the house may have served as a temporary dwelling for the *Hellanodikai* who periodically visited the site, or perhaps as a residence for priests or caretakers of the sanctuary (Miller 1988:10-19). This information, coupled with the excavation notebooks, gives little evidence to identify the structure from an architectural point of view. Miller himself states that there is no coherent ground plan for the building in K20 and L20, and that only continued excavation to the north and south would reveal more information (1982:27). Unfortunately, that never took place. To further complicate matters, an east-west running river destroyed much of the southern part of the house at some point after

the Hellenistic period (Miller 1988:10). Today, only a few courses of the foundations remain, and several recorded walls have deteriorated past the point of recognition (Figures 2.10, 2.11).

The architectural study suggests that the structures designated as Houses 1, 2, and 3 are in fact only two houses. There is no apparent reason to separate Houses 1 and 2 into two separate buildings, as they appear to be an interconnected series of rooms, with only one north-facing entrance in square L19. Further, House 3 seems to be an independent structure, divided from Houses 1 and 2 by a double wall. Unfortunately, this is all the architectural information regarding the buildings themselves that can be drawn from the excavation records without future excavation. The study of the individual rooms was not completed during the original excavations, further complicating any attempts at reconstruction. It is clear that a specialist in domestic architecture must be consulted for a more complete analysis of the structures.

Figure 2.10: The Corner House, in foreground, 1985. Photo 1985-20-19, Courtesy of the Nemea Excavation Archives.

Figure 2.11: The Corner House as it stands today, in foreground. Photo by author.

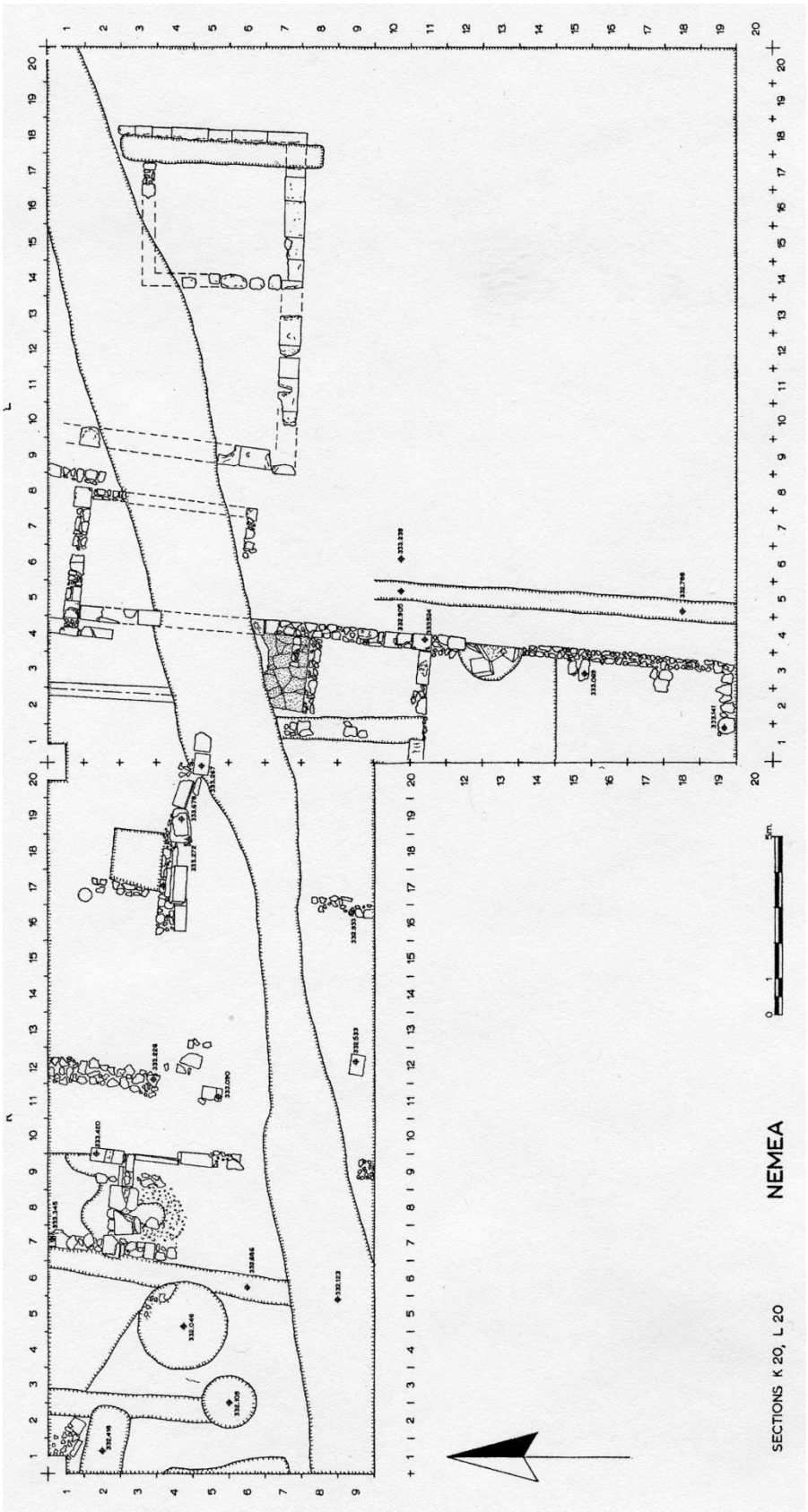

Figure 2.12: Plan of Squares K20, L20. After Miller 1982:25. Courtesy of American School of Classical Studies at Athens.

Since the main purpose of this study was to analyse the assemblages from within the houses in a meaningful way that allowed for the extraction of petrographic samples, the focus of the study of houses was on the ceramics. In total, 140 lots were studied from squares K19, K20, L19, and L20, in order to characterise the assemblages and select petrographic samples.[8] Many attempts were made to clarify the stratigraphy of the lots, as well as the relationships of many deposits to each other. The layer/lot excavation system used throughout the excavations does not explicitly record features and contexts such as floors, cuts, and fills. Rather, it simply changes layers when something appears different and it is the responsibility of the excavator to identify, record, and describe these features however they see fit, creating a rather complicated record that can vary dramatically depending on the excavator's experience and training. Unfortunately in some cases, this vital information was lost. As a result, stratigraphic study is not possible with a great deal of the material from the houses.

Instead, this study will focus on the ceramics and present an overview of the complete assemblages found within the Corner House from a combination of deposits. The contextual information is crucial in understanding the formation processes of the deposits so that it may be determined whether they are primary or secondary refuse. Primary refuse is the most informative depositional process in extracting information relating to the function of a structure (Ault and Nevett 1999:49). These primary deposits include those from several rooms inside the house, as well as refuse pits located just outside. As the main aims of the assemblage study were to characterise the ceramics, and present interpretations of

[8] The lots included: Square K19 (64 total) –lot 30, 38-100, 104. Square K20 (35 total) –lots 10-44. Square L19 (9 total) –lot 24-26, 39, 51, 58, 59, 60, 160. Square L20 (32 lots) –lot 6-12, 20, 21, 25, 31-34, 39, 41, 44, 45, 48-51, 59-68.

the house through the assemblage, this is sufficient for the purposes of the study. It is important to put these wares into a greater context and address the finewares present in the assemblages as well, in order to better understand the functions of the contexts (See Chapter 8, Section 8.6).

Since the primary focus of this study is to better understand ceramic production and distribution in the sanctuary, it may seem that the function of the deposits from which the samples were chosen is secondary in significance. This is not the case. It is not possible to understand why the sanctuary was producing goods without understanding how they were using the goods, and for what purposes. Similarly, it is very important to understand not only what types of vessels the sanctuary was importing from regional and pan-Mediterranean sources, but in which contexts these vessels were being used. The contextual study of the houses allows for these types of interpretations to be made. Chapter 8 focuses on the interpretations of the results of the entire study—contextual, typological, chronological, and petrographic results, taking all these factors into account. A list of all lots studied is available in Appendix III.

2.7. The Study of Industrial Areas in the Sanctuary

The houses are not the only area used in this study. The Kiln Complex, located in central-eastern part of the sanctuary was also studied in depth, as well as square K17, a square located between the oikoi and the xenon (Figure 2.1). The Kiln Complex represents a large ceramic workshop with three kilns, a well, and a clay mixing pit. The Complex is so significant that it requires its own chapter to be discussed at length, Chapter 7. Square K17 was chosen because the excavators interpreted it to be possible bronze casting and marble sculpting workshops, representing other crafts taking place within the boundaries of the

sanctuary. These "workshops" are little more than pits filled with debris such as slag and marble chips, with a small amount of pottery. A small kiln was identified, which may be related to bronze casting.[9] The large amount of marble chips found throughout the area suggests that sculpting was in-demand, despite the lack of marble sculpture that remains at the site today. The small nature of the chips does not allow for any deliberation as to the types of sculpture that were created, although it is likely that the workshop produced mainly architectural pieces and epigraphical stelai.[10] Slag was found in a few contexts as well.[11] Unfortunately, the majority of the slag was thrown away. No analysis had taken place on the remaining slag, but it appears to be bronze slag.

[9] K17, lots 19, 29, 30, 31, 32. The kiln appears to be little more than a pit with evidence of burning.
[10] Marble chips were found in K17, lots 11, 12, 20, 21, 23, 24, 25, 26, 27, 28
[11] K17, lots 23, 28

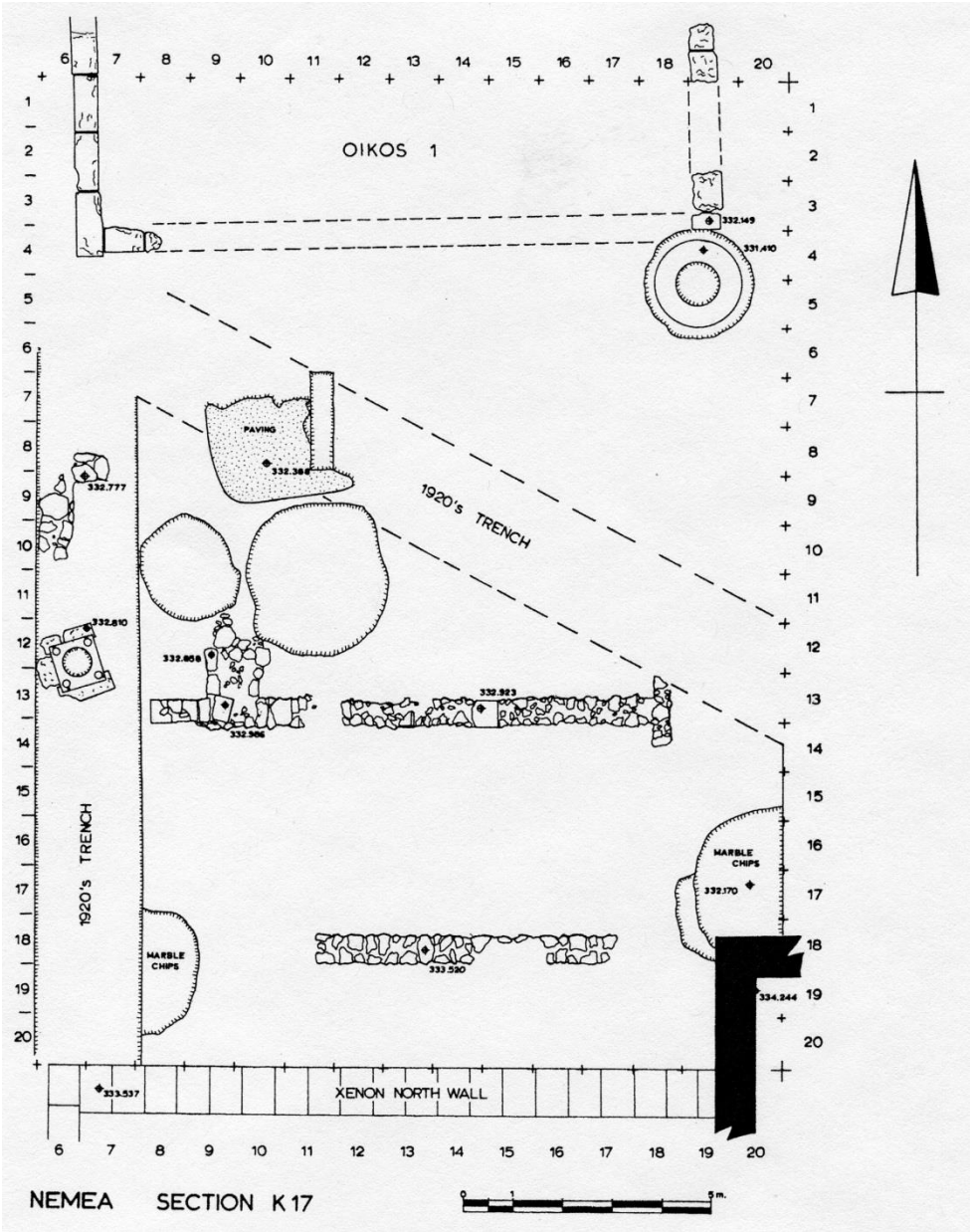

Figure 2.13: Detail of excavated pits interpreted to be related to craft workshops, square K17. From Miller 1984:177. Courtesy of the American School of Classical Studies at Athens.

The excavations did not uncover any relationships between the pits associated with the workshops and the two east-west walls in the area, shown in Figure 2.13. The Archaic-Hellenistic periods of the square are fairly disturbed due to a large amount of Late Roman activity that took place there, including burials and a paved surface (Miller 1984:178). The deposits relating to the workshops are dated to the late 4th century B.C., with some earlier and later

intrusions.[12] Miller originally dated many of the deposits to the 5th century B.C., but the assemblage study and detailed analysis of the ceramics carried out in this thesis revealed a consistent late 4th century B.C. date for the entire area (1984:178). It appears that these workshops were in use in the early Hellenistic period, most likely during the rebuilding period in the sanctuary.

The assemblages included vessels related to both consumption and the storage and use of industrial materials. These include common Attic-type skyphoi, the most common drinking vessel in that period, with a small assortment of plates and bowls. Most common in the assemblages are lekanai, mortaria, pithoi, and jugs, with several cooking pots. These vessels, while common for food preparation and storage, could have also been used in industrial activities, such as storing and preparing raw materials, as well as water and fuel. It was important to include this area in the greater study of ceramic production and distribution because while the vessels are the same as those from the houses, the uses and thus, the functions of the vessels are different. This is the same case in the Kiln Complex, which is explained in great detail in Chapter 7. By studying the same shapes from the houses and the industrial areas, it becomes possible to discern which types of vessels were favoured in each area. In some cases, it is possible to identify patterns of provenance for a vessel type that may be present in several fabrics, representing several production centres. These patterns differ between the study areas, offering a fascinating glimpse into vessel use and perhaps even demand in the sanctuary. These interpretations take all the contextual, chronological, typological, and petrographic evidence into account, and are discussed in Chapter 8.

[12] K17, lots 11, 12, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 40

2.8. The Significance of Ceramic Production and Distribution in the Sanctuary at Nemea

It is clear that the Hellenistic Panhellenic Sanctuary at Nemea was an important religious feature in the landscape of the greater Northeast Peloponnese. The sanctuary held a variety of events, and was home to a large assortment of activities that would attract neighbours from surrounding towns and villages, and well as visitors from further afield for the Nemean Games and religion pilgrimages. Yet very little information remains relating to the management and upkeep of the sanctuary. It is clear that the sanctuary consumed goods and commodities, especially ceramics. Unfortunately no work has been carried out that allows for a discussion of more perishable goods, such as food and drink. The ceramics remain the best indicator of commerce, in the form of ceramic production and distribution. This study contextualizes the ceramics through their resting places, while the petrographic study allows comparative and provenance studies to take place, especially in relation to the area surrounding Nemea—the Northeast Peloponnese. As a result, it is possible to view Nemea through the lens of the Northeast Peloponnese and regional ceramic distribution, allowing for the greater understanding of Nemea's economic connections with the area. The next chapter will place Nemea in the greater context of the Northeast Peloponnese, and focus on the significance of many sites in the area with close connections to the Panhellenic sanctuary.

Chapter 3: Placing Hellenistic Nemea in the Greater Context of the Northeast Peloponnese and Previously Conducted Research

3.1. Introduction

In order to discuss the production and distribution of Hellenistic ceramics found at Nemea in a meaningful way, it is first necessary to place Nemea in the greater context of the Northeast Peloponnese. As a place created for visitation, rather than habitation, Nemea was built, maintained, and visited by a great deal of people from all over the Greek world. However, the majority of the evidence from Nemea itself suggests that the cities and other ancient places within the boundaries of the Corinthia and the Argolid played the most important roles in the sanctuary's economic and political history. The sanctuary is located on the border between the Corinthian and Argolid regions. It is an important location, in between the small cities of Kleonai and Phlious, and on major roads to Argos, Corinth, and Sikyon, three major city-states through the Hellenistic periods (Figure 3.1). In order to fully understand the role of Nemea in the Hellenistic Northeast Peloponnese, and in turn, the ceramics, undertaking a literature review of the archaeology, and published ceramics of the area is necessary.

The purpose of this chapter is to twofold: firstly, this chapter aims to give a detailed account of the sites presented. Second, all previously conducted ceramic studies in the Northeast Peloponnese will be discussed. This chapter presents a detailed review of not only the archaeology of the Corinthia and Argolid, but it also serves as an assessment of all work completed on the Hellenistic ceramics from this area to date.

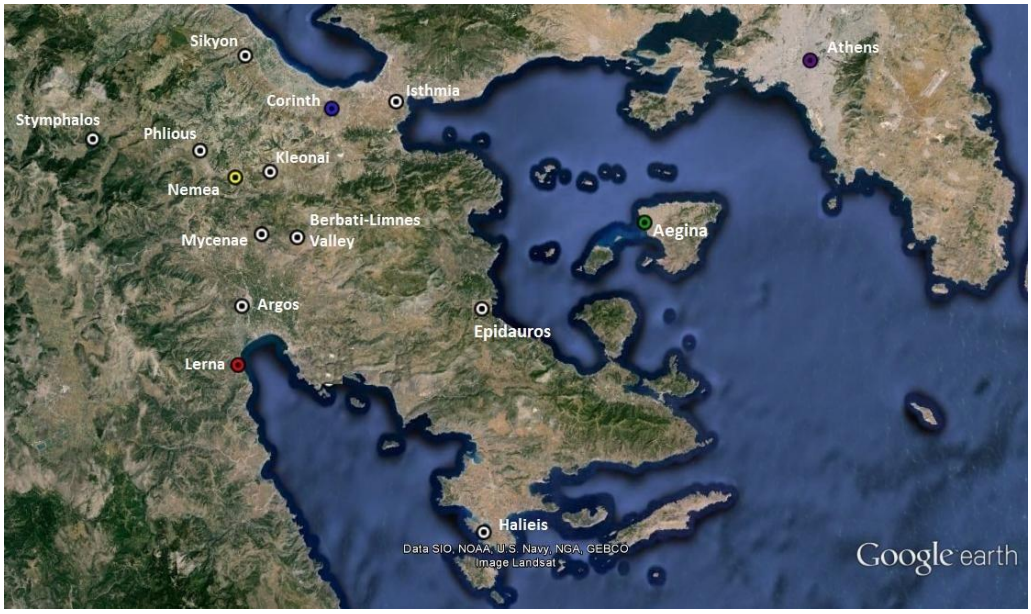

Figure 3.1: Hellenistic Sites in the Northeast Peloponnese. Image from Google Maps, identifications added by author.

3.2. Major Sites Relating to Nemea in the Northeast Peloponnese

Several factors were analysed in placing Nemea in the greater context of the Northeast Peloponnese. The sites deemed "major"- Corinth, Argos, Lerna, Kleonai, Phlious and Sikyon, have well known connections with Nemea, established by archaeological evidence at Nemea itself, in addition to literary and historical connections. The sites deemed "minor"- Isthmia, Pyrgouthi, the Berbati Valley, Mycenae, Stymphalos, and Halieis play important roles in the landscape of the Northeast Peloponnese, either historically or archaeologically, and must be considered to portray an accurate picture of activities and interactions in the Corinthia and Argolid. Each site is characterized by the state of archaeological work, evidence for Nemean interactions, and the history of ceramic scholarship to date.

No detailed studies of Hellenistic Nemea have been conducted prior to this research.[13] Many questions surrounding the ceramic assemblages from

[13] Although there are several publications on the architecture of Hellenistic buildings and coins at Nemea (*Nemea I, II, III*), to date there are no publications addressing Hellenistic ceramics, or

Nemea force the author to look further afield in order to understand the types of activities taking place within the sanctuary itself in relation to the region, as well as to define characteristic assemblages from deposits relating to the Nemean material, which is primarily from domestic and industrial contexts. Thus, there are several sites in the surrounding region which must be considered. The primary "major" sites that relate to Nemea in the Hellenistic period are Corinth, Argos, Lerna, Kleonai, and Phlious.

3.2.1. Corinth

Corinth was undoubtedly a large city during the Hellenistic period, with evidence of large scale ceramic production.[14] The abundance of Corinthian coins found at Nemea attest to the importance of Corinth to Nemea (*Nemea* III: 95-116). As will be discussed in Chapter 6, a large percentage of the ceramics from Nemea are definite Corinthian imports.[15] Thus, based on archaeological evidence at Nemea, as well as the region surrounding Nemea, Corinth most likely played a very important role in the area, providing pottery and being one of the major economic centres of the Northeast Peloponnese. Corinth has been excavated on an almost yearly basis since 1898, under the auspices of the American School of Classical Studies at Athens. However, despite a long history of excavation, the only purely Hellenistic feature excavated and extensively studied is the South Stoa, a series of shop, a building of both economic and political importance in the agora. In more recent years, Panayia Field has been excavated and revealed a great deal of closed Hellenistic deposits, along with a few buildings whose functions are unclear (James 2010). While other published features, such as the

placing the history and archaeology of Nemea in the greater significance of the Northeast Peloponnese.

[14] For discussions of the evidence of ceramic production in Hellenistic Corinth, see *Corinth* 7.3:7-11, *Corinth* 18.1:2-4; James 2010:4-7.

[15] Identifications made by author during data collection, see Chapter 6 for more information.

Sanctuary of Demeter and Kore have distinct Hellenistic activity, the mixed nature of the excavated deposits from the site did not allow for the refinement of pottery chronologies.[16] The activities of 146 B.C. destroyed a great deal, if not most of, the Hellenistic city at Corinth, accounting for the dearth of remains found.

Corinth has a long history of ceramic scholarship, most notably begun by G. Roger Edwards in his landmark volume *Corinth* 7.3 *Corinthian Hellenistic Pottery* (1975). This volume presented a large typology and chronology of the entire spectrum of Hellenistic assemblages, including finewares, moulded wares, plain wares, a small selection of cooking wares, and blisterware. The volume presented material from 118 deposits excavated throughout the ancient city, including assemblages associated with sanctuaries, pottery shops, and factories (*Corinth* 7.3: 188). However, the majority of the deposits were from graves and the South Stoa, which also included large deposits from drains located inside and underneath the shops. The drains predate the South Stoa, and were most likely part of a series of buildings destroyed to build the South Stoa. These drains are thought to have been filled at the time of the construction of the South Stoa, hence giving it a *terminus ante quem* of the 330s B.C., at the earliest (*Corinth* 7.6:14-19). While Edward's volume was very important at the time of publication, he admits in his introduction that the material presented many chronological problems, stemming from two sources. Firstly, the date of the construction of the South Stoa was changed between the date of publication and concurrent excavations of the area, down-dating the original date of the building by twenty five years from 350 to 325 B.C. (*Corinth* 7.3:vi). As Edwards used the

[16] See below for a discussion of E. Pemberton's work on the Sanctuary of Demeter and Kore (*Corinth* 18.1).

construction date as a *terminus ante quem* for a great deal of the pottery from the South Stoa deposits, he acknowledged that his published dates must be re-considered. Secondly, at the time of his work, it was widely believed that Corinth ceased to produce pottery after Mummius sacked and destroyed the city in 146 B.C. (Romano 1994:6; James 2010:3). Archaeological evidence within Corinth suggested that buildings were destroyed or went into periods of disuse. Literary sources do not mention activity in Corinth during this period, until Cicero briefly mentions inhabitants at Corinth circa 77-79 B.C. (Romano 1994:62). The extent of the population of Corinth, as well as the types of activities taking place throughout this interim period remain unknown until the second half of the 1st century B.C. The city was refounded in 44 B.C. by Julius Caesar, or *Laus Julia Corinthus*, the name given to him by Corinth (Roberts 1983:253).

While the extent of activity in post-Mummian Corinth remains unclear, there are no publications besides Romano (1994) to date that deal with this problem. As Edward's (1975) volume became a landmark study in the Northeast Peloponnese, as well as most sites in the Aegean world in which Corinthian pottery is found, it was necessary to re-evaluate the published chronology in light of new evidence. In 1989, Elizabeth Pemberton published *Corinth* 18.1*: The Sanctuary of Demeter and Kore - The Greek Pottery*, a detailed study of Proto-Corinthian to Hellenistic ceramics excavated in the sanctuary, which included structures related to religious activities, as well as large scale dining rooms (*androns)*, and a theater. The volume contains some Hellenistic pottery, but Pemberton addresses the chronological problems of the Sanctuary of Demeter and Kore, as well as ancient Corinth as a whole:

> "There are in ancient Corinth as yet virtually no limited sealed deposits from the Hellenistic period. All the South Stoa wells, the more recently discovered Forum wells, and fills in the Demeter Sanctuary show long ranges of dates, and many (including almost all the South Stoa wells) are filled with unstratified dump from the reconstruction of the Romans after 44 B.C. There are no wells that show a steady uncontaminated use fill. Hellenistic graves are also very sparse; domestic fills are unknown" (*Corinth* 18.1:3,4).

Pemberton elaborates on the problems originally addressed by Edwards, and unfortunately could not offer a great deal of help due to the mixed nature of the Demeter and Kore deposits. In 2010, Sarah James' unpublished PhD dissertation addressed this very problem, with the help of recently excavated Hellenistic deposits from Panayia Field, a large area within the ancient city that was excavated in 1995-2007 under the direction of Guy D.R. Sanders. Panayia Field contained a great deal of Hellenistic remains, including three large buildings and at least one well (James 2010:8). While Panayia Field has yet to be fully interpreted and published, James states that the excavations revealed six Hellenistic deposits, all of which appeared to be primary refuse (2010:16). By evaluating these deposits using quantification analysis, evidence of down-dating from the South Stoa wells, and datable material, such as amphora stamps, coins, and imports, she then applied her chronological results to twenty-five additional deposits excavated outside of Panayia Field, including many studied by Edwards in his 1975 volume (James 2010:19-20). The result of this study culminated in the down-dating of almost all Hellenistic material from Corinth, and thus, filling the interim period (146-44 B.C.) with many ceramics that were originally dated

earlier. The study is, and remains controversial. If this new chronology is to be accepted by the community of Hellenistic scholars, then many sites will have to re-evaluate their chronologies as well, as Corinthian imports are common throughout the Aegean and are often used as benchmarks for dating.

This study also plays a key role in the chronologies of the Hellenistic assemblages of Nemea. The Nemean assemblages contain a great deal of Corinthian imports, which could be dated using the new chronology. However, the assemblages also contain a great deal of Argive imports, whose chronologies do not agree with Corinth.[17] For the purposes of this study, all Nemean ceramics are dated using a combination of dates from Pemberton's volumes, and the recently completed Lerna study.

3.2.2. Argos

Equally significant to Nemea is Argos. From a historical perspective, Argos is perhaps that most important site in relation to Nemea, as it controlled the games at Nemea and may have been involved in the rebuilding and management of the sanctuary (Miller 2004:11-17). From a ceramic perspective, there is an abundance of Argive pottery present at the site. However, the macroscopic identification of Argive pottery was extremely problematic, due to the lack of pottery-based publications from the French excavations at Argos. The only publication dedicated exclusively to Hellenistic pottery from Argos is *Recherches sur les Ateliers de Bols a Reliefs du Péloponnèse à l'époque Hellénistique* by

[17] While there is little material published from Argos (see discussion in this chapter), the ceramics from Lerna also play in a vital role in this study, as they are primarily Argive. The author studied the Lerna assemblages for two years, in conjunction with Brice Erickson, and met with James on several occasions to discuss the misalignment of dates in the Hellenistic period. No agreement was reached; therefore the two sets of material from Lerna and Corinth, despite having obvious similarities, are dated differently, up to 50 years apart for some forms. Chronology is the biggest problem in the study of Hellenistic ceramics from the Northeast Peloponnese, which will only be solved when future excavations unearth more sealed deposits and crucial sites, such as Argos, publish their ceramic findings.

Gerard Siebert, published in 1978. While this publication is very helpful in identifying common decorative motifs and workshops that produced mouldmade bowls in the late Hellenistic period, the assemblages at Nemea are extremely varied and contain a great deal of other fineware shapes, in addition to large amounts of plain and coarsewares. The visible excavated remains of the city (Pierart and Touchais 1996:61-70), coupled with a small selection of exhibited material at the Argos Museum, are the only accessible indicators that Argos was indeed a metropolis that sustained a large population. With the exception of a small guidebook to the ancient city, designed for tourists (Pierart and Touchais 1996), there are currently no publications addressing the finds from the French or Greek excavations at Argos. However, many pottery publications from the surrounding area have confirmed that there was a large ceramic industry in the vicinity of Argos in the Hellenistic period, with Argive vessels being identified in Lerna, the Berbati Valley, and Corinth, in addition to Nemea.

3.2.3. Lerna

Thus, the lack of information relating to Argos itself hinders the understanding of the city in relation to the surrounding areas in the Northeast Peloponnese. However, a great deal of work has been carried out on the ceramics at Lerna, a small village approximately ten kilometers south of Argos.[18] No architectural remains relating to the Hellenistic period were found at Lerna, with the exception of three wells and a pit located within and near the Early Helladic House of Tiles. These wells are dated from 320-275 B.C. (*Lerna* VIII:265), and contain a variety of types of wares and shapes, including fineware cups, plain

[18] This study was undertaken by Brice Erickson, with the help of the author, and will be published in the forthcoming volume *Lerna* VIII. Erickson created the typologies and chronologies, while the author conducted macroscopic and petrographic fabric studies. See Chapter 5 for the results of the petrographic study.

ware bowls and jugs, and cooking pots. The variation within the assemblages allowed Erickson and I to create definitions of Argive wares in each ceramic ware class.

The study made it apparent that Lerna was little more than a small village or even a farmstead with a very small population, with no evidence of any type of industry (*Lerna* VIII:265-267). As Argos is the closest large settlement in the area, it makes sense that Lerna was dependent upon it for the allocation of resources and commodities, such as ceramics. A great deal of matches between the Lerna and Nemea assemblages were made, including lekanai, cooking pot fabrics, and finewares, especially the dominant Attic type skyphoi, which are the main drinking vessel shape found in both sites in the early Hellenistic period. Thus, the Lerna study is of utmost importance in gaining a greater understanding of the relationship between Argive and Nemean assemblages, so it serves as one of the major sites considered in this study.

3.2.4. Kleonai

Kleonai also played a very important role at Nemea in the Hellenistic period. Kleonai is a small village, about three kilometers east of Nemea, which is excavated by the German Archaeological Institute. To date, there is only one publication on the excavations at Kleonai, an excavation report from the 2000-2001 seasons, which focuses on the architectural study of the Temple of Herakles (Mattern 2002:1-8). This makes it necessary to evaluate the relationship between the two sites though evidence found at Nemea. Based on epigraphical studies from inscriptions found in Argos, Kleonai may have controlled the games or administered the Games on behalf of Argos at the time of the construction of the stadium, circa 330 B.C. (*Nemea* III:29, Pierart and Thalman 1980:261-269).

Thirty-one early Hellenistic coins from Kleonai were found at Nemea, which the numismatists (*Nemea* III:53) categorize as a high number in relation to coins found from other mints. In fact, the numismatic evidence suggests that Kleonai began minting coins around 320 B.C., when the games returned to Nemea, after a long period of inactivity, suggesting that Kleonai sustained economic ties to the sanctuary and the events held there (Marchand 2002:501-504). Further, the coins of Kleonai depict a Herakles head right on the obverse, and *ΚΛΕΩ* in a wreath with wild celery on the reverse (*Nemea* III:53). These symbols are obvious ties to the myths and practices of Nemea, especially seeing how victors of the Games were awarded crowns of wild celery as their prize as an homage to the death of Opheltes. Miller suggests that Kleonai was the main source of supplies for Nemea and the Games, and that the control of the Games was a very prestigious endeavor for the small village, while the proximity to the sanctuary was profitable (1982:107).

Further strengthening this argument are a series of ancient limestone quarries located on the southern tip of the Drymouni Ridge in Kleonai, approximately three or four kilometers from Nemea. These quarries were briefly excavated as rescue excavations in the late 1980s by the 4th Ephoria of Prehistoric and Classical Antiquities in Nauplion, during the construction of the new Corinth-Tripolis Highway (Marchand 2002:249). These small scale excavations were only published as brief note in *Archaiologia* in 1991 by then Ephor F. Pachyianna-Koloude, which notes "traces of tool marks, separation channels, methods of cutting lifting tennons, sherds, and twelve coins of Sikyon…[which] place the use of the quarry , at least for the section exposed, in the 5th-3rd

centuries B.C." (1991:199).[19] These quarries provided the building stone for the buildings in the Sanctuary at Nemea, and even continue to be used today as a source of fresh stone in the efforts to rebuild the Temple of Zeus.[20] The large scale of the quarries, and the evidence for transportation of the stone to both Nemea and Kleonai suggests that it was a large operation that would have employed a great deal of people, serving as another source of evidence of economic ties between Nemea and Kleonai. Furthermore, a complex system of roads connecting Nemea with Kleonai was recovered by Marchand through field walking, demonstrating that the two places were well-connected (Marchand 2009:108).

Surely if Kleonai was indeed the supplier of goods to the sanctuary and Games, an event that would draw tens of thousands of visitors, then some similarities are to be found between Kleonaian and Nemean ceramic assemblages. However, no pottery from the excavations at Kleonai has been published. It does not appear that the ceramics from Kleonai have been formally studied, to date. Because of this, it is not available to scholars to use as comparanda. Currently, there are no definitions of Kleonaian wares, in terms of fabrics or even shapes, making it impossible to identify ceramics produced in Kleonai at Nemea, or even confirm or deny that Kleonai produced ceramics. In order to fully understand the economic relationship between Kleonai and Nemea, the pottery from Kleonai must be published and made available to Nemean scholars. If Kleonai was indeed the supplier of Nemea, then the ceramic assemblages at Nemea would reflect this.

[19] Translation by J. Marchand 2002:249.

[20] Kim Shelton, personal communication 2011. The architects undertaking the re-erection of the columns at Nemea have confirmed that the original building limestone used in the late 4th century B.C. was from the quarries at Kleonai, and this same limestone is quarried to provide fresh blocks for the reconstructed columns when the ancient blocks are too eroded or fragmentary.

3.2.5. Phlious

Phlious, another small city located three kilometers west of Nemea, is equally as important as Kleonai to the sanctuary, and, unfortunately, it is also difficult to completely understand the relationship between the two sites. The historical sources do not mention Phlious in the Hellenistic period until 229 B.C., when Polybios notes that Kleonymos, the tyrant of Phlious, resigned from his position and the city joined the federal association of the Achaean League (Alcock 1991:429). In 222 B.C., the city was annexed by Sparta, and a garrison was possibly installed. However, this information is of little help in understanding Phlious' relationship to Nemea, as the games returned to Argos in 270 B.C. Thus, it is unclear what the state of Phlious was during the time of the Games. Turning to evidence from Nemea, coins from Phlious account for 6.5% of all legible coins found on site in the Hellenistic period, dating from 350-250 B.C. (Miller 1982:35; *Nemea* III:124-129), indicating the there was a settlement large enough to produce its own coinage. Xenophon (*Hellenika* 5.3.16) describes Phlious as a city of more than 5000 men in the Classical period, which may be an indication of its size a century later: "Even if the Classical citizen body was as sizable as Xenophon asserts, the political history of Phlious (at least in the Classical/Hellenistic era) can only be viewed as the struggle of one minor polis in its relations with greater cities, as it was balanced among Athens, Argos, and Sparta" (Alcock 1991:432). Miller argues that Phlious would have supported a much larger population than Kleonai, based on the accounts of Xenophon and Pausanias (*Hellenika* 5.3.16; ii.12.3-15.1), making it puzzling as to why Phlious did not attempt to gain control of the Games for the economic benefits (1982:35).

He believes that Phlious may have also supplied Nemea with goods, although there is no evidence for this besides the coins.

From an archaeological perspective, Phlious has been excavated irregularly since 1892 with small scale excavations carried out in 1892 by Henry and Charles Washington for one week, in 1924 by Carl Blegen for two months, and in 1970 by William Biers for three years (Alcock 1991:432). These excavations, particularly those of Blegen and Biers, uncovered many architectural features, including the agora, a basilica, a theater, a stage building, a hypostyle hall, and a Roman bath or gym, with some Hellenistic material found (Alcock 1991:432; Biers 1971:436-439; Biers 1973:111). In 1986, Phlious was surveyed as part of the Nemea Valley Archaeological Project (NVAP) in order to gain a greater understanding of the settlement while systematically mapping the architectural remains.

The ceramic material from the NVAP survey of Phlious produced between 1000 and 1500 Hellenistic sherds. This is almost equal to the amount of Classical sherds found, with a higher percentage of definite Hellenistic material (Alcock 1991:447). By comparing sherd densities from the Classical to late Hellenistic/early Roman periods, Alcock argues that settlement area expanded, and hence, so did the population of Phlious (1991:462). If Xenophon's (*Hellenika* 5.3.16) estimate of a Classical population of 5000 men is to be believed, then it may be interpreted that the Hellenistic population may have been larger. Thus, perhaps Miller's arguments are valid, and Phlious should be considered as a supplier of goods and commodities to Nemea.

The ceramics from the NVAP survey at Phlious were recently studied by Christian Cloke, as a component of his PhD on Geometric-Late Roman pottery

from the NVAP survey. Some parallels between the NVAP and Nemea assemblages were found, which will be discussed in Chapters 5 and 6.[21]

3.2.6. Sikyon

Sikyon is the fifth major site associated with Nemea in the Hellenistic period. While Sikyon is the furthest away, approximately 30 kilometers north of the sanctuary, its rich history in the Hellenistic period, coupled with the abundance of Sikyonian coins found at Nemea, suggests that it may have played a role in the site, or at least, brought a number of visitors to the site for the games and religious festivals.

The most extensive published work on Sikyon is *Land of Sikyon* by Yiannis Lolos (2011), the culmination of extensive topographical survey, aimed at defining political boundaries, exploring the road networks, defensive installations, forts and towers through a combination of field walking, discussions with local residents of modern villages located in ancient Sikyon, and the study of ancient written accounts. No sherds were collected at the time of this survey, instead, a second survey was carried out called The Sikyon Survey Project. This project was directed by Lolos, and focused on answering questions of archaeological, geophysical, geomorphological, anthropological, historical, and ecological activities throughout the region in the Hellenistic period (Trainor 2012:45). In 303 B.C., Demetrios Poliorketes marched on Sikyon and destroyed the lower city, and refounded Sikyon on the acropolis (Lolos 2011:72). To date,

[21] Christian Cloke studied the ceramics in April 2011 at the Nemea Museum, while the author was studying the assemblages from Nemea, allowing for the comparison of the two sets of material. Further, the author aided Cloke in putting together a petrographic study, which was completed by Samantha Ximeri at the University of Sheffield, under the supervision of Peter Day in 2011 as her MSc dissertation. Thus, the Phlious material serves as an important comparative date set for this research**.**

the exact location of the lower city is unknown, and excavations and surveys have concentrated on the acropolis.

This survey did collect sherds and archaeological material, which resulted in a great deal of post-303 B.C. ceramics, helping to better understand the early to late Hellenistic periods in the region. These ceramics were studied by Conor Trainor in his PhD dissertation, completed in 2012. His methods of analysis included typological and chronological identifications, although his primary focus was macroscopic fabric identification. Additionally, he carried out a small petrographic study on 122 samples (Trainor 2012:69).

While there do not appear to be any Sikyonian ceramics at Nemea at this time, Trainor's study is very important, as his assemblages share many similarities with those of the sanctuary at Nemea. Sikyon appears to have imported a great deal of Corinthian ceramics, much like Nemea, but there is also evidence of some kind of Hellenistic ceramic production industry in the ancient city (Trainor 2012:69). Thus, Trainor's study serves as a good case study for the identification of "locally produced" ceramics in an area with high concentration of Corinthian vessels. Although the study of survey pottery differs in many ways to that of excavated material, the presence of kiln sites and ceramic wasters aids in identifying the types of ceramics made in Sikyon, and to compare the types of imported Corinthian products.

3.3. Minor Sites Relating to Nemea in the Northeast Peloponnese

Based on the archaeological findings at Nemea, and the history of the Northeast Peloponnese in the Hellenistic period, it is clear that Corinth, Argos, Lerna, Kleonai, Phlious and Sikyon play the most important roles in understanding the sanctuary itself in this study. However, there are a series of other sites in the area that must also be considered, including Isthmia, Pyrgouthi/Berbati Valley, Mycenae,

Stymphalos, and Halieis. The term "minor site" is in no way a reflection of the site itself, its significance in the Hellenistic period, or the quality of its archaeological remains, but is rather a reflection of the extent of its relationship to Nemea. Of these sites, Isthmia is perhaps the most important archaeologically, as the other Panhellenic sanctuary in the vicinity. In most cases, these sites are considered not for their ancient roles in the landscape, but rather for their modern publications, especially the study of pottery from these areas. If Nemea serves as a case study for the study of the production and distribution of ceramics throughout the Corinthia and Argolid in the Hellenistic period, then it is extremely important to understand the extent of these activities at other sites in the area. Thus, the "minor sites" must be considered.

3.3.1. Isthmia

Isthmia was the fourth Panhellenic sanctuary in the *periodos* cycle, participating in biennial games in the Classical and Hellenistic periods (Miller 2004:12-13). Isthmia and its Games were controlled by Corinth until it was sacked in 146 B.C., when control was transferred to Sikyon (Trainor 2012:200). A great deal of the site has been excavated during two campaigns in the 1950s, by Oscar Broneer, and the 1980s, by Elizabeth Gebhard, both under the auspices of the American School of Classical Studies at Athens. These excavations uncovered the Classical Temple of Poseidon, the Archaic and Classical stadiums, and a Roman bath, in addition to a great amount of other remains (Broneer 1955, 1958, Anderson-Stojanovic 1993, 1996, 2004). However, of more importance to Nemea than the Isthmian Games is the Rachi Settlement, an early Hellenistic settlement on the ridge south of the Sanctuary of Poseidon at Isthmia (Anderson-Stojanovic 1996:57).

The Rachi Settlement was excavated by Broneer in 1954-1956, as well as in 1989 by Gebhard, in an attempt to reveal plans of individual buildings and the

extent and chronology of the settlement (Anderson-Stojanovic 1996:61). These excavations unearthed several buildings, built as early as the late 4th century B.C., that were used through the late 3rd century B.C., with evidence of destruction and abandonment circa 200 B.C. The ridge appeared to be a settlement that served as a place of industry and commerce, conveniently located close to the religious and commercial centres of Isthmia (Anderson-Stojanovic 1996:62-63, 92-93). The types of structures and activities taking place in the Rachi Settlement share many parallels with the domestic and industrial related structures studied at Nemea, in addition to being contemporary, so the parallels between the two sites are very important in understanding the activities taking place at Nemea.

Further, the Hellenistic pottery from the settlement has been published by Anderson-Stojanovic in several articles, in which she takes the full spectrum of the assemblages into account (1993; 1997; 2004). There are many parallels between the assemblages of Rachi and Nemea, including a great deal of cooking wares, some of which may be Corinthian (Anderson-Stojanovic 2004:624). In fact, the majority of the vessels from Isthmia are Corinthian including finewares, blisterwares, and cooking wares (Anderson-Stojanovic 1997:15). Anderson-Stojanovic also wrote the only publication based solely on Hellenistic cooking wares found in the Corinthia and Argolid, including information relating to shapes, chronologies, fabrics, functions, and manufacturing techniques (2004:623-630). This study was the first of its kind in the region, and acts as a good case study for the types of information that can be extracted from the cooking ware assemblages at Nemea.

Overall, Isthmia and Nemea share many parallels. As they were both Panhellenic sanctuaries, the general function of the sanctuaries themselves was

very similar, although types of buildings (and their general functions) differ. However, Isthmia has something that Nemea does not: evidence of settlement in the Hellenistic period. As the two sites are in close proximity to each other, it may be possible to view the activities at Isthmia as an example of typical Hellenistic activity in the Northeast Peloponnese, and thus, the Rachi settlement may serve as a case study for patterns in industrial and domestic practices in the late 4th and 3rd centuries B.C.

3.3.2. Pyrgouthi

The Berbati-Limnes Valley, and the site of Pyrgouthi are located approximately forty kilometers south-east of Nemea, and ten kilometers east of Mycenae, in the Argolid. The valley is isolated, both today and in ancient times, and would not have been easily accessible by ancient roads (Wells 1996:9). Pyrgouthi is an ancient tower located in the Berbati-Limnes Valley, just west of the modern village of Prosymna.

There are no ancient sources that refer to either the Berbati Valley, or Pyrgouthi, but based on archaeological evidence and the history of the surrounding region, the tower was likely military in nature (Penttinen 2005:111). It is possible that the tower was connected to a series of protective towers on the roads between the Corinthia and Argolid. The Berbati Valley itself contains a series of small settlements centred around a *Nekrotapheion* (cemetery) (Wells 1996:271).

The Berbati Valley underwent an extensive survey under the auspices of the Swedish Institute of Athens between 1988 and 1990, directed by Berit Wells, Curtis Runnels, and Eberhard Zangger. The survey revealed a great deal of activity in the valley from the Neolithic to Modern periods, with evidence of

continued settlement throughout the Hellenistic period. After the area of Pyrgouthi was surveyed, it became clear that further evidence was needed to fully interpret the site (then thought to be a farmstead), so excavations were carried out in 1995 and 1997 by the Swedish Institute of Athens under the direction of Berit Wells (Penttinen 2005:7). The excavations unearthed evidence of activity from the early Iron Age through the Late Antique periods (circa 4th to 7th centuries A.D.), with a great deal of early Hellenistic material. The tower was most likely built in the early Hellenistic period after the re-settlement of the valley following conflicts between Mycenae and Argos, which caused a great deal of unrest in the area. During this period, smaller communities and places of worship were destroyed, with populations expelled and the land divided between Argos and its allies (Pentinnen 2005:118-119). The combination of survey and excavation work around Pygouthi suggests that it was built in the middle of a village that was perhaps agricultural in nature. The remote location of the tower, the surrounding evidence, and the relative levels of political stability at the time may indicate that the tower was built to protect the agricultural resources in the area, rather than serving as a defence mechanism against invasions (Penttinen 2005:115-116).

There is no evidence of any interaction between Nemea and the settlements within the Berbati-Limnes Valley, but there are several parallels that make the site valuable to the study of Nemea. Firstly, the valley is isolated but was most likely controlled by Argos, much like Nemea (Penttinen 2005:114). Secondly, the pottery was studied and published extensively, including a large petrographic study carried out by Ian Whitbread (2007, 2011). Although there are settlements within the valley, its remote nature does not hinder the obvious

distribution of regional ceramics, most notably from Corinth and Argos (Penttinen 2005:118). Penttinen interprets that the presence of regionally imported ceramics suggest a market-oriented economy, driven by commercial activities at Argos, Kleonai in the early Hellenistic period, and later Corinth post 146 B.C. (2005:118). The evidence of regional exchange, coupled with the large petrographic study, makes the Berbati Valley extremely useful in the study of the Nemean ceramics, especially when they are applied to the extended study of Corinth and Lerna. Whitbread's study allows for the comparison of fabric matches with the three sets of material analysed in this project, further mapping regional distribution in the Northeast Peloponnese.

3.3.3. Mycenae

Mycenae plays an important historical role in the Berbati-Limnes Valley, and has a few parallels with Nemea, so it must be considered as well. Historically, Mycenae was rebuilt in the 3rd century B.C. after it was destroyed by Argos in the 5th century B.C. after it sent a contingent to fight against the Persians at Thermopylae (Wace 1949:24). Mycenae must have been allied with Sparta, as Argos sacked the city and dismantled it, and the citizens were either forced into slavery or escaped to Kleonai, Keryneia, or Macedonia at a time when the Spartans were occupied with their own internal problems. Thus, the city appears to have lain dormant until the late 4th or early 3rd century, when it was refounded as a *kome*[22] by the Argives (Wace 1949:24). Mycenae was the largest settlement in the area at this time, with evidence of domestic structures, and a textile industry (Penttinen 2005:119; Bowkett 1995; Rudolph 1978:213). While Mycenae is well known for its prehistoric citadel and pottery, the Hellenistic

[22] A small, fortified township made up of a veteran community

period is not well studied, with only one published article on the ceramics (Rudolph 1978).

Rudolph's article focuses on finewares and lamps from the House of the Idols (1978:213). The house is a Mycenaean structure; the Hellenistic finds were excavated in layers which were attributed to domestic buildings. The scant amount of ceramics published in this article is a glimpse into the Hellenistic assemblages, a small amount that is useful for studying shapes, but unfortunately little else is possible. However, the published pottery is a representative sample of the assemblages studied, with all vessels relating to drinking and eating (Rudolph 1978:228). It is unclear as to whether or not the vessels are the products of local production, or Argive products supplied to the small settlement.

> "It may be assumed with some confidence, however, that the pottery from the House with the Idols reflects a level which one would expect a small community, like the one which Mycenae seems to have housed, to produce for itself, without wishing to imply that the vessels discussed here are all-or for major part-local, i.e. Mycenae-made products. A more precise assessment of the possible local pottery production can only take place within a yet to be established frame for all Argive pottery during the Hellenistic period" (Rudolph 1978:228).

Rudolph's hesitation to attribute the ceramics to local or Argive production is telling, as the same problem remains today. While Erickson (forthcoming) was able to find comparisons between Rudolph's ceramics and the Lerna assemblages, the original problem of the lack of information regarding Argive ceramic production remains. Thus, while Rudolph's study of the Hellenistic

ceramics is helpful in understanding domestic assemblages at Nemea, the study is most valuable as a reference for the range of Argive shapes available in the area.

3.3.4. Halieis

Halieis is located in a small bay on the western tip of the southern Argolid, in close proximity to the modern town of Porto Cheli. The southern Argolid was surveyed as part of the Argolid Exploration Project under the direction of M.H. Jameson between 1979 and 1982. Halieis itself was excavated by several teams beginning in 1962 with the work of J.H. Young, and culminating in several years of excavation between 1971 and1979, led by Jameson, followed by Rudolph (Rudolph 1984; Ault 1994:24-25).[23] Unfortunately, the nearby town of Hermion was only excavated briefly in 1909 by Alexandros Filadhelfevs on a small selection of features, with no full publications (Jameson *et al.* 1994:581). As a result, little is known of Hellenistic Hermion and there is no information on the ceramics.[24] Halieis serves as the best indication of Hellenistic activity in the southern Argolid, although little is published on the ceramics.

Halieis may have been difficult to access by land, and thus maintained its contact with the outside world primarily through the sea, although evidence of ancient land routes to Argeia and Epidauros has been found (Jameson, Runnels, and van Andel 194:49). Survey in the southern Argolid revealed between seventy-eight and one hundred and ten possible settlements in the area between the 5th and 3rd centuries B.C., and Halieis and nearby Hermion were the largest cities in the region (Runnels and van Andel 1987:317).

[23] For a complete history of excavations at Halieis, as well as more information relating to excavations and survey in the southern Argolid, please see Ault 1994:24-25.
[24] Please see Jameson *et al.* 1994:587-606 for a more complete discussion of Hermion, including literary and epigraphic accounts of the city.

Halieis itself is a good example of planned urbanism, as the city was built on a grid which can be traced back to the 6th century B.C. (Ault 1994:27). Little is known of the late Classical and Hellenistic activities that took place there. The city is mostly known for a few inscriptions at Epidauros which record cures for its citizens in the 4th century (IGIV².1.121.120, 122.19-26, 122.9-82; Ault 1994:30). It was abandoned around 280 B.C. This abandonment is associated with either the destruction of the acropolis by Demetrios Poliorketes, or the onset of a major drought (Ault 1994:31). In either case, Ault states that the city's abandonment appeared to be sudden and relatively non-violent (1994:31).

The publications of Halieis to date focus on the fortifications and the houses excavated in the city. Ault completed a study on the organization and use of the domestic space, which included interpretations of the agricultural and economic activities that took place there (1999, 2005). This study includes the ceramics found in the houses studied, although the publication only gives the quantification analysis by minimum number of vessels (MNV) preserved, categorized by function (1999:Appendix 1). While this ceramic data is interesting, it is of no help to the Nemean study, as vessel types and fabrics are not discussed. However, it is useful to compare the assemblages of the Halieis houses with those from Nemea, although the Halieis examples are solely from the *koprones* (garbage collection pits, perhaps associated with the production of fertilizer) found inside the houses. Ault does state that the ceramics are a combination of Attic, Corinthian, and Argive wares, but gives no further detail as to what particular types of ceramics he is referring to (1999:566).

Halieis is perhaps more important to this study because of its economic ties to the rest of the Northeast Peloponnese, despite being relatively difficult to

access via land. Halieis was a large, urban centre in the late Classical and early Hellenistic period, with an estimated population of 2,500 inhabitants (Runnels and van Andel 1987:317). The nucleated settlement pattern in the whole southern Argolid region suggests that the area was focused on market-orientated, central-place distribution (Runnels and van Andel 1987:317-323). Based on the ceramic identifications, it appears that Halieis has access to Attic, Corinthian, and Argive distribution networks. Further, Ault suggests that the area may have produced olive oil for external markets, with the Argolic Gulf and Attica easily accessible by sea (1999:565; 1994:32). While the modes of access to Halieis may have differed from those of Nemea, it is nonetheless interesting to compare how similar their patterns of distribution are.

3.3.5. Stymphalos

Stymphalos is located on the ancient northeastern border of Arcadia, although it falls into the modern boundary of the Corinthia. Ancient Stymphalos was a town with evidence of a domestic residential quarter, a theatre complex, as well as the acropolis, which includes the Sanctuary of Athena (Schaus 2014:12-35). The town was excavated by Hector Williams of the University of British Columbia under the auspices of Archaeological Society of Athens and the Canadian Institute in Greece from 1982 to 1985, and again from 1994 to 2001 (Schauss 2014:3; Stone 1997:17-19). These areas were in use from the 4th until the mid-2nd centuries B.C., when the sanctuary and town were most likely abandoned or destroyed after Mummius and his Roman army sacked Corinth in 146 B.C. (Stone 2007:20-22). The Acropolis Sanctuary is well-published, including an in-depth study of the ceramics.

The study of the Hellenistic ceramics included the entire range of the assemblages from a variety of contexts, including trenches excavated on the acropolis sanctuary (Building A, Stone 2014), the domestic quarter, and two towers, the first an artillery tower on the summit of the acropolis, and the second the "West Wall Tower", found along the west wall of the fortification (Stone 2007:19). The ceramics from Stymphalos are important to the study of Nemea for three reasons. Firstly, Stone undertook a great deal of comparative work in order to tentatively identify the ceramics by provenance, when possible. He identified Argive, Corinthian, and Attic wares in fine, plain, and cooking fabrics. While no archaeometric analysis was completed, Stone relied on typological and macroscopic fabric indicators (Stone 2014:198). The ceramics from Stymphalos are very similar to those from Nemea in that they represent a range of pottery from different production centres found in the Northeast Peloponnese, as well as further afield. Secondly, one of the main aims of the ceramic study was to interpret the use of the various contexts through assemblage study (Stone 2014:193). Thirdly, the Stymphalian pottery includes imported wares not present (or at least published) at some of the other sites in the Northeast Peloponnese that are considered here, such as Corinth. These include tentatively identified Argive wares, for which Stone found comparatives at Nemea and Mycenae (2014:197). It is not possible to confirm these identifications without first-hand experience of the wares, or archaeometric analysis. However, if Stone is correct, then his findings may indicate that Stymphalos was part of an Argive distribution network, while sites further north, such as Corinth and Sikyon, did not have access to these markets. Overall, the study of the Stymphalos ceramics is very helpful because it had similar research aims, which were explored through a

similar methodology to the Nemea study. While ceramic petrography was not completed, the current state of the Stymphalian ceramic research allows for future study to take place with little need for additional work.

The study of Stymphalos is important in relation to Nemea because it represents another rural sanctuary. The Sanctuary of Athena was not Panhellenic, and thus perhaps not as well visited. However, the patterns of ceramic distribution from the town are very similar to those of Nemea. The role of the cult activity is unclear at Stymphalos (Williams and Schaus 2001:93-94). Nonetheless, the sanctuaries Stymphalos and Nemea must share some similarities in function, and perhaps visitation patterns.

3.4. The Significance of Nemea, and the Importance of the Study of Ceramic Production and Distribution in the Northeast Peloponnese

The integration of the studies of the history and the archaeology of the Corinthia and the Argolid demonstrate that the region was somewhat unified politically and economically throughout the Hellenistic period. The movement of commodities, namely ceramics, as well as the exchange of money, is attested at Nemea but also at most sites in question. Historically, all of these sites were connected through both Macedonian rule and the Achaean League at various points in the 3rd and 2nd centuries B.C., as discussed in Chapter 2. The presence of all the major city-states is archaeologically confirmed at Nemea, and the "minor" sites demonstrate ties with either Corinth or Argos, or both. Thus, given the information at hand, it is possible to ask further questions of the archaeological evidence, relating to industrial activities, and exchange of consumer products.

The historical and archaeological accounts confirm that Corinth was a major port of trade, as well as the major producer of ceramics in the Corinthia.

Argos served the same purpose in many ways, as the major city-state in the Argolid. However, little is known about the actual ceramic industries of these cities, due to the lack of archaeological evidence relating to pottery production. The same problems arise with smaller villages, such as Kleonai and Phlious, due largely in part to the lack of ceramic study completed to date. Thus, Nemea serves as an interesting case study to reveal further information regarding ceramic production and exchange in the region. Petrographic analysis, paired with typological and macroscopic fabric study, will allow for the identification of different clay paste recipes, indicating different centres of production. When applied to the comparative studies of Corinth and Lerna, in addition to previously conducted petrographic research, and the macroscopic identifications of the ceramics, patterns of production and exchange will be revealed. Combining the archaeological material from three sites will constitute a new way of understanding the interaction between the two major city-states of the time, and an important religious feature in the landscape that united both Corinth and Argos in peace and celebration. As the primary site in the Northeast Peloponnese with evidence of both Corinthian and Argive imports, Nemea serves as an important outlet for understanding the greater role of these cities in supporting neutral territory by both visiting the site, and possibly supplying it with the necessary commodities.

Chapter 4: Methodology

4.1. Introduction

In order to answer the questions at hand in a way that represented the Nemea assemblages accurately, several types of analyses were implemented in this study. The integration of typological, macroscopic fabric, and petrographic studies allowed for the maximum amount of information to be extracted from the assemblages. Once the analysis of the Nemean material was completed, comparative studies were undertaken in much the same fashion, using typological, macroscopic fabric and petrographic criteria. This chapter will outline how each form of analysis was carried out, in addition to explaining the value of extracting these types of information from the ceramics. It will also review the methods of sample selection from Nemea, as well as the main comparative sites, Corinth and Lerna. The aims of this study—forming a greater understanding of ceramic production in the sanctuary, and identifying the distribution of regional and pan-Mediterranean imports at Nemea will be reviewed through a discussion of the benefits of the interdisciplinary approaches used. It is only through the combination of typological, chronological, macroscopic fabric, petrographic, and comparative studies that the ceramic assemblages at Nemea can begin to answer questions relating to production and distribution.

4.2. Assessing Previous Work

Relevant previous petrographic studies in the region were helpful in demonstrating the types of results that could be extracted from historical ceramic assemblages in the Northeast Peloponnese. The most relevant studies are those by Whitbread and focus on Corinthian amphoras, as well as plainwares,

coarsewares and tiles (1995), and survey ceramics from the Berbati Valley and Pyrgouthi (Whitbread *et al.* 2007, Whitbread 2011). Prior to his work, Farnsworth was the first petrographer to analyse ceramics from Corinth, sometimes combining petrographic analysis with X-ray diffraction (XRD) and neutron activation analysis (NAA) (1964, 1970, Farnsworth *et al.* 1977). A more recent petrographic study of Byzantine and Frankish ceramics from Corinth is also valuable (Joyner 2007).

Whitbread's landmark study, *Greek Transport Amphorae*, was the first of its kind in Greece (1995). While the study focused on the petrographic identifications and provenance studies of Greek amphoras, Whitbread also focused on many common Corinthian fabrics and ceramic objects. These include roof tiles, architectural terracottas, terracotta sculptures, perirrhanteria, medium coarsewares, and finewares. The study demonstrated that refiring tests and petrographic study were useful tools in distinguishing and grouping historical fabrics in a range of ware types (Whitbread 1995:306). Whitbread also sampled and characterised a variety of clays and other raw materials around the ancient city in an attempt to find the raw materials used in the production of the Corinthian amphoras and other ceramic products. Whitbread's study did not include detailed chronological discussions or analysis of any cooking wares or "red wares" as he refers to them in his book (Whitbread 1995:305), both of which are important components of this study. Nevertheless, Whitbread's study remains the most important reference work available, and served as a guide to the questions it was possible to ask of the material, as well as the types of results that could realistically be expected from Corinthian material.

Whitbread's study of historical fabrics from the Berbati Valley demonstrated that there were several different distinguishable fabrics present there in the Hellenistic period, although they bore many similarities to Classical and Roman material (Whitbread *et al.* 2007:185). He describes four general ceramic traditions that are present between the Classical and Roman period which each represent a different ware-type (Whitbread *et al.* 2007:185). Whitbread did not attempt to provenance these fabrics, although he did collect clay samples throughout the region, which he characterised petrographically. As the Berbati Valley is located next to the Argive Plain, this study was extremely helpful for comparing fabrics found in Nemea, Lerna, and Corinth in an attempt to further characterise ceramic movement between the Argolid and Corinthia. Further, Whitbread's study demonstrated that some fabrics were present in the region over long periods of time, suggesting that ceramic traditions or indeed production centres may have continued over centuries. These results and interpretations were very important in forming questions at Nemea, and in investigating chronological differences.

Prior to Whitbread's work, Marie Farnsworth published three articles about petrographic and chemical studies conducted on Corinthian ceramics as part of a greater study that also included ceramics from Athens, Aegina, and Corfu (Farnsworth 1964, 1970; Farnsworth *et al.* 1977). In the initial study, Farnsworth aimed to demonstrate that the ceramics from Athens, Aegina, and Corinth could be distinguished on petrographic grounds, due to the different types of geology that was predominant in each area—Athens was primarily metamorphic in nature, Aegina was volcanic, and Corinth was sedimentary (Farnsworth 1964). The study was successful, leading her to continue her studies

at Corinth to determine how Corinthian glosses were made, and find the raw materials utilised in the production of Corinthian ceramics through a programme of petrographic analysis, re-firing tests, and X-ray diffraction (Farnsworth 1970). The 1977 study attempted to differentiate pottery from Corinth and Corfu through NAA (Farnsworth *et al.* 1977). Her work was very important at the time, as she was the first person to study historical ceramics through petrographic analysis and to identify several usable clays in the area (Farnsworth 1970).

Louise Joyner's work on Byzantine and Frankish cooking pots from Corinth serves as the first in-depth petrographic study of historical cooking fabrics from Corinth (Joyner 2007). While her material dates to the 12th to 14th centuries A.D., almost 1600 years after the Hellenistic period, there are a surprising number of parallels in the fabrics of the two eras, demonstrating that ceramic traditions such as raw materials procurement and manipulation were most likely in place at Corinth for upwards of two millennia.

It was important to use these key studies to better understand the limitations of both the material and the study area. Whitbread and Joyner demonstrated that it is difficult, if not impossible, to securely provenance many fabrics found in the area through petrography alone, on account of the repeated occurrence of similar geological formations over the majority of the Corinthia and the Argolid. Whitbread and Farnsworth showed that finding raw materials which are exact matches to the ancient fabrics is often difficult, if not impossible. While it is true to say that very few analytical studies in the Aegean provide exact matches for archaeological fabrics (cf. Kiriatzi 2003), it is often not necessary to do so in order to answer important archaeological questions.

4.3. Framework of Study: Identifying Problems, Forming Questions

Since the majority of the ceramics from Nemea were not studied or published prior to this research, the extent to which questions relating to ceramic production and distribution could be answered were unclear at first. It was apparent from the onset that a general assessment of variability within the assemblages was necessary before a targeted set of analytical questions could be developed. In addition, the rate of retention of plain wares, coarsewares, cooking wares, and tiles in the 1970s and 1980s excavations was unknown.[25] No attempt had been made to provenance the coarse and cooking wares before, and it was unclear how many fabrics or vessel types were present. The repertoire of the Kiln Complex was unknown, besides tiles and kiln furniture. In fact the site lacked any publications focussing on ceramics, and much of the site's chronology was based on ancient accounts of historical events in the surrounding area, or architectural style, as was discussed in Chapter 2.

While at a regional scale there existed some useful analytical work, the site of Nemea itself had not hosted a major ceramic study. With this in mind, a programme of analysis was created that would enable selection of relevant samples to illuminate specific questions. Questions asked of the material include:

1) Did ceramic production take place in the sanctuary?
2) Is it possible to identify regional and extra-regional ceramics found in the sanctuary?
3) Is it possible to comment on the role of ceramic distribution taking place within the sanctuary? In the Northeast Peloponnese?

[25] Many excavation notebooks from the 1970s and 1980s indicated that ceramics were thrown in many lots after they were read, but it was unclear how many or to what extent. Quantification analysis was not conducted before these wares were thrown, except for roughly measuring the volume of the complete lot in some cases (i.e. half a bucket of sherds, two buckets of sherds, etc.).

The methodology was established to assess ceramic production and distribution taking place in the sanctuary, through a combination of analyses. The analysis of the ceramics from well contextualized deposits from the houses and the Kiln Complex provided a sound framework from which interpretations could then be made, based on the analytical results.

4.4. The Ceramic Study

All ceramic study took place in the Nemea Museum, located on the archaeological site in Ancient Nemea, from March to October 2011. During this time, 314 lots were examined from seven squares, each measuring twenty metres square. Due to the discard of many sherds during excavations, quantified analysis of the ceramic lots was not completed. However, every attempt was made to understand the broad distribution of vessel and fabric types, as well as their relative frequencies, in different contexts. The 314 lots represent an estimated 100,000 sherds, with additional study carried out on catalogued complete vessels. In addition to analysing the lots, 500 sherds were catalogued. 299 of the catalogued sherds were selected for petrographic study based on their fabric, shape, and date. The catalogued sherds are very important, as they are a representative sample of the vessel types and fabrics present in the assemblages, as well the entire chronological range studied.

Once a lot was chosen for study, it was taken out of storage and laid on a table. The sherds were organized into four categories of ware group—fine, medium-coarse/plain, coarse, and cooking wares. The finewares were assessed by fabric, shape, function, and date, and recorded into the FileMaker Pro sherd database created for this project. In most cases, it was not possible to create coherent fabric groups, as the sherds were too fine without any visible inclusions.

Thus, macroscopic fabric analysis was limited to a Munsell colour, with any noticeable fabric characteristics recorded, if any.

The medium-coarse, coarse, and cooking wares were assessed by fabric, shape, function, and date. In many cases, the sherds were washed in order to reveal the maximum amount of inclusions, as the pottery had become quite dirty after twenty to forty years of storage. Fabric groups were created based on the type of and quantity of inclusions. Once these groups were established, the shape and suggested function of the sherds were determined. Dates were attributed to the sherds through a combination of comparative studies, when possible or relevant, and the date of the lot from which the sherd came. It was not possible to place all sherds into a fabric group. In this case, the individual fabric was recorded and the other steps carried out as above.

Sherds were selected to be catalogued based on their fabric and shape. Once a main fabric group had been defined, care was taken to sample the range of shapes present in that fabric. Common shapes, such as chytrai, lopades, jugs, mortaria, and lekanai were sampled in the entire range of fabrics present, including individual examples of a fabric that may be a loner. The ultimate goal in the selection of catalogued sherds was to represent accurately the range of shapes and fabrics present in all the assemblages. In some cases, there were slight differences in shapes in the same fabrics. For example, chytrai present in the Gritty Brownish-Red/Chert and Quartz fabric had some variation, with the rims and flanges changing slightly across different examples. It was important to catalogue and further study these examples to determine if these stylistic differences were the product of technological changes in the process of making

the vessel or chronological differences over time, or perhaps a combination of the two.

The recording of the sherds was one of the most important aspects of the museum study. The database was created to allow for the complete recording of every aspect of the sherd—context information, sherd type, fabric type, shape information, Munsell number, as well as fabric descriptions and sherd descriptions. This information was linked with other tables in the database containing petrographic information, to correlate information and reveal patterns based on petrographic fabric group, shape, and date. The ceramic database was also linked with a table containing information on excavation context, discussing the context of the sherd with reference to other finds in the lots, including other sherds, small finds, and coins.

The complete lots were assessed, with notes taken about the range of vessels and wares types found in the assemblage, with dates taken into consideration. They were also photographed. The small finds and coins found with these lots were recorded and examined, if necessary, as were the complete vessels catalogued during excavations. The lots were recorded in the same database as the sherds, in a separate table, which includes all the original excavation information, such as location, elevations, the excavator's notes, the pottery, and the original date given, in addition to the new pottery reading from this study, dates, and photographs. It was important to record the complete lots, in order to extract the maximum amount of contextual information for the catalogued sherds.

4.5. Macroscopic Fabric Studies

In this study, the fabric of the vessel is the most important factor to be studied. Each sherd was analysed macroscopically using a 10x hand lens. All fabrics were recorded using a system based on Sander's system of fabric description (Sanders 1999: Appendix 2), coupled with the standardised terms and charts for soil description utilised in the University of Sheffield's petrographic description system.[26] This included estimating the hardness of the fabric and the percentage of inclusions, then describing the shape, size, and colour of the inclusions. This system allows for detailed, standardised descriptions that any pottery expert can understand, even without knowledge of geology or ceramic petrography, which is very important for comparative studies. In most cases, individual minerals or rock fragments were not identified, due to the ambiguous appearance of many inclusions in hand specimen. Limestone and mudstone proved to be the exception to this rule, as well as mica. Lastly, the fabric colour was recorded, using a Munsell chart.

Fabrics were grouped according to colour, texture, as well as the frequency and associations of inclusions (Table 4.1). Some fabrics appeared to be neither characteristic nor diagnostic, in which case they were recorded using the system described as individuals to control the number of groups in the analysis. Four main macroscopic groups were recorded:

[26] Sanders' system of fabric recording (1999: Appendix 2) was devised with Ian Whitbread and Louise Joyner, and is the primary system for recording macroscopic fabrics at the American School Excavations at Corinth.

Fabric	Brief Description
Tile Fabric	Hard fired to soft, easily scratched fabric, 25-33% inclusions, moderately sorted, subangular to rounded black inclusions with wide variety of sizes, subrounded red inclusions, subrounded white inclusions. Ranges from red to mint green, depending on firing temperatures
Red Micaceous Fabric	Soft, powdery fabric, 5-10% inclusions, well sorted, fairly fine, fine mica, rounded white and grey inclusions
Gritty Brownish-Red Fabric	Very hard fabric with 10-25% moderately sorted sub-angular to rounded white, grey, translucent inclusions
Phyllite Fabric	Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Table 4.1: Most common macroscopic fabrics present in Nemea assemblages examined.

While there were obviously more than four fabrics present in the assemblages, these four were the most predominant and easily recognizable. They were sampled to investigate their variability over shape, surface treatment and date and, in addition other less common fabrics were well represented.

4.6. Typologies

Typological studies have long been the mainstay of ceramic studies in the field of Classical archaeology. Identifying forms and how they change over time is crucial in understanding how a vessel was used. Studies most relevant to this project are the multitude of Athenian Agora and Corinth volumes, including *Agora* 33 *The Hellenistic Plain and Coarse Wares* (Rotroff 2006), *Corinth* 18.1 *The Sanctuary of Demeter and Kore: The Greek Pottery* (Pemberton 1989), *Corinth* 7.3 *Corinthian Hellenistic Pottery* (Edwards 1975), and Hesperia

Supplement 35 *Greek Tile Works* (Merker 2005). These volumes are the most relevant to the Nemea study, as they deal with contemporary plain and coarse wares, in addition to the finewares in the cases of Edwards and Pemberton. While there are many other publications dealing with Hellenistic pottery, it was very important to consider the ceramics from nearby areas. At the beginning of this study, it seemed clear that the majority of the ceramics present at the sanctuary came from nearby sources in the Northeast Peloponnese. These volumes served as comparative references from which the shapes at Nemea could be compared. The excavations at Nemea revealed mostly small, worn sherds, most likely due to the large amount of agricultural activity taking place in the sanctuary in the Late Roman and Byzantine periods. As a result, typological studies were reserved for diagnostic sherds only in this study—those which preserved an identifying element of their shape, such as a rim, base, or handle. In most cases, little typological information can be extracted from plain, coarse, and cooking ware body sherds.

At this stage, all surface features which may provide information on the way in which a vessel was formed were recorded. Most, if not all, of the plain and coarseware ceramics from this period were wheel-made, with occasional slipping or smoothing on the exterior surface. These traits were recognizable in hand specimen without the aid of a hand lens or binocular microscope. The most common indicators that the vessel was wheel-thrown were shallow, barely visible spiral rings on the interior. The surface treatments, such as slipping and smoothing, were also visible to the naked eye, through distinct smooth surface textures or colour differentiation from the untreated interior of a closed vessel.

Any unusual observations relating to manufacturing techniques were recorded in the catalogue**.**

Once the range of vessel types present was determined, the nature of a typical assemblage in the houses and Kiln Complex became apparent. The plain and coarsewares represent a range of vessels relating to food storage and preparation, including lekanai, mortaria, jugs, pithoi, and cooking pots. The kilns contained a representative mix of tiles, kiln separators and wedges, wasters, loomweights, and a small assortment of vessels for food storage and preparation. In order to ensure a representative sample of vessels, a range of common vessel types in a variety of characteristic fabrics, was selected. The sampling not only represented the full range of the plain and coarseware assemblages, but also material found within and nearby the Kiln Complex (Table 4.2).

Vessel Type	Number of Samples
Amphora	2
Antefix	2
Chytra	52
Cooking pot lid	7
Jug	44
Kiln lining	3
Kiln separator	8
Krater	3
Lekane	48
Loomweight	9
Lopas	33
Mortar	14
Perforated Cylindrical Vessel	1
Pithos	14
Spouted vessel	1
Waster	2

Table 4.2: Petrographic samples by vessel type.

While the sample set is as representative as possible of the assemblages as studied, a great deal of the plain and coarsewares were discarded during the excavations, as well as much of the Kiln Complex material. It is therefore not

possible to fully recreate or even estimate the proportions of different shapes or fabrics present in the original assemblages. Thus, the dominance of chytrai, jugs, and lekanai in the sampled assemblage may only represent their importance in the material which has survived excavation, study and earlier discard.

4.7. Chronology

A consideration of Hellenistic chronology is important in evaluating the assemblages at the sanctuary and, indeed, not without its problems. While it is clear that all of the material at hand post-dates 330 B.C., which marks the rebuilding of the sanctuary, it is not possible to get a clear picture of the 3rd and early 2nd centuries B.C. through the ceramic assemblages alone. The fact that assemblages are comprised of primarily small, worn sherds makes the dating of fineware difficult. Furthermore, the most common fineware shape, the Attic-type skyphos, has a long life, ranging from the mid to late 4th to early 2nd centuries B.C (James 2010:56). A small amount of later deposits contain mould-made bowls, placing them in the early to mid-2nd century, but these deposits are rare in the areas studied. There are two types of dating which were considered in this study—that of an individual vessel based on comparative studies, and the date of the lot from which a vessel comes, based on the entire assemblage, including coins. Both dates were taken into account, when possible, in order to ensure the most precise dating possible. The mixed nature of many deposits made dating some lots difficult, in which case the latest date present in the assemblage was usually used.

One of the initial problems of chronology relates to the uncertainty of the provenance of the vessels. While both Corinth and the Athenian Agora have published a great deal of Hellenistic plain and coarsewares, there exist almost no

publications on Argive plain and coarsewares, with the exception of a small amount of material published from the Berbati-Limnes Survey (1996) and excavations at Pyrgouthi (2005). The Berbati-Limnes Valley and Pyrgouthi material was not ascribed provenance, either typologically in the ceramic study, or petrographically, making it unclear how much, if any, of the material is Argive. Thus, there were very few references to Argive shapes or fabrics except for the Lerna study. It was only possible to compare diagnostic sherds to published Corinthian and Attic shapes. This is highly problematic, as it was unclear to what extent Attic wares were present in the assemblages prior to this study. However, it was clear that a great deal of the ceramics were Corinthian. Thus, the Corinthian publications served as the main comparatives available for chronological study, even though these resources themselves discuss problems with their own Hellenistic ceramic chronology, as discussed in Chapter 3. This problem was dealt with in three ways. Firstly, the original dates given to the lots were considered, based on all sherds present today. Second, all diagnostic plain and coarsewares were evaluated in terms of shape and fabric to attempt to date them, including all complete catalogued examples that were removed from the lots. Third, other diagnostic elements of the original assemblages, if any, were considered. These elements were primarily coins, but in some cases included small finds such as loomweights or metal objects. As a result, many lots are roughly dated to a fifty to hundred year span, as well as most vessels. More detailed studies of well-stratified, undisturbed contexts from contexts within the sanctuary, such as the wells, must be studied in future for the chronologies to become more precise.

4.8. Ceramic Petrography

Petrographic analysis involves the description, classification, and interpretation of ceramic pastes, or fabrics, using techniques derived from those used in geology to describe rocks (Freestone 1995:111). These techniques involve the identification of clay pastes and their constituents through polarised light microscopy of prepared thin sections. Petrography was utilised in this study as the primary form of analysis to identify raw materials used, define clay paste recipes, and ascribe provenance, when possible. Thus, the petrographic study had three main aims:

1) Create fabric definitions and identify clay recipes
2) Examine differences in production techniques and clay recipes of similar vessels
3) Provenance the fabrics through geological studies of the region and comparative thin section material, if possible

Petrographic analysis was completed on 299 samples. The samples were taken in the Nemea Museum under the supervision of conservators from the ΛΖ' Ephoreia, after the appropriate permits were granted. All samples were cut from the sherds using metal shears. The samples were then made into thin sections at the Fitch Laboratory at the British School at Athens in April and May 2013. Thin section preparation included cutting the samples with a diamond saw, polishing the surfaces to be analysed, and impregnating them with epoxy resin. After impregnation, the samples were ground and polished to a thickness of 30 micrometres, and a cover slip was adhered to the surface.

The analysis of the samples was carried out between April and August 2013 at the Wiener Laboratory at the American School of Classical Studies at Athens, the Fitch Laboratory, and the Department of Archaeology's Materials Science Microscope Laboratory at the University of Sheffield using a Leitz

Laborlux 12 POL S at all three locations. Analysis began with a blind study of the 299 samples, in which they were grouped by fabric. Factors such as the type of inclusions, their relative frequency, size, shape and sorting, in addition to the texture and appearance of clay matrix were analysed in order to characterise and group the samples. Once preliminary groups were formed, evidence of the technology of manufacture was examined. This included identifying the nature of any raw materials used, including evidence for their alteration and manipulation by the potter; for example by tempering a clay with non-plastic inclusions or through the mixing of different clay-rich raw materials. In order best to represent variability on the sampled assemblage, sub-groups of main fabrics were sometimes defined. A total of seven groups were identified, with an additional seven individual samples which are here referred to as 'loners'. After the groupings were complete, each was described using the system devised by Ian Whitbread (Whitbread 1991; 1995:365-396). Full petrographic descriptions are given in Appendix I. The descriptions summarize the distinctive characteristics of the groups, and take note of factors of ceramic manufacture, such as clay preparation, clay mixing, forming techniques, and firing conditions.

4.9. Provenance Studies

The resultant groups were then examined to determine whether their source, or provenance, could be suggested. This required a characterisation of local production in the case of the Kiln Complex, the consideration that regional products might exist in the assemblage, as well as suggesting the source of pottery which may have found its way to the site from further afield. The petrological nature of inclusions present in the major groups were first compared to the geology of the Nemea Valley, which has been mapped by the Geological

Service at a scale of 1:50 000. Provenance studies conducted in the Northeast Peloponnese can be problematic, due to the similar geological formations repeated throughout the area. The region is fairly homogenous, being dominated by limestones, shale-sandstone-chert formations and marls (Whitbread 2011:143). Provenancing the ceramics in the study is difficult because six out of the seven petrographic fabrics in question contain these constituents. In order to provenance a fabric with reasonable confidence, several factors must be taken into account.

> "The accurate and successful localisation of sources [by ceramic petrologists] …is dependent upon several factors, which include the presence of distinctive mineral inclusions, the availability of detailed geological reconnaissance in the regions of interest, and reference material from the possible sources" (Maniatis *et al.* 1984 as cited in Whitbread 1995:375).

If this is regarded as the formula by which petrographic fabrics are provenanced, then the majority of the fabrics from Nemea are lacking one major element of the equation: distinctive or characteristic inclusions. The Nemea Valley and surrounding regions are fairly well recorded, in terms of geological maps from IGME, but few publications exist that go into specifics. Whitbread sampled clays and published his findings in both the Berbati-Limnes Valley (Whitbread *et al.* 2007, Whitbread 2011) and Ancient Corinth (Whitbread 1995). Geological and geomorphological work was done in the area by the Nemea Valley Archaeological Project team, which led to the conclusion: "it is already clear that the landscape of Nemea has been periodically unstable and that the environment has changed considerably since humans first settled there" (Wright *et al.*

1990:587). Essentially, the Nemean landscape has changed a great deal over the past few thousand years and the raw materials used in antiquity cannot be found. As a result of the inability to provenance fabrics based on geological matches within a discrete geographic region or distinctive geological indicators, comparative studies played a large role in the petrographic analysis.

4.10. Comparative Studies

Most suggestions of provenance within petrographic studies of ceramics are made through comparison with thin sections, both published and unpublished, from other sites. Work in the Northeast Peloponnese is no different and the petrographic fabrics established from the Nemea material were compared to pottery of similar and different dates in the region. Comparative studies were imperative for learning more information about the petrographic samples based on petrographic material from the Northeast Peloponnese, once the analysis had taken place. The comparative studies can be divided into two groups: petrographic studies designed and analysed to complement the Nemea study; and published or previously studied material from areas that relate to Nemea. The former category is comprised of the petrographic studies of Hellenistic ceramics from Lerna and Corinth, the latter include studies of Geometric to Hellenistic Corinthian amphorae (Whitbread 1995) Late Roman cooking pots and amphorae from Corinth (unpublished Sheffield MSc thesis, Graybehl 2010), Byzantine and Frankish cooking pots from Corinth (Joyner 2007), Geometric-Late Roman ceramics from the Nemea Valley Archaeological Project (unpublished Sheffield MSc thesis, Ximeri 2011), Neolithic-Early Modern ceramics from the Berbati-Limnes Survey (Whitbread *et al.* 2007, Whitbread 2011), Hellenistic ceramics

from the Athenian Agora (unpublished samples courtesy of Susan Rotroff), and Hellenistic-Late Roman ceramics from Sikyon (Trainor 2012).

The petrographic study of ceramics from Lerna was completed as part of on-going research on Geometric-Hellenistic ceramics by Brice Erickson (*Lerna* VIII, forthcoming). The petrographic study comprised of sixty samples ranging from Geometric to Hellenistic periods, but only the Hellenistic are considered here. The samples largely reflect the same shapes as those in the Nemea study, and their analysis has the same aims as those outlined for the Nemea assemblage. The same is true for the Corinth study, which is comprised of 98 samples of the same range of vessels.[27]

The published and previously studied comparative material was used in two ways. Firstly, many of the studies functioned as reference materials for different prominent settlements that most likely produced their own ceramics to pinpoint locally produced, common fabrics, such as those from Sikyon, the Athenian Agora, and Corinth. Second, the studies were consulted in an attempt to find matching fabrics, or similar types of raw materials, such as the Nemea Valley Archaeological Project and Berbati-Limnes Survey studies. In some cases, later studies such as the Late Roman, Byzantine and Frankish ceramics from Corinth (Joyner 2007) were compared to see the differences in raw materials in fabrics deemed local.

In many instances, the comparative studies were successful in finding petrographic fabrics that match or are similar to those from Nemea. However, many of these fabrics cannot be provenanced based on geological studies alone,

[27] The Corinth study was completed with Sarah James, using primarily deposits from Panayia Field which will be published in James' forthcoming volume on Hellenistic plain and coarsewares. James acted as pottery expert, identifying and selecting the samples, with Graybehl acting as petrographer.

because of the undiagnostic nature of the inclusions. Thus, archaeological evidence, especially contextual evidence, must be considered as well. This is discussed extensively in Chapters 6, 7, and 8**.**

4.11. The Integration of the Analyses

The data collection was a lengthy process, taking two and a half years from start to finish. It included eight months of pottery work in the Nemea Museum, as well of months of work at Corinth and Lerna. The petrographic study included not only the 299 samples from Nemea, but also over 600 thin sections used as comparative material. As a result of all of this, the results embody a rich data set containing many facets of information. This allows for the manipulation the data in many different ways to extract patterns and reconstruct the movement of certain fabrics over the Northeast Peloponnese. It allows this study to comment on how the data represents the Nemean assemblages, but also those of Corinth and Lerna. Perhaps most importantly, this data set allows this study to answer all three of the original questions set forth at the beginning of the project. It is only through applying the petrographic results to the other forms of information, as well as the comparative studies, that the study becomes important in answering archaeological questions. This will be elaborated upon in the next three chapters.

Chapter 5: Thin Section Petrography

5.1. Introduction

The petrographic analysis resulted in the identification of fourteen fabric groups in the assemblage. These groups are based on unique clay mixes, with types of inclusions and manufacturing techniques taken into account. In some cases, the raw materials may be similar in several groups, in which case the manipulation of the materials became important factors in distinguishing separate fabric groups. The techniques of clay treatment and preparation, such as mixing, sieving, and levigating, in addition to treatment and addition of temper, were the main manufacturing methods examined. Surface modification was not studied petrographically, as all techniques related to the forming and decorating of the vessels were visible macroscopically.

The methodologies used in this study are outlined in Chapter 4. The petrographic study had three main aims:

1) Create fabric definitions and identify clay recipes
2) Examine differences in production techniques and clay recipes of similar vessels
3) Provenance the fabrics through geological studies of the region, if possible

In order to provenance these groups, the raw materials were compared with the local geology of Nemea. If the raw materials are not compatible with Nemean geology, then the provenance search was widened, and previous identifications through macroscopic analysis (i.e. typologies and macroscopic fabric descriptions) were utilized in an attempt to find other areas to source the raw materials. Due to the homogenous nature of the geology of the Corinthia and Argolid due to the repetition of geological formations, it was not possible to

provenance many fabrics based solely on geological evidence. In all cases, any proposed provenance in this study is based on two factors—a confirmed match between the petrographic sample and the geology of the region of stated provenance, as well as a confirmed match with comparative petrographic material. The comparative material is comprised of both published and unpublished material, ranging from Neolithic to Frankish ceramics from a variety of sites in the Northeast Peloponnese, as detailed in Chapter 4. All of these comparative collections proved to be of great importance to this study, as the majority of the ceramics from Nemea were likely produced in these regions. Given the inability to provenance the various groups due to the homogenous nature of the geology of these areas, factors such as characteristic clay paste recipes and unusual inclusions became the most important factors in confirming matches between sample sets.

A total of 299 petrographic samples from Nemea were studied. One sample was removed from the study after analysis demonstrated that it was not ceramic.[28] The detailed petrographic descriptions for each group are found in Appendix I. The fourteen groups, with the number of samples present in each:

Fabric 1: Mudstone and Micrite, 110 samples

Fabric 2: Chert and Quartz, 104 samples

Fabric 3: Fine Quartz and Mica, 32 samples

Fabric 4: Intermediate Grade Metamorphic Rocks, 22 samples

Fabric 5: Mudstone and Mudstone Breccia, 9 samples

Fabric 6: Angular Chert, Limestone and Quartz, 5 samples

[28] Sample 264 proved to be a highly burnt intermediate to basic porphyritic igneous rock, most likely used as a millstone.

Fabric 7: Micrite and Quartz, 3 samples

Fabric 8: Mudstone in Red Micaceous Matrix, 1 sample

Fabric 9: Micrite in Red Matrix, 1 sample

Fabric 10: Metamorphosed Limestone, 1 sample

Fabric 11: Chert and Clay Pellets, 1 sample

Fabric 12: Intermediate Igneous Rocks, 1 sample

Fabric 13: Intermediate Grade Igneous Rocks and Clay Pellets, 1 sample

Fabric 14: Degraded Basic Igneous Rocks, 1 sample

5.2. Fabric 1: Mudstone and Micrite

Samples: 110

Sample Number	Artefact Number	Form
55	K19.74.2	lekane
57	K19.57.5	lekane
65	K19.67.1	lekane
67	K19.59.19	lekane
72	K19.65.1	jug
81	K19.67.2	pithos
84	K17.25.4	pithos
85	K17.28.1	pithos
92	K19.75.11	mortar
93	K19.88.1	mortar
94	K17.27.14	mortar
96	K17.38.2	mortar
97	K17.11.2	mortar
98	K17.27.17	mortar
178	K20.13.8	mortar
179	L20.61.4	mortar
182	K20.11.3	lekane
183	K20.10.15	lekane
186	K20.35.7	lekane
188	K20.13.11	lekane
190	L20.6.1	lekane
193	K20.24.1	lekane
197	K20.35.2	lekane
198	N17.14.2	lekane
199	N17.14.1	lekane
201	L20.32.1	lekane
203	L20.62.2	lekane
204	L20.34.4	lekane

206	N17.14.3	lekane
207	L20.32.6	lekane
208	L20.32.3	lekane
212	K20.11.4	pithos
215	K20.10.9	pithos
216	K20.13.10	pithos
217	K20.10.14	pithos
218	N17.35.1	Lakonian pan tile
219	N17.35.2	Lakonian pan tile
220	N17.36.1	Lakonian pan tile
221	N17.36.2	Lakonian pan tile
222	N17.36.3	eave tile
223	N17.36.4	pan tile
224	N17.36.5	eave tile
225	N17.26.30	loomweight
226	N17.26.31	loomweight
227	L20.60.2	loomweight
228	N17.26.11	loomweight
229	N17.26.22	loomweight
230	N17.26.9	loomweight
231	N17.26.26	loomweight
232	N17.14.6	loomweight
233	N17.14.9	loomweight
234	L20.60.3	loomweight
235	N17.26.10	loomweight
236	N17.14.4	kiln separator
237	N17.14.5	kiln separator
238	N17.26.7	kiln separator
239	N17.26.3	kiln separator
240	N17.26.2	kiln separator
241	N17.26.23	kiln separator
242	N17.26.1	kiln separator
243	N17.26.24	kiln separator
244	N17.32.2	kiln wedge
245	N17.26.34	kiln wedge
246	N17.26.5	kiln wedge
247	N17.26.6	kiln wedge
248	N17.32.1	vitrified kiln wedge
249	N17.26.33	kiln wedge
250	N17.26.4	kiln wedge
251	N17.29.2	tile
252	N17.29.5	eave tile
254	N17.29.1	tile
255	N17.26.20	tile
256	N17.37.1	eave tile
257	N17.26.15	tile
258	N17.27.1	tile
259	N17.29.4	tile

260	N17.26.12	tile
261	N17.29.3	tile
262	N17.27.2	tile
263	N17.14.11	waster
265	N17.26.21	tile
266	N17.26.28	kiln lining
267	N17.34.2	kiln lining
268	N17.34.1	kiln lining
269	N17.34.3	waster
270	N17.38.1	vitrified tile
271	AT 445	vitrified tile waster
272	AT 446	vitrified tile waster
273	AT 30	Corinthian cover tile
274	AT 31	cover tile
275	AT 32	antefix
276	AT 10	antefix
277	AT 375	Lakonian pan tile
278	AT 380	Lakonian pan tile
279	AT 381	Lakonian Pan Tile
280	AT 384	Lakonian pan tile
281	AT 368	Lakonian pan tile
282	AT 382	Lakonian pan tile
283	AT 379	Lakonian pan tile
284	AT 387	Lakonian pan tile
285	AT 349	Lakonian pan tile
286	AT 350	Lakonian pan tile
287	AT 351	Lakonian pan tile
288	AT 353	Lakonian pan tile
289	AT 354	Lakonian pan tile
290	AT 393	Corinthian pan tile
291	AT 392	Corinthian pan tile
292	AT 306	Lakonian pan tile
293	AT 286	tile
294	AT 292	tile
295	AT 334	Lakonian pan tile
296	AT 328	Lakonian pan tile
297	AT 294	tile
298	AT 290	Lakonian pan tile
299	AT 330	Lakonian pan tile

Table 5.1: Mudstone and Micrite samples.

This large, homogeneous fabric group is characterized by an abundance of several types of mudstones- grey, micaceous, red and black, with common micrite, mudstone breccia and fine fraction quartz in a fairly calcareous matrix (Figure 5.1). Strong evidence of clay mixing is present, especially in the form of

large streaks of red and calcareous clays which were insufficiently mixed into a homogenous paste (see sample 179 for both red and calcareous streaks, Figure 5.1-B). The streaks suggest that the fabric was made from a red clay with fine fraction quartz and mica inclusions, and a calcareous clay with micrite concentrations. The calcareous clay most likely came from a sedimentary environment. The red clay may be a terra rossa. The frequency, size, and angularity of the mudstones suggest that they were added as temper. This is supported by a small sub-group of finer examples, which contain no mudstone (samples 234, 237, 248).

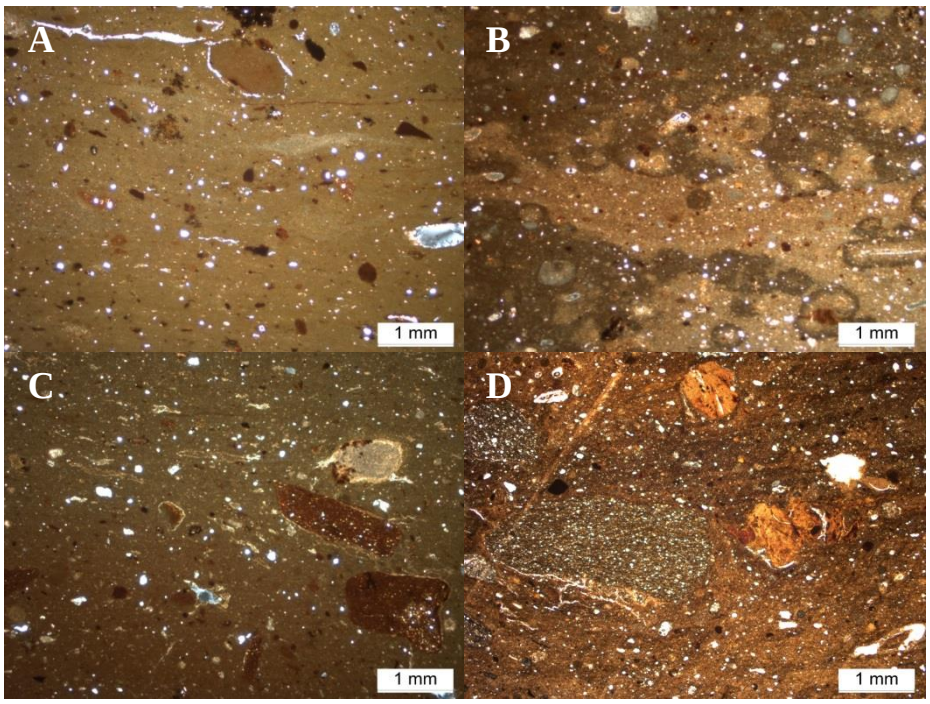

Figure 5.1: Photomicrographs of Mudstone and Micrite fabric. (A): Sample 212, XP; (B): Sample 220, XP; (C): Sample 226, XP; (D): Sample 217, PPL.

While the fabric is homogenous in terms of inclusions, excluding a few finer examples mentioned above, the matrices show great variation due to firing temperature (Figure 5.1). The fabric ranges from a redder matrix to a glassier green matrix that was likely fired over 1050˚ C. There is also a small group of samples which were so high-fired that they contain common to abundant bloating

pores, both in the matrices and mudstones (samples 240, 248, 266, 267, 268, 271, 272). Further, three samples (269, 271, 272) were so high-fired that the matrices turned liquid and recrystallized, forming a needle-like texture.

The samples represent a large range of vessel types and ceramic objects, including wasters and industrial material, such as kiln lining. All the vessels present represent storage or food preparation, and include lekanai, pithoi, mortaria, and a single jug. The ceramic objects are a small assortment of tiles, antefixes, loomweights, and artefacts associated with ceramic production: kiln separators, wedges, and the lining of the kiln itself.

Geologically, this fabric is not particularly characteristic or diagnostic. All of the main constituents — mudstone, micrite, siltstone, and marly clay—are found throughout the Northeast Peloponnese and are well attested in other petrographic studies from the area (Whitbread 1995, 2007, 2011; Burke forthcoming). It appears that it was common to mix mudstones with marly clays to make coarse vessels throughout time within the area (Matson 1972:203, Whitbread 2011:151-153). The Nemea region is comprised of primarily limestones, with dolomites, dolomitic limestones, marly conglomerates, and shale-chert-sandstone formations. The sanctuary itself and the areas immediately surrounding it is dominated by Upper Jurassic limestones. The ingredients used in this mix are compatible with most areas in the Northeast Peloponnese. The shale-chert-sandstone formations also contain slates, which are referred to as argillites in this study.

All of the samples in this fabric group are associated with the Kiln Complex, located in the sanctuary at Nemea. Large-scale ceramic production took place in the sanctuary from the late 4th until the early or mid-3rd centuries

B.C. It has always been associated with tile production, due to the large amounts of tiles found within and surrounding the complex (Miller 1990:65). This study is the first attempt to characterize the full repertoire of the Kiln Complex through the analysis of all the other types of ceramic objects found within and surrounding the complex. This material falls into three categories—ceramic vessels with functions not associated with ceramic production (i.e. tiles, loomweights, lekanai, mortaria, pithoi, etc.), ceramic objects associated with ceramic production (i.e. kiln separators and wedges), and material from the kilns themselves, such as lining. By demonstrating through petrography that all three categories of objects are made in the same fabric, this study presents a strong case that the complex produced a wide range of goods, and used a single recipe for everything. Chapter 7 discusses all the evidence of ceramic production in the sanctuary in-depth, including the archaeological remains of the Kiln Complex, the chronology of the complex, and the range of goods produced within.

5.3. Fabric 2: Chert and Quartz

Samples: 104

Sample Number	Artefact Number	Form
1	K19.56.2	chytra
3	K19.59.10	chytra
7	K19.59.14	chytra
8	K19.60.4	chytra
9	K19.63.1	chytra
11	K19.66.1	chytra
13	K19.68.1	chytra
15	K19.69.1	chytra
16	K19.70.1	chytra
17	K19.70.2	chytra
20	K19.73.3	chytra
21	K19.74.3	chytra
25	K19.77.2	chytra
26	K19.77.3	chytra
27	K19.78.1	chytra

29	K19.66.3c	chytra
30	K19.70.3c	chytra
32	K19.61.5c	chytra
33	K19.57.1	lopas
34	K19.58.1	lopas
36	K19.77.1	lopas
37	K19.60.2	jug
38	K17.27.15	lopas
39	K17.25.3	jug
40	K19.56.4	jug
41	K17.27.16	lopas
42	K17.25.1	lopas
43	K17.25.2	chytra/lopas
44	K19.61.3	chytra
46	K17.11.5	jug
47	K19.57.2	cooking lid
48	K17.28.8	chytra
51	K19.75.7	lekane
60	K19.75.5	lekane
64	K19.77.11	jug
66	K19.62.3	jug
68	K19.64.8	jug
78	K19.78.2	jug
101	K20.10.4	chytra
102	K20.10.7	chytra
103	K20.16.5	chytra
104	K20.26.2	lopas
105	K20.36.5	lopas
106	K20.31.5	lopas
107	K20.15.3	chytra
108	K20.38.5	chytra
109	K20.14.3	chytra/lopas
110	L20.10.3	lopas
112	K20.32.2	lopas
113	K20.38.6	krater
114	K20.35.3	krater
115	K20.16.1	krater
116	N17.26.19	lopas
117	K20.21.4	lopas
118	K20.10.1	chytra/lopas
119	K20.14.2	chytra/lopas
120	L20.60.5	lopas
121	K20.10.3	chytra
122	K20.15.2	lopas

123	K20.12.1	lopas
124	L20.10.4	lopas
125	K20.20.2	lopas
126	N17.26.13	lopas
127	L20.10.1	chytra/lopas
128	K20.26.6	lopas
129	K20.10.2	lopas
130	N17.26.25	lopas
131	K20.19.2	lopas
132	K20.13.3	lopas
133	L20.32.5	chytra
134	L20.61.5	chytra
135	K20.44.1	lopas
139	K20.11.2	lopas
142	L20.62.3	lopas
146	K20.14.4	cooking lid
147	L20.67.3	cooking lid
148	L20.34.1	cooking lid
149	L20.67.2	cooking lid
150	K20.24.11	cooking lid
151	K20.16.3	cooking lid
155	K20.36.4	jug
156	K20.19.3	chytra
157	L20.61.7	jug
158	L20.61.8	jug
159	N17.14.7	jug
160	K20.13.4	jug
161	K20.26.4	jug
162	K20.11.1	jug
163	K20.13.7	jug
164	L20.21.2	jug
165	K20.31.1	jug
166	K20.13.5	jug
167	K20.14.1	jug
169	K20.10.5	jug
170	K20.13.6	jug
171	L20.44.1	jug
172	L20.34.2	jug
173	K20.10.8	jug
174	L20.44.1b	jug
175	L20.63.2	jug
177	L20.31.2	jug
185	K20.10.10	lekane
187	K20.13.9	lekane

195	K20.31.4	lekane
209	L20.45.1	lekane

Table 5.2: Chert and Quartz samples.

This largely homogenous fabric group is characterized by dominant chert and quartz inclusions, with common polycrystalline quartz/schist fragments, micrite, mudstone, textural concentration features (clay pellets), and small plagioclase feldspar in a red to brown matrix with dominant fine fraction quartz and biotite (Figure 5.2). While the majority of the samples are homogenous in terms of both inclusion size and frequency, there is a small amount of variation. Several samples are relatively fine (120, 127, 133, 185, 187, 195). Additionally, a small amount of samples display uncharacteristically large chert and quartz (samples 42, 44, 105, Figure 5.2-C). These differences appear to be the product of natural variation in the raw materials, rather than differences in choice and manipulation. The two types of clay pellets present suggest that the fabric is a mix of a terra rossa red clay with a calcareous, green-firing clay. Sample 163 displays mixing striations, allowing for the identification of inclusions in the individual clays. The terra rossa clay contains quartz, chert and biotite, judging from the clay pellets (samples 7, 9, 109, 112), while the green firing calcareous clay also contains quartz (samples 66, 102, 107, 117). The inclusions present in the mix are mostly likely the natural constituents in these two clays and there does not seem to be a need to suggest that the larger inclusions have been added as temper.

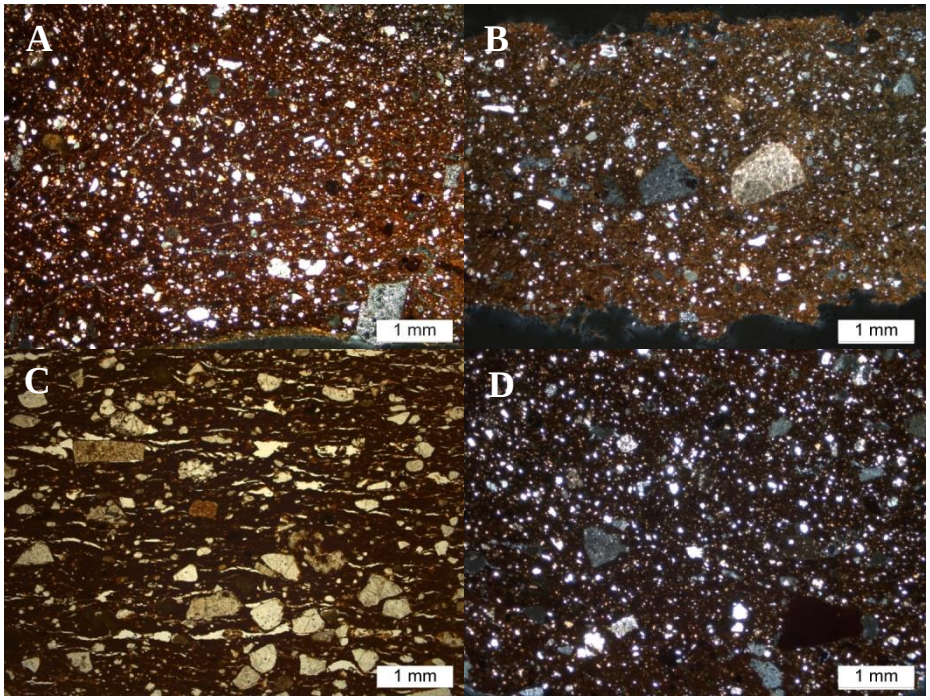

Figure 5.2: Photomicrographs of Chert and Quartz fabric. (A): Sample 33, XP; (B): Sample 134, XP; (C): Sample 42, PPL; (D): Sample 115, XP.

The samples demonstrate a range of firing temperatures. The majority of the samples are moderately optically active, but several are so high-fired that they display no optical activity (samples 34, 38, 48). Most samples display homogeneity of colour throughout the matrix suggesting firing in an oxidising atmosphere, but several samples (5, 161, 209) have grey cores with red edges. This may be related to being fired in an initially reducing atmosphere, or being incompletely oxidised. While it is not possible to suggest an equivalent firing temperature without scanning electron microscopy, it appears that the majority of samples were most likely fired above 750˚ C.

While this fabric may be compatible with the geology of Nemea, comparative studies strongly suggest that this fabric is Corinthian in origin, with many good matches from other studies at Corinth, spanning the Early Helladic to Frankish periods, and exact matches with Corinthian Hellenistic ceramics. Burke (forthcoming) has chert fabrics that are very similar to the Chert and Quartz

fabric in terms of raw materials, dating to the Early Helladic period. Joyner discusses Chert, and Chert and Quartz cooking fabrics from the 12th-14th centuries AD which display many parallels with this study's Chert and Quartz fabric in terms of fabric composition, suggesting that the same or similar raw materials were used (Joyner 2007:193-195). The author's concurrent study of Hellenistic wares that took place with the Nemea study showed that the Chert and Quartz fabric was identical in every way, such as raw materials choice and manipulation, range of vessel shapes, and dates, to the primary Corinthian cooking ware fabric, also called the Chert and Quartz fabric. As a result of these comparative matches, which effectively demonstrated that the Chert and Quartz fabric is related to the most common Corinthian cooking fabrics, the provenance studies focused on the vicinity of Corinth.

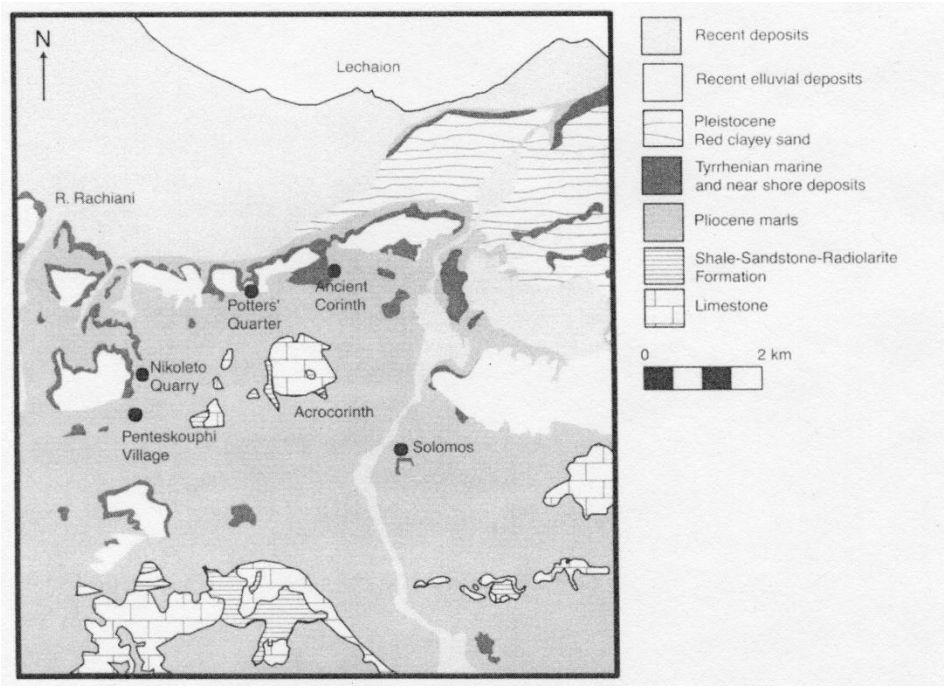

Figure 5.3: Geological Map of Corinth. From Whitbread 2003:3. Courtesy of the American School of Classical Studies, Corinth Excavations.

This fabric group is consistent with the local geology of Corinth. The calcareous and terra rossa clays may relate to the Acrocorinth red and white clays

analysed by Farnsworth (1970:13), and discussed by Whitbread (2003:3,7,8). Additionally, the cherts (both regular and radiolarian) are consistent with the cherts found around Acrocorinth. Chert is a common outcrop on Acrocorinth within Middle Jurassic limestone beds as nodules or bands, and intercalated in shale-chert formations (Joyner 2007:193).

The biggest discrepancy related to Corinthian geology involves the presence of schist. While Farnsworth identifies it in the Acrocorinth white clay, Joyner states that the identification of schist in local outcrops is debated, due to different classifications on two geological maps (Farnsworth 1970:13, Joyner 2007:201). Joyner points out that one geological map shows a small exposure of schist associated with limestones, graywackes, and volcanic rocks, as well as ophiolitic material, while another shows the same area to be made up of limestones, graywackes, and conglomerates (2007:201). The schist-like, metamorphic inclusions found in the Chert and Quartz fabric may relate to the schist and quartzite identified by Farnsworth, however, the lack of an agreed identification of schist in the Corinth area does not allow for a definitive statement at this time. Although several clay studies of the vicinity of Ancient Corinth have taken place, none have found schist (Whitbread 1995, 2003; Graybehl, Hammond, Sanders in progress). The quartz inclusions are consistent with local geology, as they "could have come from a weathered sandstone source such as the sandstones present in the Middle Jurassic shale-chert formation outcropping on Acrocorinth or the Pliocene and Pleistocene deposits that form the terraces below Ancient Corinth" (Joyner 2007:193). While the previous work on the geology and clay sources of Corinth somewhat support a Corinthian provenance for the Chert and Quartz fabric, it equally points out that more

prospection and analytical studies need to take place to more fully understand the area (Whitbread 2003:12).

Previous work on Corinthian clays does not allow for an identification of possible raw material sources. A great deal of clay prospection and study, including treatment and firing experiments, petrographic analysis, and various forms of chemical analysis have taken place (Farnsworth 1964, 1970, 1977; Jones 1986; Whitbread 1995, 2003). None of these studies have been successful in finding clay sources that match Corinthian fabrics. There are terra rossa soils found in the area, like on the terraces above Penteskouphia village (Whitbread 2003:8). These soils were first studied by Whitbread, and were more recently sampled and experimented with by Graybehl, Hammond, and Sanders, using terra rossas found near Penteskouphia, are well as from the Acrocorinth plain. These soils require levigation to be usable, due to the large amounts of organic material, large inclusions, and high silt content. They contain a large amount of limestone, even when using the finest fraction of the levigated clay, which often became unstable after firing between 800˚-1000˚ Celsius, causing the clay to crack or fall apart and making it unusable. When studied petrographically, these clays contained a great deal of micrite, with moderate amounts of quartz, and occasional microfossils. The range of inclusion size and frequency was dependent on the fineness of the clay fraction used in the experiment, most obviously. No chert was found in these clays. It is most likely that the raw materials used in the Chert and Quartz fabric contained fine and coarse fraction chert. Whitbread's experiments with these clays were more successful, and he suggested that they might be a likely candidate for Corinthian Type A amphora and blisterware production, due to their vitrification at 900˚, as well as their

composition and grain size (Whitbread 2003:9). It is likely that while the clays sampled by Whitbread and Graybehl, Hammond, and Sanders are related, each party worked with different clays with slightly different properties, leading to different results. Both the terra rossas described by Whitbread, and studied by Graybehl *et al.* are not suitable matches for the Chert and Quartz fabric. It is clear that the Chert and Quartz fabric was produced on a large-scale, suggesting that the raw materials used were in great supply. It is most likely that the raw materials have not yet been found, due to changes in the geological landscape over time, or perhaps, being located further afield than the areas searched to date.

While it is not possible to provenance this fabric on geological terms alone, the combination of the inclusions and the parallels found in previous clay and fabric studies from the area, suggest that the Chert and Quartz fabric is compatible with a Corinthian provenance. However, while the fabric itself is characteristic, it is not diagnostic of origin, as the inclusions present are not unique to the vicinity of Corinth. This is demonstrated by Whitbread in his study of clays around the Berbati Valley. He found three samples in the valley (3, 12, 14), which match his fabric Felsic: Chert, Limestone, Garnet exactly (Whitbread *et al.* 2007:179, 182, 186; 2011:144-146). The Berbati fabric dates to the Roman and Late Roman periods, with single examples from the Final Neolithic and Medieval-Modern periods (Whitbread 2011:146). The fabric finds an exact match at Corinth, known as Corinthian cooking fabric, which was common between the 4th-7th centuries A.D. (Graybehl 2010). Both fabrics match this study's Fabric 6: Angular chert, limestone and quartz exactly, and display many similarities with the Chert and Quartz fabric. However, both Fabric 6 and the Chert and Quartz fabrics date at least eight centuries earlier, to the late 4th-1st

centuries B.C. While Fabric 6 and Corinthian cooking fabric are slightly different from the Chert and Quartz fabric, the raw materials are very similar and may be related. All three fabrics are characterized by chert, micrite and clay pellets in a mix of terra rossa and calcareous clays. All three fabrics are the dominant coarseware fabrics at Corinth in their respective time periods (Hellenistic and Late Roman), with a great deal of overlap in shapes between the Chert and Quartz and Fabric 6, and between Fabric 6 and Corinthian Cooking fabric.

At Nemea, the Chert and Quartz fabric is the primary fabric of cooking pots, as well as a dominant fabric for jugs, dating from the late 4th to mid-2nd centuries B.C. Comparative petrographic study at Corinth demonstrated that this fabric was produced from the late 4th century B.C. down to 10 B.C. Comparative petrographic material from Lerna suggests that this fabric may have been produced as early as 500 B.C.[29] Macroscopic fabric analysis completed at Corinth supports this, as it shows that "a type of fabric that is characteristic of most of the vessels: somewhat gritty in texture, although often given a smoothing of the surface; micaceous, more in the Archaic, less in later periods; often with burnishing strokes on the exterior until the end of the 4th or beginning of the 3rd century" (*Corinth* 18.1:69). This fabric description can be applied to the majority of cooking fabric vessels found in the Corinth storerooms from the Archaic to Hellenistic periods, as well as the samples from both the Nemea and Corinth studies.[30] These cooking fabric vessels were referred to as "red wares" by

[29] The Lerna Chert and Quartz group is very similar, although it is an exact match with the Corinth Tuffite and Quartz group. The Corinth Chert and Quartz and Tuffite and Quartz groups are related, only separated by the presence of tuffite and slightly different mixes. Graybehl forthcoming.

[30] In the 2011-2012 academic year, I worked at the Corinth Museum and was able to study the entire collection of catalogued cooking fabric vessels.

Whitbread. He did not study any cooking fabrics or "red ware" as at the time there were not enough archaeological criteria to secure a Corinthian attribution for cooking wares (Whitbread 1995:305). Since his study, a great deal more work has been carried out on Corinthian cooking wares, and this present study serves as the first in-depth petrographic study of these wares in the Archaic-Hellenistic periods.

5.4. Fabric 3: Fine Quartz and Mica

Samples: 31

Sample Number	Artefact Number	Form
52	K19.75.4	lekane
53	K19.56.3	lekane
54	K19.77.6	lekane
56	K19.75.6	lekane
58	K19.74.4	lekane
59	K19.81.1	lekane
61	K19.64.3	lekane
69	K19.64.7	jug
70	K19.64.6	lekane
73	K19.74.6	jug
74	K19.74.7	jug
76	K19.93.5	jug
79	K19.75.10	krater
80	K19.60.5	jug
87	K19.70.5	lekane
88	K19.62.4	jug
89	K19.69.2	mortar
90	K19.77.10	jug
91	K19.74.8	jug
99	K19.56.1	mortar
153	K20.24.17	jug
176	K20.24.10	jug
180	L20.9.2	mortar
181	K20.10.13	lekane
184	K20.14.5	lekane
189	L20.60.6	lekane
191	K20.36.2	lekane
194	L20.65.1	lekane
196	K20.36.1	lekane
202	L20.10.2	lekane
205	L20.8.1	lekane

Table 5.3: Fine Quartz and Mica fabric samples.

This homogenous fabric is characterized by the presence of very fine biotite, fine quartz, and micrite in a calcareous reddish brown clay with common polycrystalline and metamorphic rock fragments and few voids. The rarity of coarse inclusions suggests they were naturally present in the otherwise unimodal clay paste (Figure 5.4). Some samples contain rare coarse inclusions of micrite, mudstone, or large clay pellets. The presence of all three principal components of the fabric (mica, quartz, and micrite) in the clay pellets suggests that this group was made from a terra rossa clay which contained calcareous sand-sized grains. This clay may have be partly comprised of material which has derived from metamorphic rocks, given the presence of polycrystalline quartz, low grade metamorphic related rock fragments, and both biotite and muscovite.

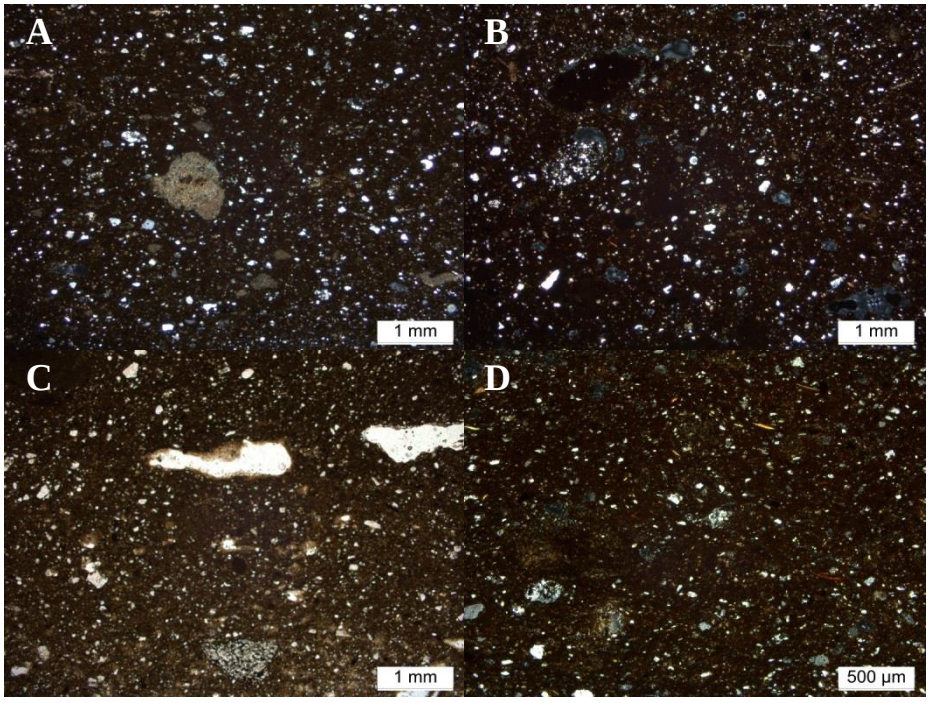

Figure 5.4: Photomicrographs of Fine Quartz and Mica Fabric. (A): Sample 79, XP; (B): Sample 180, XP; (C): Sample 184, PPL; (D): Sample 196, PPL.

The fabric is relatively optically active, with homogenous reddish-brown colouring throughout, indicating that all samples were fired in an oxidising atmosphere. This fabric is a match with two samples from Lerna's Quartz and

Micrite fabric, Lerna 58 and 62. Both Lerna samples are lekanai that are contemporary to those from Nemea, as well as identical in form. The Quartz and Micrite group represents the most common fabric found in the Lerna historical assemblages, from 800- 275 B.C.

This undiagnostic fabric is impossible to provenance securely without comparative material from a production centre, and would be aided by chemical analysis. Erickson suggested that the majority of the samples are Argive, based on stylistic and macroscopic fabric grounds (*Lerna* VIII: 322-329). He presented a strong case for "Argive" production, based on the most common shapes and their decorations, using previous and comparative studies to strengthen his argument (*Lerna* VIII: 322-329). While it cannot be stated for certain that this group was produced at Lerna, or at Argos, production within the greater Argolid is not completely out of the question. The alluvial deposits immediately surrounding Lerna contain terra rossa clays, sand and torrential conglomerates, and littoral deposits of fine grained material and silt. These resources could account for most, if not all, of the primary constituents of the historical fabrics. Just west of Lerna are flysch deposits consisting of sandstones and calcareous shales and marls, and these could have been the source of the abundant argillaceous rock fragments in the historical fabrics (*Lerna* VIII: 547-549). Yet these outcrops are also found further away from Lerna to the north in the vicinity of Argos and even within the limits of the ancient city. Without clay prospection studies, it is impossible to attribute the raw materials of the Lerna fabrics to a single source in such a geologically homogenous region.

Also of great significance to the Fine Quartz and Mica fabric is a similar Early Helladic fabric found nearby at the site of Talioti. Currently being studied

by Burke, her Fine Micaceous fabric is almost identical to the Fine Quartz and Mica fabric. Her assemblages also include a coarse fraction version of the fabric, the Sandstone and Low Grade Metamorphic fabric. While there is no known Early Helladic production centre known in the region of Lerna or Talioti, Burke argues that these fabric must have been produced somewhere in the vicinity of the Argive plain, on much of the same grounds that this study has presented (Burke forthcoming).

There are strong comparisons between the Nemea and Lerna assemblages, as they both contain a great deal of the same material. Within the Lerna and Nemea Hellenistic ceramics, the shapes characteristic of the Fine Quartz and Mica fabric are easily recognizable. The reddish, micaceous lekanai with sharp triangular rims, and soft, micaceous jugs with slightly outturned rims are diagnostic and stand out at Nemea, while being common at Lerna. The same is true of the mortaria and kraters. While there are only two Lerna samples that match the Nemean samples exactly, the Nemean samples are very homogenous. This is most likely due to small changes in the recipe over time, as the Lerna group represents a large time span of five centuries.

5.5. Fabric 4: Intermediate Grade Metamorphic Rocks

Samples: 22

Sample Number	Artefact Number	Form
2	K19.59.9	chytra
4	K19.59.11	chytra
6	K19.59.13	chytra
12	K19.66.2	chytra
18	K19.73.2	chytra
19	K19.73.1	chytra
22	K19.74.1	chytra
23	K19.75.1	chytra
24	K19.75.2	chytra
28	K19.58.5	chytra
31	K19.77.4b	chytra

35	K19.60.1	lopas
45	K19.61.2	chytra
75	K19.76.2	jug
111	N17.26.14	lopas
136	K20.16.7	chytra
137	K20.24.7	chytra
138	K20.24.6	chytra
140	K20.16.4	chytra
141	K20.24.3	chytra
144	K20.20.3	cooking lid
145	K20.35.1	jug
152	L20.60.4	spouted vessel

Table 5.4: Intermediate Grade Metamorphic Rock Fabric Samples.

This homogenous group is characterized by intermediate to low grade metamorphic rocks, namely schist and phyllite with common chert and micrite (Figure 5.5). The fine fraction inclusions, quartz with biotite and muscovite, are consistent with the coarse fraction inclusions. There is very little variation within the group. The two sub-groups, medium-coarse and fine, were divided from the primary grouping, however, the inclusions in these groups are generally the same. The only differences may be due to levigation or sieving of the clay.

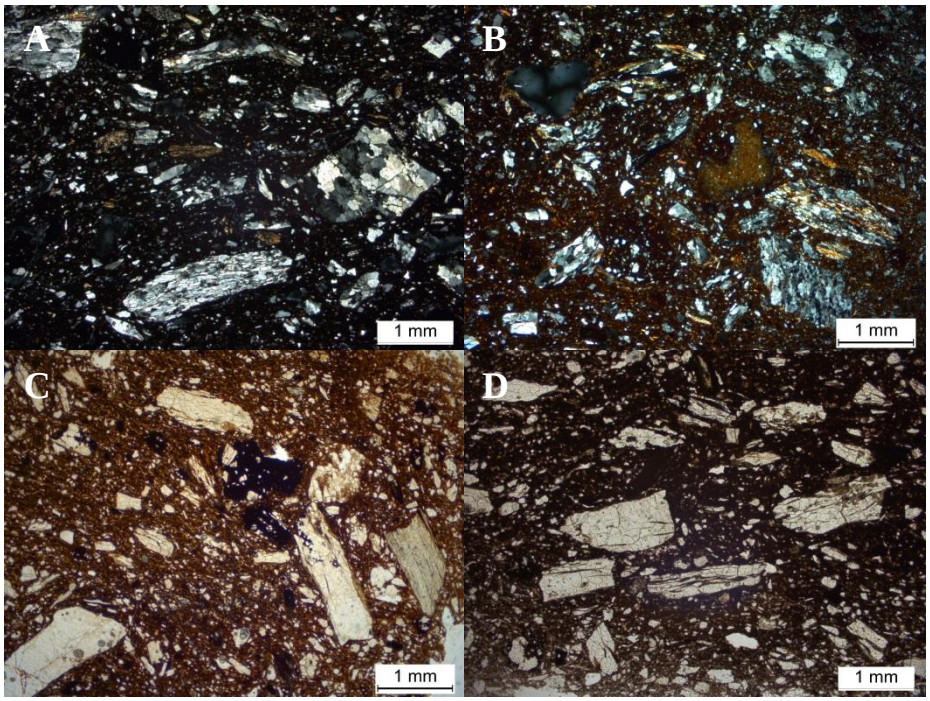

Figure 5.5: Photomicrographs of the Intermediate Grade Metamorphic Rocks Fabric. (A): Sample 111, XP; (B): Sample 137, XP; (C): Sample 145, PPL; (D) Sample 22, PPL.

The homogenous nature of both the fine and coarse fraction inclusions suggest all inclusions present are natural constituents of a single clay. The clay may have come from a clay-rich raw material which comprises a sedimentary deposit which has parent material from both metamorphic and sedimentary rocks. The homogeneous matrix colour and the highly optical activity of the samples suggest that the fabric was low-fired in a well-oxidised atmosphere.

The nature of the inclusions originally led to an investigation of an Attic provenance, based on the similarities between the mica schist with published macroscopic and petrographic descriptions of contemporary Attic fabrics in *Agora* 33 and Farnsworth (1964). Both the Agora and Farnsworth material were studied petrographically for comparative purposes. However, upon analysis, the three sample sets were different to each other. The Athenian Agora samples from Rotroff displayed the same types of inclusions, but the schists displayed higher levels metamorphism with much greater foliation.[31] Also, there was no micrite in any of these samples. Attica and its environs are made up of a combination of mica schists, marbles, limestones, and deposits of sands, clays, marls and conglomerates (Farnsworth 1964: Plate 65). Many of these constituents are similar to or the same as those present in the fabric. Further, all six of the Rotroff samples are late Hellenistic braziers with mould-made satyr adornments. This is not a representative shape as it is not present in the Nemean assemblages, and is also much later than all of the samples in the Nemean data set. These samples cannot be seen as completely representative of Hellenistic Athenian cooking ware production; rather they represent a single shape at a site that produced many other

[31] Susan Rotroff gave permission to analyze the unpublished thin sections. Of these, 6 were the phyllite fabric, samples 93/38, 39, 40, 41, 42.

popular cooking wares. A great range of Hellenistic cooking and coarsewares from Attica and the Athenian Agora must be studied petrographically in order to fully characterize the range of fabrics present in Hellenistic Athens.

In a petrographic study of ceramics from Aegina-Kolonna conducted by Pentedeka, Kiriatzi and Georgakopoulou (Klebinder-Gauss 2012:162), a fabric very similar to the Nemean metamorphic fabric was studied. While the three Aeginetan samples are all earlier, ranging from the late 5th- late 4th centuries B.C., one sample may be a petrographic match.[32] This sample contains micritic and schist/quartz-rich metamorphic inclusions, much like the Nemea samples. Further, the authors believe that an Attic provenance for this fabric is plausible.[33] This demonstrates that a range of cooking fabrics were most likely present in Attica, and that the Nemean fabric may likely be Attic in origin.

A second, less likely, provenance may be the Argolid. The geology of the Argolid is not dramatically different from that of the Corinthia, being dominated by sedimentary outcrops with limestone and argillaceous rocks. However, there are metamorphic outcrops in this area. West of Argos lay a series of mica schists and phyllites with interlayered quartzites. Shriner and Dorais suggest that this series is transported closer to the coast of Argos through the Xerias River, resulting in some metamorphic material mixing with sedimentary material, especially calcite (Shriner and Dorais 1999:30-31). Shriner sampled some of these metamorphic sources in her doctoral research, but never published petrographic descriptions or micrographs, beyond stating that they were chloritoid/muscovite schists and phyllites with interlayed quartzites (Shriner 1999:33,34). While it is tempting to try to assign the Intermediate Grade

[32] Sample CKOL 94, Klebinder-Gauss 2012:162
[33] I was unable to study this sample in person; comparative work needs to be done in the future at the Fitch Laboratory.

Metamorphic Rock fabric to these deposits, much more work needs to be done to characterize these outcrops before any conclusions can be made as to what extent these sources may be plausible resources for ancient potters. Two previously identified metamorphic fabrics from Lerna do not have any similarities with the Nemean fabric based on comparative petrographic analysis, and neither were attributed to local or Argive sources. The two fabric groups in question are the Early Helladic Disparate Metamorphic group (*Lerna* III 1995:674), and the Early-Middle Geometric Metamorphic Rocks group (*Lerna* VIII:539-540). The Lerna III material was studied several times at the Fitch Laboratory, and the author published the Geometric material. As these comparatives are much earlier than the Hellenistic material in question, they unfortunately did not offer any help other than demonstrating that the Nemean material was different stylistically, macroscopically, and petrographically. To date, the only stylistic and macroscopic parallels with the Nemean Low Grade Metamorphic fabric samples have been found in the Athenian Agora.

5.6. Fabric 5: Mudstone and Mudstone Breccia

Samples: 9

Sample Number	Artefact Number	Form
63	K17.11.3	lekane
71	K19.62.5	Corinthian A amphora
77	K19.75.9	pithos
83	K19.69.4	pithos
86	K17.38.1	pithos
210	N17.29.6	pithos
211	K20.28.1	Corinthian A amphora
213	K20.26.1	pithos
214	K20.12.3	lekane

Table 5.5: Mudstone and Mudstone Breccia samples.

This fabric is characterized by dominant mudstone and common mudstone breccias in a high fired matrix with fine fraction quartz and biotite

(Figure 5.6). This fabric seems to be a mix of red and calcareous clays, with added mudstone and mudstone breccia temper, based on the lack of related inclusions in the fine fraction, and the large size, the angularity, and the abundance of the inclusions. Obvious clay striations from both the red and calcareous clays are present. The calcareous clay contains fine quartz and iron-rich opaques (sample 83). No discrete striations of red clay are evident, with the exception of sample 210, which is too high fired to determine the inclusions. This fabric was high-fired, evident by the mottled matrices (samples 71, 77) and glassy appearance of several matrices. It may have been high-fired in a reducing atmosphere due to the "sandwich" effect of interchanging red and grey cores, with up to three to five striations often present, seen macroscopically.

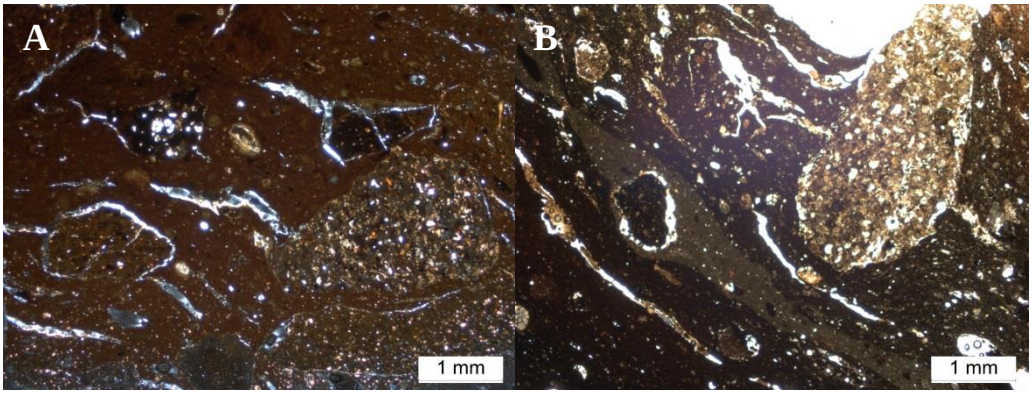

Figure 5.6: Photographs of Mudstone and Mudstone Breccia Fabric. (A): Sample 77, XP; (B): Sample 83, PPL.

This fabric is very similar to Corinthian A fabric, as characterized by Whitbread. Based on Whitbread's descriptions and discussion of Type A fabric, the Mudstone and Mudstone Breccia fabric is a match (Whitbread 1995:268-270). The mudstone breccia found in both fabrics is a diagnostic feature of the Type A fabric that strengthens this argument. Further, one of the Nemea samples (71) was macroscopically identified as a Corinthian Type A amphora. This fabric also shares similarities with NVAP historical samples 11/2, 3, 4, 5, 10, 13, the majority of which pre-date the excavated Nemean samples. Whitbread does not

discuss the chronology of the Type A fabric, but it is clear that his samples have a range of dates that are in line with the NVAP samples (Whitbread 1995:268). The Type A fabric was not shown to have any parallels to shapes other than amphoras, with the exception of blisterware in Whitbread's study (1995:307). The Nemean and NVAP samples overlap a great deal in represented typology—the Nemean samples are comprised of two lekanai, five pithoi, and two amphoras. The NVAP samples are comprised of one mortar, two lekanai and three pithoi, ranging in date from the 6th to 4th centuries B.C. This demonstrates that the range of vessels produced in the Type A fabric was much greater than originally thought. Corinth would benefit greatly from an extended study that focused more closely on chronological changes in fabric and vessel types in the Type A fabric. Perhaps the production centres that produced these amphoras were also supplying household utilitarian vessels over at least 3 centuries.

5.7. Fabric 6: Angular Chert, Limestone and Quartz

Samples: 5

Sample Number	Artefact Number	Form
5	K19.59.12	chytra
10	K19.64.1	chytra
14	K19.68.2	chytra
49	K17.38.3	perforated cylindrical vessel
154	K20.32.1	jug

Table 5.6: Angular Chert, Limestone and Quartz samples.

This group is characterised by angular chert inclusions, sub-rounded micrite, monocrystalline quartz, and clay pellets (Figure 5.7). The size distribution is bimodal, with a high percentage of coarse fraction inclusions. The group is fairly homogeneous, with fine fraction inclusions including micrite, quartz, and biotite. The abundance of clay pellets indicates that two clays were used in this fabric. The two different types of clay pellets attest to this, as one is

a red clay with quartz and biotite inclusions, while the other is a calcareous clay. It is apparent from the inclusions present that the micrite was introduced from the calcareous clay, while the quartz and mica inclusions were part of the red clay. The chert was most likely added as temper, perhaps crushed to desired size, before being mixed with the two different clays. Several types of rare inclusions are present, such as schist and possible garnet, indicating that the terra rossa clay may have contained a variety of metamorphic rocks.

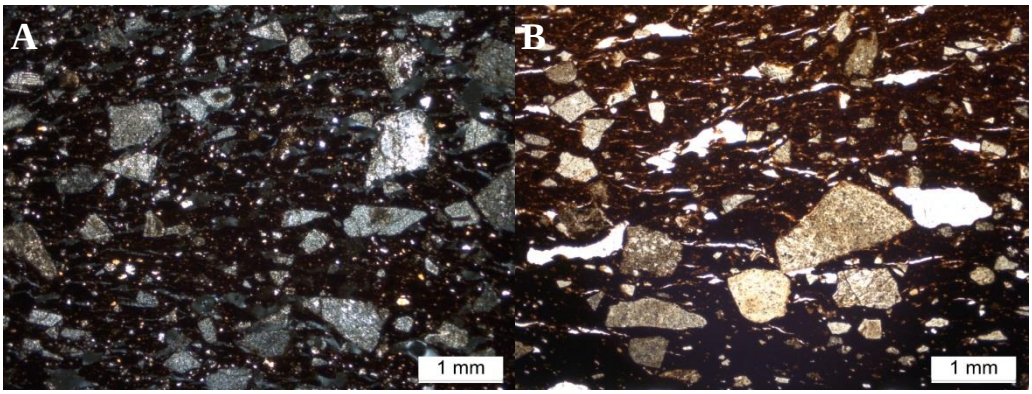

Figure 5.7: Photomicrographs of Large Angular Chert, Limestone, and Quartz fabric. (A): Sample 14, XP; (B): Sample 5, PPL.

This fabric is an exact match with the Late Roman Chert and Quartz fabric, commonly known as Corinthian cooking fabric (C.c.f.). This fabric has been extensively examined in a study on Late Roman coarseware and amphoras from Panayia Field in Corinth (Graybehl 2010). Extended work through NVAP, as well as macroscopic identifications of this very easily recognizable fabric by Mark Hammond and Kathleen Slane, has shown that this fabric is present throughout the rest of the Northeast Peloponnese. Petrographic analysis has confirmed its presence at Nemea and the Berbati-Limnes Valley, while it has been recorded macroscopically at Isthmia and Argos.[34] While the Late Roman

[34] It was petrographically confirmed at Nemea through the NVAP study, Ximeri 2011. It was petrographically confirmed at the Berbati Valley through Whitbread 2007, 2011. It was macroscopically confirmed at Isthmia by Graybehl and Hammond, and at Argos by Kathleen Slane (personal communication).

study has focused specifically on the 4th-7th centuries A.D., the Nemean samples have revealed that this fabric is present as early as the 3rd century B.C. The five samples that represent this fabric at Nemea are from the mid-3rd-late 2nd century B.C. One matching sample from the study of Hellenistic Corinth was dated to 10 B.C., suggesting that this fabric may have been produced throughout the Interim Period at Corinth.[35] However, a great deal more evidence is necessary to pursue this hypothesis. As seen in the case of C.c.f., it is not possible to provenance this fabric on purely petrographic terms (Graybehl 2010). Additionally, while it appears that this fabric and Fabric 2 from this study, Chert and Quartz, fabric are related, it is uncertain as to whether they were made from the same raw materials, although archaeological evidence suggests that they were both produced at Corinth. As discussed in Fabric 2: Chert and Quartz, Whitbread sampled three clays from the Berbati-Limnes Valley that proved to be matches with this fabric, Fabric 6 (Whitbread *et al.* 2007:179, 82, 186). Since it is clear that these cooking pots, both of the Chert and Quartz, and Angular Chert, Limestone and Quartz, were not made at Nemea, we must wait for a more detailed study of Hellenistic cooking wares at Corinth to become available in order to understand the complete range of both fabrics, at Corinth and further afield in the Northeast Peloponnese.[36] A study of this nature will allow for a greater understanding of how these characteristic macroscopic fabrics change, and the full range of vessels they are associated with over time.

[35] Corinth sample 2013/98. The Hellenistic samples from Corinth represent the new down-dated chronology developed by Sarah James, based on new evidence from large, closed deposits from Panayia Field. This is discussed in Chapter 6. The Nemea samples were not down-dated, as there is currently insufficient evidence for such a measure at the site. Thus, strong arguments relating to dates in the late 2nd-late 1st century B.C. cannot be made at this time.

[36] A study of Hellenistic plain and coarse wares from Corinth is currently on-going by Sarah James.

5.8. Fabric 7: Micrite and Quartz

Samples: 3

Sample Number	Artefact Number	Form
50	K19.77.4	lekane
100	L17:2.39.2	mortar
192	K20.20.1	lekane

Table 5.7: Micrite and Quartz samples.

This small group is characterized by weakly bimodal micrite and quartz inclusions, in a red matrix with fine fraction quartz, biotite and muscovite inclusions (Figure 5.8). The matrix seems to be made from a terra rossa clay, most likely derived from intermediate grade metamorphic rocks. There are no indications that the clay contains calcareous constituents. Thus, it appears that the micrite may have been added separately.

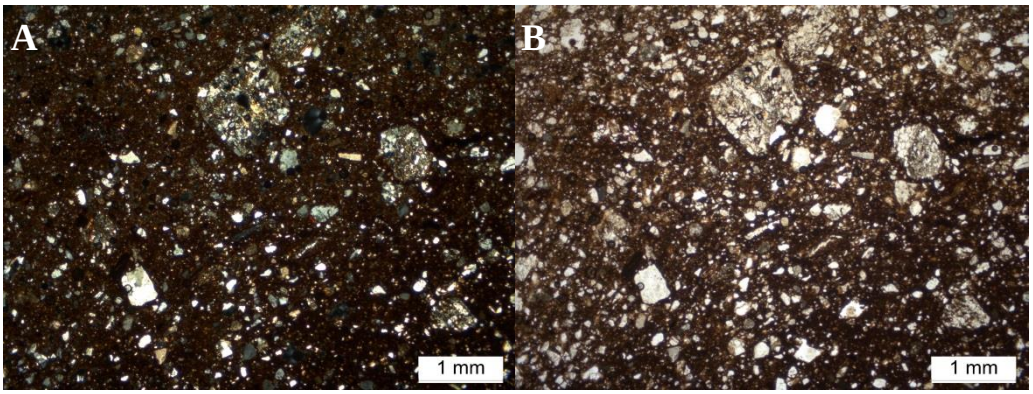

Figure 5.8: Photomicrographs of Micrite and Quartz fabric. (A): Sample 192, XP; (B): Sample 192, PPL.

The homogeneous reddish appearance of the matrices and the high optical activity suggest that the vessels were low-fired in an oxidising atmosphere. Sample 100 slightly differs from the others, in that it has a slightly higher amount of micrite, and is the only sample to contain the iron-rich opaque fragments. As this sample is a mortar, the iron-rich fragments are from the interior of the body, and were added as grits to make the surface as coarse as possible for grinding. As it is the only sample of its kind, with no found comparanda for tempering with

iron-rich inclusions in mortars, no conclusions regarding this sample can be made at this time. This fabric is neither characteristic nor diagnostic.

5.9. Fabric 8: Mudstone in Red Micaceous Matrix

Samples: 1

Sample Number	Artefact Number	Form
200	K20.38.1	pithos

Table 5.8: Mudstone in Red Micaceous Matrix fabric sample.

This single sample is characterized by red, micaceous mudstones in a red matrix with abundant fine fraction quartz and mica inclusions (Figure 5.9). This fabric is similar to the Corinth Fine Quartz and Mica fabric, but with added mudstones.[37] The fabric appears to be derived from a single clay tempered with mudstones. The vessel was most likely low-fired in an oxidising atmosphere, based on its high optical activity and orange-red colour.

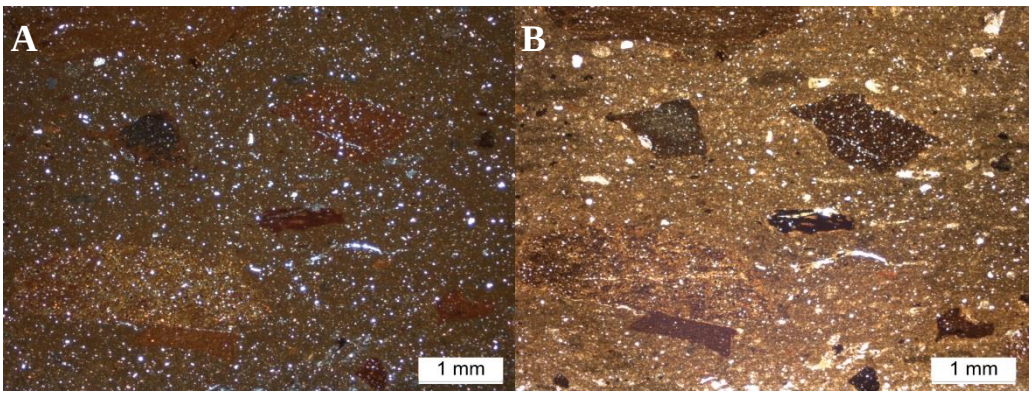

Figure 5.9: Photomicrographs of Mudstone in Red, Micaceous Matrix. (A): Sample 200, XP; (B): Sample 200, PPL.

It is apparent from comparative analysis that the Corinth Fine Quartz and Mica fabric and this fabric are related to Whitbread's Corinthian B amphora Class 4 fabric, which is contemporary with the Nemea sample (Whitbread 1995:278). Further, NVAP samples 11/11, 12 provide exact matches as well.

[37] Please note that the Nemea Fine Quartz and Mica fabric and the Corinth Fine Quartz and Mica fabric are two separate, unrelated fabrics. The Corinth Fine Quartz and Mica fabric is part of my study of Hellenistic Corinth. It is a fine fabric that represents Corinthian B amphoras, lekanai and mortaria, ranging from the 3rd to early 1st centuries B.C. It is published as Type B, Fabric Class 4 by Whitbread (1995:274-278).

Both samples are late 4th-3rd century B.C. pithoi, the same as the Nemea sample discussed here. Whitbread did not identify any coarseware vessels related to the Type B class 4 fabric in his study; however, he only studied roof tiles, architectural and sculptural terracottas, perirrhanteria, and medium coarsewares (Whitbread 1995:306). All of these were attributed to Type A or A' fabrics. This sample from Nemea, coupled with NVAP material, warrants further investigation into Corinthian coarseware such as pithoi to examine the full range of vessels produced in this fabric.

5.10. Fabric 9: Micrite in Red Matrix

Samples: 1

Sample Number	Artefact Number	Form
62	K17.28.9	lekane

Table 5.9: Micrite in Red Matrix fabric sample.

This single sample is characterized by subrounded to rounded micrite inclusions in an optically very active, red matrix (Figure 5.10). Fine fraction quartz and iron-rich opaques/TCFs are present. The lack of calcareous inclusions in the fine fraction and the roundness and abundance of the micrite suggests that it may have been added temper, in the form of sand.

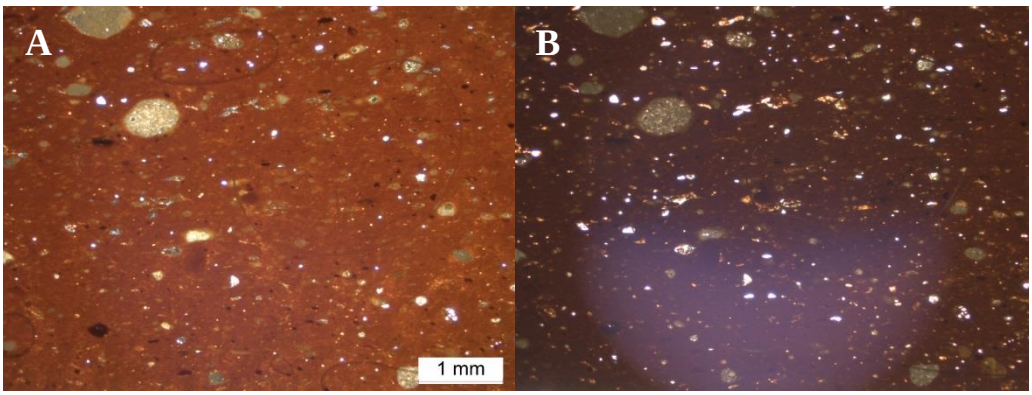

Figure 5.10: Photomicrographs of Micrite in Red Matrix fabric. (A): Sample 62, XP; (B): Sample 62, PPL, x25 (no scale).

The fine fraction inclusions appear to be natural constituents of the clay. The high optical activity and orange-brown homogenous colour suggests that it

was low-fired in an oxidising atmosphere. This sample does not have any parallels with other groups in the assemblage. This fabric is both uncharacteristic and undiagnostic.

5.11. Fabric 10: Metamorphosed Limestone

Samples: 1

Sample Number	Artefact Number	Form
82	K19.62.6	pithos

Table 5.10: Metamorphosed Limestone fabric sample.

This loner sample is characterized by red to black mudstone, with common sandstones and several large metamorphosed limestone inclusions (Figure 5.11). The red matrix contains fine fraction quartz and biotite. The lack of calcareous inclusions in the fine fraction, as well as the ostensibly non-calcareous matrix suggests that the limestone inclusions were added, instead of being a natural constituent in the clay.

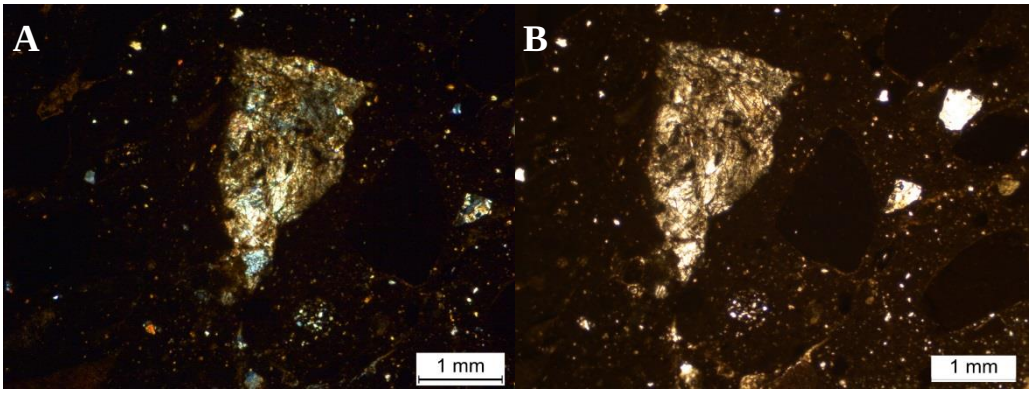

Figure 5.11: Photomicrographs of Metamorphosed Limestone fabric. (A): Sample 82, XP; (B): Sample 82, PPL.

The large size and angular nature of the inclusions support this. The three main inclusions—mudstone, sandstone, and metamorphosed limestone, are actually quite different from each other, suggesting that they came from a heterogeneous source of possibly dolomitic limestone or metamorphosed limestone. The mudstone may have been added temper as well, judging from its abundance, angularity, and large size, as well as the lack of smaller pieces in the

matrix. It is likely that the source of the mudstone was fairly heterogeneous, containing a variety of colours including red and black and including radiolaria. The sample is optically highly active with a homogeneous matrix, suggesting that it was fully oxidized. Although the matrix and mudstone inclusions are common in the Nemean fabrics, the metamorphosed limestone is unusual and thus characteristic. No other fabrics matched this sample.

5.12. Fabric 11: Chert and Clay Pellets

Samples: 1

Sample Number	Artefact Number	Form
95	K19.59.7	mortar

Table 5.11: Chert and Clay Pellets fabric sample.

This single sample is characterized by chert and micrite inclusions in a high-fired greenish matrix, full of large to small clay pellets with fine fraction quartz, chert, micrite, and biotite (Figure 5.12). The clay pellets and mixing striations suggest that a red clay rich in quartz, chert and mica, was mixed with a marly clay. The clays were insufficiently mixed, resulting in the clear mixing striations. The green matrix suggests that this fabric was high-fired. Due to the weakly bimodal grain size distribution, it appears that all constituents in this fabric were naturally present in the clays.

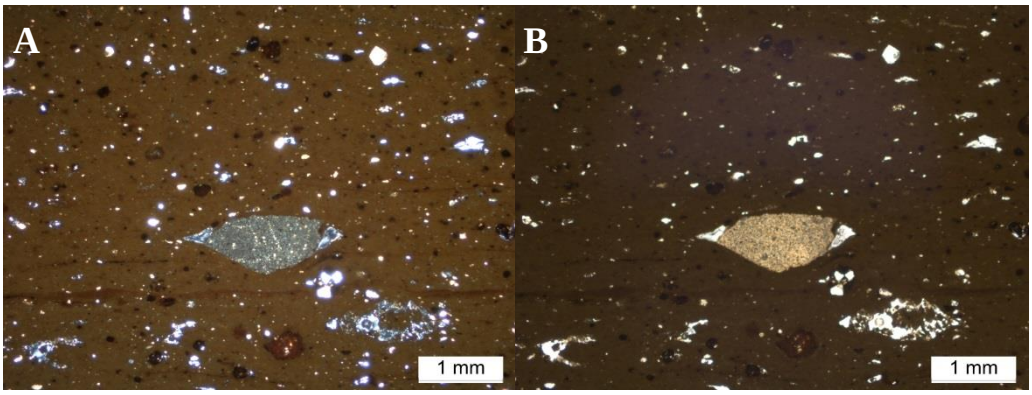

Figure 5.12: Photomicrographs of Chert and Clay Pellets Fabric. (A): Sample 95, XP; (B): Sample 95, PPL.

This fabric may be related to Corinthian Tile Fabric. While Corinthian Tile Fabric has not been studied petrographically, it most likely relates to the roof tiles, architectural and sculptural terracottas, and perirrhanteria studied by Whitbread, which he attributed to Corinthian A and A' fabrics (1995:293-308). He did not study mortaria, much like the pithoi discussed in relation to fabric 8. The Chert and Clay Pellets fabric do not match any of the A or A' fabrics, primarily because of the presence of chert. Mortaria are well studied and published at Corinth, and macroscopic fabric descriptions of mortars in Corinthian tile fabric match this sample very well (Merker 2006:22; Pemberton and Villing 2010:564). Furthermore, while the sample itself is an undiagnostic body sherd, the thin wall suggests that it was most likely from a raised lip form mortar, a common Hellenistic type (Pemberton and Villing 2010:563). This shape identification, coupled with the macroscopic fabric identification makes a strong case that this fabric may be representative of Corinthian Tile Fabric. The production centres which manufactured this fabric were published in *Greek Tile Works*, which includes macroscopic fabric descriptions and the range of ceramic objects associated with the centre (Merker 2006). Future petrographic study of Corinthian Tile Fabric, spanning the complete range of shapes present at Corinth in this fabric, must be completed in order to better understand the fabric.

5.13. Fabric 12: Intermediate Igneous Rocks

Samples: 1

Sample Number	Artefact Number	Form
143	N17.26.18	lopas

Table 5.12: Intermediate Igneous Rocks fabric sample.

This fabric is characterized by volcanic rock inclusions, and their constituent minerals, most commonly andesite, with plagioclase, amphibole and

biotite, with less common alkali feldspar (most likely sanidine), iron rich opaque fragments and monocrystalline quartz (Figure 5.13). The micaceous matrix is fairly homogeneous.

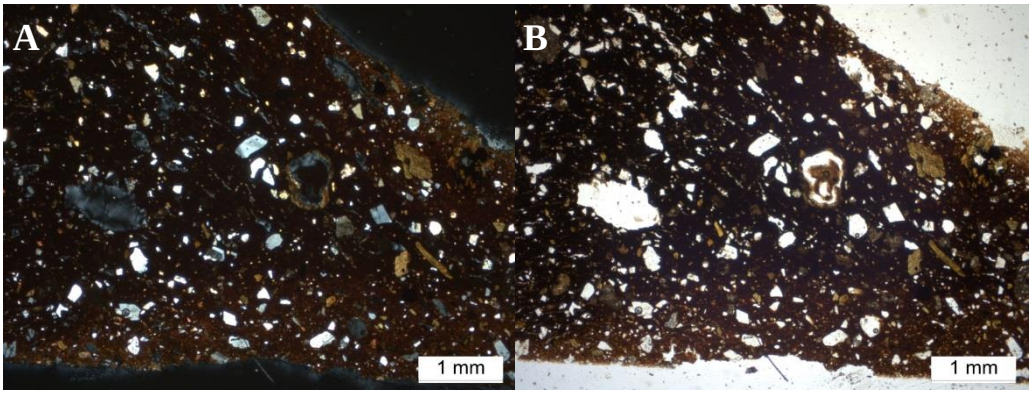

Figure 5.13: Photomicrographs of Intermediate Igneous Rocks Fabric. (A): Sample 143, XP; (B): Sample 143, PPL.

The inclusions are moderately to well sorted and range from angular to subrounded. The relatively small size and variety of shapes of inclusions in the clay paste suggests that they might be natural constituents in the clay. This fabric matches with Red Fabric A from the petrographic study of 6th-4th century B.C. ceramics from Aegina-Kolonna, and is considered to be the same (Klebinder-Gauss 2012:106-108).[38] The Nemea sample is dated broadly to the 4th century, which fits the chronology of Red Fabric A. As the Aeginetan fabric is well-studied and published, and the Nemea sample is an exact match, this is considered to be from Aegina.

5.14. Fabric 13: Intermediate Grade Metamorphic Rocks and Clay Pellets

Samples: 1

Sample Number	Artefact Number	Form
168	K20.13.1	jug

Table 5.13: Intermediate Grade Metamorphic Rocks and Clay Pellets fabric sample.

[38] Petrographic analysis of the comparative Aegina-Kolonna samples at the Fitch Laboratory was completed several times over 2012-2013, and confirmed the match.

This single sample is characterized by intermediate grade metamorphic rock fragments and red clay pellets in a non-calcareous red clay (Figure 5.14). The fine fraction inclusions of quartz, clay pellets, metamorphic rock fragments, and micas are repeated in the coarse fraction constituents. There are dominant clay pellets: these may be the products of incomplete wedging, or simply concentrated pieces of clay that were naturally present in the clay and not sieved out.

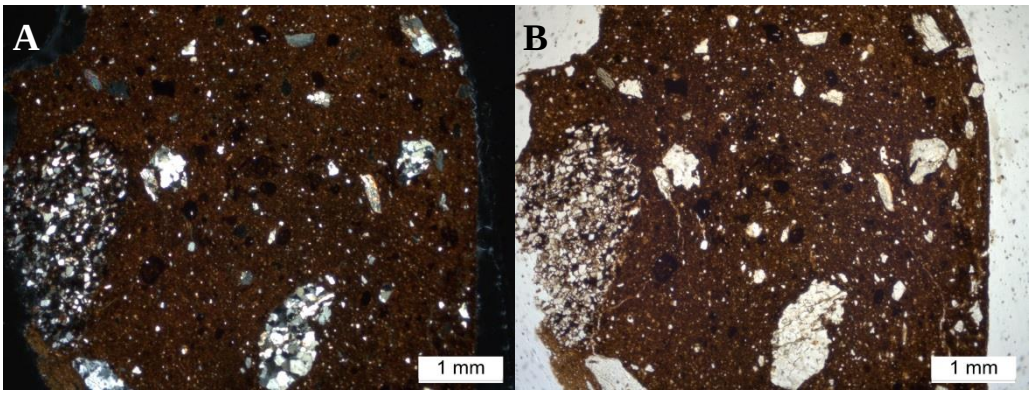

Figure 5.14: Photomicrographs of Intermediate Grade Metamorphic Rocks and Clay Pellets. (A): Sample 168, XP; (B): Sample 168, PPL.

There are no indications of clay mixing. The raw material used appears to be a terra rossa with metamorphic constituents. The homogeneous reddish coloration of the matrix and high optical activity suggest that the vessel was low-fired in an oxidising atmosphere. This sample is neither characteristic nor diagnostic. No comparative matches have found been found for this loner.

5.15. Fabric 14: Degraded Basic Igneous Rocks

Samples: 1

Sample Number	Artefact Number	Form
253	N17.26.16	tile

Table 5.14: Degraded Basic Igneous Rocks fabric sample.

This sample is characterized by tuffites and degraded igneous inclusions in a highly optically active, fine red matrix with highly-bimodal grain size distribution (Figure 5.15). The matrix is characterized by common to rare quartz,

micas, and textural concentration features, which are most likely natural constituents in the clay. The bimodal nature of the fabric suggests that the tuffites and degraded basic igneous rocks are added temper. These inclusions most likely come from an ophiolitic source. The red clay is undiagnostic. The sample is optically very active, and was most likely low-fired.

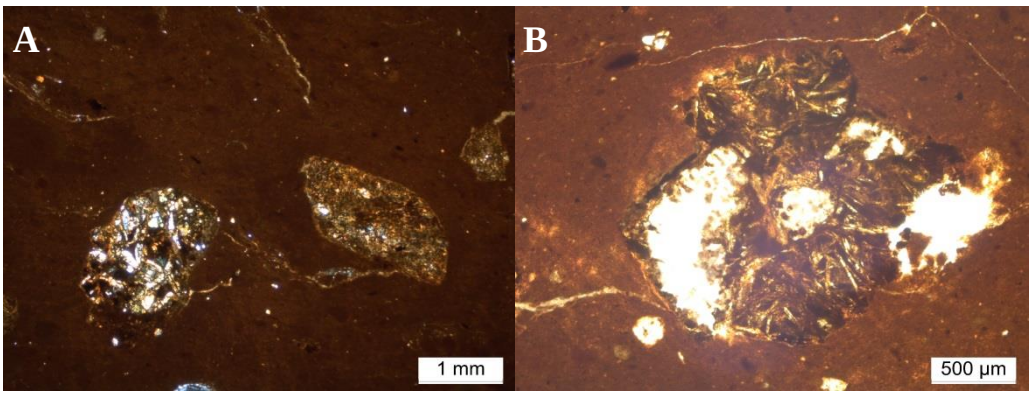

Figure 5.15: Photographs of Degraded Basic Igneous Rocks Fabric. (A): Sample 253, XP; (B): Sample 253, PPL.

This sample is both characteristic and diagnostic. The combination of tuffites and degraded igneous rocks is unique. It must be noted that this is the only tile in the study which was not produced in the sanctuary, making it very unusual. The ophiolitic nature of the constituents is compatible with the geology of Acrocorinth (see discussion of fabric 2). Further, the inclusions are very similar to those found in Early Helladic samples from Corinth, currently studied by Burke. Her fabric is also characterised by tuffites and degraded igneous inclusions in a fine red matrix. The tile itself was very undiagnostic in shape, unfortunately not helping secure any kind of provenance.

5.16. Conclusion

The petrographic study of the 299 samples from Nemea yielded seven fabric groups with seven loner samples. The thin section analysis coupled with comparative study was successful in identifying matches with other fabrics from a variety of archaeological sites. The next step in this study is to apply the

petrographic results with typological studies to further analyse the Nemean ceramics and demonstrate their relationships with other sites in the Northeast Peloponnese.

Chapter 6: The Ceramics

6.1. Introduction

The petrographic results presented in the preceding chapter demonstrated that a variety of fabrics are present at Nemea representing several production centres, some of which can be identified through provenance and comparative studies. In order to fully interpret and contextualise these results, a comprehensive review of the ceramic assemblages is necessary. This chapter presents the Nemean ceramics, and discusses typology, function, and chronology, as well as how they relate to comparanda to further identify local, regional, and imported connections. In order to fully investigate all types of vessels present in this study, the catalogued ceramics are arranged by shape and petrographic fabric group in this chapter.

In some cases, the suggested provenances of the petrographic fabrics, discussed in Chapter 5, are strengthened by comparative typological and chronological studies of the same types of vessels from other sites with confirmed petrographic matches, particularly Corinth and Lerna. By presenting the ceramics themselves by vessel type and fabric group, patterns of both local production and regional distribution emerge. The range of fabrics of each vessel type is examined, and comparatives are presented. These comparatives are based on shape and fabric, and in most cases, are petrographic fabric matches. This allows for much more confident identifications of regional wares. When comparatives were not available, the samples themselves are presented, as they represent previously unknown or unpublished examples of vessels in particular fabrics. Full catalogue entries, including fabric descriptions, can be found in Appendix II.

6.2. Cooking pots: Chytrai and Lopades

Cooking pots, both chytrai and lopades, are the most common shapes present in the assemblages from Nemea. They are found in four main fabric types, with only two fabrics being present in both shapes. This will be discussed in turn.

Fabric Type	**Total Samples**
Chert and Quartz	34
Intermediate Metamorphic Rocks	16
Large, Angular Chert	3
Total Samples	**53**

Table 6.1: Chytrai samples by fabric.

Fabric Type	**Total Samples**
Chert and Quartz	29
Intermediate Metamorphic Rocks	3
Intermediate Igneous Rocks	1
Total Samples	**33**

Table 6.2: Lopades samples by fabric.

The two forms of cooking pots present in this study, chytrai and lopades, will be discussed together as they share many similarities. The two forms are differentiated by both body shape and function. Chytrai account for the largest sample set in this study, with fifty-three samples (Table 6.1). A chytra is a round bottomed, usually globular shaped cooking pot (Figures 6.1, 6.2). Lopades account for thirty-three samples in the study (Table 6.2). The lopas differs from the chytra in that it has a low wall and convex bottom, with either a rounded curve or sharp carination between the wall and somewhat flat base (Figures 6.3, 6.4). In some cases both the chytra and lopas have a plain rim, and it is most commonly found with an interior flange. The flange acts as a resting place for a lid to be placed just inside of the rim. Their rims and flanges are often so similar that it is impossible to distinguish between the two without the body being preserved. The chytrai usually have two vertical handles that attach just below

the rim on the exterior. In most cases, the lopas has two handles that either attach at the rim, or below, near the carination or curve. However, most of the examples from Nemea are too fragmentary to determine if the vessel had handles, much less to say if they were vertical or horizontal.

Chytrai are generally associated with functions relating to the boiling or stewing of food (*Agora* 33:167). Their deep shape and rounded bottom are ideal for placing on or above a fire. Lopades are usually associated with parching food, and/or cooking the food in its own juices, or a sauce (*Agora* 33:179). While both are used for the cooking of food over a fire, their functions are slightly different, thus it is important to distinguish them when possible. In some cases, lopades may have wider diameters than chytra. If possible, the maximum diameter of the rim sherds was estimated in order to determine the approximate size of the complete vessel.

The chytrai and lopades at Nemea are dated based on two factors: the date of the lots in which they were found, and dates based on comparative studies. The latter is problematic, as the most complete published source of similar cooking vessels (*Corinth* 7.3) is currently undergoing a chronological re-evaluation that is on-going at the time of this study. Edwards, the author of the original volume on Corinthian Hellenistic pottery did his best to date the published vessels based on deposits from the South Stoa, only to learn that it had been down-dated 25 years while his volume went to press (*Corinth* 7.3:vi-vii). Thus, although his work served as the main reference for comparative studies of Corinthian Hellenistic pottery, it was generally regarded as somewhat unreliable in chronological terms. Without the new chronology, not yet completed, the Nemean ceramics must rely on dates from their own lots. This is also

problematic, as many of the original dates given to the Nemean deposits were based on ceramic studies, using *Corinth* 7.3 as a guide for typologies and chronologies. When the original excavators tried to date the cooking pots at the time of excavation, *Corinth* 7.3 was the only available resource that dealt with similar Hellenistic ceramics. Thus, all cooking wares, Corinthian or not, were dated using the Corinthian chronology. Unfortunately, this leaves the Nemean cooking pots somewhat chronologically unstable. In this thesis, the dates of every studied pottery lot were re-examined, based on current studies from other sites, such as Lerna and the Athenian Agora. In some cases, it was possible to refine the date originally given at the time of excavation. However, in many cases, it was not possible and the primary dating tool was the date of the lot from which the ceramics came. As a result, all dates should be viewed as approximate.

The chytrai samples are petrographically divided with thirty-four samples belonging to the Chert and Quartz fabric, three samples attributed to the Large, Angular Chert fabric, and sixteen samples assigned to Intermediate Metamorphic Rocks fabric (Table 6.1). The lopades were petrographically divided with twenty-nine samples belonging to the Chert and Quartz fabric, three samples attributed to the Intermediate Metamorphic Rocks fabric and one sample assigned to the Intermediate Igneous Rock fabric (Table 6.2). Many of the proposed fabric provenances, discussed in Chapter 5, are supported by comparative analysis with ceramics from the actual sites representing the possible place of manufacture.

6.2.1. Chert and Quartz

The Chert and Quartz petrographic fabric cooking pot samples from Nemea are an exact match with the petrographic samples of Hellenistic cooking pots from Corinth, all of them being contemporary and identical in shape to each

other. The Chert and Quartz fabric chytrai from Nemea are well represented in published studies of contemporary cooking wares from Corinth. In fact, essentially most of the chytra forms published in *Corinth* 7.3, the Hellenistic pottery volume, are present at Nemea in the Chert and Quartz fabric.[39] It is possible that every form is present, but the fragmentary nature of the sherds does not allow for identifications of unusual forms which are characterized by handles or body shape. Both Edwards and Pemberton use the names "chytra" and "stew pot" interchangeably, while acknowledging that they refer to the same form with the same function (*Corinth* 7.3:120-122; *Corinth* 7.6:77-80).

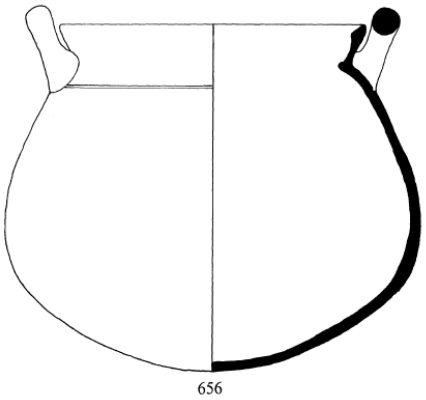

Figure 6.1: Corinthian chytra with bevelled rim and flange with two vertical handles. From *Corinth* 7.3, #656, Plate 27. Courtesy of the American School of Classical Studies, Corinth Excavations.

The Chert and Quartz fabric chytrai in this study range from the late 4th to the 2nd centuries B.C. A few samples date generally from the late 4th to early 3rd centuries[40], with the majority being attributed to the 3rd century, particular the late 3rd to early 2nd centuries[41], and four samples placed in the 2nd century B.C.[42] The range of chytrai found in the sample set most closely resemble the *Corinth* 7.3

[39] The Corinthian forms identified at Nemea include *Corinth* 7.3:#650-658, Plate 61.
[40] Samples 8, 15, 48, 101, 102, 107, 118, 121, 156, 169
[41] Samples 1, 9, 11, 13, 16, 17, 20, 21, 25, 26, 27, 29, 30, 32, 109, 119, 127, 133, 134
[42] Samples 3, 7, 103, 108

chytra II shape, specifically objects 650-655 (*Corinth* 7.3:122). These chytrai are described by Edwards as

> "a broad piriform body constricting above to a moderately broad lip which is separated from it by semi-articulation. The lid broadens outward from its based in a nearly straight profile, its top is ordinarily bevelled, the slope inward and at its based within there is a vestigial flange for the lid" (*Corinth* 7.3:122).

The Nemea samples have plain, straight, lipless rims with a flat, upturned flange in most cases. There is a small selection with bevelled rims.[43] Similarly there is a small selection of chytrai that are unflanged—these are generally dated to the early periods (late 4th-early 3rd centuries B.C.).[44] Interestingly, there does not appear to be any chronological differences in the chytrai with plain, lipless, and bevelled rims; they both range from the late 4th to early 2nd centuries B.C.

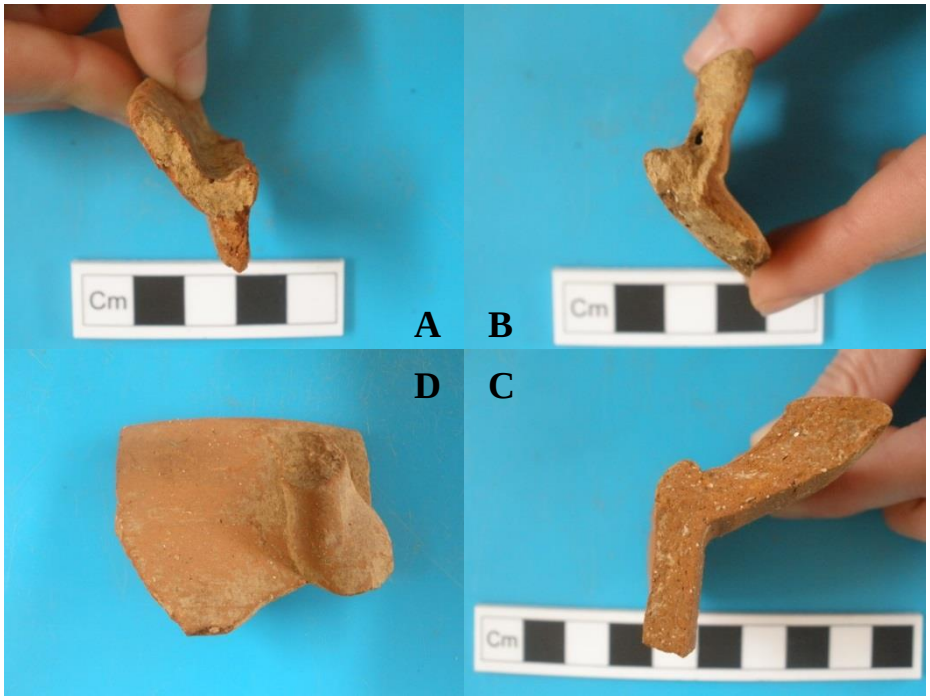

Figure 6.2: Chytra rims with flanges from Nemea in Chert and Quartz fabric. (A): flat, lipless rim (Sample 16); (B): bevelled rim (Sample 16); (C): rounded rim, exterior view (Sample 20); (D): bevelled rim (Sample 27).

[43] Samples with bevelled rims are 16, 26, 27, 107, 108
[44] Samples without flanges are 101, 102, 103, 169

Edwards attributes the chytrai to 146 B.C., but the comparative studies conducted on a range of Hellenistic cooking wares from Corinth suggest that these vessels range from the late 4th to late 1st centuries B.C., with a large variety dating to the mid-late 3rd and early 2nd centuries B.C.[45] All of these Corinthian samples were exact petrographic matches with the Nemean Chert and Quartz material. The matching chytrai include plain rims with flanges, bevelled rims with flanges, and unflanged rims. Further, the expanded chronological range is supported by chytrai from the Sanctuary of Demeter and Kore at Corinth, which include flanged and unflanged examples with plain and bevelled rims, also matching the examples from Nemea, and date from the later 4th century to the later Hellenistic period (*Corinth* 18.1: 68-71).[46]

[45] Corinth samples 2013/10, 11, 12, 20, 28, 32, 65, 66, 68, 74, 78, 89, 91, 92, 97, 98. The dates were given to these samples by Sarah James as part of her re-evaluation of the Hellenistic chronology at Corinth.

[46] Similar vessels from the Sanctuary of Demeter and Kore (Corinth 18.1) include #109, 655, 656, 657.

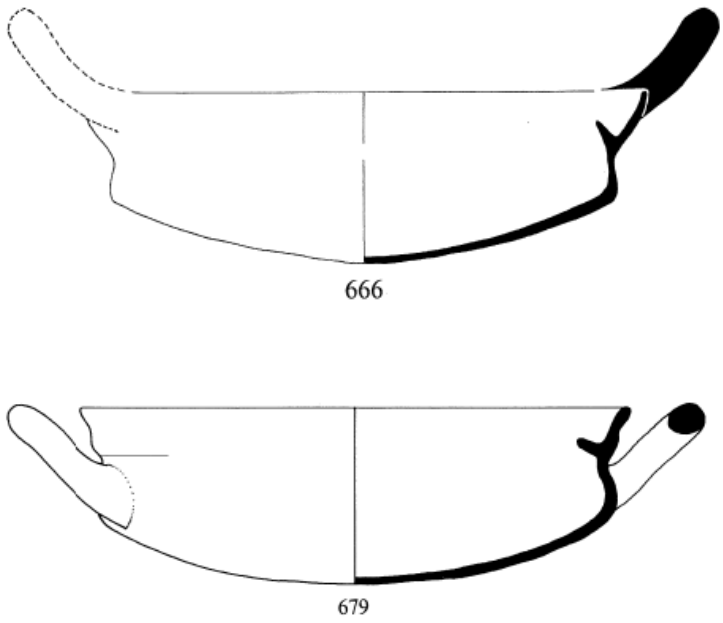

Figure 6.3: Top: Type I Corinthian lopas with plain rim and flange with vertical handles. From *Corinth* 7.3, #666, Plate 29. Bottom: Type II Corinthian lopas with offset rim and handles attached to shoulder. From *Corinth* 7.3, #679, Plate 29. Courtesy of the American School of Classical Studies, Corinth Excavations.

The Nemean Chert and Quartz fabric lopades also represent all Corinthian shapes, while being exact matches with the Corinthian Chert and Quartz fabric. The lopades represent the same range of dates as the chytrai, spanning from the late 4th to mid-2nd centuries B.C.[47] Lopades from Corinth are divided into two types—type I, characterized by a broad, gently convex bottom and low wall with low lip that is broader above, and type II, which has a rounded bottom and low wall with articulation between the two, and a low rim which is always greater in diameter than the body (Figure 6.3, *Corinth* 7.3:124-125). Both types I and II are present at Nemea, representing the full extent of the examples presented in both *Corinth* 7.3 and *Corinth* 18.1.[48] Edwards dates them from 450 to 146 B.C. (*Corinth* 7.3:124-125), while Pemberton loosely attributes them to the mid-late

[47] Samples 33, 34, 42, 36, 118, 129, 139, 123, 132, 119, 109, 122, 131, 125, 117, 104, 128, 106, 112, 105, 135, 127, 110, 124, 120, 142, 126, 116, 130
[48] Similar lopades from *Corinth* 7.3 include #659-682, from the Sanctuary of Demeter and Kore (*Corinth* 18.1) include #110, 112, 658, 660.

4th century, with one example from the early 3rd century B.C. (*Corinth* 18.1:69). Similar to the chytrai, the comparative petrographic Hellenistic material from Corinth provides a wider range of dates which are more closely tied to those of the Nemean samples, spanning from the late 4th to the early 1st centuries B.C., indicating that the fabric was produced and used over a large period of time.[49]

While it is not possible to provenance the Chert and Quartz fabric to Corinth on strictly petrographic terms, the wide variety of matches in terms of both shape and date strongly support the case for Corinthian provenance. The chytrai and lopades from Nemea and Corinth are identical in shape and fabric, with strong chronological parallels. Further, the Chert and Quartz fabric is the most common cooking fabric found in Hellenistic assemblages at Corinth, as well as the most common cooking fabric at Nemea, as evidenced through typological, macroscopic, and petrographic analyses. These factors create a strong argument for Corinthian ceramic production. But, if these vessels were being produced in such a standardized way, in the same fabrics with only slight changes to the shape, surely the production centre(s) would have been large. The need for raw materials, water, and fuel would have been immense, especially if production was relatively steady and unchanged for at least three centuries.

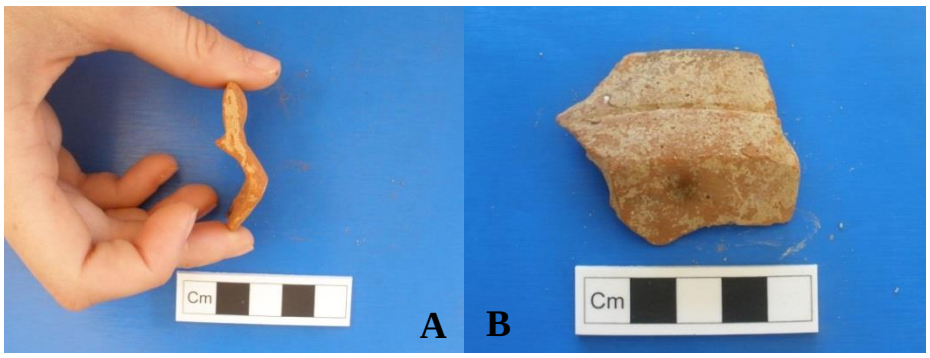

Figure 6.4: Lopas rims from Nemea in Chert and Quartz fabric. (A): lipless rim, profile view (Sample 117); (B): lipless rim, exterior view (Sample 130).

[49] Corinth samples 2013/9, 16, 21, 27, 29, 67, 77, 80, 95, 96

While it is certain that ceramic production took place on a large scale, no evidence of Hellenistic cooking ware production has been found at Corinth. It also unknown how the vessels were distributed around the Northeast Peloponnese, being so common at Nemea and Lerna. Unfortunately this dearth of information hinders our ability to further our understanding of Corinthian ceramic production. This fabric dominates as the primary cooking ware fabric in Corinth, as well as Nemea. A production centre that was able to produce this quantity of pottery must have been large, but no excavations or surveys of the vicinity of Ancient Corinth have revealed a possible location. It may be that this type of large scale manufacturing took place outside of the ancient city, in the countryside where there was room for various workshops, as well as abundant water, fuel (such as tree cuttings, dry weeds, vines), and clays. If the production centres were located outside of the city in the greater region of the Corinthia, then it is possible that those areas have not been fully explored yet. However, it is also possible that such workshops were demolished once they went out of business, or simply disintegrated over time, leaving no archaeological indicators.

6.2.2. Angular Chert, Limestone, and Quartz

In relation to the Chert and Quartz fabric, the Angular Chert, Limestone, and Quartz fabric is of great interest. Although there are only three chytrai samples and no lopades samples, this fabric is significant as it suggests a change in the manufacturing processes of cooking fabrics.[50] As discussed in Chapter 5, this fabric is particularly interesting because it is virtually impossible to tell the difference between this and the Chert and Quartz fabric macroscopically. The primary constituents of both fabrics are most likely related, and perhaps even

[50] Samples 5, 10, 14

derived from the same raw materials. The Large, Angular Chert chytrai samples resemble the Chert and Quartz chytrai in every way. It seems that the main difference lies in the later dates of the Large, Angular Chert fabric. The Nemean samples date to the 2nd century B.C., with two samples dating to the late 2nd century B.C., post 146 B.C. Comparative petrographic studies with the Corinthian material revealed a match with a similar chytra, dated to 10 B.C.[51] The late date of this Corinthian sample is particularly interesting, because it dates to the later part of the interim period, after the sack of Corinth in 146 B.C. but before its re-founding in 44 A.D. It is possible that ceramic manufacturing traditions and processes changed during the Interim period, which is reflected by this later sample. Only extended sampling of Interim period ceramics, as well as early Roman ceramics, will give us further information. At this time, there are no ceramics from the Nemean lots used in this study that can be dated later than 146 B.C.

6.2.3. Intermediate Grade Metamorphic Rocks

In addition to the Chert and Quartz fabric and Large, Angular Chert fabrics, there are fifteen chytrai and four lopades present in the Intermediate Metamorphic Rock fabric. As described in Chapter 5, the fabric is very similar to the Schist cooking fabric found in the Athenian Agora, described by Susan Rotroff in *Agora* 33. The Attic Schist cooking fabric represents both chytrai and lopades. The Nemean samples find almost exact parallels with the Attic examples. Rotroff states that the Schist cooking fabric is the prevalent cooking fabric in the Agora which most likely locally produced in Athens or greater Attica (*Agora* 33:39-41).

[51] Corinth Sample 2013/98

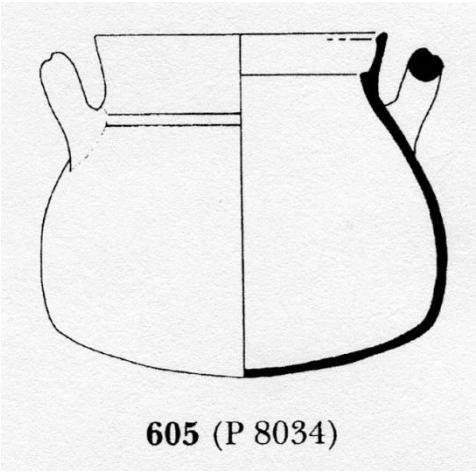

Figure 6.5: Chytra, Form 6: Two-Handled, Collar Rim. From *Agora* 33, #605, Figure 76. Courtesy of the American School of Classical Studies at Athens.

The Nemean chytrai find parallels in Agora chytra form 5: two-handled, lidded, and chytra form 6: two-handled, collar rim in both shape and fabric (Figure 6.5).[52] Both of these forms are present in the Schist cooking fabric at the Agora, with form 5 ranging in date from ca. 500 to the early 1st century B.C., and form 6 dating between 175-125 B.C. (*Agora* 33:173-174). The Nemean samples range in date from the early 3rd to mid-2nd centuries B.C., complementing the Agora comparatives nicely. Interestingly, Rotroff mentions that form 6 has a parallel with a single example from Corinth, dating to the 2nd century B.C., a chytra grouped by itself with a bevelled rim and dated to 146 B.C. (*Agora* 33:174, *Corinth* 7.3:122, #656). This form is prevalent at both Corinth and Nemea in the Chert and Quartz fabric. This particular form is referred to as the chytra with bevelled rims above.

[52] Samples 2, 4, 6, 12, 18, 19, 22, 23, 24, 28, 136, 137, 138, 140, 141

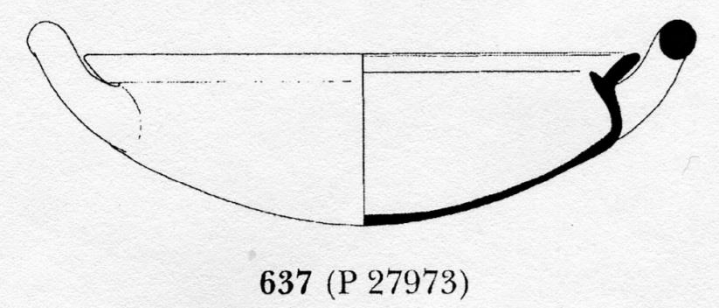

Figure 6.6: Lopas, Form 1: Upturned Handles, Rounded Bottom. From *Agora* 33, #637, Figure 82. Courtesy of the American School of Classical Studies at Athens.

The Nemean lopades also find direct comparisons with the Agora material in both fabric and shape.[53] The Nemean samples are very similar to Athenian Agora lopas forms 1: upturned handles, rounded bottom (Figure 6.6); form 2: upturned handles, flat bottom; and form 3: engaged handles and flat bottom (*Agora* 33:179-180). Although most lopas sherds at Nemea do not have handles preserved, or enough preserved profile to determine the shape of the bottom, the various forms of the rims and flanges are all accounted for. The Attic examples are placed throughout the Hellenistic period with Lopas: form 3, the most common lopas shape, dating from ca. 285-110 B.C. (*Agora* 33:179-181). The Nemean samples date from the late 4th to the mid-2nd, with two of the four samples being placed around the mid to late 3rd century B.C., further complementing the Agora comparanda.

The comparisons between the Nemean samples and the Agora chytrai are strong enough to suggest that the Nemean samples are in fact Attic, based on the typological and macroscopic evidence. While there were no petrographic matches between the Nemean samples and the Attic samples that were available, the Attic petrographic sample set did not contain any samples of Schist cooking fabric. The petrographic analysis of the Nemean samples did suggest that the

[53] Samples 31, 35, 111, 137

fabric may be Attic, based on geological provenance studies, so further comparative analysis with Attic cooking fabrics must take place. Thus, this provenance cannot be confirmed, but it is strongly suggested.

6.2.4. Intermediate Igneous Rocks

The single lopas sample found in the Intermediate Igneous Rock fabric is interesting, as it is clearly an Aeginetan import (see section 5.13.). This sample finds shape parallels in the lopades from Aegina dating to the Hellenistic period, published by Klebinder-Gauss (2012:#CKOL105). The petrographic analysis completed on these samples confirms the match with the Nemea sample, while Klebinder-Gauss' (2012:85-87) study confirmed the Aeginetan provenance of the fabric. The fabric is characteristic and different from the other lopades present at Nemea, as it contains common to abundant black, sparkling inclusions.

6.3. Lekanai

Fabric Type	**Total Samples**
Chert and Quartz	6
Fine Quartz and Mica	17
Mudstone and Micrite	19
Micrite and Quartz	2
Mudstone and Mudstone Breccia	2
Micrite in Red Matrix	1
Total Samples	**47**

Table 6.3: Lekanai samples by fabric group.

Lekanai account for forty-seven samples present in the Nemean study. These are divided into six fabrics (Table 6.3). A lekane is a large bowl designated for household purposes (*Agora* 33:108). It may also be referred to as a bowl or a basin. While lekanai are generally large and deep, they can also be shallow in some cases. It is difficult to pinpoint uses for lekanai only because there are so many possibilities, similar to the plastic lekanai (basins) used across Greek households today. They could be used for food preparation and storage,

for holding water, for washing—their possible uses are endless. As a truly utilitarian vessel, it is not surprising to find lekanai in abundance across different contexts, ranging from domestic and commercial to industrial.

The six fabrics that the lekanai are present in are interesting, as they most likely represent six separate workshops or geographical places of manufacture, suggesting that this shape was distributed by multiple production centres throughout the Corinthia and the Argolid. The Chert and Quartz fabric lekanai were coarser and grittier, as the fabric was typically used for cooking wares. The Fine Quartz and Mica fabric lekanai are a great deal finer, while the Mudstone and Micrite, Mudstone and Mudstone Breccia, and Micrite and Quartz examples are typical coarseware with large, visible inclusions. In some cases these coarseware groups can be distinguished by the colour of their large inclusions. For instance, the Mudstone and Mudstone Breccia fabric is full of large, angular red, brown and black mudstones, while Mudstone and Micrite also contains large white to yellow chunks of limestone. These differences would have been apparent to the naked eye, even without a hand lens. Since all of these vessels are the same general shape without a great deal of variation in size, then perhaps demand was based on fabric. It is possible that aesthetic factors such as surface texture and fabric appearance affected choice in lekanai, when a range of choices were available, as all of the lekanai seem to represent the same types of functions and uses.

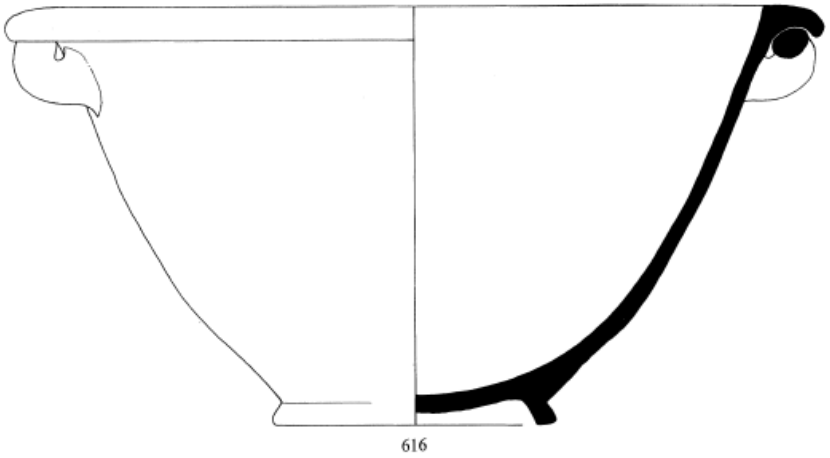

Figure 6.7: Corinthian lekane with ring foot and overhanging rim. From *Corinth* 7.3, #616, Plate 21. Courtesy of the American School of Classical Studies, Corinth Excavations.

6.3.1. Chert and Quartz

The Chert and Quartz lekanai, six samples total, were produced in exactly the same fabric as the Chert and Quartz fabric chytrai and lopades.[54] The fabric is very characteristic macroscopically, being red to brown with gritty white and grey inclusions. There were no complete profiles preserved in the Nemean assemblages, making it difficult to ascertain what types of rims went with what types of bases. Of the six samples in this fabric, the five rims demonstrate the wide range of rim shapes available—overhanging rim, triangular folded rim, collared rims, flat projecting rims, and outturned rims were all present (Figures 6.7, 6.8). These do not appear to be chronological changes, as most of the samples date to the late 4th-early 3rd centuries B.C. One ring foot base was sampled, but it is very likely that many lekanai had flat bases as well, similar to those of mortaria (see section 6.6 in this chapter). In any case, neither the shape of the rim nor the type of base affected the function of the vessel, so perhaps different potters preferred to make the rims in their own way. It is clear that there

[54] Samples 51, 60, 185, 187, 195, 209

is considerable variation in shape present in lekanai, even in a single fabric group, which were all used contemporaneously. There is considerably less variation in lekanai decoration, with most samples remaining undecorated without any surface treatment. One sample (51) has a streaky red slip covering the interior, a fairly common lekane phenomenon, seen in many examples in the Nemean assemblages (Figure 6.8-A).

Figure 6.8: Lekane rims from Nemea in Chert and Quartz fabric. (A): Flat, projecting rim (Sample 51). (B): Triangular collared rim (Sample 187).

The difference in rim shape has caused confusion in Corinth, where all of these samples find exact matches in both fabric and shape. Edwards published this shape as a krater, and Pemberton and McPhee refer to an ambiguous example as a "krater or lekane", demonstrating that the terms are interchangeable for the forms (*Corinth* 7.3:108; *Corinth* 7.6:91-92). A coarseware krater and a lekane are identical in most ways; it is purely the function that causes division. However, a krater was used for mixing liquids, something that a lekane could also do. Thus, the differentiation of kraters and lekanai are not important to this study, as both the shape and the function are interchangeable here. In this study, the term lekane is used, with the exception of a special krater type which is easily differentiated from the lekane due to a complex rim form, discussed below (Section 6.7).

There are a great deal of lekanai published in *Corinth* 7.6 which display the range of rim types. These lekanai (*Corinth* 7.6: Figures 59-61) serve as comparanda in this study. There are many comparatives presented from other contexts from Ancient Corinth, including the South Stoa Drain 1971-1, which date as early as the late Classical period (*Corinth* 7.6:III-62-67; V-19-28). These demonstrate the range of lekanai rims present in the coarsewares fabric over a large span of time, at least from the 4th to the 2nd centuries B.C., much like the Chert and Quartz cooking pots from both Nemea and Corinth. The Chert and Quartz fabric lekanai fit very comfortably in the Corinthian repertoire, and it is appropriate to suggest a Corinthian provenance based on typological, macroscopic, and petrographic evidence.

6.3.2. Fine Quartz and Mica

The Fine Quartz and Mica fabric lekanai include seventeen samples and represent a finer version of the shape, with only slight variations in rim types compared to the Corinthian examples.[55] These lekanai are common in the Nemean assemblages, and greatly outnumber all others found in different fabrics, except perhaps the Mudstone and Micrite fabric (discussed below in Section 6.3.3). The Fine Quartz and Mica fabric is noticeably finer than its Chert and Quartz and Mudstone and Micrite counterparts. As discussed in Chapter 5, the Fine Quartz and Mica fabric was a petrographic match with the Fine Quartz and Micrite fabric from Lerna. The Hellenistic deposits at Lerna contained a relatively large amount of lekanai, most of which find exact parallels at Nemea.

[55] Samples 52, 53, 54, 56, 58, 59, 61, 70, 87, 181, 184, 189, 191, 194, 196, 202, 205

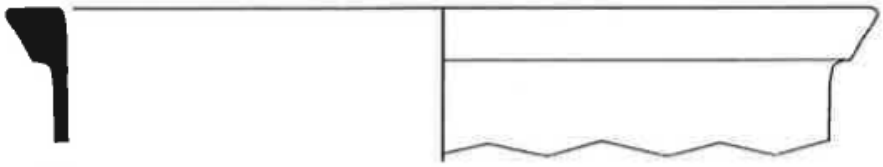

Figure 6.9: Thickened Triangular Rim of Lekane. From *Lerna* VIII, #592, Plate X. Courtesy of the American School of Classical Studies at Athens.

The Fine Quartz and Mica fabric is easily recognizable in hand specimen. It is a hard to very hard fabric, deep red in colour, is fairly fine, and contains common to sparse sparkling inclusions. Often a sherd has to be very clean for the sparkling inclusions to be visible, as they are usually clay or silt-sized grains instead of sand sized flecks.

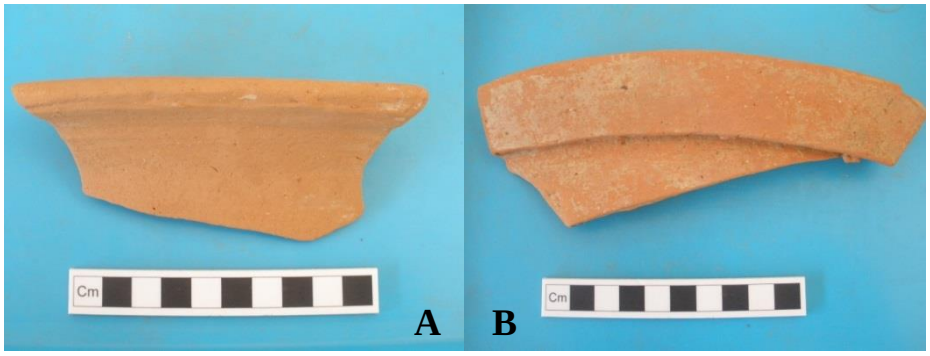

Figure 6.10: Lekane rims from Nemea in Fine Quartz and Mica fabric. (A): Outturned, projecting rim (Sample 54). (B): Collared rim (Sample 59).

The most common form of Fine Quartz and Mica fabric lekane found at Nemea is the type with the thickened triangular rim (Figure 6.9). No complete profiles were preserved, so the type of base that was most commonly found with this rim type is unknown, although two ring foot bases were identified in the fabric. This is the case at Lerna as well, where only one lekane base was identified without a preserved rim, described as "an unusually small vessel that has a ring foot with protruding, cushion-shaped outer face" (*Lerna* VIII:326). This is fairly similar to one base sample from Nemea.[56] Erickson also identified the three most common types of lekane rims found at the Lerna assemblages: flat-

[56] Sample 61, a ring foot base with partial preserved wall.

toped ledge, a thickened triangular rim, and a slightly thickened rectangular collar (*Lerna* VIII:325). These three types are all common at Nemea as well, as seen in Figure 6.10. Four of the Nemean samples had red slips on the interior, with two samples having red slips on the interior and exterior.[57] Several of the Lerna examples also had red slips (*Lerna* VIII:327). All of the Lerna samples are from a single well dated between ca. 325-275 B.C. In contrast, the Nemean samples range in date from the late 4th-mid 2nd century B.C. In light of the provenance studies of this fabric, this discrepancy in dates is very interesting. Erickson attributes this fabric to the Argolid, based on the quantity, and the style and decoration of many of the vessels and the petrographic evidence cannot confirm or deny this (*Lerna* VIII:594). While the fabric remains tentatively attributed to the Argolid as a general region, the greater diversity of vessel chronology at Nemea is important. It signifies that the workshop producing this fabric, wherever it may be, was most likely independent of Lerna as it continued to produce ceramics after Lerna was abandoned. Unfortunately the greater chronological range now visible does not strengthen the argument of Argive provenance, but it does add an additional sample set to consider if more Argive ceramics ever become available for study.

6.3.3. Mudstone and Micrite

The Mudstone and Micrite lekanai (nineteen samples) represent products that were locally produced within the sanctuary, in the Kiln Complex.[58] No study of lekanai had taken place at Nemea previous to this one, so the forms present in this fabric are new to the archaeological record. In these assemblages, three rim forms were identified. These forms are very similar to their Corinthian and

[57] Interior slip: Samples 52, 53, 61, 205; Interior and Exterior: Samples 54, 70
[58] Samples 55, 57, 65, 67, 182, 183, 186, 188, 190, 193, 197, 198, 199, 201, 203, 204, 206, 207, 208

Argive counterparts, discussed above. They include the flat projecting rim, the overhanging rim, and the triangular folded rim (Figure 6.11). The overhanging rim-style lekane appears to have a straight wall, indicating that they may have been tall vessels, while the flat, projecting rim style has a sloping wall, resulting in more of a typical bowl shape. One base was identified, a heavy, flat base with thick wall (sample 65). It is most likely that the wall slightly thinned at the top.

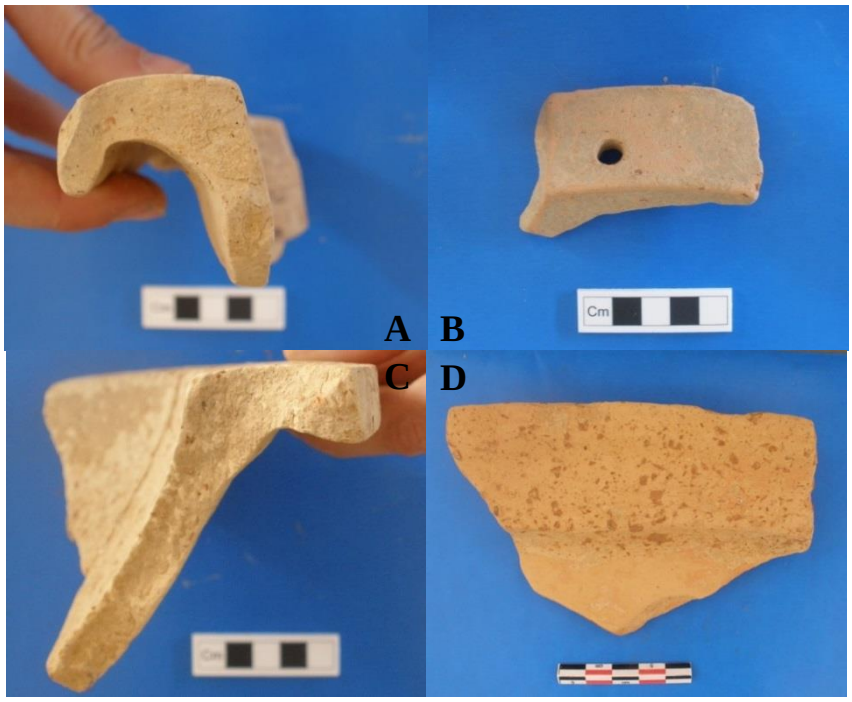

Figure 6.11: Lekanai from Nemea in Mudstone and Micrite fabric. (A): Overhanging rim in profile (Sample 182); (B): Flat, projecting rim with repair hole (Sample 183); (C): Triangular, folded rim (Sample 195); (D): Flat, projecting rim in profile (Sample 188).

There are slight variations in the fabric in some examples. The colour variation is due to differences in firing temperatures and atmospheres.[59] While most examples contain only moderate visible mudstone inclusions, sample 195 displays abundant red mudstones, concentrated around the rim (Figure 6.11-C). It is possible that this was added deliberately for the aesthetic effect. One sample, 182, is decorated with a very thin, streaky red-brown slip on the interior

[59] See Chapter 5, section 5.2. for a discussion about the variation in firing temperatures and atmospheres within the Mudstone and Micrite fabric.

and exterior. The slip may have been added as decoration, but it would have also made the vessel more impervious. Depending on what the lekane was used for, resistance to soaking up liquids may have been a valuable quality to the user of the vessel.

It is apparent that the Mudstone and Micrite lekanai were repaired in some instances. Several examples display holes in the rims, which were most likely added after the creation and firing of the vessel. It was not uncommon to occasionally find lekane rims with lead strips on the rims, attached at the holes. In a study of ancient pottery mending at the Agora, Rotroff states that Hellenistic utilitarian ceramics were mended with high frequency (*Agora* 33:120), a pattern that is echoed at Nemea. It is likely that mending a vessel was easier or cheaper than producing a replacement, another pattern also seen at the Agora (*Agora* 33:127). Unfortunately no complete examples were found to demonstrate how the final product of this repair may have looked, or what type of damage the repair was fixing or stabilizing.

The Mudstone and Micrite fabric lekanai range in date from the late 4th-mid 2nd centuries B.C., accounting for the entirety of the Hellenistic period in the Northeast Peloponnese. While it is clear that the Kiln Complex began producing material as early as the late 4th century B.C., during the period of the rebuilding of the sanctuary, it is unclear how long the complex was in use.[60] The dates of the vessels are based on their lots, but in all cases the dates are supported by the comparative material from Corinth and Lerna, as the majority of the Mudstone and Micrite lekanai mirror shapes present in the Chert and Quartz, and Fine Quartz and Mica fabrics.

[60] Please see Chapter 7 for a discussion of the use and lifespan of the Kiln Complex.

The repertoire of lekanai produced in the Kiln Complex suggests that the potters were influenced by vessel shapes already present in the sanctuary. The rim styles are well accounted for in the comparative material from Corinth and Lerna, which are both present at Nemea at the same time as these locally produced vessels. At the same time, it is unlikely that these vessels would have ever been mistaken for their regional counterparts due to their recognizable, coarse fabric. It is likely that the Mudstone and Micrite lekanai represent imitations of other lekanai forms that were contemporarily present in the sanctuary.

6.3.4. Micrite and Quartz Fabric

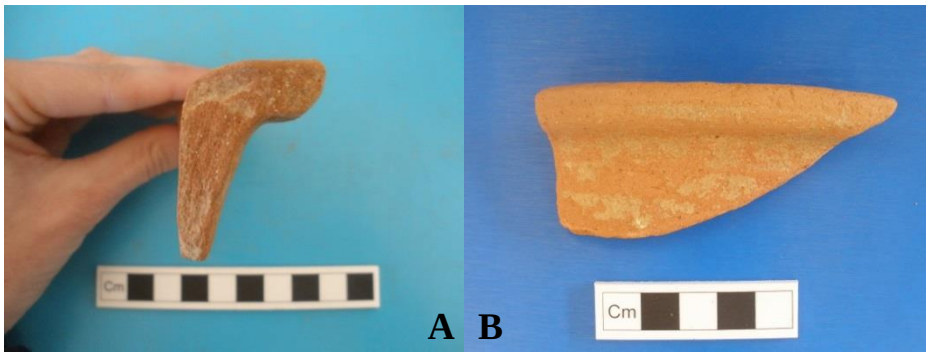

Figure 6.12: Lekanai from Nemea in Micrite and Quartz fabric. (A): Flat, projecting rim in profile (Sample 50); (B): Flat, projecting rim from exterior (Sample 192).

The two lekanai in Micrite and Quartz fabric do not have any petrographic parallels.[61] The fabric is not easily recognizable in hand specimen, as the two samples had completely different fabric descriptions. Sample 50 was described as hard and sandy, while sample 192 was described as soft and micaceous with common white and orange inclusions. However, they are petrographically identical. They are rather uncharacteristic in shape, with both examples having flat, projecting rims with little wall preserved (Figure 6.12). Sample 192 has a fugitive red slip on the interior. Both lekanai are similar to

[61] Samples 50, 192

those lekanai with flat, projecting rims from Lerna (Figure 6.10-A), as well as those from Corinth (Figure 6.8-A). When this information is coupled with the undiagnostic nature of the inclusions, it is impossible to hypothesize where these vessels were produced.

6.3.5. Mudstone and Mudstone Breccia Fabric

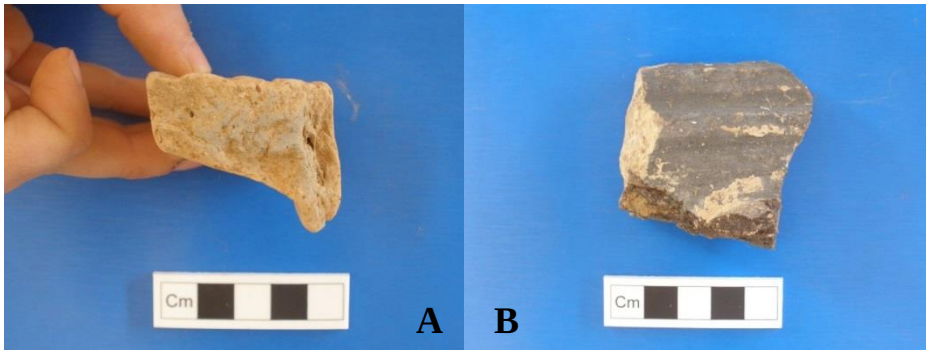

Figure 6.13: Lekanai from Nemea in Mudstone and Mudstone Breccia fabric. (A): Thickened, flat, projecting rim, with ridges on top of rim, profile view (Sample 63); (B): Thickened, flat, projecting rim, top view of rim (Sample 214).

The two Mudstone and Mudstone Breccia lekanai samples represent the same form and style.[62] Both samples have a thickened, flat, projecting rim with wheel-made ridges on the top of the flat top of rim. While they are a petrographic match, it was unclear macroscopically if the two sherds are related, due to the highly burnt nature of sample 214. Sample 63 was slightly powdery, light pinkish buff fabric with common red to brown angular inclusions. As seen in Figure 6.13, sample 214 was too burnt to ascertain any helpful information from the fabric. The thick rim with ridges find parallels in the South Stoa Drain 1971-1, although the fabric of the comparative vessel is unknown (*Corinth* 7.6:#V-25). Sample 63 dates broadly to the 4th century B.C., while sample 214 is dated to the late 4th-early 3rd centuries B.C., based on the lots that the lekanai were found in.

[62] Samples 63, 214

As discussed in Chapter 5, the Mudstone and Mudstone Breccia fabric finds parallels with Corinthian Type A fabric. Whitbread demonstrated that this fabric was used to produce Type A amphoras, in addition to blisterware (Whitbread1995:306-308). However, his analysis of a small selection of lekanai demonstrated that they were produced in his Type A' Class 1 and Class 2 fabrics, which is not related to the Type A fabric (Whitbread 1995:301). This small study included twenty-three samples which were originally part of Richard Jones' chemical study of 4th century B.C. coarsewares. As a result, neither Jones nor Whitbread publish a list of sample numbers and results with the shapes taken into account, beyond stating that the samples included hydriai, lekanai, oinochoai, and other contemporary forms (Jones 1986:178, 182; Whitbread 1995:301). Thus, it is impossible to compare the Corinth samples with those from Nemea, in terms of shape. Given the large range of lekanai produced in Corinth, as demonstrated above, it is possible that several workshops were producing this shape. The Greek Tile Works, a Corinthian ceramic workshop, produced a small range of wheel-made lekanai, but the published examples pre-date the Nemean ones by almost a century (Merker 2006:51-52). Since the Mudstone and Mudstone Breccia fabric is a match with the Corinthian Type A fabric, then the lekanai, as well as the other shapes from Nemea found in the fabric, offer new insights into the repertoire of the Type A workshops.

6.3.6. Micrite in Red Matrix

Figure 6.14: Flat, projecting rim of lekane from Nemea in Micrite in Red Matrix fabric (Sample 62).

This single sample (62) is a lekane with a flat, projecting rim with sloping wall. It is very similar to the other flat, projecting rim types lekanai discussed above, and dates to the late 4th century B.C. based on the lot from which it came. The light red fabric is hard with a slightly powdery feel, with common white and red inclusions. The fabric is very uncharacteristic, and does not stand out as dramatically different to several others in this study, such as the Chert and Quartz fabric. The undiagnostic nature of the fabric on both macroscopic and petrographic levels, as well as the common form, does not allow for speculation relating to provenance.

6.4. Jugs

Fabric Type	**Total Samples**
Chert and Quartz	29
Fine Quartz and Mica	10
Intermediate Metamorphic Rocks	2
Mudstone and Micrite	1
Large, Angular Chert	1
Intermediate Metamorphic Rocks and Clay Pellets	1
Total Samples	**44**

Table 6.4: Jugs by fabric type.

The jugs account for the third largest group of vessels in the study with forty-four samples. These samples broke down into six petrographic fabric

groups (Table 6.4). Jugs, often referred to as pitchers, can be used for both the serving and storage of liquids. They are abundant at Nemea, in coarse and occasionally finewares. However, the fineware versions, such as oinochoai and olpai, are rare in the Nemean assemblages used in this study. It seems that there was a clear preference for coarse, undecorated jugs in the areas studied, which perhaps relates to their use within the sanctuary. If the fine, painted wares are used specifically for serving, the coarseware examples may have been used for other purposes, such as food preparation, storage, as well as industrial uses in the Kiln Complex. Edwards suggests that these vessels may have been used for drawing water out of wells, or transporting the water from the well. He even speculates that the indented base on many jugs may have been designed for placing the jug on the head for ease of transport (*Corinth* 7.3:141, Figure 6.15). In any case, a coarseware jug was a versatile addition to any kitchen or workshop, with a great variety of functions that made it very useful.

6.4.1. Chert and Quartz

As discussed above in relation to the cooking pots and lekanai, the Chert and Quartz fabric is the dominant cooking ware fabric at both Nemea and Corinth, with all samples from Nemea finding parallels at Corinth.[63] The Chert and Quartz fabric jugs are no different. The twenty-nine samples all find parallels with the Corinthian jug, also called the round-mouth pitcher by Edwards (*Corinth* 7.3:139-142). Although the Chert and Quartz fabric is a cooking ware, the jug is not a shape usually used in the cooking of food, or more simply, a shape put over a fire. Despite this, the Chert and Quartz jugs are the most

[63] Nemea samples 37, 40, 46, , 64, 66, 68, 78, 101, 103, 155,157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 169, 170, 171, 172, 173, 174, 175, 177

abundant jug type at Nemea, and they are considered to be a cooking ware based on their fabric, not their use.

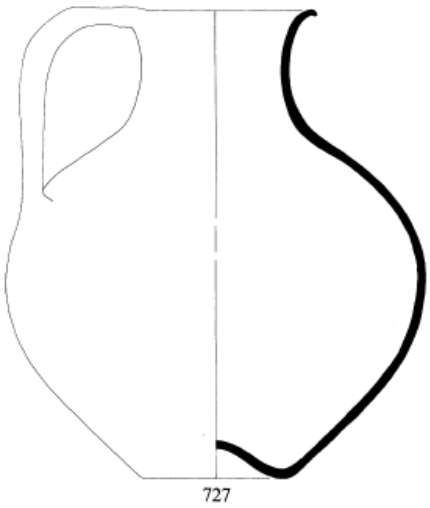

Figure 6.15: Round-mouth jug with indented base. From *Corinth* 7.3, #727, Plate 34. Courtesy of the American School of Classical Studies, Excavations at Corinth.

The Chert and Quartz jugs from Nemea are exactly the same as the round-mouth jug from Corinth in both petrographic fabric and shape (Figure 6.15). They are characterised by a widening mouth, a single, vertical handle that attaches at the rim and shoulder, and, in most cases, an indented base. The rim shape varies slightly, with the majority being plain, outturned, flat rims (Figure 6.16). Rolled rims, thickened rolled rims and rounded outturned rims are all present in small quantities.[64] There is one example with an everted and squared rim.[65] Several examples have grooved striations on the exterior, just below the rim.[66] These slight differences in rim shape do not seem to be significant. It is likely that these vessels were made quickly on the wheel, with the plain outturned rim being the easiest and quickest style to make, as it required no additional forming after the mouth of the vessel has been slightly outturned. If this is the

[64] Rolled rim: Sample 158; thickened rolled rim: Sample 161; rounded, outturned rim: Sample 155
[65] Sample 37
[66] Samples 64, 174

case, then the small discrepancies in rim forms are to be expected. This variation is also apparent in the Corinthian parallels, where the rims slightly differ from example to example (*Corinth* 7.3:#722-745).

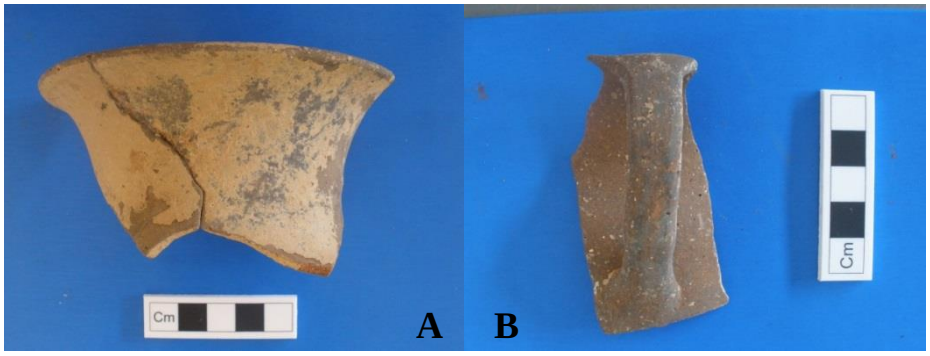

Figure 6.16: Jugs from Nemea in Chert and Quartz fabric. (A): Outturned rim (Sample 163); (B): Rim with complete handle attached at shoulder (Sample 160).

The Nemean examples have a range of dates based on their lots, spanning the late 4th- mid 2nd centuries B.C., with the greatest majority belonging to the 3rd century. This matches the Corinthian chronologies well. Edwards dated the form from ca. 450-146 B.C., a wide range within which he focussed on rim styles as chronological indicators (*Corinth* 7.3:139-141). The newly re-dated Corinthian material from the comparative study dates the pitchers from Corinth to the late 4th century- ca. 75 B.C., with the majority of the material dating to the 3rd and early 2nd centuries B.C.[67] This comparative material was an exact match to the Nemean jugs on typological, macroscopic, and petrographic grounds, strongly indicating that the material from Corinth and Nemea is the same.

6.4.2. Fine Quartz and Mica

The ten Fine Quartz and Mica fabric jugs in this study are unusual, as they are the first group of proposed "Argive" jugs to be published.[68] While the fabric itself is a confirmed petrographic match with Fine Quartz and Micrite fabric from

[67] Corinth samples 2013/13, 15, 17, 19, 30, 69, 70, 79, 93
[68] Samples 69, 73, 74, 76, 80, 88, 90, 91, 153, 176

Lerna, no coarseware jugs were found in the Hellenistic assemblages at Lerna.[69] Given the dearth of Hellenistic pottery publications from the Argolid, it is difficult to find typological comparanda.

Figure 6.17: Jug rims from Nemea in Fine Quartz and Mica fabric. (A): Collared rim and neck, profile view (Sample 74); (B): Rounded rim with exterior wheel-marks (Sample 69); (C): Flat base, exterior view (Sample 76); (D): Plain, outturned rim, exterior view (Sample 73).

The Nemean samples are characterised by a variety of rim types. The jugs most likely had flat bases, based on the one example present (Sample 76, Figure 6.17-C). Only one handle was preserved, which is most unusual with an indented cylindrical rotelle decorating the top (Sample 153, Figure 6.18-B). The rims present include collared rims, plain outturned rims, rounded "folded over" style rims, flaring rims, and plain rounded rims (Figure 6.17). The forms are similar to those found at Corinth (Section 6.4.1), with the exception of the "folded over" style rim (Sample 91, Figure 6.18-A). No comparative examples

[69] See *Lerna* VIII:259, see above discussion of Fine and Quartz fabric in lekanai section

of these styles of rims could be found from any site, with the exception of one flaring rim comparative.

This possible comparative of the flaring jug rim is found at Pyrgouthi. The rim, described as a flaring rim in a reddish-yellow fabric with mica and lime, is a possible match in both form and fabric (Hjohlman *et al*. 2005:67, #176). The rim is described as later Hellenistic "due to the qualities in the fabric" (Hjohlman *et al*. 2005:68). The particular qualities in the fabric are not explained. If this rim is indeed a match with the Nemean samples, then the practice of dating the sherds based on the fabric in this particular case is unwarranted. Petrographic analysis of the Fine Quartz and Mica fabric shows no discernible change in the fabric, and the Nemean samples date from the early 3rd to mid-2nd centuries B.C. Fabric analysis aside, it is possible that the Nemean samples do match the date of this Pyrgouthi example.

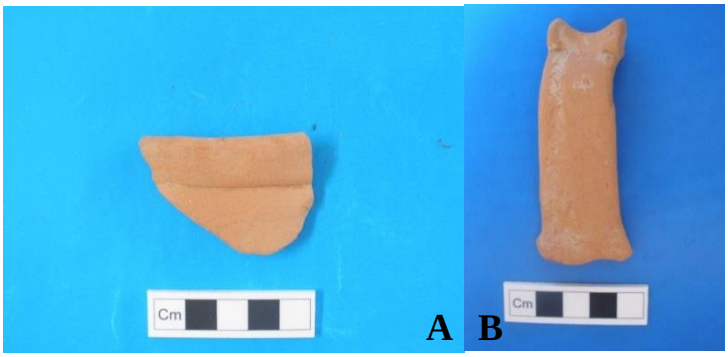

Figure 6.18: Jugs from Nemea in Fine Quartz and Mica fabric. (A): Straight, "folded over" rim (Sample 91); (B): Strap handle with rotelle style decoration, Sample 153.

As discussed above, the Fine Quartz and Mica lekanai proved to be significant because of the date range they presented, the jugs in this fabric are equally, if not more important, as they represent the first set of jugs in this fabric to be published. They demonstrate that the workshop or production centre that produced this fabric may have a greater repertoire than that represented at either Nemea or Lerna individually. In order to fully understand the range of the Fine

Quartz and Mica fabric, in both chronological and typological terms, this fabric must be investigated across the Argolid and Corinthia, particularly at Argive sites such as Argos and Mycenae. As the fabric is present at both Lerna and Nemea, the contemporary sites located in between the two are likely sources to find more examples of Fine Quartz and Mica fabric vessels.

6.4.3. Intermediate Grade Metamorphic Rocks

There are two jug samples present in the Intermediate Metamorphic Rocks fabric: a ring foot base and a vertical strap handle with rotelle attachment at top.[70] Both samples are characterized macroscopically by their reddish-yellow to brown, hard, gritty fabric, the same as all other Intermediate Metamorphic Rock fabric vessels present in this study.

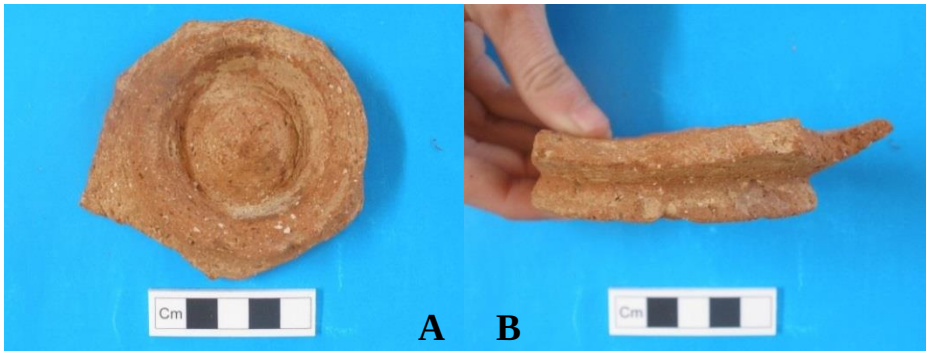

Figure 6.19: Ring foot and partial globular body of jug from Nemea in Intermediate Grade Metamorphic Rocks fabric. (A): exterior view; (B): profile view (Sample 75).

The ring foot base is not particularly diagnostic, as it is unknown what type of handle and rim were attached (Figure 6.19). It is dated to the late 3rd- mid 2nd century B.C. based on the lots from which it came. Although there are several jug types with ring feet at the Athenian Agora, none are in the Schist cooking fabric, which has parallels with the Nemean Intermediate Metamorphic Rocks fabric. Rotroff mentions a jug style with disk foot in the coarser Pink Temper fabric, concentrated in the first half of the 2nd century B.C., and these

[70] Samples 75, 145

could possibly be a good comparative (*Agora* 33:75). However, the Nemean example has a nipple-like projection on the bottom of the exterior of the base, which found no parallels with Athenian Agora examples.

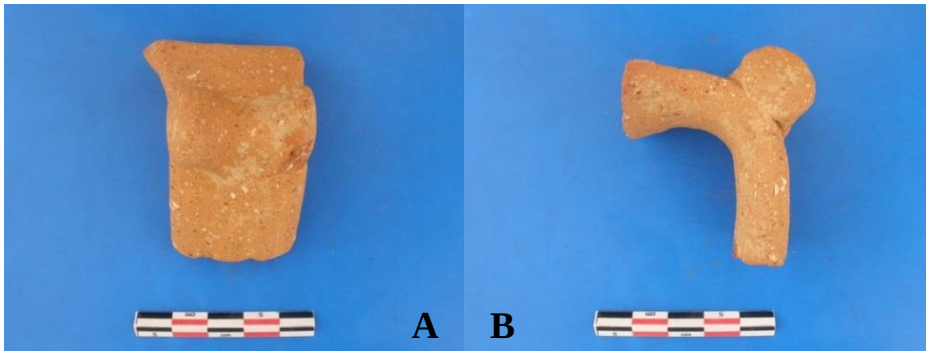

Figure 6.20: Vertical strap handle with indented rotelle decoration from Nemea in Intermediate Grade Metamorphic Rocks fabric . (A): top view; (B): profile view (Sample 256).

The handle with rotelle attachment does not find any parallels in the Athenian Agora as well (6.20). Similar to the rotelle handle in the Fine Quartz and Mica fabric (above), no vessels with this type of decorated handles are known. This example, dated loosely to the 3rd-2nd centuries B.C., is the only known specimen in the Intermediate Metamorphic Rock fabric. While it is very diagnostic, not a great deal can be said without comparative material. It is very interesting that such an unusual decoration is found on two handles in two different fabrics in the sanctuary. It is possible that the rotelle signifies that these vessels are skeuomorphs of metal vessels, which were generally fancier with attached and/or ornate decoration (*Agora* 29:12; Rotroff 1982).

It is interesting that there are not any jugs in the Athenian Schist cooking fabric published in *Agora* 33. It could be that the vessels produced in the Intermediate Metamorphic Rock fabric represent a workshop in Attica, which perhaps did not distribute its ceramics in the Agora. It may also be possible that

several of Rotroff's macroscopic fabrics represent the same petrographic fabric.[71] Further study of both Intermediate Metamorphic Rock and Schist cooking fabric vessels must take place in order to determine if they are petrographically related.

6.4.4. Mudstone and Micrite

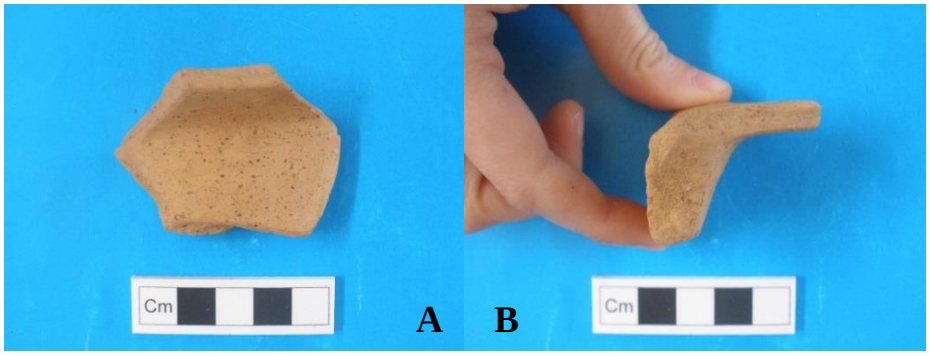

Figure 6.21: Jug from Nemea with flat, outturned rim in Mudstone and Micrite fabric. (A): exterior view; (B): profile view (Sample 72).

The single jug sample present in the Mudstone and Micrite fabric is a rim sherd with a flat, projecting rim (72). The sample dates to around 300 B.C., based on the deposit from which it came. The very soft, pink fabric has abundant angular red and black inclusions with small rounded grey inclusions. The flat, projecting style rim is less common on jugs than it is on lekanai, and there are no parallels for this vessel at Nemea or other sites. Mudstone and Micrite fabric jugs are not common in assemblages at Nemea, suggesting that they were not popular vessels to make in the Kiln Complex, or, simply they were thrown away at the time of excavation.

[71] James Stoltman conducted quantitative petrographic analysis on thirteen samples from the Agora. He divided these into four groups—Household-1 and 2, and Cooking-1 and 2. All samples were tempered with quartzite, but does not elaborate further beyond provided ternary diagrams of matrix, sand, silt, and temper in the body of the samples. The quantitative results are not suitable for comparison with the qualitative results in this study, thus, it is not possible to speculate what might be similar or different (*Agora* 33: Appendix D).

6.4.5. Angular Chert, Limestone, and Quartz

Figure 6.22: Partial neck and body of jug from Nemea in Angular Chert, Limestone, and Quartz fabric, exterior view (Sample 154).

The only sample in the Angular Chert. Limestone, and Quartz fabric is an undiagnostic neck and body sherd (154). The fabric is macroscopically similar to that of the Chert and Quartz fabric jugs. It is a hard, gritty, red-grey fabric with common white, grey, and black inclusions. The sherd most likely comes from a globular jug, similar to those described in the Chert and Quartz fabric jugs section above. The sample dates to the mid-3rd century B.C. based on the lot from which it came.

6.4.6. Intermediate Grade Metamorphic Rocks and Clay Pellets

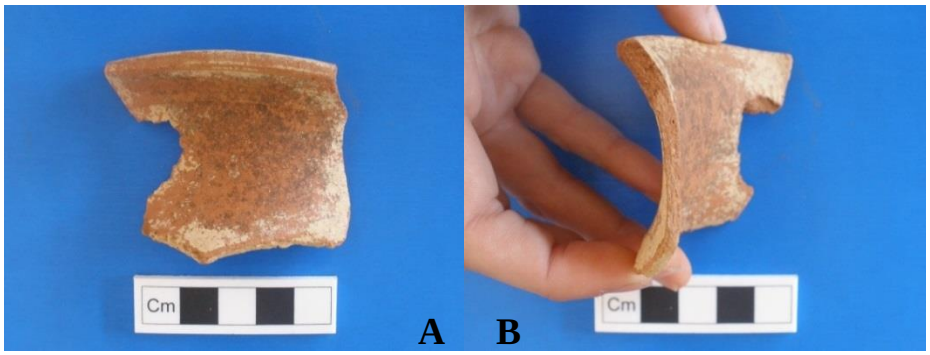

Figure 6.23: Outturned, rolled rim of jug from Nemea in Intermediate Grade Metamorphic Rocks and Clay Pellets fabric with exterior wheelmarks, (A): exterior view, (B): profile view (Sample 168).

This single example of the Intermediate Metamorphic Rocks and Clay pellets fabric is an outturned, rolled rim of a jug with partially preserved neck (Sample 168, Figure 6.23). It is dated to the late 4th-early 3rd century B.C. based

on the lot from which it came. This rim is not particularly characteristic or diagnostic, much like the fabric, which is discussed in Chapter 5. As this is the only example of both the fabric and the shape in this study, little can be said about the sample and its provenance is unknown.

6.5. Pithoi

Fabric Type	**Total Samples**
Mudstone and Micrite	7
Mudstone and Mudstone Breccia	5
Mudstone in Red Micaceous Matrix	1
Metamorphosed Limestone	1
Total Samples	**14**

Table 6.5: Pithoi by fabric type.

There are fourteen pithoi in this study, represented by four fabrics (Table 6.5). A pithos is a large, closed vessel used for storage. In some instances a pithos can be up to a meter high, and at least half meter in diameter. Often they have a lid. Much like the lekane, this shape is still popular in modern Greece and it used in so many ways that it is impossible to pinpoint one particular use, beyond general storage. Classical Attic pithoi were used to store wine, honey, olive oil, water, fruits and cereals, salted meat and fish, and all other kinds of liquids and solids (Giannopoulou 2010:41). In the Hellenistic period, it was common to set pithoi almost completely in the ground, with only the rims exposed. This allowed for the collection of rain water, and also the storage of many commodities (Giannopoulou 2010:42-43).

Pithoi were practical objects that took a great deal of work to make, and were surely difficult to transport. Pithoi are not very common in Nemean assemblages, although this may be the result of the practice of discarding of coarsewares during excavation rather than vessel use and preference of shape in

antiquity. Those examples that remain are a varied group in terms of style, decoration and fabric.

6.5.1. Mudstone and Micrite

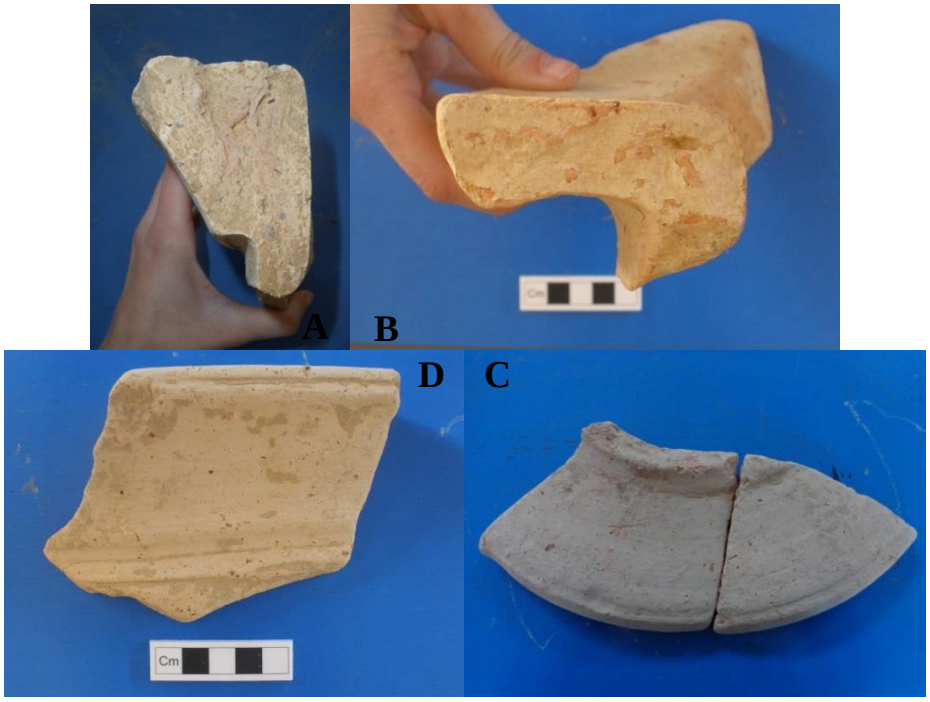

Figure 6.24: Pithoi from Nemea in Mudstone and Micrite fabric. (A): Collared rim, profile view (Sample 81); (B): Flat, projecting rim, profile view (Sample 217); (C): Pithos lid, exterior view (Sample 215); (D): Triangular rim, profile view (Sample 212).

The seven pithos samples in the Mudstone and Micrite fabric represent various rim forms, with one example of a lid (Figure 6.24).[72] The rim forms include collared; flat, projecting; and triangular. In some cases, wheel-marks or grooves are used to decorate the exterior of the rim, as seen in Sample 212 (Figure 6.25-D). The single example of a pithos lid represents a shape previously unknown in the Northeast Peloponnese. It is round, concave and upcurving, with the centre upturned, perhaps forming a handle or knob. This is very different from the few known examples of Hellenistic pithoi lids, which are completely flat (*Agora* 33:#175-177). The lid is preserved enough that it was

[72] Samples 81, 84, 85, 212, 215, 216, 217

possible to try resting the lid on a few more complete rims. It appears that the lid might be a perfect fit with rim sample 217 (Figure 6.25-B,C). Both the lid and rim come from the same deposit, strengthening this argument.[73] The fabrics appeared to be slightly different, but the petrographic study demonstrated that the fabrics are identical, and that colour variation is the result of differences in firing regimes and temperatures, rather than fabric recipes, as discussed in Chapter 5.

Unfortunately there were no preserved bodies or bases, so it is not possible to speculate what the complete vessels may have looked like. All of the samples date to the late 4th-early/mid 3rd centuries B.C. based on the lots from which they came, in line with the dates of the Kiln Complex. These pithoi represent locally produced vessels. Due to the lack of vessel bodies, it is not possible to comment on how these pithoi were made. It appears that the rims and lid were most likely wheel-thrown. It is possible that the bodies were slab built or coiled built, with wheel-thrown rims added at the end, but this is only a hypothesis based on typical pithos manufacturing methods (Rice 1987:125-128).

6.5.2. Mudstone and Mudstone Breccia

Figure 6.25: Pithoi from Nemea in Mudstone and Mudstone Breccia fabric. (A): Pithos body sherd with horizontal ridging and black slip (Sample 210); (B): Pithos body sherd with horizontal ridging and wavy line in relief (Sample 77).

[73] Square K20, lot 10

The five samples of Mudstone and Mudstone Breccia fabric pithoi represent four body sherds and one rim (Figure 6.25).[74] These examples are typical of the Corinthian Type A fabric, outlined by Whitbread in his study of Type A amphoras and blisterware (1995:268,269,305-308). The hard, gritty fabric can be pink, light red, and grey, most commonly a combination of the different colours sandwiched in layers. It is very recognizable in hand specimen and is very reminiscent of common Corinthian blisterware vessels, such as aryballoi and oinochoai in fabric colour and texture. However, the pithoi are obviously a great deal thicker than the blisterware, as are the Type A amphoras.

The ridging and moulded relief decoration found on the Nemean samples is fairly common in Corinthian pithoi, like an almost identical example from the Greek Tile Works, dating to ca. 420 B.C. (Merker 2006:106-108, #227), which has the same decoration and fabric, based on her macroscopic description. The nipple like extrusion on sample 213 is unusual, and no parallels have been found. The Nemean examples date to the 4th century, with sample 77 dating as late as the late 3rd-mid 2nd centuries B.C. based on the dates of their lots. The Corinthian Type A amphoras are dated from the early 7th century until 300 B.C. (Whitbread 1995:256), but the Nemean samples in this fabric suggest that this fabric may have been produced as late as the mid-2nd century B.C.

[74] Samples 77, 83, 86, 210, 213

6.5.3. Mudstone in Red Micaceous Matrix

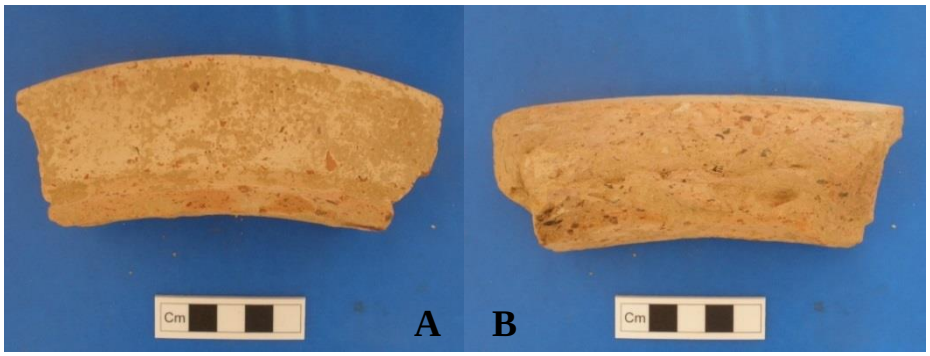

Figure 6.26: Triangular pithos rim from Nemea in Mudstone in Red Micaceous Matrix fabric. (A): exterior view; (B): interior view (Sample 200).

The single example in the Mudstone in Red Micaceous Matrix fabric is a triangular pithos rim (Sample 200, Figure 6.26). It is dated to the late 3rd- mid 2nd century B.C. based on its lot. This fabric is petrographically the same as Whitbread's Type B, Class 4 fabric, as well as being a coarser version of the Corinthian Fine Quartz and Mica fabric, as discussed in Chapter 5. The fabric also finds petrographic matches with two contemporary pithoi from the Nemea Valley Archaeological Project.[75] This fabric is very similar to the Mudstone and Micrite fabric on a macroscopic level, even with a hand lens. It would be difficult to distinguish the two fabrics without petrographic analysis. Whitbread studied this fabric, but he only takes Type B amphoras into account in his analysis and discussion (1995:278-285). He states that the Type B, Class 4 fabric is restricted to the late 4th and 3rd centuries B.C., which agrees with both the Nemean and NVAP samples (1995:278). Based on these comparative studies, it seems likely that the production centre associated with Corinthian Type B, Class 4 amphoras was also producing pithoi, which were then distributed around Nemea.

[75] NVAP Samples 11/11, 12

6.5.4. Metamorphosed Limestone

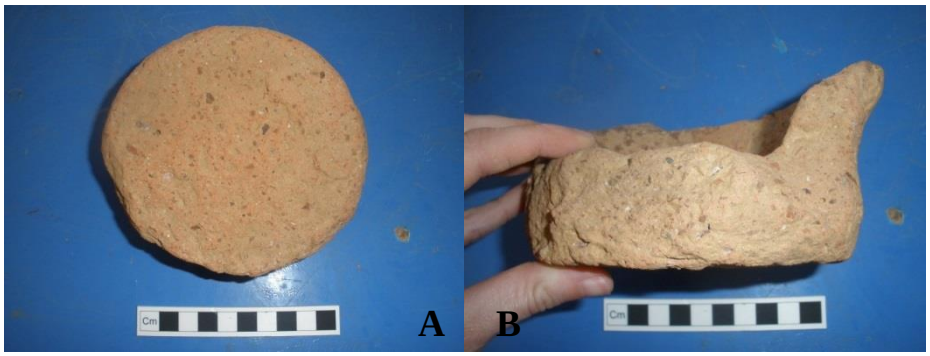

Figure 6.27: Round button-style pithos base from Nemea in Metamorphosed Limestone fabric. (A): bottom view; (B): profile view (Sample 82).

This single example of the Metamorphosed Limestone fabric is also the only pithos base in the study (Figure 6.27). It is a button base style toe. The body of the pithos would have greatly restricted itself at the bottom to form the base, with the toe slightly splayed. The fabric is similar to the other coarse, mudstone-rich pithos fabrics discussed above, and thus is difficult to identify in hand specimen. It is characterised as a soft, powdery fabric with abundant coarse inclusions, including angular red and black inclusions and subangular to rounded white to yellow inclusions. Due to the undiagnostic nature of both the shape and macroscopic fabric, coupled with the inability to provenance the fabric petrographically, nothing else can be said of this sample.

6.6. Mortaria

Fabric Type	**Total Samples**
Mudstone and Micrite	8
Fine Quartz and Mica	3
Micrite and Quartz	1
Chert and Clay Pellets	1
Total Samples	**13**

Table 6.6: Mortaria by fabric group.

The thirteen mortar samples are divided into four fabric groups (Table 6.6). Mortars, or mortaria, are shallow, round vessels, similar to bowls. They usually differ from lekanai or coarseware bowls by their most characteristic

feature, heavy gritting on the interior. Mortaria may have spouts built into the rims, and lugs or handles for ease of handling. While rim styles change over time, the most common at Nemea is the peaked rim style, featuring "the flat disk foot, a rim rising to a peak with a rounded profile of the outer face, and a straight or concave wall" (Villing and Pemberton 2009:582).

Mortaria are often associated with having a specific function such as grinding, rubbing, mashing or mixing (Villing and Pemberton 2009:602). It is most likely that a pestle was used, as many mortaria show wear from grinding or rubbing in the centres of the interior. The large grits adhered to the surface would have aided the pestle in the grinding. Other functions such as cheese making and measuring out grain rations have been proposed as well, but ruled out based on wear patterns and residues on the interiors of the mortaria (Villing and Pemberton 2009:603). Grinding seems to be the most obvious function that can be seen through wear patterns, and it can be assumed that mortaria would have been very helpful in grinding grain and spices, and perhaps even pigments. Mortaria are regarded as part of the standard repertoire of Classical and Hellenistic kitchens, alongside common shapes such as cooking pots, jugs and cups (Villing and Pemberton 2009:558). The Nemean assemblages agree with this, as mortaria are common.

6.6.1. Mudstone and Micrite

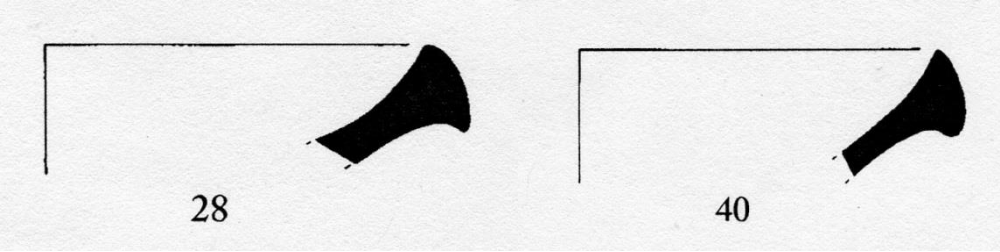

Figure 6.28: Peaked rim mortaria profiles. From Villing and Pemberton 2009:585-587. Left: #28, Right: #40. Courtesy of the American School of Classical Studies, Corinth Excavations.

The eight Mudstone and Micrite samples are all represented by peaked rim profiles (Figure 6.28).[76] Seven of the samples are of the typical peaked rim variety, while one sample (93) is of a more rounded variety, although still regarded as a peaked rim (Figure 6.29).[77] No samples have preserved bases, so it is unknown what style of base was associated with the peaked rim style. However, it is likely that the peaked rim mortar at Nemea had a flat disk foot, like the Corinthian comparanda, as they are very similar in every other way (Villing and Pemberton 2009:582). One sample has part of the handle preserved with a protruding lug (sample 94). Four samples have slips of various kinds. Sample 93 has exterior black banding, with samples 96 and 98 have all over black slips (Figure 6.29-D). Sample 178 is the most unusual, with a thick red slip on in the interior (Figure 6.29-C). No other interior slipped mortaria are known outside of Nemea, and this may be the first published example.[78]

[76] Samples 92, 93, 94, 96, 97, 98, 178, 179
[77] See Villing and Pemberton 2009:585, #34 for reference, this is the closest comparative found.
[78] In 2011, I discussed this sample with Pemberton, who told me that she had never seen or heard of a mortar with interior slip (per. Comm.)

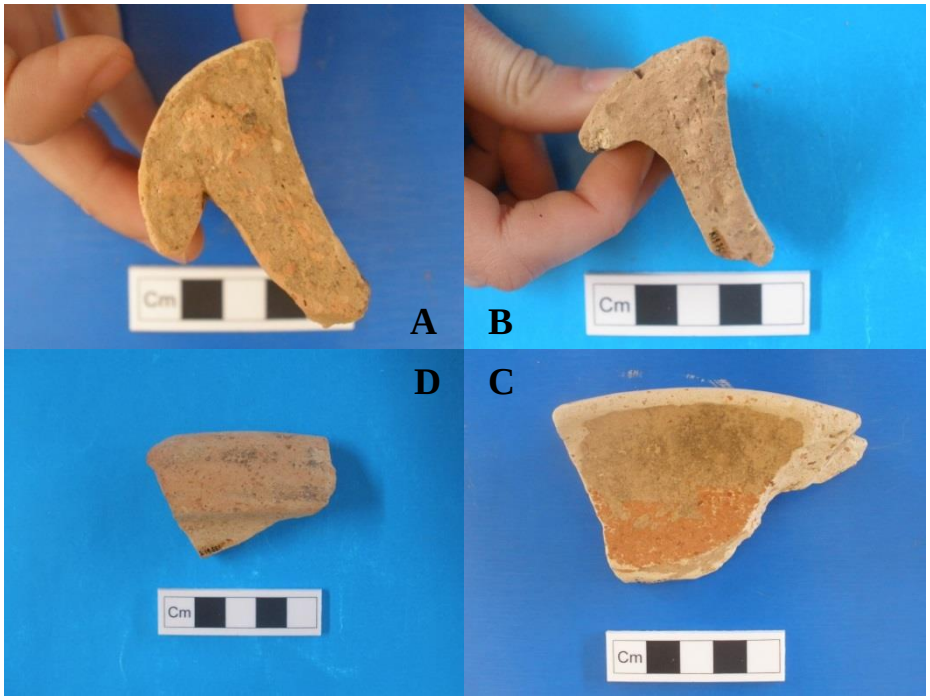

Figure 6.29: Mortaria from Nemea in Mudstone and Micrite fabric. (A): Peaked rim, profile view (Sample 179); (B): Peaked rim, profile view (Sample 92); (C): Interior with thick, red slip (Sample 178); (D:) Rounded rim with black slip banding on exterior (Sample 93).

As discussed above in relation to jugs, lekanai, and pithoi, the Mudstone and Micrite fabric is easily recognizable, but also problematic due to variation in colour. As there are several other fabrics with similar macroscopic appearances, it is difficult to pinpoint Mudstone and Micrite products solely through examination in hand specimen.[79] The fabric is characterized as reddish yellow to light brown, ranging from slightly powdery to hard, with common to abundant angular red and black inclusions with common rounded yellow to white inclusions. The samples appear to be wheel-made rather than mould-made.

The samples date to a small range between the 4th and 3rd centuries B.C., with sample 92 going as late as perhaps the late 3rd century B.C. based on their lots. Villing and Pemberton (2009:582) traced the peaked rim form at Corinth

[79] As discussed above, several fabrics have similar macroscopic appearances to the Mudstone and Micrite fabric, including the Mudstone in Red Micaceous Matrix, Metamorphosed Limestone, Micrite and Quartz, Mudstone and Mudstone Breccia, and Micrite in Red Matrix fabrics.

from the mid-late 5th to mid-3rd centuries B.C., which agree with the Nemean dates. However, these Nemean mortaria are attributed to the Kiln Complex due to their fabric. It seems likely that the Nemean kilns were reproducing well known contemporary Corinthian shapes. It is interesting to note that all of the mortaria are slightly different in rim style, suggesting that production was not standardised. It is possible that they were produced on an as-needed basis. Of the eight samples, four came from the houses, suggesting domestic activity.[80] The other four are from a square associated with industrial activities, including bronze casting and the marble sculpting and carving.[81] Thus, it may be possible that the Nemean mortaria were made for both domestic and industrial use.

6.6.2. Fine Quartz and Mica

The three Fine Quartz and Mica samples represent three different types of rims (Figure 6.30).[82] Sample 89 is a folded rim with an indented strip along the exterior, presumably used as a type of handle (Figure 6.30-A,B). Sample 99 is a rounded rim with attached piecrust handle (Figure 6.30-D), very similar to a mortar from Lerna (*Lerna* VIII:#856). Sample 180 is a peaked rim with bolster spool type handle (Figure 6.30-C), and appears to be almost identical in shape to a Corinthian example (Villing and Pemberton:#28, #29).

[80] Samples 92 93, 789, 179, from squares K19, K20, and L20.
[81] Samples 94, 96, 97, 98, all from square K17.
[82] Samples 89, 99, 190

Figure 6.30: Mortaria from Nemea in Fine Quartz and Mica fabric. (A): Folded rim with indented strip, profile view and (B): exterior view (Sample 89); (C): Peaked rim with bolster spool type handle (Sample 180); (D): Rounded rim with piecrust handle (Sample 99).

Samples 89 and 99 have fugitive red slips on the exterior, while sample 180 has no slip. The fabric is reddish-yellow, and can range from slightly soft and powdery to hard, with common small rounded white and translucent white inclusions and small rounded sparkling inclusions in fabric, interior surface covered with red-black angular inclusions. This description is very similar to the macroscopic fabrics of other vessels found in the Fine Quartz and Mica fabric, especially the jugs. Samples 180 and 89 date to the late 4th- early 3rd centuries B.C. while sample 99 dates to the late 3rd century B.C. based on the lots from which they came.

Although this fabric is a petrographic match with Lerna's Fine Quartz and Micrite fabric, there are no contemporary mortars in that petrographic sample set. However, there are three mortaria dated to the 5th century B.C. in the same

fabric.[83] There is one Hellenistic mortar from Lerna, dated to the 3rd-2nd centuries B.C. that does share some stylistic similarities with sample 89 (*Lerna* VIII:431, #856, discussed above). This sample was not studied petrographically, but the fabrics seem to match on a macroscopic level based on the macroscopic study conducted at both sites.

The mortaria are another vessel type that can be added to the repertoire of the workshop producing the Fine Quartz and Mica fabric, similar to the jugs. It is apparent that the workshop was active over several centuries based on the Lerna studies and produced a great range of vessel types in the Fine Quartz and Mica fabric, which remained consistent for at least four centuries (*Lerna* VIII:529).

6.6.3. Micrite and Quartz

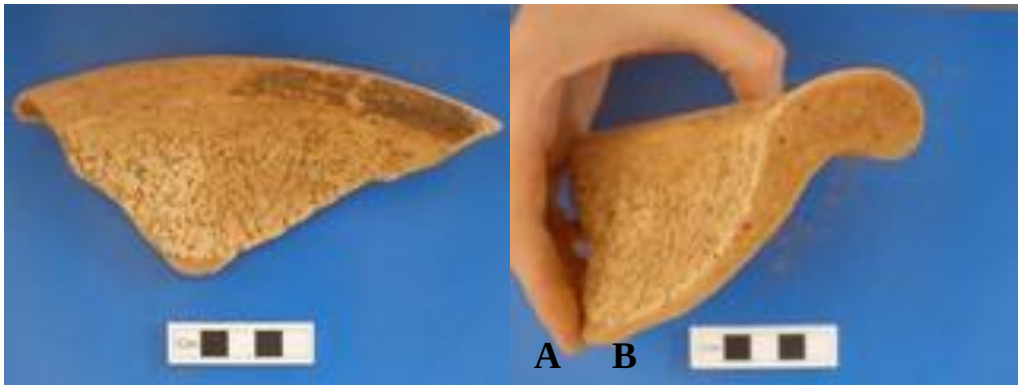

Figure 6.31: Projecting, slightly overhanding rim of mortar from Nemea in Micrite and Quartz fabric with interior black slip on rim. (A): exterior view, (B): profile view (Sample 100).

The Micrite and Quartz fabric mortar is characterised by a projecting, slightly overhanging rim, with a fugitive black slip along the interior of the rim (Figure 6.31).[84] It is similar in shape to a mortar from Lerna (*Lerna* VIII: #701), dated to ca. 200-175 B.C. The Nemean mortar is from a well, with the context dated to the late 4th century B.C. The coarse fabric was soft and slightly

[83] Lerna samples 11, 30, 61. Samples 11 and 61 date to 450-400 B.C., while sample 30 dates to 500-480 B.C.
[84] Sample 100

powdery, with common subrounded white and yellow inclusions, sparkling inclusions, and abundant black and red grits on the interior. As discussed in Chapter 5, the petrographic studies suggested that this fabric might be related to the Fine Quartz and Mica fabric. The Lerna studies demonstrated that there were two main fabrics attributed to Argive production by Erickson—the Quartz and Micrite fabric, which is petrographically identical to the Nemean Fine Quartz and Mica fabric, and the coarser Mudstone and Fine Quartz fabric (*Lerna* VIII:524). If the Nemean Micrite and Quartz fabric is indeed a coarser version of Lerna's Fine Quartz and Mica fabric, then one might expect it to resemble the Mudstone and Fine Quartz fabric. However, the two fabrics are not closely related, if related at all. Lerna's Mudstone and Fine Quartz fabric included three mortaria samples, whose fabrics were not petrographically related to the Micrite and Quartz sample.[85] The three Lerna samples are all dated to 450-400 B.C., admittedly earlier than the Nemean sample. The Mudstone and Fine Quartz fabric samples date from the 6th-4th centuries B.C. at Lerna (*Lerna* VIII:530).[86] It is unclear if the fabric ceases to be produced after the 4th century, or if there were simply no later samples taken at Lerna. If the fabric does not continue after the 4th century B.C., then it may be possible that the Micrite and Quartz fabric is perhaps a later development of the production centres associated with the Lerna fabrics.

[85] Lerna samples 16, 31, 45

[86] The Quartz and Micrite fabric spans the 9th-3rd centuries B.C., while the Mudstone and Fine Quartz fabric spans from the 6th-4th centuries B.C. (*Lerna* VIII:532).

6.6.4. Chert and Clay Pellets

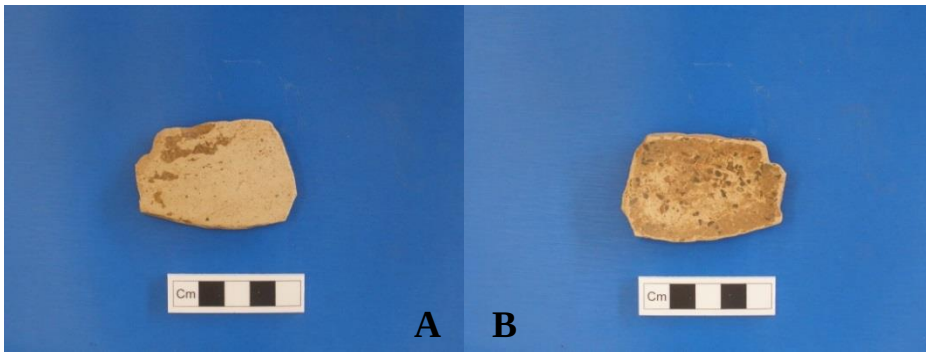

Figure 6.32: Mortar body sherd from Nemea in Chert and Clay Pellets fabric. (A): exterior view, (B): interior view (Sample 95).

Sample 95, the only sample in Chert and Clay Pellets fabric in this study, is an undiagnostic body sherd with interior grits (Figure 6.32). It was sampled because the very pale brown, powdery fabric resembled Corinthian Tile Fabric.[87] The sample is dated to the late 2nd century B.C., based soley on context. It can be macroscopically characterised as containing abundant red-orange to black angular inclusions on the interior, with common black and red angular inclusions throughout, and abundant irregular voids.

As previously discussed in Chapter 5, this fabric may be related to Corinthian Tile Fabric petrographically, but a great deal more work needs to be carried out before any definitive statements can be made. The macroscopic identification as Corinthian Tile Fabric strengthens the argument, but it is so difficult to macroscopically distinguish the Chert and Clay Pellets fabric from other coarse fabrics, such as the abundant Mudstone and Micrite fabric, that it is not feasible to expect ceramic specialists to accurately identify and separate between these coarseware fabrics in hand specimen, even with the aid of a hand lens. It appears that Corinthian Tile Fabric is dominant at Corinth with

[87] Corinthian Tile Fabric is well-known as the main fabric for tiles, as well as a variety of ceramic vessels and miscellanea such as architectural terracottas at Ancient Corinth (Whitbread 1995: 306 (also referred to as A' fabric), Merker 2006:17, Villing and Pemberton 2009:590-592).

surprisingly little variation discovered thus far (Whitbread 1995:306). The picture is more complex at Nemea, where it is apparent that the sanctuary was inundated with several common coarseware fabrics producing similar shapes, including mortaria.

6.7. Kraters

Fabric Type	Total Samples
Chert and Quartz	3
Total Samples	**3**

Table 6.7: Kraters by fabric group.

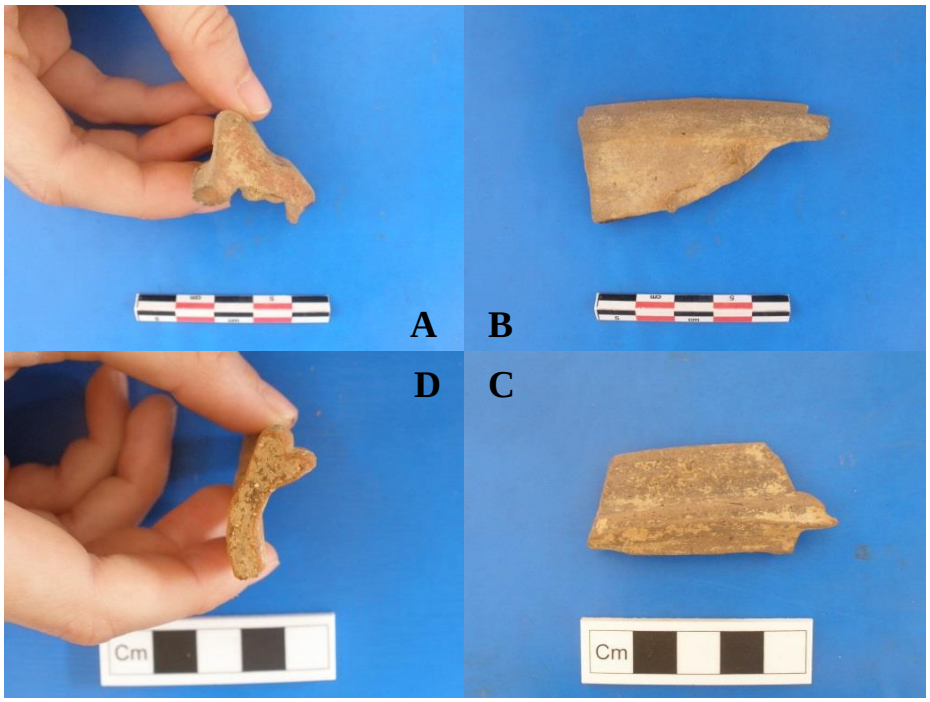

Figure 6.33: Kraters from Nemea in Chert and Quartz fabric. (A): Krater with dropped exterior ridge, profile view and (B): exterior views (Sample 115); (C): Raised lip krater with slightly incurved rim with interior groove, exterior dropped ledge, exterior view (Sample 113); (D): Concave, offset double rim of krater, profile view (Sample 114).

While many kraters and lekanai are very similar in shape, if not the same in function, allowing for the interchangeable terminology, these three samples are of a variety that could only be kraters, due to their complex rims. Thus, these samples were separated from the lekanai samples and are presented on their own. The three krater samples are all in the same fabric, Chert and Quartz (Table

6.7).[88] While all three samples are rims, they represent slightly different rim forms (Figure 6.33). Sample 113 is a raised lip form krater, with slightly incurved rim with interior groove, exterior dropped ledge and no body preserved (Figure 6.33-C). Sample 114 is a concave double rim offset from the body. No body is preserved, and there is a dull black slip on the interior (Figure 6.33-D). Sample 115 is a straight rim with dropped exterior ridge along exterior, with the neck curving out sharply (Figures 6.33-A,B). All three samples are dated to the 3rd-2nd centuries B.C., with sample 113 perhaps being late 3rd-mid 2nd centuries and sample 115 dating between mid-3rd-mid 2nd centuries B.C., based on their lots. The krater fabrics are consistent with other macroscopic descriptions of the Chert and Quartz fabric for other vessel types, such as chytrai, lopades, and jugs. The hard, gritty fabric varies from reddish-brown to grey with abundant to common white, grey and orange inclusions.

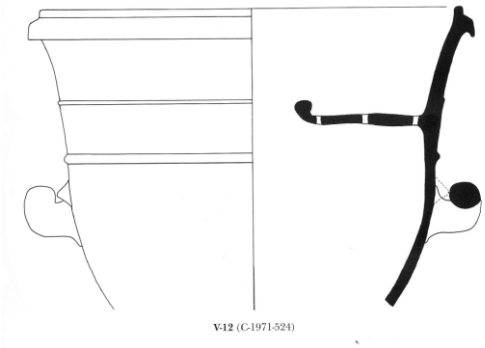

Figure 6.34: "Falaieff type" krater, from *Corinth* 7.6:#V-12. Courtesy of the American School of Classical Studies, Corinth Excavations.

These samples match the available comparanda in form, namely the Corinthian coarseware kraters. Pemberton and McPhee outline several types of coarseware kraters with these types of rims, demonstrating the range present, including the "Falaieff type" illustrated above (*Corinth* 7.6:136-137, Figure 6.34). Further, the Nemean samples are an exact petrographic match with four

[88] Samples 113, 114, 115

Corinthian krater samples, tentatively dated from ca. 215-75 B.C.[89] While it is not possible to assume that all three Nemean samples are related to the "Falaieff type," outlined by Pemberton and McPhee due to the very fragmentary nature of the sherds, it is clear from both the rim shapes and fabric that these kraters are indeed Corinthian.

6.8. Amphoras

Fabric Type	**Total Samples**
Mudstone and Mudstone Breccia	2
Total Samples	**2**

Table 6.8: Amphoras by fabric group.

The only two amphora samples in this study are both in the Mudstone and Mudstone Breccia fabric.[90] These samples include a collared rim and body sherd of two Corinthian A amphoras (Figure 6.35). The samples match Corinthian A amphoras in shape, macroscopic fabric, and petrographic fabric. Corinthian A amphoras have been well studied by Koehler, and petrographically studied by Whitbread (Koehler 1978, Vandiver and Koehler 1986, Whitbread 1995:268,269,305-308).

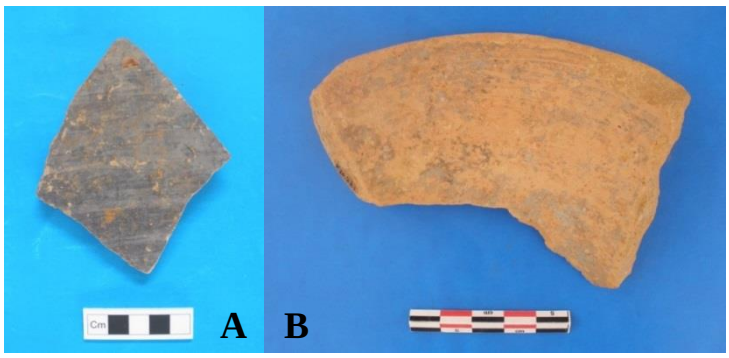

Figure 6.35: Amphoras from Nemea in Mudstone and Mudstone Breccia fabric. (A): Corinthian A amphora body sherd, exterior view (Sample 71); (B): Corinthian A amphora collar rim with mottled surface interior view (Sample 211).

[89] Corinth samples 2013/34, 76, 87, 88
[90] Samples 71, 211

Sample 71, the body sherd, has a dark grey exterior with orange core, similar to Corinthian example C-1871-393, as shown in Whitbread (1995:257, Plate 5.2; Figure 6.35-A). Sample 211 has a mottled orange and grey appearance, typical of Corinthian A amphoras (Vandiver and Koehler 1986:180, Figure 6.35-B). The surfaces of both sherds are very hard and vitrified, and the fabric was most likely impervious. Corinthian A amphoras were impermeable to water, oil, and wine, and thus well suited for transport, according to a study conducted by Vandiver and Koehler (1986:204, 208). Both Nemean samples date to the 3rd century B.C. based on their context and Corinthian comparanda.

Hellenistic amphoras are rare at Nemea, although Vandiver and Koehler mention an over-fired, bloated, and warped grey amphora found at the bottom of a well there (1986:208). They do not mention the specific context, or even square that this well is located in at Nemea, so it is unknown how this amphora relates to the examples in this study. Even though Corinthian A amphoras are well-documented, the study of the Nemean examples is important because it demonstrates that the fabric that these amphoras are produced in is exactly the same as a small range of lekanai and pithoi as well. While Whitbread showed that the Corinthian A fabric was related to blisterware, his coarseware samples reflected other fabric groups, unrelated to the A fabric (Whitbread 1995:268,269,305-308). The integration of that work with this study reveals that there may have been several workshops or production centres in the region that produced the same shapes in different fabrics. It is curious that despite how well-known Corinthian A amphoras are in the area, they seem to be a local phenomenon that did not spread around the Mediterranean in the same ways that Corinthian A' and B amphoras did (Vandiver and Koehler 1986:214). Yet the

Corinthian A fabric appears in other shapes, such as lekanai and pithoi at Nemea, evidenced by both the excavated sanctuary material and the NVAP survey material.[91] This makes the picture of production and distribution even more complex. While Nemea is not a great distance away from Corinth, these findings may call for a re-evaluation of the distribution of Corinthian A amphoras, as well as other vessels in the Mudstone and Mudstone Breccia fabric, especially around the Northeast Peloponnese.

6.9. Perforated Cylindrical Vessel

Fabric Type	**Total Samples**
Large, Angular Chert	1
Total Samples	**1**

Table 6.9: Perforated Cylindrical Vessel by Fabric Type.

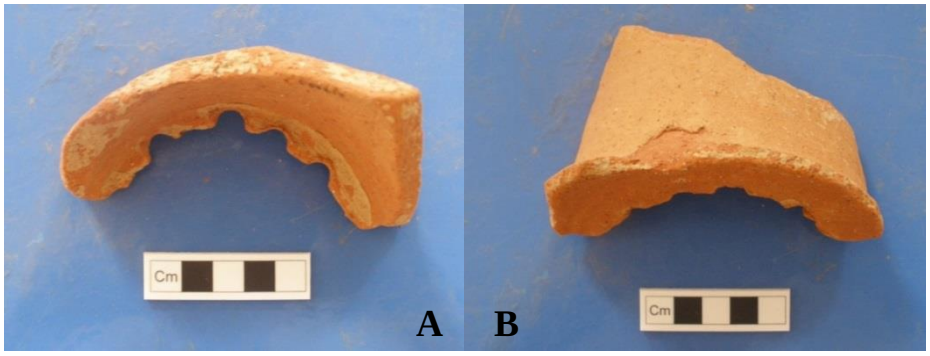

Figure 6.36: Perforated cylindrical vessel from Nemea in Chert and Quartz fabric. (A): top view, (B): side view (Sample 49).

This single example of the perforated cylindrical vessel in the Large, Angular Chert fabric is unusual in shape, with no exact parallels (Figure 6.36).[92] The function of this vessel is unknown, and it was the only one of its kind found in the Nemean assemblages. The red fabric is hard and gritty, with common white opaque and transparent inclusions, the same as the other vessels in this fabric. However, just as discussed above, it is difficult, if not impossible, to

[91] Six samples from the NVAP petrographic study were in the Mudstone and Mudstone Brecchia fabric. The sample numbers and more information are in Chapter 5, section 5.6.
[92] Sample 49

distinguish the Chert and Quartz and Large, Angular Chert fabrics macroscopically, even with the aid of a hand lens.

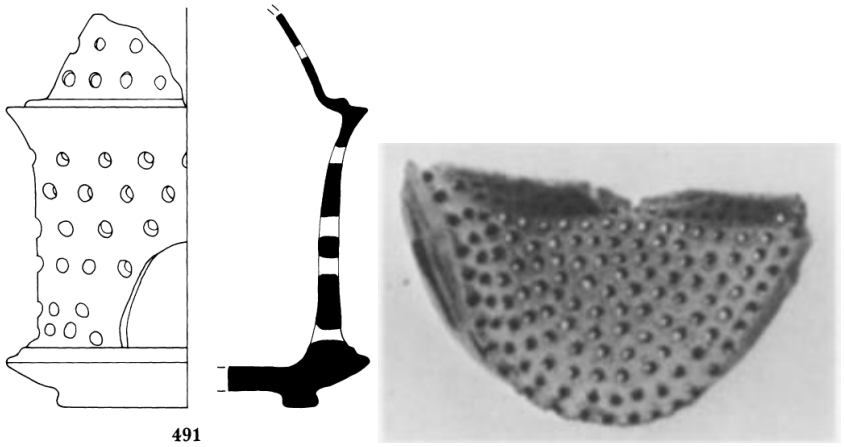

Figure 6.37: Left: Perforated Cylindrical Vessel, *Corinth* 18.1:#491. Right: Strainer, Top view, *Corinth* 18.1:#644. Courtesy of the American School of Classical Studies, Corinth Excavations.

The vessel finds two possible parallels at the Sanctuary of Demeter and Kore in Corinth (Figure 6.37). The first is a vessel also referred to as a perforated cylindrical vessel. Much like the Nemean vessel, the function of this shape is unknown, although it is thought to be associated with ritual or dining activities (*Corinth* 18.1:61). No other examples have been found outside the Sanctuary of Demeter and Kore. This is very interesting, as the Nemean sample are very similar to the Corinthian comparanda in context—it is from a sanctuary which supported ritual and dining related activities. Further, the Corinthian example is dated loosely to the Hellenistic period, based on context, as is the Nemean sample. While the two shapes are not exactly the same, the lack of other examples does not allow for speculation as to how the shape varies, if it all. The fabrics of the two examples have not been compared, although Pemberton's descriptions of #491 and #492 appear to be similar to that of the Nemean sample (*Corinth* 18.1:60).

The second possible parallel to the perforated cylindrical vessel, the strainer, is another uncommon shape at Corinth, with only one, incomplete published example. It is described as a jaw-shaped strainer with rising edges and holes punched throughout (*Corinth* 18.1:186, #644, Figure 6.37). The photo does not elaborate. It is difficult to tell how similar the strainer and the Nemean example actually are, but the comparison is included here to demonstrate that all possible vessels were considered. As with the perforated cylindrical vessel, the strainer was dated loosely to the Hellenistic period. The lack of a good comparison does not allow for a definite identification of this vessel. However, as seen above with the other vessels produced in the Large, Angular Chert fabric, the fabric is well-documented and has many ties to Corinth, suggesting that the vessel was produced in the vicinity.

6.10. Spouted Vessel

Fabric Type	**Total Samples**
Intermediate Grade Metamorphic Rocks	1
Total Samples	**1**

Table 6.10: Spouted Vessel by fabric type.

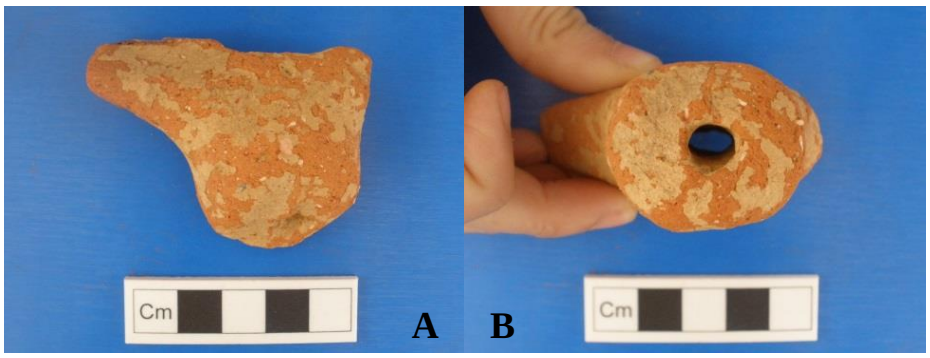

Figure 6.38: Spouted vessel from Nemea in Intermediate Grade Metamorphic Rocks fabric. (A): top view, (B): profile view (Sample 152).

This spout is the only one of its kind found at Nemea (Sample 152, Figure 6.38). It is in the Intermediate Metamorphic Rocks fabric, characterised by its red colour and common, poorly sorted micaceous inclusions, and small bits of

foliated rocks. The spout is cylindrical and slightly oval in shape, with little preserved wall around it. It has a hole in the centre of the spout, with a diameter of 0.8 cm. It is not known what type of vessel this spout was attached to, or what the function of that vessel may have been. It is dated by context to the 3rd-early 2nd centuries B.C.

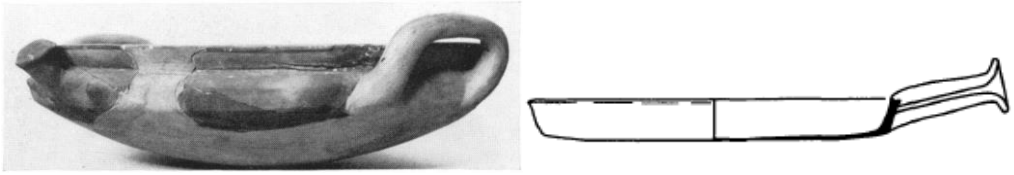

Figure 6.39: Left: Lopas with spout, *Agora* 12:#1968. Right: Frying pan with spout, *Agora* 33:194. #708. Courtesy of the American School of Classical Studies at Athens.

Comparative shape studies were mostly unsuccessful, as no exact matches were found. The most likely match is perhaps a Form 7 frying pan from the Athenian Agora, dated to ca. 250-200 B.C. (*Agora* 33:194). As can be seen in Figure 6.39, the frying pan was a shallow vessel with a long, hollow handle and a grooved rim. The Nemean sherd is not preserved well enough to determine if there was a rim near the spout. The main difference between the Nemean and Attic spouts is the hole. In the Nemean example, the hole goes through the vessel so that liquid could go through it, while in the Attic example, the hole stops at the wall of the pan. Further, the Attic frying pan is in the Micaceous cooking fabric, which is similar to the Intermediate Metamorphic Rocks fabric based on macroscopic description (*Agora* 33:13-15). Thus, the two examples are probably not the same, despite being similar fabrics, and having contemporary dates.

The second possible comparison is a spouted lopas (Figure 6.39). This is not a common form, with only one published example in *Agora* 12 (#1968). Further, the example is much earlier than the Nemean sherd, dating to 375-350 B.C. (*Agora* 12:374). The catalogue entry states that the spout is unpierced,

suggesting that it was decorative rather than functional. Thus, this comparison is not a viable option.

Unfortunately the lack of comparatives does not allow for the identification of this vessel. It is possible that it might be an uncommon shape, such as a cooking fabric lamp. The fabric suggests an Attic provenance, but no comparanda has been found in that region. Thus, not a great deal can be said about this sample.

As discussed earlier in relation to other Nemean shapes in the Intermediate Metamorphic Rocks fabric, while geological arguments support an Attic provenance, there are no exact petrographic matches with comparative material to date. Also, given how the Hellenistic ceramics from the Athenian Agora are very well-published, it is puzzling that there are not any parallels for these shapes found at Nemea, such as the spouted vessel, and jug with rotelle handle decoration. It seems likely that either these represent very unusual shapes that have not been found at the Agora, or that the Intermediate Metamorphic Rocks fabrics represents a fabric produced in Attica, but not present at the Athenian Agora. Extended sampling of Hellenistic material from the Athenian Agora, as well as other sites in Attica, needs to take place before any conclusions can be made.

6.11. Conclusion

The analysis of the shapes by petrographic fabric groups reveals three major elements of this study—local production, regional distribution, and choice within vessel types were present at the sanctuary. Local production took place in the Kiln Complex, and included a variety of vessels such as lekanai, mortaria, jugs, and pithoi. The next chapter will explore the Kiln Complex and address the

other products of the kilns, including tiles, architectural terracottas, and loomweights. If the Kiln Complex was built to meet the ceramic demands of the sanctuary, then the evidence for regional distribution must be considered.

The petrographic and typological analyses demonstrated that a great deal of vessels were imported to the sanctuary from at least three main production centres, those associated with Corinth, Lerna/the Argolid, and Athens/Attica. Although these three centres produced similar shapes with identical functions, the differences in vessels of the same shape would have been immediately apparent to the naked eye. Chert and Quartz fabric cooking pots are markedly different from the Intermediate Metamorphic Rocks fabric cooking pots, while the Fine Quartz and Mica lekanai had dramatically different fabrics than those in the Mudstone and Micrite fabric. If the function was the same, why are several fabrics present in one vessel shape? While it is not possible to comment on the availability of certain types of vessels, or local demand, it is clear that choice was present in the sanctuary. Individuals visiting or residing in the sanctuary most likely were presented with a choice when procuring vessels there. It may be possible that the regional distribution represents different people from those regions at the site. These questions necessitate the study of these vessels in context. This is apparent in many contexts, such as square K19, where almost every vessel in every fabric present in this study is found. The following chapters will address these issues. Chapter 7 will focus on the Kiln Complex and the products produced within, while Chapter 8 will be an interpretation of all the evidence—the petrographic analysis, the shape studies, and contextual studies, to evaluate what interpretations can be made of the evidence presented in this study.

Chapter 7: Local Ceramic Production at Nemea: The Kiln Complex and Its Products

7.1. Introduction

The petrographic studies and subsequent analysis of vessel types by fabric group allowed for the identification of several ceramic forms present in the locally produced Nemean fabric. This chapter will address the local fabric—the Mudstone and Micrite fabric, and its repertoire through a combination of studies of the Kiln Complex itself, the assemblages relating to the complex, and the petrographic study of material associated with the kilns and ceramic production. This material includes tiles and the types of vessels identified and discussed in Chapter 6, as well as by-products of ceramic manufacture including kiln wedges and separators, wasters, and kiln lining.

The first aim of this thesis is to determine if ceramic production, other than tile production, took place in the sanctuary. The petrographic study confirmed that a large variety of ceramics were produced locally in the Kiln Complex in the Mudstone and Micrite fabric. In order to understand the greater significance of local ceramic production taking place, it is necessary to evaluate the Kiln Complex itself, as well as the full repertoire of the ceramic products produced by the complex. Local production signifies that the sanctuary was independent in some respects, as it was able to provide itself with the necessary goods to both rebuild the sanctuary, as well as sustain activity there in the 3rd century B.C. The evaluation of the types of goods that were produced there reveals important information about the needs of the sanctuary, as well as activities that may not be otherwise archaeologically visible.

7.2. The Kiln Complex

The Kiln Complex was located in the eastern area of the sanctuary, in between the Xenon and Oikoi 6, 7, and 8. It was primarily situated in squares N17 and M17 (Figure 2.1). The complex consisted of three kilns—two rectangular and one circular, a well, and a bothros most likely used as a clay settling basin (Figure 7.1). The kilns are no longer visible, as they were backfilled in order to protect them (Miller 2004:151). In any case, only the well head and bothros remain and there are no visible indications of any kiln to be seen. The kilns are referred to in the literature as the North Kiln, the South Kiln, and the circular kiln, each will be discussed separately.

Figure 7.1: The Kiln Complex during the 1977 excavation season. Squares N17 and M17, view from west. Photo 1977-30-27, courtesy of the Nemea Excavation Archive.

7.2.1. The South Kiln

The complex was first excavated in 1964 by Charles K. Williams II, who revealed a large portion of the south kiln in square N17, along the North wall of the xenon (Figure 7.2). The exposed area continued to be excavated by Miller

during the 1973 and 1974 excavation seasons, when it was once again cleared and explored. "The kiln consisted of a large rectangular (ca. 8.50 x 10 m.) firing chamber, later cut through by the north wall of the xenon, with two arched passageways for stoking the kiln. These passageways were entered from the north at a subterranean level. The upper chamber of the kiln was apparently built of bricks, but most evidence had been removed with the construction of the xenon" (Miller 1975:162). The kiln also contained a large forechamber sunken to the level of the floor of the entrance passageways to the kiln (Figure 7.3). The excavation further exposed a rectangular bothros, which is most likely a clay settling basin associated with the Kiln Complex.

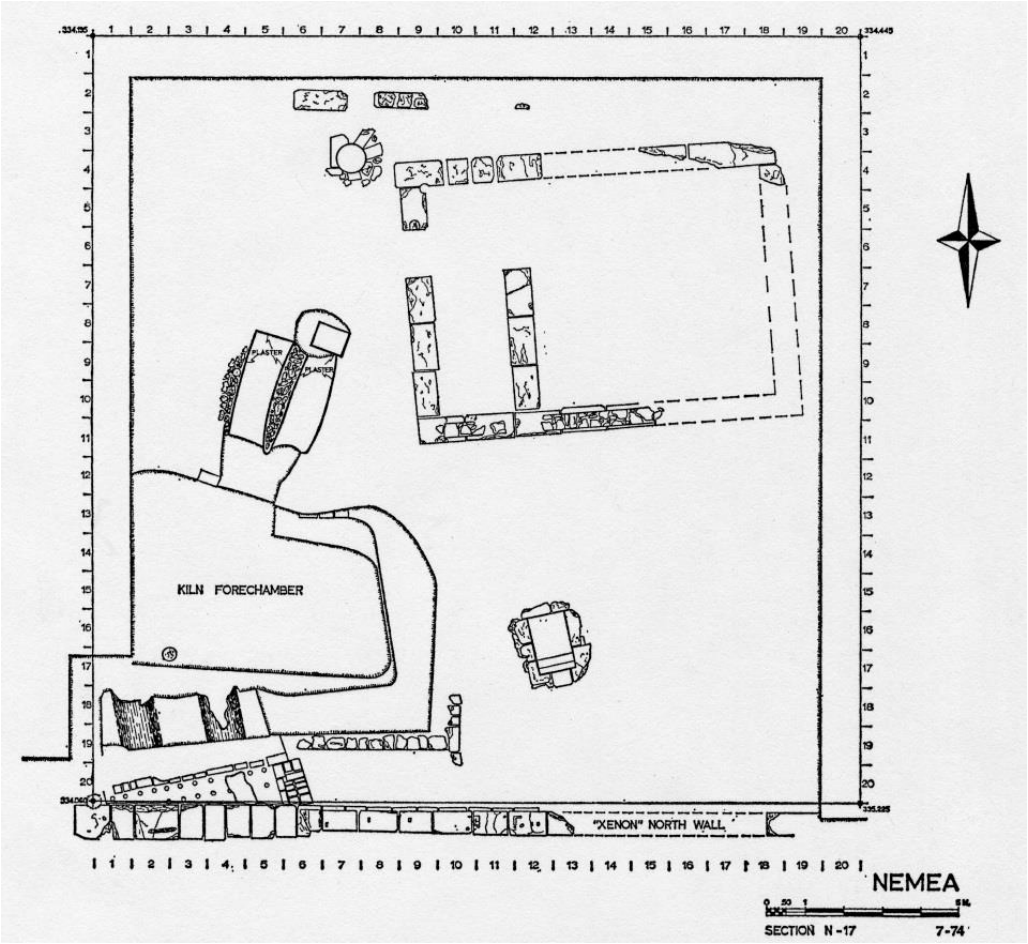

Figure 7.2: Plan of square N17, 1974. The South Kiln is in the southwest corner, with the stoking chambers of the North Kiln visible at the top of the kiln forechamber. The clay settling basin is right of the forechamber. The structure in the NE of the square, the "Rectangular Building" was interpreted to be unrelated to the Kiln Complex, and thus will not be discussed. The well at the

top corner of the "Rectangular Building" is well N17:2, which is associated with the Kiln Complex. From Miller 1975:163. Courtesy of the American School of Classical Studies at Athens.

Figure 7.3: View of N17 from North. Perforated kiln floor in background, stoking chambers of North Kiln in foreground. Clay settling basin at top left. Photo 1974-18-19, courtesy of the Nemea Excavation Archive.

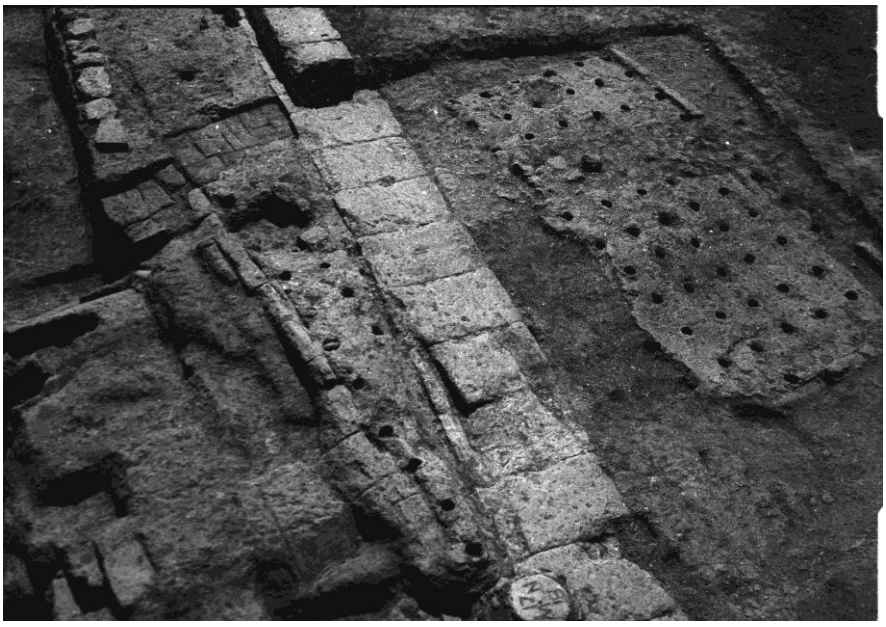

Figure 7.4: View of N17 from West. Xenon wall cutting through perforated kiln floor. Photo 1974-18-17, courtesy of the Nemea Excavation Archive.

The South Kiln is a possible Type II kiln, according to Hasaki's interpretation of Cuomo di Caprio's typology of kilns (Hasaki 2002:348).[93] Type II is a rectangular kiln, but unfortunately not enough is preserved to determine other characteristics that would allow for further identification of the kiln type. The perforated floor of the firing chamber was bisected by the xenon wall, indicating that the kiln predates the xenon, which is dated to the late 4th century B.C. (*Nemea* I:174, Figure 7.4). Williams was able to reconstruct the firing chambers during his 1964 excavations of the area, which still represent the most complete reconstruction of any of the kilns in the Nemean complex (Figure 7.6).

Unfortunately, not a great deal is published and few definitive statements on the South Kiln can be made. The only sources of information are the 1964 and 1974 excavation notebooks, by C.K. Williams II and Barbara Forbes, respectively. However, there are several photographs from the 1974 excavations which say a great deal about the area, and allow for a greater understanding of the South Kiln. All of the excavated material from the South Kiln was discarded after excavation, with the exception of the material from the east stoking chamber, which was excavated in 1975 at the time the North Kiln was being excavated (Figure 7.5).[94]

[93] Hasaki refers to the South Kiln as Kiln B in her study, while the North Kiln is Kiln A, and the Circular Kiln is Kiln C (2002:348).
[94] N17 NB III, lots 36-38, excavated by James C. Wright on May 27-28, 1975.

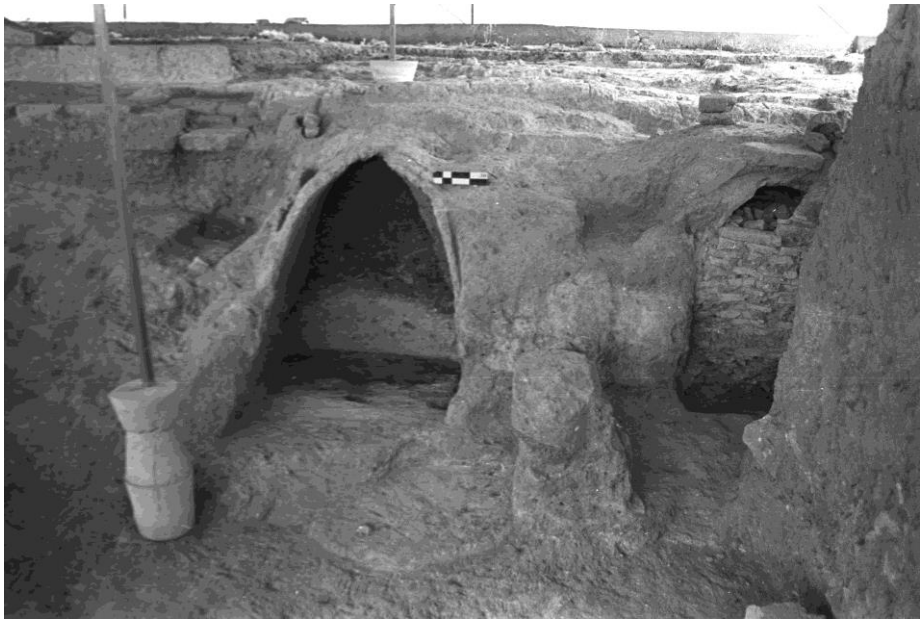

Figure 7.5: South Kiln East Stoking Chamber, view from North. Photo 1975-15-13, courtesy of the Nemea Excavation Archive.

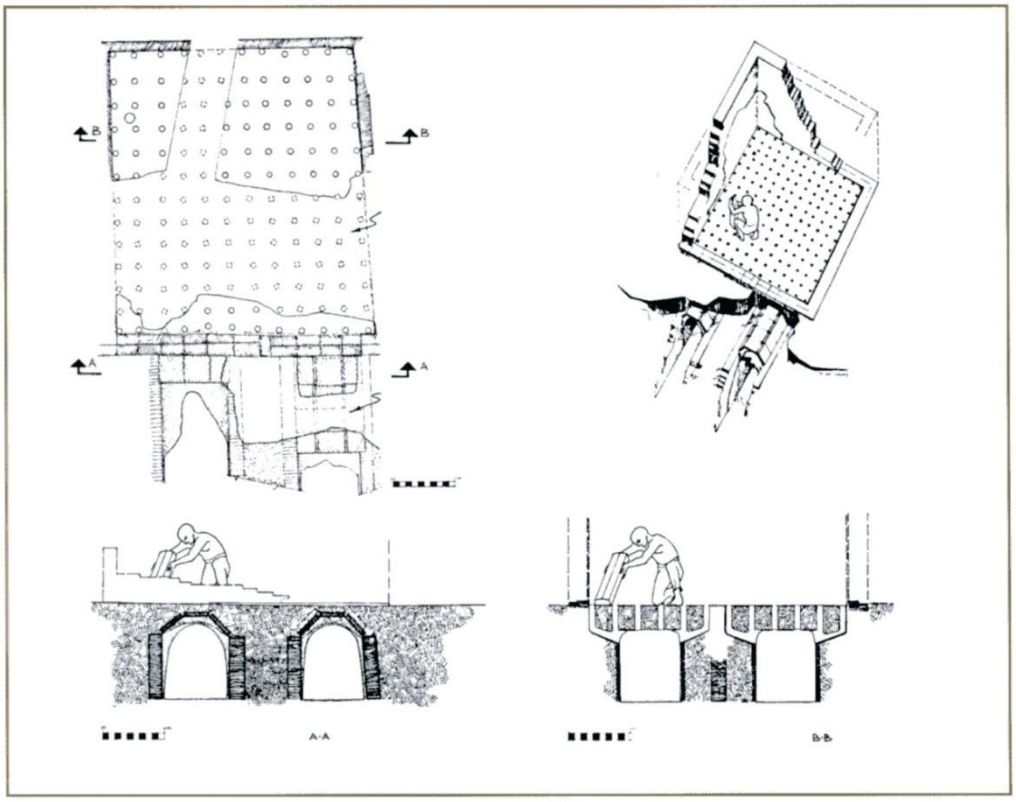

Figure 7.6: Reconstruction of South Kiln, by C.K. Williams II. Courtesy of the Nemea Excavation Archive.

7.2.2. The North Kiln

The North Kiln was excavated in 1975 by James C. Wright. The North Kiln is located north of the South Kiln in Square N17. This kiln was the best preserved out of the three, and is discussed by Miller in his report of the 1975 excavations (1976:186-193). He does not discuss the possible construction date of the kiln, but it is likely that it was built sometime in the late 4th century B.C. while the major re-building was taking place. The kiln is characterised as a Type IIb by Hasaki (2002:348), indicating that is a rectangular kiln with central corridor with cross-wells and cross-flues. The kiln includes a combustion chamber, with the stoking chamber (*dromos*) preserved. The dimensions of the firing chamber measure 4.6 x 4.2 meters, with the combustion chamber measuring 1.56 m in height (Hasaki 2002:348). The two stoking chambers were 4.75 m long and varied from 0.86-1.06 m wide. According to Miller, "each chamber had its own entrance divided by a mud-brick wall some 0.40 m wide and each was coated with a heavy coarse stucco which makes a vertical return at one end. A low stone socle facing the forechamber marked the western edge of the entrance to the west chamber and another socle marked the eastern edge of the entrance to the east chamber" (Miller 1976:188, Figures 7.7, 7.8). The kiln seemed to change over time, as five floors were identified in the east stoking chamber.[95]

Miller interprets the five floors as five separate changes to the structure of the kiln, which was dramatically changed by reducing the size of the chamber and partially destroying the dividing wall at the south end, while other walls were thickened with plaster, creating a single entrance for both chambers about 1.50 m

[95] Nemea excavation notebook N17, III, pp. 425-433 outlines the excavations of the North Kiln and chronicles the excavation of the floors of the East Stoking Chamber.

wide covered by a stucco vault (1976:188). The kiln went out of use when it was filled with debris, which Miller believed was in the first quarter of the 3rd century B.C. As the majority of the material found in the North Kiln was saved, this thesis studied and sampled material from the fills of the antechamber, basin, and stoking chambers.[96]

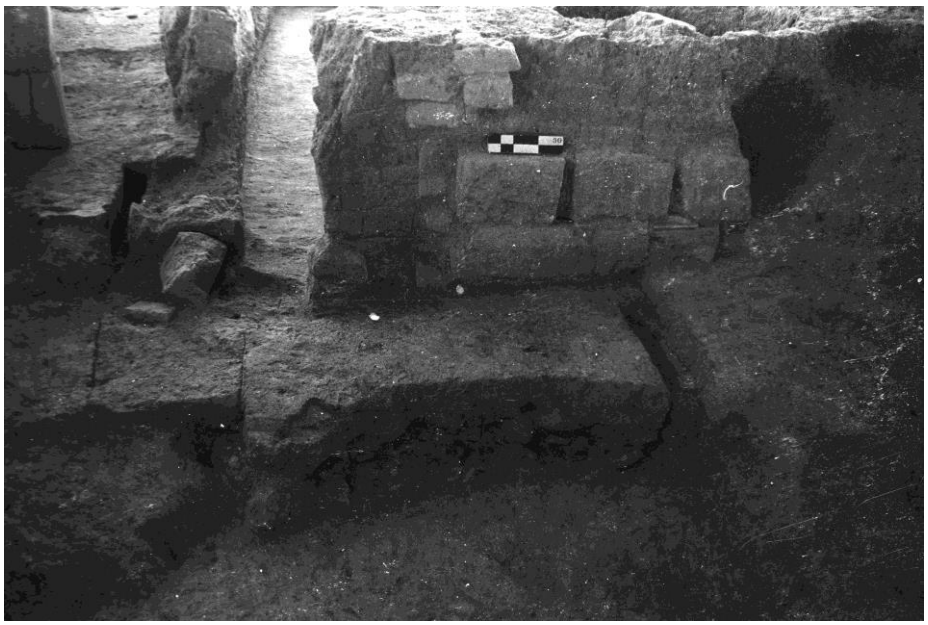

Figure 7.7: Kiln entrance showing mudbrick floor, with stoking chamber behind. Photo 1975-12-31, courtesy of the Nemea Excavation Archive.

[96] N17 lots 26, 27, 29, 32, 33, 34, 35

Figure 7.8: The North Kiln (background) and the South Kiln (foreground). Square N17 from southwest. Photo 1977-29-11, courtesy of Nemea Excavation Archive.

7.2.3. The Circular Kiln

The circular kiln was excavated by Joan Connelly in 1977 in square M17. The chamber of the kiln was approximately 2.0 m in diameter and lined with stucco. It also included one stoking chamber with a narrow passageway going northwards into the sunken forechamber (Miller 1978:81, Figure 7.9). Miller speculates that the kiln was built later than the xenon, and may have been built to replace the South Kiln based on stratigraphy (1978:81). All the material from the Circular kiln was thrown away after excavation, so it was not possible to study it.

Figure 7.9: The Circular Kiln, view from northwest. Photo 1977-29-13, courtesy of the Nemea Excavation Archive.

7.2.4. Well N17:2

The well located in square N17 is associated with the Kiln Complex, based on its proximity, contents, and date. Miller states that there were two phases of the well, based on the well heads and attributes the second phase to the first half of the 3th century B.C. without dating the first phase (1976:189). The second well head was packed with material relating to the kilns, including mudbrick, tile fragments, and burnt stucco (Figure 7.10). The contents of the North kiln are also related to ceramic production, including a great deal of tiles and water jugs, with various kiln related artefacts such as kiln separators and wedges, loomweights, and miscellaneous mixed pottery (N17 NB III:575-584).[97] All lots related to the well were examined in this study, and samples were taken from lots 59 and 64, attributed to the second phase of the well head.

[97] The contents of the well were excavated as lots N17:59-65.

Figure 7.10: Second phase of well head of Well N17:2. Photo 1975-15-31, courtesy of the Nemea Excavation Archive.

7.3. Reconstructing the Kiln Complex

Figure 7.11: The Kiln Complex in 1977, view from North. Photo 1977-30-32, courtesy of Nemea Excavation Archive.

Despite the three kilns being excavated in a sound fashion, it is not possible to reconstruct any of them further than what is stated above. A synthesized publication on the complex or the individual kilns was never produced, and the kilns are no longer visible. Without first-hand experience of

the kilns themselves, it is difficult to hypothesize about their completed design, firing practices and regimes, and how the complex functioned as a workshop. It is not known if the kilns were active at the same time, although Miller speculates that the South Kiln was built first, with the North and Circular kilns built later, once construction began on the xenon. He further speculates that the kilns went out of use by the early to mid-3rd century B.C., presumably because their primary function—tile manufacture—was no longer necessary once the Nemean building program was complete. However, this study has demonstrated that the kilns produced more than just tiles. Their primary function may have been the production of roof tiles, but the production of loomweights and vessels such as lekanai, mortaria, and pithoi may have been important as well, and perhaps more important once copious amounts of new tiles were no longer needed. Further, all the material found in the kilns themselves is secondary refuse placed inside once they went out of use. Secondary refuse may have come from anywhere on the site, and may not necessarily be a sound indicator of the *terminus post quem* for the kilns going out of use. Unfortunately, not enough material was saved to test this theory. The majority of the contents of the well are tiles and jugs, both of which have long periods of use, as well as long chronological ranges.[98] There is simply not enough evidence saved to securely date the closing of the Kiln Complex. It would not be surprising if the kilns (or at least one kiln) remained in operation throughout the 3rd century B.C. based on the ceramic evidence discussed in Chapter 6, but this cannot be confirmed.

[98] The petrographic results showed that the majority of the jugs in the well are exact matches with Corinthian pitchers in both shape and fabric. While it is not possible to closely date the Nemean jugs by context alone, the Corinthian parallels date from the late 4th-mid 1st centuries B.C. Please see the discussion on Chert and Quartz fabric jugs in section 6.4.1. As for tiles, even the most common Lakonian tiles are hard to date, as there is very little change in shape or proportions from the Archaic-Roman periods (Winters 1993:108).

7.4. The Material from the Kilns

Petrographic analysis was conducted on seventy-two samples taken from contexts relating to the kilns, or tiles attributed to the kilns.[99] This material included tiles, architectural terracottas, loomweights, ceramic vessels, kiln separators, kiln wedges, wasters, and fragments of kiln lining that were preserved in the lots and sampled.[100] All of the artefacts associated with production in the kilns were found to be petrographically homogenous, produced in a single fabric—the Mudstone and Micrite fabric. Selected ceramic vessels were also sampled from the kiln material; all of those are discussed in Chapter 6: Ceramics. In addition, thirty samples taken from other contexts around the site are also Mudstone and Micrite fabric. These samples are all lekanai, jugs, mortaria, and pithoi. While some variation in firing is visible, the fabric is consistent, and demonstrates that a single recipe was used to produce the entire range of kiln goods, including a range of ceramic vessels such as pithoi, mortaria, and lekanai, which were discussed in Chapter 6.[101] The entire repertoire of the Kiln Complex seems to be produced in a standardised fashion. Each category of object will be discussed individually.

7.4.1. Tiles

Forty-six tiles were studied in thin section.[102] These included the complete range of shapes found at Nemea, including tiles from the stamped "Sosikles" series. They are comprised of thirteen Lakonian tiles, eleven

[99] N17 lots 14, 26, 27, 29, 32, 33, 34, 35, 36, 37, 38, 59, 64.
[100] Many sampled tiles, especially those catalogued in the museum (with an AT prefix in the catalogue number) were excavated by Miller along the Sacred Way or in the apodyterion and attributed to the kilns (Miller 1994:86-89).
[101] See discussions of the Mudstone and Micrite fabric pithoi, mortaria, and lekanai in Chapter 6.
[102] Samples 218, 219, 220, 221, 222, 223, 224, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 265, 270, 273, 274, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299

Corinthian tiles, including eave and cover tiles; one small fragment of an unknown shape covered in plaster, and twenty-one stamped Lakonian tiles. Lakonian and Corinthian tiles are differentiated based on their shape, not by their provenance as their names may suggest. The two types represent different roofing systems. Lakonian tiles are large, concave pan tiles and narrower, convex cover tiles. Corinthian tiles are relatively flat pan tiles with pitched cover tiles (Winter 1990:13; Winter 1993:19-21, 95-98).

The stamped tiles fall into four categories—unknown stamp type (one sample), Type 1A (four samples), Type IB (nine samples), and Type 2 (seven samples).[103] The stamp types are variations of the "Sokles" or "Sosikleos" tile stamp, published and discussed by Miller in 1994 (Figure 7.12).

Figure 7.12: The Nemean series of "Sosikleos" and "Sokleios" stamped tiles. From top to bottom: Type 1A, Type 1B, Type 2. From Miller 1994:91. Courtesy of the American School of Classical Studies at Athens.

[103] Miller discusses two other types of stamped tiles but only one example of each was found, both of which are displayed in the Nemea Museum, thus I was unable to sample them. See Miller 1994:90-92 for more information.

The unstamped tiles are most likely a combination of unused and discarded examples and were selected from two contexts—the contents of the North Kiln, and a late Hellenistic destruction layer from the apodyterion.[104] The mix of styles present represents the different roofing styles of all the buildings in the sanctuary, such as the xenon, the bath house, the houses, the oikoi, the temple, as well as the apodyterion, located next to the stadium. With the exception of the temple and the apodyterion, the exact roofing styles of the other buildings are not known. For example, the xenon was first excavated in the 1920s-30s, and the notebooks indicated that there was a consistent tile destruction layer. However, the notebooks do not always indicate what types of tiles were found, and nothing was saved (*Nemea* I:117-125). A mix of Corinthian and Lakonian tiles was found in the excavations during the Miller years, and it is suggested that different types and styles of tiles might have been combined on the roof (*Nemea* I:120). Unfortunately the tiles from the refuse in the kilns and the excavation of the apodyterion are the best examples left to determine what types of roofing systems were used in the sanctuary.

The members of the stamped series are the most interesting finds among the tiles. The three stamps do not appear to be indications of any differences in the tile itself. They are all in the same fabric, and appear to be the same size and shape (Miller 1994:92). Furthermore, they are in the same fabric as all the tiles sampled from Nemea, and appear to be the same size and shape as all the plain Lakonian tiles, indicating that they were produced in the same way, and perhaps

[104] All tiles from the North Kiln are from various lots from square N17; see Appendix III for a full list of contexts. All the tiles from the apodyterion are from SACWAY lot 69, excavated in 1991 by Alison Futrell. The SACWAY examples are catalogued in the museum and all catalogue numbers begin with the prefix of AT.

even at the same time. The question must then be asked—why were these tiles stamped, while others were not?

Miller offers a suggestion relating to the name on the stamp, Sosikles. Miller traced these stamps to Sosikles, the architect of the nearby Argive Heraion, as well as the official architect of Argos in the late 4th century. Sosikleos, depicted in stamps 1A and 1B, is the genitive of Sosikles, while the Type 2 name Sokleios is the genitive of Sokles, a known nickname for Sosikles (Miller 1994:92). Miller speculates that Sosikles may have been a sort of "city architect", who served the cities and sanctuaries controlled by Argos at the time (Miller 1994:95). Thus, given the concentration of these tiles around the apodyterion, Miller suggests that Sosikles was the architect in charge of that particular building. While it is impossible to prove this with certainty, this theory has some interesting implications, when the tiles themselves are taken into account. If Sosikles was indeed an architect, he was most likely not manufacturing the tiles himself. Rather, it seems likely that the tile construction was part of the building plan, and the stamps were a way for Sosikles to "brand" his building. There is no literature that deals with tile design and manufacture as a significant part of architectural design and building in Ancient Greece, but surely it must have been an important element in both those processes. It is unusual for a name in the genitive to be stamped on tiles, as no other examples have been found. Miller speculated that Sosikles may have ordered the tiles from a factory, which branded them with his name. (1994:96). This may be true, but not in the way that Miller originally thought. Since the petrographic analysis has demonstrated that the stamped tiles were made in the kilns, along with a great deal more tiles and other types of material, perhaps the Sosikles stamped tiles

were special in some way and needed to be differentiated from the others. At Nemea, the stamped tiles were only found in contexts relating to the apodyterion, and no other Sosikles stamps have been found in Argos or the greater Argolid. Whether this relates to the design and building of the apodyterion is unknown.

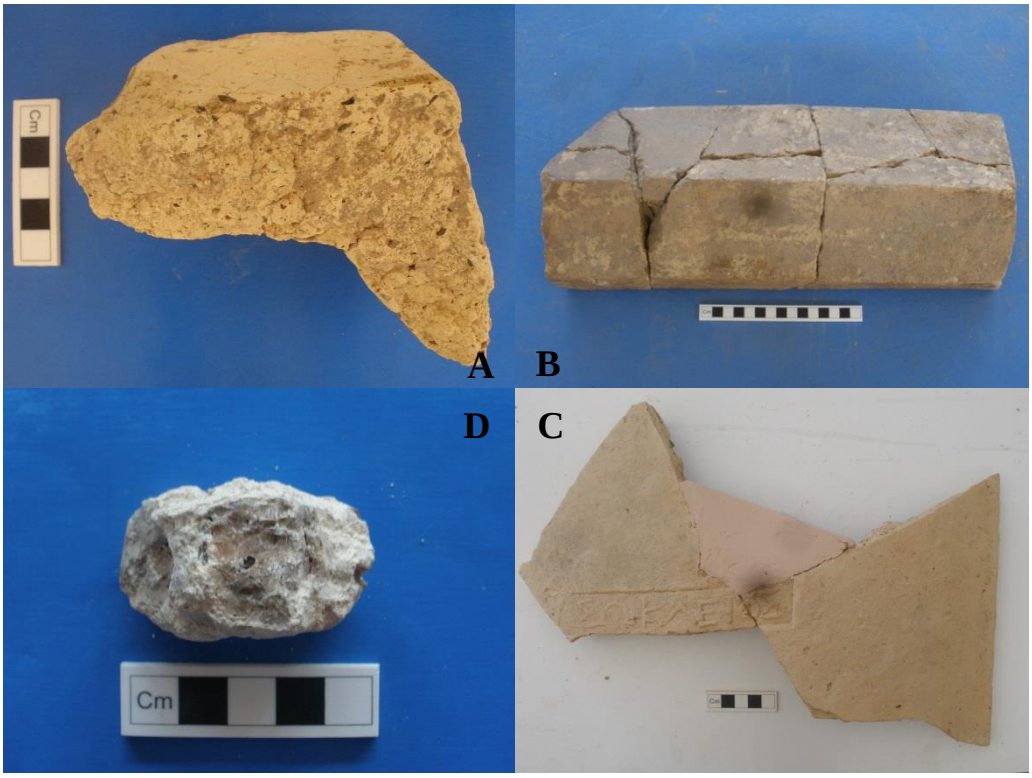

Figure 7.13: Locally produced tiles from Nemea. (A): Ridge tile, profile view, (Sample 257); (B): Cover tile, top view (Sample 273); (C): Type 2 stamp on Lakonian pan tile (Sample 284); (D): Vitrified tile covered in plaster (Sample 270).

The other sampled tiles are significant because they accurately characterise the range of tiles found in the saved material from the kilns. They all represent well-known shapes in late Classical and Hellenistic tiles—Lakonian and Corinthian pan, cover, and eave tiles (Figure 7.13). Sample 270, a fragment covered in plaster is important because it may have been a piece of one floor in the east stoking chamber of the South kiln (Figure 7.13-D).[105] This sample demonstrates that the kilns were built with a combination of discarded tiles that

[105] From square N17, lot 38.

were produced in the complex, or the same raw materials used to make the kilns. Perhaps one of the most interesting things about the tiles is the range of colours they display, from dark red to mint green. In fact, macroscopic analysis originally suggested that there were up to five tile fabrics based on the colour range. The petrographic analysis demonstrated that these differences in colour are simply due to firing temperature or placement within the kilns. The dark reds to pinks represent the lower fired, with the greens are the result of much higher firing (Nicholson and Patterson 1989:80). The results of this study indicate that the majority, if not all, of the Hellenistic tiles found at the sanctuary were produced there in the Kiln Complex, and can safely be assumed as such, despite differences in fabric colour. Only one tile was found to not be local, an undiagnostic piece of Lakonian tile, demonstrating that imported tile was uncommon in the studied material.[106]

7.4.2. Architectural Terracottas

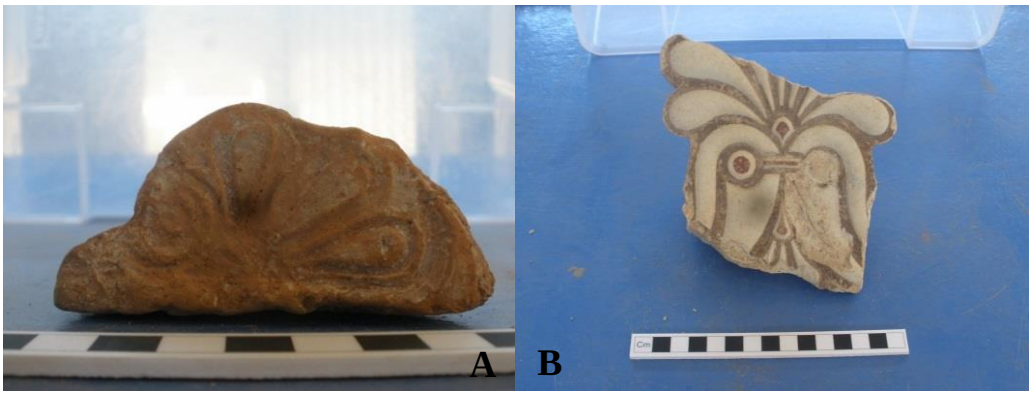

Figure 7.14: Locally produced architectural terracottas from Nemea. (A): Un-slipped antefix (Sample 275); (B): palmette-style antefix (Sample 276).

Two architectural terracottas—antefixes—were sampled in order to determine whether these were produced in the Kiln Complex (Figure 7.14).[107]

[106] Sample 253, a Lakonian tile with no preserved edges.
[107] Samples 275, 276. Sample 276 was published by in Nemea I as catalogue number 60, museum number AT 10 (*Nemea* I:288). In the publication picture, AT 10 is shown as joined with smaller

These two samples are very different, and originally were not thought to be related in any way. Sample 275 is an unpainted antefix with a five petal palmette design (Figure 7.14-A). The bottom is flat, and the exterior extends in a slightly sloping, triangle shape. This is the only known antefix of its kind at Nemea.

In contrast, sample 276 represents a well-known and accounted for type of antefix which was popular around the site. It is painted white with red and black accents, depicting a seven leaf palmette with a red centre that rises above a reversed lotus which has a three-petalled flower with a red lozenge calyx, a red band with red eyes in the centre (*Nemea* I:118, Figure 7.14-B). Approximately 50% of the complete antefix is preserved in sample 276, allowing for the identification of most of these features. Interestingly, many of the antefixes have chisel marks on the bottoms, removing the lower edge and the three petals (*Nemea* I:199). Kraynak, who published the architecture of the xenon, suggests that this was done in order to make the antefixes fit over the ridge formed where two pan tiles meet, and that this may indicate that the antefixes were originally made to fit tiles of a different shape and size from those of the xenon (*Nemea* I:119). Several examples found within the xenon show that the antefixes were clearly altered to fit a roof that used Corinthian cover tiles, where the antefix would rest on the triangular part at the edge of two pan tiles (*Nemea* I:120). Kraynak points out that this practice of chiselling antefixes is present at the South Stoa in Corinth, demonstrating that it is not unusual (*Nemea* I:120).

The antefixes seem to be mould-made based on macroscopic observations. It is possible that the moulds represented a standard back and bottom edge, which would then be altered to fit the desired style of roof.

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fragment AT 234. The two fragments were disjoined at some point between this study and the publication, AT 234 was not part of this study.

Logically, it does not make sense that the Kiln Complex would produce antefixes that did not meet the architectural needs of the buildings for which they were created. Perhaps the different buildings represented different roofing styles, and thus each antefix was individually altered depending on what building it would be used for. Unfortunately, the one sample used in this study is not enough evidence to offer a reasonable explanation for this phenomenon. An in-depth study of both the contexts and shapes of all the known antefixes at Nemea needs to take place.

7.4.3. Loomweights

Figure 7.15: Locally produced loomweights from Nemea. (A): conical loomweight (Sample 226); (B): base of loomweight with hole pierced in centre (Sample 232).

Eleven loomweights were sampled from a large array of both complete and broken loomweights found within the kiln contexts.[108] All the loomweights with preserved bodies were conical in shape, with a slight carination near the base and a small hole near the top (Figure 7.15-A). In 1978, two loomweights were found at Nemea with intact rods in the top holes with the tips broken off, indicating that the weights were used on a warp for weaving at Nemea (McLauchlin 1981:79-81). All the loomweights sampled match the shape of the rough drawing provided in McLauchlin's article (1981:79). Further, all sampled

[108] Samples 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 234

loomweights with preserved bases display a single pierced hole in the centre, usually approximately 2 cm in depth (Figure 7.15-B).[109] The purpose of this hole is unclear. Sample 225 appears to be a waster or failed example, as it is crumbling with only the crude shape preserved.

While the loomweights are very consistent in shape, they vary in fabric colour, as well as percentage of visible inclusions, despite all being the Mudstone and Micrite fabric. Many of the examples display a smooth exterior surface, free of the abundant mudstone inclusions found within. The loomweights were most likely mould-made, and then slipped on the exterior. The slip allowed for a smooth surface which covered the inclusions. This is most apparent in Sample 228. Much like the tiles, the loomweights vary in fabric colour due to differing firing conditions, and can range from light red to very pale brown to pale yellow. The loomweights must be dated by the context of the kiln, as the only other source of dating is *Corinth* XII, which is relatively chronologically outdated after being published in 1952. The Nemean examples match Robinson's Loomweight Profiles IX and X, dated to around 350-300 B.C. (*Corinth* XII:155). These dates, at least the later range, fit the Nemean contexts well. Interestingly, the Corinth Tile Works also produced a large amount of loomweights, including those with Profiles IX and X (Merker 2006:59-72). However, given the Nemean examples' confirmed local production, the Corinthian comparanda may be viewed as a possible influence on the shape, rather than an accurate indicator of chronology. These loomweights are important for two reasons—there is now proof that they were produced in the Kiln Complex, and they indicate another craft taking place in the sanctuary which is not archaeologically visible beyond the loomweights

[109] Samples with holes in bases are 226, 229, 230, 232, 235, 238

themselves—weaving. Many loomweights were found in the kilns, as well as in the houses.[110] This suggests that weaving was commonly practised in the sanctuary area. While the looms and textiles would not survive nearly 2,000 years of deposition in the marshy valley, the loomweights are indicators of these activities.

7.4.4. Kiln Separators

Figure 7.16: Locally produced kiln separators from Nemea. (A): finger shaped separator, top view (Sample 236); (B): "pointy" style separator, top view (Sample 243); (C): vitrified, coarse separator (Sample 241); (D): coarse separator (Sample 239).

Two types of kiln furniture were found in the Kiln Complex: kiln separators and kiln wedges. Eight kiln separators were sampled.[111] The separators were most likely used for stacking and separating vessels in the kilns. Hasaki (2002:92) notes that the Nemean examples are the earliest known tripod

[110]Quantitative analysis was not possible due to the discarding of a great deal of material at the time of excavations.
[111] Samples 236, 237, 238, 239, 240, 241, 242, 243. The kiln wedges will be discussed below.

separators in Greece, dated by context as early as the late 4th century B.C. There are three general styles of separator, which seem to be different in form only; the functions remain exactly the same (Figure 7.16). All three styles are a slight differentiation of the standard three-finger tripod shape. The first style is an elongated, thin finger with an indentation on the top exterior. This indentation is shaped like a fingernail, giving the tripod finger the appearance of a human finger. This style is usually the finest in fabric, compared to the other two types of tripods. The second type is simpler, an elongated finger than is wide at the attachment point, and narrows to a point at the end. This type is usually coarser than the finger type, and is fairly unremarkable. The third type is the most common, the coarse type. The fingers of the coarse type do not taper at the ends; rather they remain the same thickness and end bluntly. The coarseness is visible, similar to that of the tiles. One example is highly fired to the point of vitrification—it is the mint green colour that is so common amongst the tiles.[112] Much like the tiles and the loomweights, the separators display a range of fabric colours, indicators of different firing temperatures. As these objects were designed to be used in the kiln over and over again until they broke, it is not surprisingly that they exhibit being fired at a large range of temperatures to the point of vitrification. The colour range includes very pale brown to reddish yellow to pale yellow. As noted above, there are variations of coarseness visible in the tripods. Despite the wide range of coarseness and colour, all the tripod separators were produced in the Mudstone and Micrite fabric, and are local.

[112] Sample 241

7.4.5. Kiln Wedges

Figure 7.17: Locally produced kiln wedges from Nemea. (A): trapezoidal kiln wedge (Sample 247); (B): vitrified kiln wedge (Sample 248).

Kiln wedges represent the second type of kiln furniture present in the Kiln Complex. These wedges would have been used to stack and separate vessels in the kiln. Unlike the tripod separators, these are small, thus more flexible in stacking methods for objects other than tiles. Seven samples were taken in this study.[113] They are uniformly trapezoidal in shape, tapering on one side with a thickness ranging from 2-3 cm (Figure 7.17). The kiln wedges range in colour, but are usually visibly coarse, much like the tile. The colour range indicates a range in firing temperature, which makes sense since they would have been fired over and over again, much like the kiln separators. One example is highly vitrified and misshaped (Figure 7.17).[114] The wedges range in colour from very pale brown to reddish yellow to pale yellow.

[113] Samples 244, 245, 246, 247, 248, 249, 250
[114] Sample 248.

7.4.6. Wasters

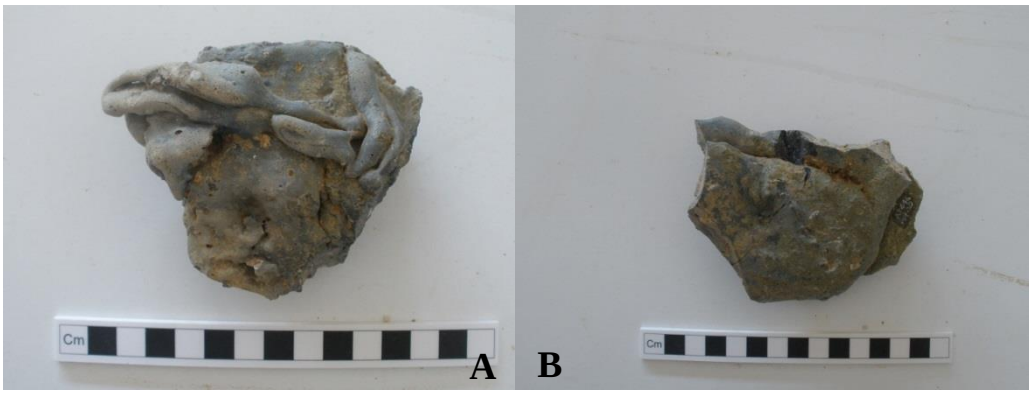


Figure 7.18: Vitrified tile wasters from Nemea. (A): Sample 271; (B): Sample 272.

Three tile wasters were sampled in this study.[115] Two examples are highly vitrified tiles with melted drips (Figure 7.18). The third sample is a smaller mass of melted ceramic with no preserved edges, making it difficult to discern its original shape or purpose. It is most likely that these wasters were in the kiln, or stoking chambers in firings reaching over 1050˚ C, in order for them to become this vitrified, likely in an over-firing episode. Both waster samples 271 and 272 are unusual because they are the only known examples of their kind, and were actually excavated in Square I17, north of the bath house. While they were not found "in situ" within the Kiln Complex, there is no other logical place for these objects to have been produced and then altered to this state. Miller originally associated them with the Archaic temple in the sanctuary[116], but they were produced in the Mudstone and Micrite fabric from the kilns, which were not built until the late 4th century B.C. at the earliest. Thus, despite being found a few hundred meters away from the kilns, it is safe to assume that these wasters were indeed products of the Kiln Complex. This argument is strengthened by

[115] Samples 269, 271, 272.
[116] This information was not published, but written on the objects' catalogue cards in the Nemea Museum. It does not state why Miller associated the wasters with the Archaic temple.

sample 269 which is very similar in shape, as well as being in the Mudstone and Micrite fabric, and was found inside the North Kiln.[117]

7.4.7. Kiln Lining

Figure 7.19: Kiln lining from Nemea. (A): vitrified lining from East Stoking Chamber (Sample 267); (B): vitrified lining from kiln fill (Sample 266).

Three samples are associated with kiln lining.[118] Large, vitrified chunks of the kiln and stoking chamber walls were preserved and found in contexts associated with the fills of these two areas (Figure 7.19).[119] Sample 266, associated with the fill from the North Kiln's antechamber, basin, and dromoi, is fairly flat, highly vitrified, and covered in plaster or cement on its back. It may have been from the firing chamber wall, but since its context was interpreted as secondary refuse, it is impossible to determine the exact location from which it came. Samples 267 and 268 were found in the same context, floor 4 of the east stoking chamber. Both of these samples are highly curved, indicating that they were most likely part of the lining of the stoking chamber. Further, both samples were chaff tempered and highly vitrified.[120] Sample 268 was covered in plaster along its back. Sample 267 was covered with unfired, chaff tempered clay along

[117] Sample 269 is from N17, lot 34, which was the material associated with floor 4 in the east stoking chamber of the North Kiln.
[118] Samples 266, 267, 268
[119] Sample 266 is from N17 lot 26, samples 267 and 268 are from N17 lot 34.
[120] The chaff temper was identified macroscopically through the characteristic voids that chaff leaves once it is fired out of ceramic.

its back. The two samples are very similar, and the main difference is that sample 268 retained a better preserved shape. One side of the sample forms a ledge that resembles an outturned rim, while the other side has a "finished" edge that has not been broken. This sample might represent the end of the stoking chamber, where it meets the firing chamber.

While it is not possible to identify the exact locations within the kiln from which these samples came, they are still very important to this study. The petrographic study of these samples demonstrates that the kiln and related architectural elements were made out of the same raw materials as the products produced in the kilns. Without the preserved kilns, it is not possible to speculate what percentage of the kiln was built out of these materials, primarily calcareous clay mixed with mudstone. It is possible that parts of the structure were built out of bricks, as illustrated in William's reconstruction (Figure 7.6), but no bricks were found in the saved material from the kilns, and no mention of bricks are made in any of the notebooks relating to the excavation of the kilns. Based on the excavation records of the kilns and archival pictures, it appears that the kiln remains that were archaeologically explored were primarily made out of clay.

7.5. The Kiln Complex as a Ceramic Production Centre

While it is not possible to completely reconstruct the activities that took place within the workshop, several assumptions can be made, based on other archaeological evidence in the sanctuary, as well as the petrographic results. The sanctuary was a suitable place to make ceramics, as all the necessary components of ceramic production are present—raw materials, water, and fuel. The Nemea Valley is full of sedimentary clays, with abundant limestone and mudstone

resources.[121] The bothros may have been used as a settling basin to levigate the clays. It is likely that the clays were levigated to remove the larger limestone pieces to prevent spalling, and then mudstone was added to the fine fraction clay. The sanctuary was well-watered by the Sacred Spring, located only a few hundred meters from the kiln site. This spring was tapped in antiquity with a pipe system that carried water to the nearby bath house in the sanctuary (Miller 1990:111). The ground water was plentiful as well, judging from the large amount of wells within the sanctuary, and the Kiln Complex benefitted from having its own well in close proximity to the kilns. Fuel would have also been relatively easy to find in an area with a likely abundance of brush and undomesticated plants with high caloric values. The cuttings of both would have been suitable for firing the tiles.

With abundant natural resources, Nemea then needed perhaps the most important aspect of ceramic production—the potters themselves. The Nemean potters left no indication of who they were. The series of stamped tiles are the only known indicators of an individual being affiliated with the Kiln Complex. As previously discussed, the "Sosikleos" tiles may represent the architect, but they most likely do not reflect a particular potter or group of potters who were solely producing these tiles. The tiles are identical to non-stamped examples found in large amounts throughout the sanctuary. The same raw materials were used, the clay paste was prepared in the same way, and the tiles were manufactured with the same techniques. It appears that whoever was making the

[121] While the valley is geomorphologically altered today so that it is not possible to locate ancient clay sources, the general geology of the valley would have been the same, i.e. sedimentary with large limestone and shale-sandstone-chert outcrops (See discussion of local geology in Chapter 5).

"Sosikleos" tiles was also making the whole range of items that were produced in the complex.

While the ancient potters will never been known, that information is relatively unimportant in light of all the evidence we do have in relation to the Kiln Complex. The large range of products produced in the kilns is surprising. The manufacture of loomweights is the best evidence available for another industry present in the sanctuary. Weaving, for domestic, ritual, or commercial use, must have been present, if not abundant, in the Hellenistic period at the sanctuary.

The discovery of vessels relating to storage and food preparation being produced in the sanctuary was also very important to this study. The vessels— lekanai, jugs, pithoi, and mortaria— all have functions relating to food storage and preparation, but they all could have easily been used in industrial contexts as well. The mortar with red pigment on the interior is especially suggestive of industrial use, as it is the first of its kind found.[122] Lekanai could have been used for holding water and various dry materials, while the pithoi are convenient for the storage of anything that would fit inside, liquid or dry. As water is one of the primary components of a clay paste, the jugs would have been an ideal receptacle for storage and pouring. Unfortunately, the contexts of these objects does not allow for further speculation of their use within the Kiln Complex.

Of all the lekanai, jugs, pithoi, and mortaria sampled in this study, only three lekanai, one jug, and one pithos were actually from the Kiln Complex (Table 7.1). Within those five samples, only the three lekanai were actually in the local (Mudstone and Micrite) fabric. The lekanai and the jug were sampled

[122] Sample 178. No published comparanda was found, as discussed in Chapter 6.

from the bothros (clay mixing pit) fill.[123] The jug was in the Chert and Quartz fabric, the most common jug fabric in this study. The pithos is from the fill of the North Kiln antechamber, and is in the Mudstone and Mudstone Breccia fabric.[124] Both of these contexts represent secondary refuse. The refuse would have been deposited as fill into these areas after the kilns went out of use. While the contents of the fills strongly suggest that the material was refuse associated with the Kiln Complex, and perhaps kept in the vicinity of it, it cannot be said for certain. These fills contained a great deal more than a single example of each vessel type, so the sampling does not accurately reflect the quantities present in the contexts.

	N17 (Kilns)	**K17 (Industrial)**	**K19 (Houses)**	**K20 (Houses)**	**L20 (Houses)**	**Total**
Lekane	3		2	6	6	**17**
Jug			1			**1**
Mortar		4	2	1	1	**8**
Pithos		2	1	4		**7**
Total	**3**	**6**	**6**	**11**	**7**	**33**

Table 7.1: Mudstone and Micrite samples by vessel type and context square.

In contrast, all of the vessels found in the Micrite and Mudstone fabric, with the exception of the three lekanai samples from the kiln fills, were found in contexts related to the houses (Table 7.1). Fourteen local lekanai were sampled in the houses, in contexts associated with the storage, preparation, or consumption of food. There are eight locally produced mortaria present in the study, none of which are from the Kiln Complex. Rather, four are from contexts within the houses, while four are from square K17, associated with the

[123] The bothros fill is N17 lot 14.
[124] The North Kiln antechamber fill is N17, lot 29.

production of bronze and marble statuary. The seven local pithoi in this study are all from K17 and the houses, no examples are from the Kiln Complex. Only one jug in the entire study was in the Mudstone and Micrite fabric, and it is from K19 in the houses. While this limited sampling is not an indication that these thirty samples are the only Mudstone and Micrite vessels present in the sanctuary, it is perhaps suggestive that almost all of them come from domestic contexts.

The contextual evidence suggests that the locally produced vessels were made for domestic use. It is entirely possible that they were also produced for use within the Kiln Complex. All four categories of vessels were present in the kiln fills, and a representative sample was chosen based on the most common types present. It is likely that there were Mudstone and Micrite vessels there that were not sampled. Only further study can provide more information. The presence of the locally produced mortaria and pithoi in K17 suggests that those vessels may be associated with industrial use, not related to the Kiln Complex. Perhaps most interesting is the mortar with preserved red paint on the interior, which was found in square K20 in an undisturbed context.[125] It is unclear what the area would have used the red paint for; no archaeological artefacts or architecture with red paint have been found.

7.6. Conclusion

The petrographic identification of the Mudstone and Micrite fabric produced in the kilns allowed for the discovery of the full range of ceramic products produced in the kilns. The extended study of the types of products produced has demonstrated that the Kiln Complex was doing much more than producing tiles. Instead, it was a vital part of the sanctuary, providing vessels

[125] Sample 178 from K20, lot 13

relating to craft production, and food storage and preparation. The implications of these findings will be discussed in Chapter 8.

Chapter 8: Interpretations and Implications: Ceramic Production and Distribution at Nemea and in the Greater Northeast Peloponnese

8.1. Introduction

The culmination of this integrated study, including the ceramic studies, petrographic analysis, and comparative studies of typologies and macroscopic fabrics has revealed patterns of ceramic production and distribution, which contextualise Nemea within the wider Northeast Peloponnese. The results of this thesis, discussed in the previous chapters, allow for further interpretation of the ceramics themselves, as well as their distribution patterns. The implications of ceramic movement and possible exchange within the sanctuary assemblages become highly significant, as they allow for new interpretations of the craft and economic activities taking place. Discussions of provenance and production centres become very important in this regard, when ascription of source is possible. Perhaps most important is applying the results and subsequent interpretations to the original questions created at the outset of the study:

1) Did ceramic production take place in the sanctuary?
2) Is it possible to identify regional and imported ceramics found in sanctuary?
3) Is it possible to comment on ceramic distribution taking place within the sanctuary? In the Northeast Peloponnese?

This chapter will offer interpretations of these questions and discuss their implications for the greater Northeast Peloponnese.

8.2. Did Ceramic Production Take Place in the Sanctuary?

Yes. The petrographic analysis, coupled with the typological studies and study of the Kiln Complex allowed for the identification of a locally produced fabric. This fabric was used to produce tiles, kiln furniture, loomweights, lekanai, jugs, pithoi, and mortaria. It is possible that the full range of the kilns' repertoire is still unknown, due to the discarding of all the excavated material associated with two kilns. At present, there is no evidence that the vessels produced by the Nemean kilns travelled beyond the sanctuary.

The contemporary NVAP ceramics do not have any matches with the Nemea tile fabric, petrographically. However, it is difficult to definitively state that the NVAP material does not include Mudstone and Micrite fabric ceramics for several reasons, not least because it is difficult to accurately characterise the nature of survey coarsewares. The Mudstone and Micrite fabric was discovered petrographically and characterised macroscopically after the study of the NVAP ceramics by Cloke. Additionally, the Mudstone and Micrite fabric is very similar to the Corinthian tile fabric on a macroscopic level and it would be very difficult to tell the difference without a great deal of experience with both fabrics. The NVAP petrographic study was small with only 60 samples, and thus cannot be conclusive in that the Mudstone and Micrite fabric does not exist in the greater Nemea area outside of the sanctuary. Only additional macroscopic and petrographic study of the NVAP Hellenistic coarsewares can show if the Mudstone and Micrite fabric was present outside of the sanctuary.

While it is obvious that the sanctuary was in need of a great deal of tiles throughout the rebuilding period, it is unclear why the Kiln Complex was producing vessels in the same style as abundantly available regional products

from Corinth and the Argolid. As discussed in Chapter 6, the lekanai, pithoi, and mortaria represent shapes present at the sanctuary in other fabrics. The contextual analysis of the vessels in Chapter 7 suggests that they were produced primarily for domestic use related to food storage and preparation, with additional examples suggesting that they were used in industrial contexts related to bronze casting and marble sculpting. Perhaps the Kiln Complex was producing these vessels on an "as needed" basis to supplement the needs of the structures in which they were found. Unfortunately, it is not possible to produce a tight chronology of the houses to demonstrate whether or not the regionally produced vessels were in use at the same time as the locally produced examples. While it would make sense to argue that the local vessels were produced at a time when the imports were not available, there is no evidence to support this claim. However, it does appear that the Nemean potters were highly influenced by the regional shapes, and imitated them to the best of their ability, as they were producing within a known *koine* of shapes. The main difference between the local and regional vessels that would be visible to the consumer would be the physical appearance of the fabric. The coarse, highly tempered Mudstone and Micrite fabric would have been strikingly different from other popular fabrics, especially the vessels in the Fine Quartz and Mica fabric. However, it is unlikely that the properties of the fabrics were any different, and that a particular one offered an advantage, such as increased imperviousness. Rather, it is more likely that these choices were based on availability, and perhaps aesthetic preference.

8.3. Is it possible to identify regional and imported ceramics found in the sanctuary?

Yes. The provenance and comparative studies demonstrated that a range of regional and imported ceramics is present at the sanctuary. In this study,

regional ceramics are defined as products produced within the Northeast Peloponnese. All material from further afield is considered to be imported. This distinction does not take into account the fashion in which the ceramics arrived at the sanctuary. That information is difficult to reconstruct, with the possible exception of shipwrecks, especially in an area known for large-scale visitation. While it is possible that some types of exchange, such as the sale of various commodities, were taking place at the sanctuary during the games, it is also known that individuals travelled to Nemea in large numbers for pilgrimages to the Temple of Zeus and as spectators for the games (Miller 1990:2). These individuals may have brought their own supplies, accounting for some of the regional and imported vessels.

Regardless of how the ceramics came to the sanctuary, in many cases it is possible to reconstruct the areas they came from, and in some cases, to suggest the production centres in which they were produced. Based on the results, there are six fabrics with proposed provenances, based on provenance and comparative studies, in addition to the locally produced Mudstone and Micrite fabric.

Fabric	Proposed Provenance
Chert and Quartz	Corinth
Angular Chert, Limestone, and Quartz	Corinth
Mudstone and Mudstone Breccia	Corinth
Fine Quartz and Mica	Argos/Argolid
Intermediate Grade Metamorphic Rocks	Athens/Attica
Intermediate Igneous Rocks	Aegina

Table 8.1: Fabrics and Proposed Provenance.

Some of the fabrics are not able to be definitively provenanced to their proposed place of origin due to undiagnostic geology in the region, as well as the choice and manipulation of the raw materials. In these cases, it is impossible to provenance them with certainty on strictly petrographic grounds. However, the

archaeological evidence and known comparatives discussed in Chapter 6 were taken into account in order to strengthen these interpretations.

8.3.1. Corinthian Ceramic Production

The three fabrics in this study with proposed Corinthian provenances have strong ties to Corinth through comparative typological and petrographic evidence. However, these fabrics—Chert and Quartz; Angular Chert, Limestone, and Quartz; and Mudstone and Mudstone Breccia—are not able to be provenanced to Corinth on strictly geological or petrographic grounds. Only the archaeological identification of production centres and subsequent petrographic study of the material could produce enough evidence to confirm a Corinthian provenance on petrographic grounds, if the material matched that from Nemea. This is not possible at this time, as no kilns relating to the production of Hellenistic coarse and cooking wares have been found in Corinth. Instead, the archeological evidence at hand must be discussed.

The only published Corinthian ceramic production centre to date is the Tile Works, which dates to the Late Archaic to Late Classical periods, with very little evidence of use in the Hellenistic period (Merker 2006:3).[126] The Tile Works produced coarsewares in the typical Corinthian tile fabric of the time; no evidence for the production of cooking wares has been found. Since there is no evidence for large-scale ceramic production at the Tile Works in the Hellenistic period, the fabrics themselves provide the only evidence of the production centres in use. The Nemean Mudstone and Mudstone Breccia fabric was found to be the same as Whitbread's Type A fabric (1995:269). This perhaps suggests that one

[126] The material from the Corinth Potter's Quarter is well-published, however, no evidence of kilns was found throughout the excavations there.

Corinthian production centre produced a variety of shapes in a single fabric, including amphoras, pithoi, and lekanai.

This same idea is true for the Chert and Quartz fabric. As the primary cooking fabric at Corinth itself, as well as at Nemea, the petrographic studies from both sites demonstrated that the fabric was used to produce more than just cooking pots. The fabric's repertoire included both lopades and chytrai with adjoining lids, jugs, lekanai, kraters, saucepans, and even Corinthian A' and B amphoras.[127] While there is some overlap with the contemporary vessel shapes produced in the Mudstone and Mudstone Breccia fabric, the Chert and Quartz fabric was most likely more tough, allowing for repeated exposure to heat due to the larger proportion of non-plastic inclusions. The manufacturing processes used in the production of this fabric do not appear to change over the four centuries sampled in this study. In fact, comparative material from Lerna suggests that this fabric was produced as early as 500 B.C., as evidenced by seven samples of cooking pots and a lekane.[128] The late Archaic/early Classical samples are identical in petrographic fabric to the Hellenistic samples from Corinth and Nemea, suggesting continuity in manufacturing techniques and traditions for six centuries. The same raw materials were used, which were then treated in the same way.

These processes are very similar to those used in the production of the Large Angular Chert, Limestone, and Quartz fabric. As discussed in Chapter 6, this fabric is exactly the same as Late Roman Corinthian cooking fabric, which has been extensively studied from the 4th-7th centuries AD. The primary constituents of both fabrics are the same, indicating that they most likely came

[127] The Corinthian A' and B petrographic samples are Corinth 13/43 and 22, respectively.
[128] Lerna samples 8, 25, 27, 33, 43, 55, 63. All samples date between 500-275 B.C., see Appendix V for complete list of samples with dates.

from the same raw materials. Corinthian cooking fabric was first produced in the early Roman period, as early as the late 1st century B.C., based on comparative samples from Hellenistic Corinth.[129] In 2007, Louise Joyner published a petrographic study of Byzantine and Frankish cooking pots from Corinth, manufactured five centuries after the latest samples of Corinthian cooking fabric. Joyner's sampled cooking pots include two chert-rich groups, which appear to match the Late Roman fabrics in thin section (Joyner 2007:193-195). Even the clay mixing and manufacturing techniques of Joyner's cooking pots are quite similar to Corinthian cooking fabric. Joyner suggested that these vessels could be provenanced to Corinth itself, as they were compatible with local geology. Textural features of this pottery may have changed slightly over time, and the shape of the vessels may have been altered, but the fabric and the range of functions were essentially the same as those of the Large Angular Chert, Limestone, and Quartz fabric, as well as Corinthian cooking fabric. Additionally, Corinthian cooking fabric is present in large quantities around Nemea, in the Nemea Valley Archaeological Project's historical ceramics, as well as in the sanctuary itself.[130]

While the fabric is thus persistent through time and characteristic of consistent production methods, it is not diagnostic of origin as Joyner suggests. Her suggestion of a Corinthian origin has important implications for the Chert and Quartz and Large, Angular Chert, Limestone, and Quartz fabrics. In the case of Corinthian cooking fabric, examples were found further afield, which must be taken into account in discussions of provenance. In 2007, Whitbread analysed 67

[129] Corinth sample 2013/98, dated to 10 B.C.
[130] Christian Cloke is currently conducting a study of the Late Roman ceramics from the sanctuary, and confirmed that there is an abundance of Corinthian cooking fabric vessels (pers. comm. 2014).

vessels dating to the 4th to 7th centuries AD, from the Berbati Valley. These samples contain chert, limestone, and occasional garnet, and appear identical to Corinthian cooking fabric and the Large Angular Chert, Limestone, and Quartz fabric (Whitbread *et al.* 2007:186). Not only are finds of vessels in this fabric from Berbati, Corinth, and Nemea contemporary, but all three assemblages also include the same range of utilitarian forms. In addition to his petrographic study of ancient ceramics from Berbati, Whitbread has published a clay sample from the valley that closely matches the predominant cooking fabric among Berbati survey finds, and is also a close match for Corinthian cooking fabric (Whitbread 2007:179,186). Whitbread therefore proposed that the strong correspondence of local clay resources to those raw materials used for the production of ancient pots demonstrated production of this fabric in the Berbati area. The geology of the northeast Peloponnese, however, is notably homogeneous as previously discussed, and similar sources may be available elsewhere.

While the geological evidence at Berbati is important, the archaeological evidence for this fabric suggests that from its inception in the 1st century B.C. through the 14th century A.D., the fabric was produced in large quantities, and served as the primary cooking and coarse fabric at Corinth throughout the fifteen centuries in question. It seems unlikely that the Berbati Valley could have supported such large-scale operations, especially over a vast period of the time without leaving any archaeological trace. No evidence of this was found in the Berbati-Limnes survey and subsequent excavations at Pyrgouthi. Whitbread's clay is the most likely candidate for the Large Angular Chert, Limestone, and Quartz fabric found to date, but there is no archaeological evidence supporting a Berbati Valley provenance for the fabric.

The chronological continuity alone makes a strong argument for Corinthian provenance, but this is difficult to prove without production centres. Production on such a large scale, over such a long period of time would hopefully have left some kinds of archaeological indicators, but unfortunately none have been found to date. Slane suggests that the production centres related to this fabric were located in rural areas, away from major population centres (2014:127). This may be the case. Clay prospection studies within the vicinity of Ancient Corinth itself have failed to find raw materials similar to those of this fabric, and no signs of a production centre have been found (Whitbread 1995, Whitbread *et al.* 2007).[131] It is possible that production took place outside of the walls of the ancient city in a remote location.

Another possible production centre in close proximity to Corinth is Sikyon. A study of wasters collected during the survey at Sikyon demonstrated that Sikyon was producing a small variety of ceramics in the Hellenistic period, most notably, a chytra/casserole with a flanged-thickened rim, and a stew pot with everted rim with thickened end (Trainor 2012:96). These shapes find parallels at Corinth. Trainor studied these shapes petrographically, and he characterised the cooking pot fabric as "Sikyonian Silicate Fabric", comprised of common chert, quartz, and micrite (2012:123). Comparison of these samples in relation to the Corinthian and Nemean Chert and Quartz fabric samples showed many similarities in every way, and may come from the same raw materials and recipe. In fact, the fabrics are so similar that it is difficult to distinguish them macroscopically and petrographically. After extended study of the two fabrics, it appears that the Sikyonian fabric is differentiated by two factors—more abundant

[131] Current studies carried out by Graybehl, Hammond, and Sanders have also failed to find clays in the vicinity of Corinth that are petrographically related to known archaeological fabrics.

polycrystalline quartz displaying metamorphic textures, and the presence of wavy orange/red inclusions, which may be related to serpentinite. However, these differences are very subtle. Thus, it is not possible to confirm that the Sikyonian Silicate fabric is present at Nemea. The subtleties of the differences of the two fabrics does not allow for a secure identification of the Sikyonian fabric without further sampling at Sikyon. More comparative study of the Sikyonian and Corinthian fabrics must take place, with a larger sample set. Chemical analysis may also help distinguish the two fabrics. At this time, it is safest to assume that Sikyon was producing its own Hellenistic cooking fabric which was very similar to the Corinthian Chert and Quartz fabric, but it is unlikely that the production of the two fabrics took place in the same production centre or workshop, and thus, they are not related.

Despite efforts to tie the Chert and Quartz and Angular Chert, Limestone, and Quartz fabrics to Corinth on geological, petrographic, and archaeological terms, it is not possible to definitively prove that these fabrics were indeed produced in Corinth. The archaeological evidence makes a strong argument, which will continue to be explored through further study, within the Hellenistic period but also expanded to both early (Geometric-Classical) and later (early Roman) periods.

8.3.2. Argive Ceramic Production

The Fine Quartz and Mica fabric has a proposed attribution to the Argolid based on primarily archaeological evidence, discussed in Chapters 5 and 6. The fine fabric is both undiagnostic and uncharacteristic in every respect. The geology of the Argolid fits with that of the fabric, but the geological constituents are easily available throughout the Northeast Peloponnese and further afield. As

discussed in the Chapter 5, Erickson attributed this fabric to Argos/Argolid based on its quantities, shapes, decoration, and time span at Lerna (*Lerna* VIII:322-329). Petrographically, the fabric is common at Nemea, as well as at Lerna. At Lerna, it was the most common plainware fabric, and spanned the Geometric to Hellenistic periods, ranging from 800-275 B.C.

Although so little is known about Argive pottery, especially the ceramics from the ancient city itself, the Fine Quartz and Mica fabric seems a likely candidate for Argive production, due to its large quantities present at Lerna, Lerna's location along the border of the northern and western Argolid, and close proximity to Argos. The "Argive" identification is not tied to Argos itself, but rather denotes a possible production location somewhere in the northern Argolid or Argive Plain. Greater studies of Argive ceramics need to take place and be published, especially in the Southern and Western Argolid, as well as from excavations within the ancient city.

While it is not possible to definitively provenance this fabric, it is possible to comment on the production centre itself. It is clear from the studies at Lerna and Nemea that manufacturing techniques and practices concerned with raw materials were upheld for at least five centuries. There is no change in the fabric from the 8th-3rd centuries B.C. The repertoire can be recreated at least partially from the petrographic samples from both sites. The centre was producing kraters, lekanai, and mortaria throughout the Archaic-Hellenistic periods. All three of these shapes are present at both sites. At Lerna, there is a larger range of vessels present in this fabric, including an amphora (dated to Middle Geometric II), a bowl, and a kantharos, both Hellenistic in date. At Nemea, there are nine Hellenistic jugs in this fabric. No Fine Mica and Quartz jugs are found at Lerna,

further indicating that the repertoire of the production centre in question is most likely greater than that present at a single site.

It is likely that the Fine Mica and Quartz fabric relates to Whitbread's Felsic (very fine sand) fabric from the Berbati Valley Survey (2011:147-148). This fabric represents the same shapes present at Lerna and Nemea, in addition to skyphoi, pyxides, kanthariskoi, and tiles, all dating from the Geometric-Late Antique periods. It is clear that the centre is producing more shapes than are present at a single site, and only comparative study of more sites around the area will reveal the whole picture.

8.3.3. Attic Ceramic Production

The production of Attic plain, coarse, and cooking wares took place on a large scale in the Hellenistic period. As this study only relates to Attic ceramic production through twenty-three samples of the Intermediate Grade Metamorphic Rock fabric which may possibly be of Attic origin, an in-depth analysis of Attic production is not possible. Susan Rotroff studied and published Hellenistic Attic ceramics extensively, most notably in *Agora* 33. As discussed in Chapter 5, the Nemean samples ascribed to an Attic origin are both characteristic and diagnostic. The geological indicators, as well as macroscopic fabric and typological analysis, strongly suggest an Attic provenance. More analytical study of Attic ceramics would be of great value, especially with contemporary samples of the same shapes.

8.3.4. Aeginetan Ceramic Production

The single sample of Intermediate Igneous Rock fabric is a confirmed match with contemporary Aeginetan samples. Aegina was a large producer of cooking pots in the 6th-4th centuries B.C. (Klebinder-Gauss 2012). Perhaps most

interesting is the discovery of a burnt, rectangular stone, most likely a millstone, that was found and sampled from the contents of the North Kiln.[132] Petrographic analysis demonstrated that it is an Intermediate Igneous rock, highly burnt with a great deal of bloating pores. This rock is most likely andesite, and is very similar to the inclusions found in the Intermediate Igneous Rock fabric. It is likely to have been imported from Aegina. Aeginetan ceramic production is well-studied and published by Gauss and Kiriatzi (2011) and Klebinder-Gauss (2012). Those references provide excellent discussions of the significance of ceramic production and distribution of Aeginetan wares.

8.4. Is it possible to comment on ceramic distribution taking place within the sanctuary? In the Northeast Peloponnese?

It is possible to comment on the role of ceramic distribution in both the sanctuary and the greater area, within reason. Regardless of where they were produced, it is clear that the same vessels in the Chert and Quartz fabric were travelling between Nemea, Corinth, and Lerna. The same cooking fabric and shapes were found at all three sites, but are most common at Corinth. Similarly, the Fine Quartz and Mica fabric lekanai, kraters, and mortaria travelled to at least Lerna and Nemea. These are most common at Lerna, and range from the Geometric to Hellenistic periods. Even if we disregard all provenance-based evidence, it is clear that ceramics were being distributed throughout the Corinthia and the Argolid, and that Nemea was receiving material that was also present at Lerna and Corinth (Figure 8.1). This study demonstrated that the same fabrics are found at Lerna and Nemea, and Corinth and Nemea, but only Corinthian fabrics have been found at Lerna, with no Argive fabrics petrographically confirmed at Corinth to date.

[132] Nemea sample 267

Figure 8.1: Exchange patterns demonstrated through petrographic study of Nemea, Corinth, and Lerna. From Google Maps, identifications added by author.

The picture becomes more complex if the imported vessels are taken into account (Figure 8.2). It demonstrates that ceramics are being circulated throughout the Northeast Peloponnese, while imports from further afield are also present.

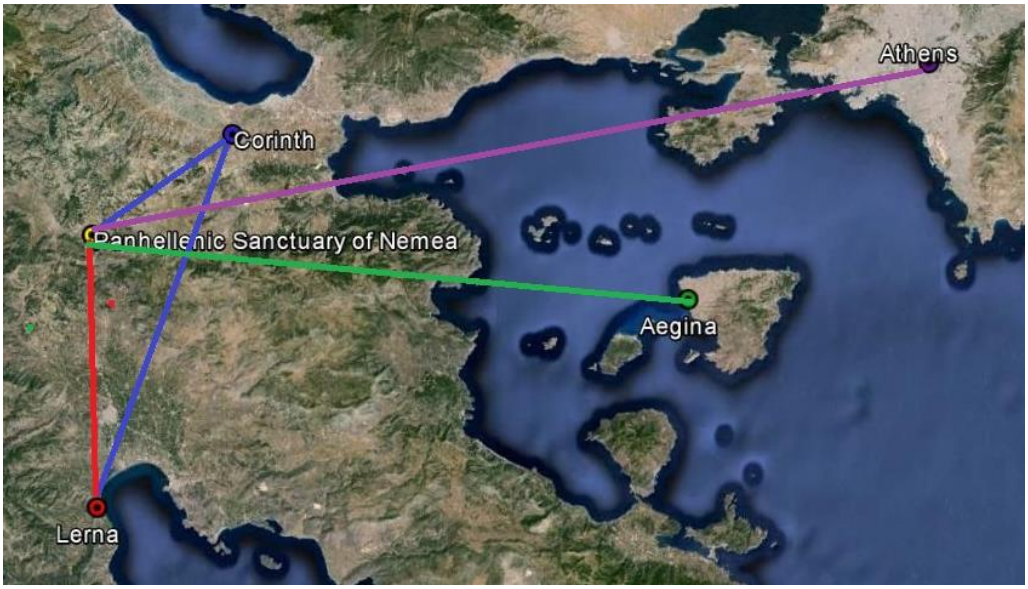


Figure 8.2: Distribution patterns based on proposed provenance studies. From Google Maps, identifications added by author.

Finally, it is necessary to look at a distribution map based on the petrographic results of this study combined with published ceramic studies from

sites around the Northeast Peloponnese (Figure 8.3). These published studies did not use petrographic analysis or any other form of scientific analysis to ascribe the provenance of the fine, plain and coarseware vessels; rather, these hypotheses are based on typological and chronological comparanda. This map does not purport to be an accurate indication of ceramic distribution around the Hellenistic Northeast Peloponnese. Instead, it represents the potential for petrographic studies to reveal these patterns through comparative work.

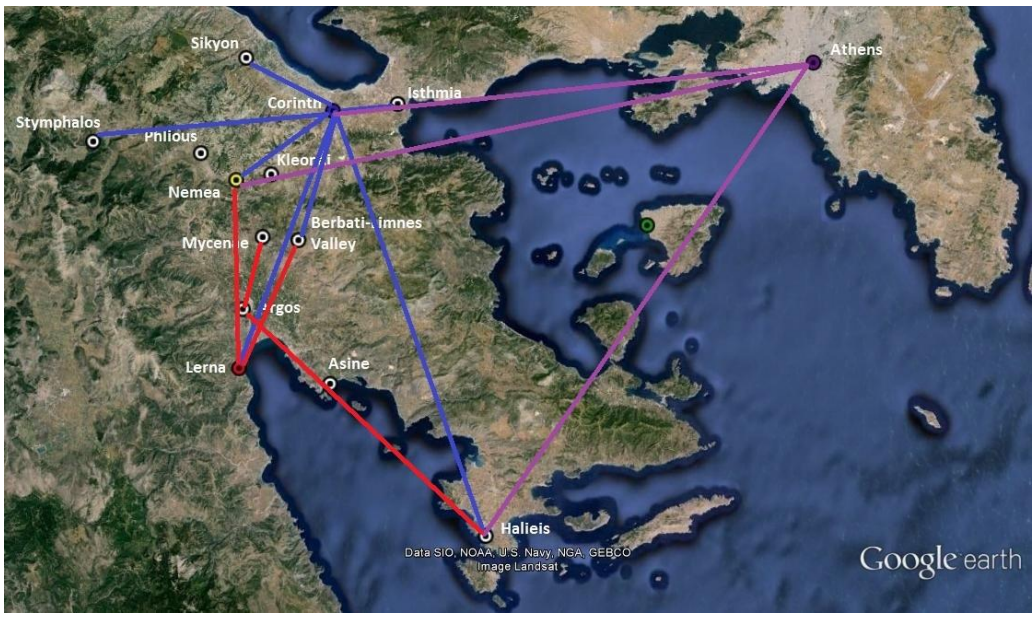


Figure 8.3: Hypothetical distribution patterns based on published studies. Blue lines represent the movement of "Corinthian" ceramics, red lines for "Argive" ceramics (typically attributed to Argos, connected to Lerna only through petrographic comparative matches), purple lines for "Attic" pottery. From Google Maps, identifications added by author.

This hypothetical distribution offers some interesting theories in light of the distribution patterns confirmed by the petrographic analysis. For instance, if ceramics found at Corinth were also found at Nemea and Lerna, it would make sense to find them at Kleonai, Mycenae, and Argos, as they are all along the same route. While there is no evidence for these ceramics at the latter three sites, there are no studies in Hellenistic coarse and cooking wares from these sites. The same

is true for Phlious. From a historical context, Nemea, Phlious, and Kleonai were all controlled by Argos at various times throughout the Hellenistic period, with control of the sanctuary alternating between Kleonai and Argos. If this is the case, then it would be reasonable to expect to find the same patterns of ceramic distribution at both Kleonai and Argos, as they most likely shared economic assets, or at least had regular access between the two sites.

At the onset of this study, it seemed likely that Phlious, Nemea, and Kleonai were interconnected in a variety of ways. It was assumed that if local ceramic production (apart from the Kiln Complex) was taking place in the greater Nemean region, it was most likely located in Kleonai or Phlious. From an economic standpoint, both cities had a great deal to gain from the Panhellenic sanctuary when it was active, and the numismatic evidence supports this.[133] However, at present, it seems that if Kleonai or Phlious were indeed producing ceramics, they are not present at Nemea. It is impossible to state that a ceramic type was never present at the sanctuary, due to the large amounts of ceramics thrown at the time of excavation, but the current assemblages are well represented by the petrographic study and there was no large unprovenanced fabric group that could be ascribed to production from either site. Unfortunately there is little excavated Hellenistic material at Phlious, but survey material from NVAP was collected, saved, and studied, which is discussed in Chapter 3. The German excavations at Kleonai have unearthed Hellenistic pottery, yet to be published. If the results of the Nemea study were applied to these assemblages, and they were approached with similar methodologies, then it may be possible to reconstruct a great deal more information relating to ceramic production and

[133] The numismatic evidence is discussed in Chapter 3, in the sections relating to Kleonai and Phlious.

distribution in the greater Nemea Valley region, and the role of the sanctuary in these activities.

The same is true of the North and Eastern regions of the Corinthia. It is clear that some ceramics are being exchanged between Sikyon and Corinth, especially Type B amphoras.[134] Sikyon was easily accessible from Corinth, but was also close to lesser accessible sites in the Northern and Eastern Corinthia, such as Stymphalos and Aigeira. Examining the distribution patterns between these sites would be interesting, especially in relation to Corinth. Peter Stone identified one of the most common coarseware fabrics at Stymphalos as "Northeast Peloponnesian Orange" (2007:40). After careful review and discussion with Stone, it seems likely that this fabric is the same as the Chert and Quartz fabric. While only petrographic analysis can confirm this, the fabrics are the same macroscopically and represent the same typologies. Stone and Trainor's study of the Sikyonian fineware from the Sikyon Survey Project identified sherds of possible Attic and Argive origin, suggesting that Sikyon's patterns of ceramic distribution may be similar to Nemea's (Trainor 2012:179). Stone identified Argive wares at Stymphalos, but not Attic sherds, suggesting that the Attic wares did not travel that far west (2007:40). It is possible that Aigeira may also been connected to these distribution patterns. However, due to its Western location and proximity to Sikyon, it may be removed from these patterns found in the Northeast Peloponnese and instead be more focused on the Western Peloponnese and exchange from further afield, such as Italy or even Boeotia. This material is currently being studied by Trainor, and the results will be very

[134] Comparative petrographic studies at Corinth and Sikyon revealed that Sikyon was producing Corinthian B type amphoras in its own local fabric. Corinth was also producing B amphoras in its own fabric. The two types of amphoras are very similar macroscopically, so it is unclear to what extent the two amphora types were being exchanged between the sites. Corinth samples 13/36-, 57, 59 (Sikyonian Type B amphoras).

interesting in relation to the Northeast Peloponnese. While Sikyon is an important Hellenistic site in the Northeast Peloponnese with historical significance to the region, Stymphalos and Aigeira represent the outskirts of the area.

Only a small amount of finewares have been published from Mycenae to date, but Rudolph offers some interesting insights. He suggests that many of the shapes are a "stock of established forms" within the greater sphere of Hellenistic pottery, and that they could be produced locally (Rudolph 1978:231). However, his definition of "local" production is defined by the lack of knowledge of Argive pottery—it could have been produced at Mycenae, but also within the Argive Plain or Eastern Peloponnese. He concludes that the assemblages may reflect an Argive/Eastern Peloponnesian production centre, but that it is not possible to identify anything within these loose terms until an established framework of Hellenistic Argive pottery is created (Rudolph 1978:228). It should also be noted that he only discusses finewares, and there is no mention of Corinthian or Attic ceramics in the assemblage. The ceramics from the Berbati-Limnes Valley are similar, especially because Penttinen (1996:273) relied on Rudolph's identifications from Mycenae as a guide to the finewares. It is clear that the ceramics from the valley shares many similarities with Mycenae, such as similar fineware shapes. Penttinen (1996:275) also identified Corinthian louteria and Type A' amphoras, suggesting that Corinthian ceramics were available to the area, even if in small quantities in a very limited range of shapes. It does not appear that any Attic wares were found.

Another nearby area to take into account is the Southern Argolid. Few Hellenistic sites are known in this region, with Epidauros and Halieis perhaps

being the best known. Very little is published on the archaeology of Epidauros, with no publications relating to Hellenistic ceramics. Given the nature of the sanctuary as a healing centre, along with the theatre, the site was most likely visited by large numbers of people on a regular basis. It would make sense if the ceramics from the site were similar to the patterns found elsewhere in the Corinthia. Halieis is further afield in the Southern Argolid, in a more isolated location. Corinthian, Argive and Attic ceramics are found there, according to Ault's study of the houses (Ault 1999:566). These identifications are most likely based on finewares, and he does not explicitly mention the shapes and dates. The pattern of ceramic distribution there, even though it is in a fairly remote area, is the same as at Nemea.

Many of these publications based their provenance studies solely on finewares. Finewares proved to be a challenge at Nemea. While Corinthian finewares are well-published, and the Corinth Museum storeroom proved to be an excellent resource for comparing fabrics and shapes, the assemblages at Nemea contain a great deal of finewares that are not Corinthian. It became apparent that a large percentage of Nemean finewares was Argive, based on the personal study of comparative material from Lerna. However, with so little Argive material published to date, it is virtually impossible for a ceramics scholar to confidently identify Argive finewares without personal access to Argive material. Rudolph and Erickson may be the most relevant experts in this case, as they have studied and published the most material. However, Rudolph himself expresses concern over the identification of local and Argive finewares at Mycenae, because so little is known of the ceramics from Argos itself, as well as the surrounding Argive plain.

Nemean fineware assemblages occasionally contain a few items of Attic origin, but this identification can be problematic, especially if the sherd is so worn that the characteristic shiny, black gloss has dulled. Many hours were spent at the Nemea storeroom contemplating these differences, as well as at Lerna.[135] At this time, it is not possible to accurately identify the majority of the finewares at Nemea by provenance. Further, in light of the provenance studies, it is archaeologically impossible to definitively prove that the finewares are attributed to proposed places of origin based on published comparanda only. The Corinthian, Argive, and Attic identifications of fineware are based partially on previous study at Corinth and Athens, but also stem from the historical belief that these three places were the main centres of ceramic fineware production in the greater region during the Hellenistic period. Many studies have been conducted at Corinth and Athens, but the majority of them do not discuss fabrics in depth, or use archaeometric studies to prove that the ceramics were indeed produced there. Many of the provenance attributions currently accepted are based on art historical approaches to decoration and shape, rather than fabric and technological studies. Thus, the identification of many finewares' provenance is part of a cycle of misinformation, based on assumptions that have been accepted as fact. It is clear that chemical analysis will facilitate confident grouping of the material at sites that contain mixed assemblages, and perhaps even provide answers to provenance questions at Nemea, but also around the Northeast Peloponnese and the greater

[135] Erickson and I conducted a study of comparing all the Attic-type skyphoi found in the Lerna assemblages, which were all contemporary and most likely represented Corinthian, Argive, and Attic provenances. As the study began, we were confident that we could tell the difference between the vessels from the three locations. After completing macroscopic fabric analysis, and studying the shapes and glosses in detail, it became apparent that it was rarely possible to identify the origin of one of these vessels with certainty, if not impossible. The differences are superficial and not always visible. We planned a program of chemical analysis, to be completed, to help group these objects in a more conclusive way which has not been completed to date.

Mediterranean. The map (Figure 8.3) further demonstrates these points, as the majority of published references used refer to typological and chronological studies of finewares, illustrating the great need for archaeometric studies of fine, plain, coarse, and cooking wares in the Northeast Peloponnese in order for this proposed distribution network to come to fruition.

While this study has revealed some information relating to ceramic production and exchange in the Northeast Peloponnese, it is clear that a great deal more information can be extracted from further study of a range of sites located within the Northeast Peloponnese. In that respect, one of the most important aspects of the Nemea study is the methodology utilized, and how the results demonstrate its effectiveness. It may not be possible to definitively provenance many of the fabrics at this time, but continued study and utilization of other techniques, especially chemical analysis, may help answer these questions relating to the location of production centres. Continued study of more sites within this study area will reveal more detailed patterns of distribution, and may allow other sites to be connected. It should be made clear that the distribution patterns created in this study are only reflections of the movement of ceramics, not of people. While it may be tempting to connect Corinth and Nemea economically or politically, it is not possible to comment on these types of interpretations based on the evidence at hand. The evidence only demonstrates that the same kinds of ceramics were present at multiple sites, indicating that the ceramics did move around the region.

8.5. Commenting on Ceramic Production Centres in the Northeast Peloponnese

At this stage of the study, it is possible to comment on some of the production centres that were producing a few of the fabrics and speculate about

their provenance based on geological and archaeological studies. It is clear that at least two large production centres were present in the Hellenistic period, which produced a large range of vessels over a long period of time, those represented by the Chert and Quartz and Fine Quartz and Mica fabrics. Through comparative analysis, these fabrics can be shown to be present at multiple sites, thus displaying patterns of ceramic distribution throughout the Northeast Peloponnese. In contrast to this, the production taking place at Nemea seemed to be for exclusively local use. As discussed above, no evidence has been found to suggest that the vessels produced in the sanctuary are present elsewhere.

It is apparent from the petrographic results that there was a choice of vessel types available to the sanctuary at Nemea at various points in the Hellenistic period. Chapter 6 discusses the large range of shapes found in different fabrics, where the main differences relate to appearance rather than function. It is clear that a range of vessel types from different places were acquired and used. However, this phenomenon is most interesting when compared to similar assemblages from Corinth. The petrographic study at Corinth sampled a wide range of vessel types that mirrored the Nemean sample set in vessel shapes. At Corinth, the most common plainware fabric found in the assemblages was the Quartz and Mica fabric.[136] This fabric was presumed local by Corinthian ceramic experts because it is the primary fabric for Corinthian B amphoras.[137] The petrographic results indicated that this fabric was used for various types of lekanai, mortaria, and pitchers, in addition to Corinthian B

[136] Despite the similar names, the Corinthian Quartz and Mica fabric is different from the Nemean/Lernan Fine Quartz and Mica fabric—the two fabrics are not related.
[137] Personal communication with Sarah James, 2013

amphoras.[138] The chronological range spans from the late 4th century to 75 B.C. Based on this study, it is apparent that the Quartz and Mica fabric is the primary plainware fabric at Hellenistic Corinth, in which many shapes relating to food preparation and storage were produced. Despite being so popular at Corinth, the fabric is not present at Nemea in any form. Interestingly, the non-amphora shapes produced in this fabric—lekanai, mortaria, and pitchers (jugs)—are the main vessel forms being produced locally in the sanctuary in the Kiln Complex. These shapes are also present in the Argive Fine Quartz and Mica fabric, which are found at Nemea. Based on the evidence, it seems probable that Nemea sufficiently met their demands for these shapes through a combination of local production and exchange with other non-Corinthian sources. On the other hand, when the Chert and Quartz fabric vessels were in such high demand at both Nemea and Corinth, it would make sense that the sanctuary may have obtained other types of vessels through the same distributors or exchange networks. If the Chert and Quartz and Quartz and Mica fabrics are both attributed to Corinth, then perhaps the lack of Quartz and Mica vessels elsewhere suggests that the production centres did not interact, at least in terms of distribution. More simply, perhaps there was no need for these vessels at Nemea, as they were already adequately supplied with these shapes from other sources.

At present there is no petrographic evidence to confirm that the Corinthian Quartz and Mica fabric travelled outside of Corinth itself. It is apparent that Corinthian B amphoras did indeed travel, although no petrographic studies have taken place at sites other than Corinth and Sikyon to date. Given the evidence that Sikyon was also producing Corinthian B amphoras in their own

[138] Samples Corinth 2013/1, 2, 3, 4, 5, 6, 7, 24, 25, 39, 40, 41, 42, 44, 45, 46, 47, 48, 49, 50, 54, 55, 56, 58, 60, 61, 62, 63, 64, 81, 82, 83, 84, 85, 86

fabric (discussed above), it is difficult to assess the distribution patterns of Corinthian B amphoras in the Corinth Quartz and Mica fabric outside of Corinth without further petrographic analysis. The Quartz and Mica fabric is not particularly characteristic or diagnostic in hand specimen, further complicating the problem. While many sites in the Northeast Peloponnese have attributed plainware lekanai, mortaria, and pitchers to Corinth, none to date have completed petrographic studies to demonstrate that the fabric is indeed the Quartz and Mica fabric, so it is impossible to tell if and where these vessels were distributed at this time. Based on the results of this study, it is possible that many of the Northeast Peloponnesian ceramics traditionally attributed to Corinth may actually be Argive or from a currently unknown source.

8.6. New Interpretations of Activities Taking Place in the Sanctuary

Nemea serves as the ideal location to study ceramic production and distribution in the Northeast Peloponnese as it is located in the centre of the region, on the border between the Corinthia and the Argolid. The sanctuary itself is an excellent case study for the production and consumption of ceramics for a variety of functions. While it was visited by a large array of people from all over the Mediterranean world as a Panhellenic Sanctuary, it must have been active on a small level during periods of dormancy in the Olympiad calendar. Even if this is not the case, a great deal of preparation must have taken place before the Nemean Games, especially in securing provisions for the visitors. Food must have been acquired, along with the appropriate equipment for the storage and preparation of the food. Unfortunately, the excavators of the houses, the areas that have been associated with food production, did not collect any organic material or soil samples that would allow for archaeobotanical or

micromorphological analysis of the areas to confirm these activities, or shed light on the types of foodstuffs that were prepared and consumed. Even the pottery provides only a partial glimpse into this picture, as a great deal of it was thrown away. However, the remaining material presents overwhelming evidence for these activities. As discussed in Chapter 6, the majority of the ceramics from the houses represent functions relating to food storage and preparation. The little fineware present, representing consumption activities, is a very mixed assemblage representing different types of vessels for drinking and eating with no dominant types.

The finewares present in the assemblages from the houses include a variety of consumption vessels, with a surprising lack of serving vessels. The most common shape found throughout the lots was the Attic-type skyphos, the typical Hellenistic drinking shape. The majority in question appear to be a combination of Corinthian and Argive vessels, although the uniformity of black gloss and shape found between the skyphoi from both areas makes it difficult to tell for many sherds, as discussed above. Additionally, the presence of the shape in deposits ranging from the late 4th to mid-3rd centuries B.C. does not help in refining the chronology of the house.

Other common drinking shapes include mould-made bowls. Foliage, figural, net-pattern, and linear mould-made bowls are all represented in the assemblages, and are found in lots dating to the mid-3rd to mid-2nd centuries B.C. These lots have a noticeable lack of Attic type skyphoi, suggesting that the mould-made bowl came to replace it as the primary drinking vessel. The mould-made bowls are probably both Corinthian and Argive based on the study of their

decoration, although it is possible that other centres of production are represented.

The assemblages also contain a great deal of different bowl shapes from the early 3rd to mid-2nd centuries B.C. These include a great deal of echinus bowls, most of which appear to be Corinthian in origin based on shape, in addition to outturned rim bowls, some of which have dipped gloss on the exterior with visible drips. Noticeably absent from the assemblages are kantharoi, a common drinking form found at Corinth in large quantities (James 2010:60-70). Very few were found in the houses, with only one catalogued example.

The few fineware serving vessels present in the assemblages include several oinochoai and olpes, a hydria, and a table amphora, all used for the storage and pouring of liquids. There is also evidence for several black glazed kraters with tab handles, which are most likely Argive based on Lerna comparanda. Kraters were used for the mixing and serving of wine. The lack of fineware serving vessels is more than made up for by the abundance of plain and coarseware table vessels. There are also a few rare fineware shapes, with less than five catalogued examples, that represent a consumption and serving functions. These include Lakonian mugs/kyathoi, Hexamillia cups, and a single example of a lagynos. Several aryballoi are also present, traditionally used for the storage of oils.

Unfortunately due to the limited amount of published Hellenistic pottery from the Argolid and Corinthia regions, with the obvious exception of Ancient Corinth, it is not possible to identify fineware vessels by provenance, except for characteristic Corinthian wares, and a small amount of tentatively identified Argive wares, based on the concurrent study of Hellenistic ceramics from Lerna.

However, despite the lack of provenance for the majority of the finewares, it is important to note that there is no apparent homogeneity within the fineware in the assemblages. Instead of representing the dining vessels of a single residence, the finewares appear to be a mixed group of different types of vessels with many different origins. It is possible that these finewares could have been the possessions of many different people, discarded at the site once broken.

If these eating and drinking vessels, primarily Attic-type skyphoi and various types of bowls, were part of a serving set associated with the food production, then it would be reasonable to expect some homogeneity within the assemblage, such as many examples of the same types of same cups and bowls. This is not the case. Rather, the finewares seem to represent an eclectic mix of shapes with different fabrics and glosses. There are surprisingly few finewares as well. Compared to the coarsewares, of which a great deal was thrown at the time of excavation, the finewares account for less than 25% of the total assemblages.[139] Although it is not possible to accurately hypothesize the provenances of the finewares from these assemblages, it seems clear from the fabric studies that the vessels represent many centres of production, perhaps from a range of places throughout the Northeast Peloponnese and further afield. If the houses represent a type of establishment that provided food and drink to visitors of the sanctuary, then it is possible that the finewares represent the visitors themselves. The juxtaposition of a somewhat uniform arsenal of food storage and cooking-related equipment with a diverse and varied collection of finewares

[139] This is an estimate of the percentage of finewares found in the assemblages of squares K19, K20, L20. As discussed in Chapter 4, quantitative analysis was not possible on these assemblages, due to the large percentage of material thrown during the excavations. However, the notebooks of all three squares explicitly state that only plain and coarsewares were thrown, all fineware was saved.

suggests that perhaps the visitors brought their own vessels for eating and drinking, which were only discarded at the site if they broke.

Based on the ceramic assemblages from within and outside the houses, there are several hypotheses regarding the function of these structures that can be offered. The ceramic studies suggest that the houses did not serve as a residence for one person, or a small group of people, but rather, a structure that may have functioned as a type of kitchen or restaurant designed to serve a large amount of people at a time. It is the vessels relating to food storage and preparation, such as the lekanai, chytrai, lopades, and jugs that form homogenous fabric groups in large numbers. The abundant quantities of these vessels in the assemblages is also significant—even after the discarding of many coarsewares, over seventy-six cooking vessels, fifty-four lekane, and fifty-four jugs were present in the lots. The great numbers of visitors to both the games and sanctuary would surely have needed some place to eat, especially those staying in the xenon, conveniently located across the street. It may be possible that the houses were not independent structures but rather a cluster of connected buildings that shared the same function. Indeed, the structure designated as House 4 contains a hearth, suggesting that it was also used for food preparation (Miller 1990:76).

It is not possible to discredit or prove Miller's theory that the house may have been domestic in nature, and served as a residence. This is because there is simply not enough information available on the typical assemblages of Hellenistic domestic structures to demonstrate what a typical residence would look like, or to understand the crucial indicators of a solely residential building (Nevett 1999, Ault and Nevett 1999). This is not to say that trying to understand the function of a space through assemblage study is futile. Rather, as Ault and

Nevett suggest, it is important to understand the limitations of the assemblages and realistically assess the types of information that can be discerned. The assemblages cannot and will not provide a "synchronic view of a household's inventory, consumption, or discard patterns on anything approximating an ethnographic 'moment in time'" (Ault and Nevett 1999:51, 52). In light of this, it is not possible to confidently identify the main purpose of the structures. It seems likely that the houses served a variety of functions, including the storage, preparation, and serving of food to large numbers of people who brought their own consumption vessels. In this case, it seems reasonable to consider this practice to be more commercial than domestic in nature. However, it is entirely possible that people were residing in the house, either on a permanent or occasional basis. Just as there is no archaeological evidence to support this theory, there is no evidence to discredit it either. Thus, it is perhaps safest to assume that the houses performed many functions over their use-life of one and one-half centuries, many of which are not visible in the archaeological record.

8.7. The Significance of the Ceramic Study

The problems with identifying the source of finewares from the houses assemblages demonstrate how important the petrographic study is. It is not possible to confidently comment on the nature of the provenance of the finewares, other than to note that many of the fabrics and shapes are different. It is likely that the finewares came from a range of places, perhaps brought in by visitors who would have surely needed a cup and bowl or plate for drinking and eating along their journey. Whether this theory is accepted or not, it is clear that there is a broad range of vessel types present in the fineware assemblages. This is starkly different from the picture of the plain and coarsewares made clear by

the petrographic study. The assemblages from the houses are a very homogenous mix of a small range of vessel types, in an even smaller range of fabrics. It is clear that Chert and Quartz chytrai and lopades were the standard cooking equipment used at the sanctuary, with a mix of Fine Quartz and Mica and Mudstone and Micrite (locally produced) lekanai, jugs, and mortaria with a few exceptions.[140] These assemblages suggest the activities in the houses utilised a standardised set of plain, coarse, and cooking ware vessels. These vessels were likely replaced by the same types of vessels for at least a century, suggesting that the sanctuary had a preference for certain vessels from different production centres. In the case of plain and coarse wares, the imported vessels may have supplemented the local supply, while cooking wares were almost uniformly Corinthian with occasional Attic or Aeginetan vessels.

The next logical step in this study is to broaden the understanding of ceramic distribution in the region. Applying the methodology used in this study to other sanctuaries with similar patterns of visitation, as well as evidence for the preparation and consumption of food, such as Stymphalos and Isthmia may reveal similar patterns of ceramic distribution. It is likely that the greater distribution of plain and coarsewares around the Northeast Peloponnese reflect these patterns. It is also possible that sites in the Northeast Peloponnese with areas associated with food storage and preparation may have had similar preferences. Only future study can answer these questions.

8.8. Implications of Local Ceramic Production at Nemea

Local ceramic production at Nemea can now be divided into four categories—tiles, kiln furniture, loomweights, and vessels. These categories

[140] Such as the Intermediate Metamorphic Rock fabric cooking vessels and jugs, but these are relatively rare in the assemblages.

reflect different needs being met by the Kiln Complex. Tiles were obviously needed in the construction and reconstruction taking place in the sanctuary. While it is not possible to reconstruct the roofing systems of any building other than the apodyterion, it is clear that the systems were fairly complex and utilised a large range of tiles types. Corinthian and Lakonian tiles were both used, along with the typical pan tiles, ridge tiles, eave tiles, cover tiles, and even a few types of architectural terracottas, such as antefixes. The Kiln Complex was able to produce this entire range, suggesting that the workers were skilled in their craft, or at least were trained by someone who was. Many of these tiles were most likely produced in moulds, although no evidence of any has been found. Recent experiments on Corinthian tile replication utilised wooden moulds, which would not have survived in the swampy valley for twenty-four centuries (Rostoker and Gebhard 1991, Sapirstein 2009). Perhaps Sosikles was the architect of at least one building, but it also seems possible that he was in charge of designing the tiles, and training the potters to make them.

The kiln furniture is a standard part of a kiln's repertoire, used to stack tiles and other vessels in the firing chamber so that the ceramics do not fuse during firing. The two types found at Nemea—tripod separators and wedges—would have been easy to make from leftover raw materials and were sturdy enough to survive repeated firings.

The loomweights are very interesting, as their abundance, coupled with their production in the Kiln Complex, suggests that weaving was a common practice at Nemea. As no textiles survive at the site, it is difficult to assess whether weaving was the handicraft of women who may have lived or worked in the sanctuary, producing goods for their own use or for their families, or, if this

was a practice associated with the sanctuary, producing textiles for use in the buildings or in ritual contexts. As the study of the assemblages of the houses suggest that they were more commercial than domestic in function, it may be possible that certain houses were used for weaving. An in-depth contextual analysis of the loomweights may shed light on their use, as well as reveal likely crafting areas. Many loomweights have been excavated outside of the Kiln Complex in the sanctuary, but no detailed study has taken place.

The locally-produced pottery, extensively discussed in Chapter 6, represent a small range of shapes relating to food storage and preparation, as well as industrial uses. The pithoi, lekanai, mortaria, and jugs are attested at the site in other non-local fabrics, but in some cases, the shapes remain exactly the same. It seems clear that the potters were copying popular shapes already present in the sanctuary. The contextual analysis of the vessels demonstrated that they were primarily used in the houses, most likely in a context relating to food production, but that they were also present in an area associated with marble sculpting and bronze casting.

The raw materials used in the production of the Mudstone and Micrite fabric are fairly unremarkable—a calcareous clay mixed with a terra rossa clay, with added mudstone temper. While the same ingredients were used in all the products of the Kiln Complex, the ratio of temper added would vary from fine (rare to common mudstone) to coarse (abundant mudstone). Whether this was a deliberate choice of the potters, or the result of unstandardised preparation of the clay paste, the fabric is considered to be the same despite its level of coarseness. Although it is not possible to quantify the total output of the complex, it is clear from the number of tiled buildings and remaining ceramic material that a large

amount of ceramics were produced there, using dozens if not hundreds of tons of clay and temper. Although exploration of the clay sources around the valley took place in this study, no suitable source was found. Despite the uncertainty regarding where the raw materials were from, the Mudstone and Micrite fabrics demonstrate that it was produced in a fairly standardised fashion using the same raw materials throughout the lifespan of the kilns.

8.9. Sacred Economy: The Economic Implications of the Study

Nemea is unique in the study of sanctuary economy, as it is a small, rural site with evidence of large-scale visitation from all over the Greek world. There is evidence of four crafts taking place—ceramic production, weaving, bronze casting, and marble sculpting. However, unlike its larger Panhellenic counterparts Olympia and Delphi, Nemea lacks one of the biggest indicators of prosperity at sanctuaries—dedications. Few survive in the archaeological record. While the bronze casting and marble sculpting were almost certainly related to the production of dedications, little evidence remains relating to the types of goods produced. Small examples of bronze statuary remain, such as eyelashes and locks of hair, demonstrating that the dedications or tributes were present at one time (Miller 1990:63-67). Marble statue bases are also present, that held the bronze statues. These statues are most likely a combination of religious and athletic dedications (Miller 1990:37-38, 141-142, 154-156). The marble sculpting was likely focused on architectural elements of the temple, as well as stelai for epigraphical decrees. It is clear that the bronze and marble work was used for other purposes in the sanctuary as well.

Miller (1990:23) believes that Macedonian involvement, particularly Philip II, may have aided the sanctuary financially by funding the rebuilding.

This influx of money may have not only paid for the materials and labour to build and rebuild the temple and surrounding structures, but it may have also been used to create the industries which continued to operate in the sanctuary once the building programme was completed. The Kiln Complex is the greatest indicator of continued industrial activity that most likely benefited the sanctuary from an economic standpoint. The complex produced goods, saving the sanctuary from having to procure tiles, loomweights, and an assortment of ceramics which were definitely available elsewhere in the region. The sanctuary was independent in this respect, as it was able to provide amenities for itself. This kind of economic freedom may have allowed the sanctuary to prosper, even in periods of dormancy when visitation was low.

The work of NVAP and Cloke demonstrated that it is unlikely that there was a permanent settlement in the Hellenistic Nemea Valley. However, while it is not possible to state that the sanctuary was in use year-round, or even continuously throughout its active period in the late 4th and 3rd centuries B.C., it appears that it is the most likely place for a somewhat regular settlement in the valley. It is clear that a variety of people with various professions were needed in the sanctuary on a regular basis—priests to tend to the temple and ritual aspects of the sanctuary, potters in the Kiln Complex, craftsmen making bronze sculptures and working marble. It is also likely that these specialists had a support staff of slaves or various workers for preparing food, cleaning, making repairs, assisting the specialists, and so forth. The number of support staff necessary during the Nemean Games must have been even greater, not including the various guests such as athletes, *theodorokoi*, and the *hellanodikai*. The ability to comment on the different roles of sanctuary dwellers, be they priests or slaves,

as well as what they did, and how they did them, is a unique characteristic of Nemea which may come to fruition with further study. While many studies of sacred economies focus on a larger scale, this study of Nemea allows for an in-depth look into the practicalities of the sanctuary.

A great deal of work could be done at Nemea in this respect with continued excavation. The roles of animal husbandry and agriculture in the sanctuary could reveal a great deal more information relating to the use of local resources with the help of zooarchaeological and archaeobotanical analyses. It is important to fully assess the resources available in the area, and to understand how the sanctuary used and exploited them. Similarly, metallurgical analysis on the products relating to the bronze casting workshop could reveal where the metals came from, and place Nemea in another important distribution network. The archaeological evidence suggests that the workshop acquired bronze ingots, rather than making their own bronze from copper and tin (Miller 1990:63-64, 162-164).

The economy of the sanctuary can be divided into two categories at this stage—the sacred economy relating to the temple and the religious aspects of Nemea, and the economy of the greater sanctuary which supported the religious and athletic activities. It is difficult to reconstruct the sacred economy without an in-depth study of the altar, the *oikoi*, the Heroön, and all known dedications which focuses on the economic aspects of Nemea. However, it is more possible to reconstruct the remaining parts of the sanctuary through the evidence at hand. The sanctuary produced many of its own goods, for the rebuilding (tiles), for utilitarian purposes (ceramic vessels), and for dedications and statuary (marble and bronze sculpture, weaving). Nemea was part of a larger network of ceramic

distribution that included the majority of the Northeast Peloponnese, with connections further afield in the Greek world. The sanctuary was able to provide housing and food to a large number of visitors during the Nemean Games, and perhaps in more dormant periods when no festivals were taking place. While no epigraphical or literary records survive that outline the finances of the sanctuary, it is clear that Nemea was economically independent in some respects.

8.10. Assessment of Future Work

This thesis has revealed a great deal of potential future work, both at Nemea and further afield in the Northeast Peloponnese. At Nemea, this study has resulted in a great deal of new information about the study areas, in terms of both function and assemblage study. Further afield, this thesis sets a new precedent for the study of Hellenistic plain, coarse, and cooking wares by implementing a new methodology that has proven to have significant results.

The study of the assemblages from the houses demonstrated that the activities taking place in houses 1 and 2 are most likely to be more complex than being a single residence, as initially interpreted by Miller. It is likely that the structures prepared and served food to a variety of visitors over time. However, it is necessary for the rest of the houses to be studied, including squares M-Q, 19-20 (Figure 2.8). The methodology utilised here has proven to be most appropriate for these areas, as it reveals typological, chronological, and functional information that can help interpret the activities taking place within the structures themselves. Further, in order to fully understand the houses as a coherent group of buildings, squares O19, O20, P19, and P20 must be excavated. If these areas were excavated in a sound fashion that included geoarchaeological, zooarchaeological, and archaeobotanical sampling and analyses, they might

reveal a great deal of information that is permanently lost from the other squares. These analyses could shed light on the types of foods being produced and consumed in the area, and the extent and role of animal husbandry in the valley, as discussed above. They could also help identify specific areas associated with food preparation and cooking. Perhaps most importantly, the excavations of these squares would produce complete ceramic assemblages from within the structures. All of the previously excavated squares had unspecified amounts of non-finewares thrown away after excavation. The ability to characterise a complete assemblage from one of the houses may allow for a more detailed interpretation of the types of activities taking place within, as visible through the ceramics. It is also possible that complete assemblages from new areas may reveal other vessels types that were produced in the Kiln Complex but previously discarded with other coarse wares.

The houses would also greatly benefit from being studied by a domestic architecture specialist. The study of domestic structures and spaces in ancient Greece is a popular field with a growing number of experts. Placing the houses at Nemea into the greater context of known domestic structures in the region, and also in Greek sanctuaries, may reveal more information as to why the houses are significant. The comparative study of both the architecture and the assemblages may be helpful in further identifying activities taking place within the buildings as well.

More broadly, the ceramics at Nemea would greatly benefit from a thorough study from all types of areas in the sanctuary: those relating to ritual and religious activities from areas such as the altar and the oikoi, athletic activities from the bath house and apodyterion, and possible domestic activities

from the xenon. Currently, it is not possible to place this study into the greater repertoire of Hellenistic ceramics at Nemea, simply because so little is known about other assemblages on site. Future study of these areas will help to understand the full range of activities taking place on site, and how other aspects of the sanctuary utilised locally and regionally-produced vessels, as well as imports. Creating a typology of all vessels—fine, plain, coarse, and cooking—found on site through assemblage study of other areas of the sanctuary, will help broaden the understanding of the activities taking place there.

This type of extended ceramic study at Nemea will also help to refine the ceramic chronologies of the site, which is sorely needed. While many areas of the site suffer from mixed lots due to deep ploughing, and a great deal of ceramics thrown away at the time of excavation, similar to the houses, there are many wells present. These wells may be able to provide more evidence for a tighter Hellenistic chronology, based on stratigraphy, coins, and diagnostic vessels.

This thesis will have a significant impact on future studies of Hellenistic ceramics in the Northeast Peloponnese, and perhaps further afield. The methodology proved to be very successful in identifying fabrics at multiple sites, and tracing the repertoire of the production centres across the region. The next logical step in this study is to apply the methodology to a larger selection of sites in the area. Argos, Mycenae, Kleonai, Phlious, Stymphalos, Halieis, and Isthmia would all greatly benefit from extended ceramic study coupled with a programme of petrographic analysis. Comparative study with this thesis may yield a greater understanding of distribution networks around the Northeast Peloponnese, in addition to identifying new fabrics and new shapes in known fabrics. It is

entirely possible that production centres are present in the Northeast Peloponnese whose products were not found at Nemea, Lerna, or Corinth, and may be found at one or several of the sites listed above. Similarly, extended study at Corinth and Sikyon is very important in forming a better understanding of the relationship between the two sites with the Corinthia and Argolid. The current results suggest that the production of plain, coarse, and cooking wares, especially cooking pots and amphoras, was closely connected at the two sites by using the same shapes and similar raw materials. In order to more fully understand the differences between the Sikyonian and Corinthian wares, more petrographic analysis must take place at both sites.

Much more work can be done with ceramic analysis in the Northeast Peloponnese from geological and technological perspectives, especially with comparative material from Prehistoric contexts. As discussed in Chapter 5, on-going petrographic studies of Early Helladic and Late Helladic ceramics from the Corinthia and Argolid demonstrated that many of the same raw materials were used in the production of the Prehistoric and Hellenistic material. These comparisons can be taken even further through continued comparative study of chemical data, and technological studies. The use and manipulation of similar raw materials can be examined in the different time periods. Although many technological factors, such as vessel forming and firing greatly differ between the Early Helladic and Hellenistic periods, the raw materials selection and treatment appear to be similar, if not the same, in many instances. The tracking of similar fabrics from the region over time could provide an interesting perspective on ceramic production in the Northeast Peloponnese.

Lastly, further exploration of Panhellenism at Nemea should be completed. While Nemea's role in the periodos seems clear, it is unclear how the Panhellenic status of the sanctuary affected its relationship with the surrounding region. Kleonai and Argos had direct roles in the Games and control of Nemea, but it is unknown how Panhellenism affected neighbouring towns and cities on political, economic, and social levels. It seems likely that Panhellenism and the sanctuary itself was more important to those towns under Argive control, such as Phlious and Mycenae. Patterns of ceramic distribution are very similar at Lerna and Nemea, while they are slightly different at Corinth, which has its own Panhellenic sanctuary at Isthmia. Is this related to patterns of visitation to the Panhellenic sanctuaries? Did Nemea interact with a large number of sites in the region because it was a Panhellenic sanctuary, or because it was located in a convenient place for the distribution and exchange of goods? It is unclear exactly how these questions can be answered. The numismatic study shows which coins are present at the sanctuary, but it would be unwise to assume that every coin represents a visitor from its place of origin. Epigraphic information has revealed little evidence relating to visitation in the sanctuary beyond officials and judges. The known literary sources provide no information relating to this. Thus, the ceramics are the best source of information. By extending the study of the production and distribution of ceramics in the Northeast Peloponnese to a greater range of sites, a greater network of distribution and exchange will be apparent. Comparing Nemea to other sites in this fashion may demonstrate how the sanctuary relates to other sanctuaries (Isthmia, Stymphalos), to nearby towns (Kleonai, Phlious), to other areas under Argive control (Argos, Kleonai, Phlious, Mycenae), to larger towns and cities (Corinth, Argos, Sikyon, Halieis) and to

more isolated locations on the outskirts of the region (Halieis, Stymphalos). Further study of Hellenistic ceramics from the Northeast Peloponnese using this methodology will not only reveal patterns relating to different types of sites, but may also shed light on the relationships between these sites. As Nemea was a small, rural site with nothing to offer the region except for Panhellenic activities, all visitation and commerce must have happened because of these activities, or the support of these activities. Thus, evidence of interaction with other sites with the region suggests that these sites had a Panhellenic relationship with Nemea. The problem lays in how to establish this relationship through archaeological evidence. The presence of ceramics from an area does not necessarily denote the presence of visitors from that area, much the same as the coins. Placing Nemea into a network of distribution will, at the very least, demonstrate how it is similar and different to the other sites in the area.

8.11. Conclusion

This study has demonstrated that Nemea produced a large amount of goods while participating in a network of ceramic distribution that was active throughout the Northeast Peloponnese and perhaps further afield in Greece. The comparative studies with Lerna and Corinth demonstrated how at least two ceramic production centres are present in the Northeast Peloponnese, accounting for three Corinthian fabrics and one Argive fabric that were circulating throughout the region. The combined petrographic study of Nemea, Corinth, and Lerna revealed that several fabrics produced greater repertoires for a greater time span than represented at one site, representing potential patterns of distribution of specific shapes. This study showed that similar shapes were available in different fabrics at the same time at Nemea, further complicating the distribution patterns.

This study is significant because it demonstrates the types of questions that can be answered through the methodology. The study of the finewares from Nemea, as well as those published from the Northeast Peloponnese indicated that there was a great need for provenance studies in the area in order to understand where many of the ceramics were being produced, and in turn, the relationships between many of the sites. The methodology used in this study allows these needs to be met with plain, coarse, and cooking wares. While it does not apply to finewares, in many cases, many relevant questions can be answered through the coarser wares alone. The extended study of the houses and Kiln Complex demonstrate that in the instances of domestic, commercial, and industrial contexts, the plain, coarse, and cooking wares reveal more information relating to function, technology, and provenance. This study presents new information relating to the production and distribution of plain, coarse, and cooking wares that has big implications for future study at Nemea, as well as the greater Northeast Peloponnese. These new interpretations of ceramic production, inter-site interactions, and sanctuary economies based on the results will have a significant impact on the state of Hellenistic archaeology in the Northeast Peloponnese.

Appendix I: Petrographic Descriptions

I.1. Fabric 1: Mudstone and Micrite

Mudstone and Micrite Samples: 55, 57, 65, 67, 72, 81, 84, 85, 92, 93, 94, 97, 98, 179, 182, 183, 186, 188, 190, 193, 197, 198, 199, 201, 203, 204, 206, 208, 212, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 295, 296, 297, 298, 299

Inclusions: 15-35% el. & eq. a-sr. Single-spaced or less. Strong to crude alignment to margins of samples. Highly to moderately bimodal grain size distribution.

Coarse fraction 45-60%, 4.0-0.21 mm.

Dominant:

Mudstone; eq. & el. a-sa. <4.0 mm, mode 1.76 mm. Comprised of several types of mudstones, which together dominate the fabric. Includes grey mudstones with black rims and occasional inclusions of fine silt size quartz and radiolaria (samples 55, 84, 218, 287). Micaceous mudstones with common fine silt-sized grains of biotite and quartz (samples 55, 85, 193, 247, 263, 280), with the mica breaking down in high fired samples (229, 230). Some of the micaceous mudstones have a foliated texture and may be slightly metamorphosed into argillites (samples 57, 179, 216, 255, 292). Some samples contain radiolarian (93, 190, 201, 203, 212). Red mudstones with black rims and occasional black staining in interior, containing common to rare silt-sized grains of quartz (samples 84, 201, 203, 262, 279, 283, 295). High-fired examples show that these red mudstones reduce to an all-black color, some of which contain bloating pores (samples 239. 287).

Common:

Micrite; eq. sa-r. <3.36 mm, mode 0.96 mm. Fine grained limestone.

Mudstone brecchia; eq. & el. a-sr. <1.92 mm, mode 1.40 mm. Well sorted fine grained sandstone with mud cementation, containing mudstone, radiolaria, micrite, orange and red possibly clay based material (see Whitbread 1995:287). (samples 65, 84, 190, 201, 275, 291, 193).

Siltstone; eq. & el. sa-sr. <2.72 mm, mode 1.46 mm. Well-sorted containing grains of monocrystalline quartz, and white and orange micas in opaque brownish-red cementation.

Textural clay features (TCFs- clay pellets); eq. & distorted. sr-r. <0.72 mm, mode 0.5 mm. Concentrated lumps of red and calcareous clays with low optical density and sharp to margining boundaries.

Rare:

Sandstone; eq. sr-r. <1.92 mm, mode 1.46 mm. Well-sorted, containing sand and silt-sized grains of monocrystalline quartz, plagioclase, micas, and possibly hornblende in orange-brown to brown-grey cementation.

Chert; eq. & el. a-sa. <1.05 mm, mode 0.55 mm. Fine grained chert with occasional radiolarian.

Polycrystalline quartz: eq., sr-r. <0.75 mm, mode 0.45 mm. Coarse (sample 241) to fine-grained (sample 239) fragments.

Very Rare:

Iron-rich Opaques; eq., sr-r. <1.00 mm, mode 0.3 mm. Isotropic in PPL and XP. Sample 224 contains specimen with possible bloating pores.

Fine Fraction: 0.20-0.01 mm, 40-55%.

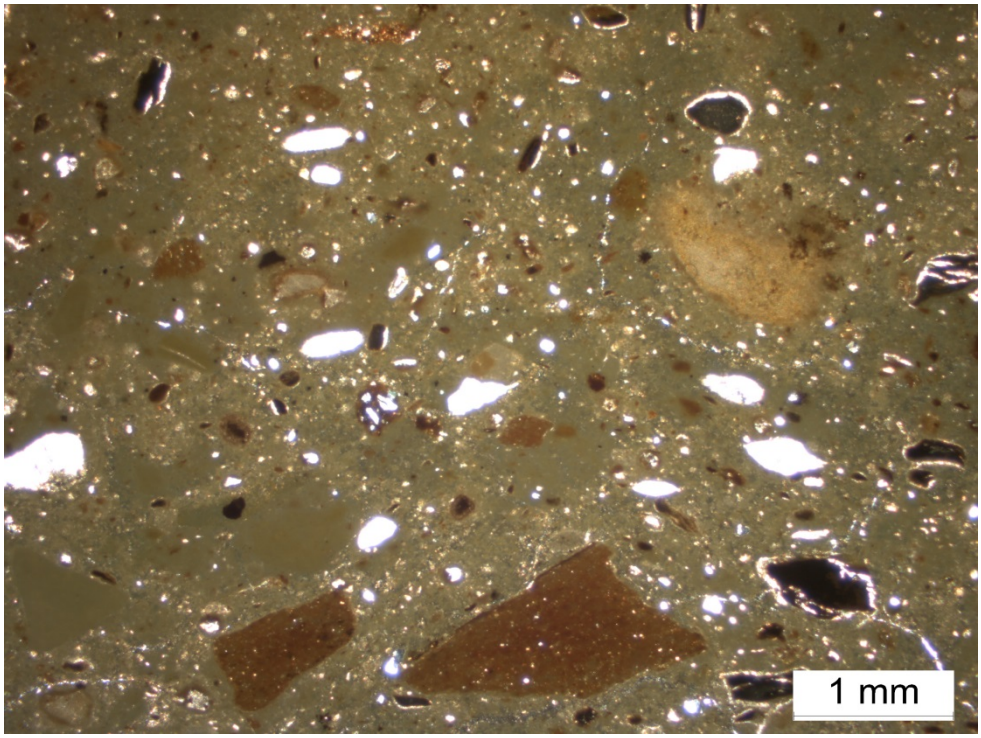
Dominant: *Quartz, Micrite*
Common: *Mudstone, Textural clay features (clay pellets)*
Common to rare: *Mica, Calcite*

Matrix

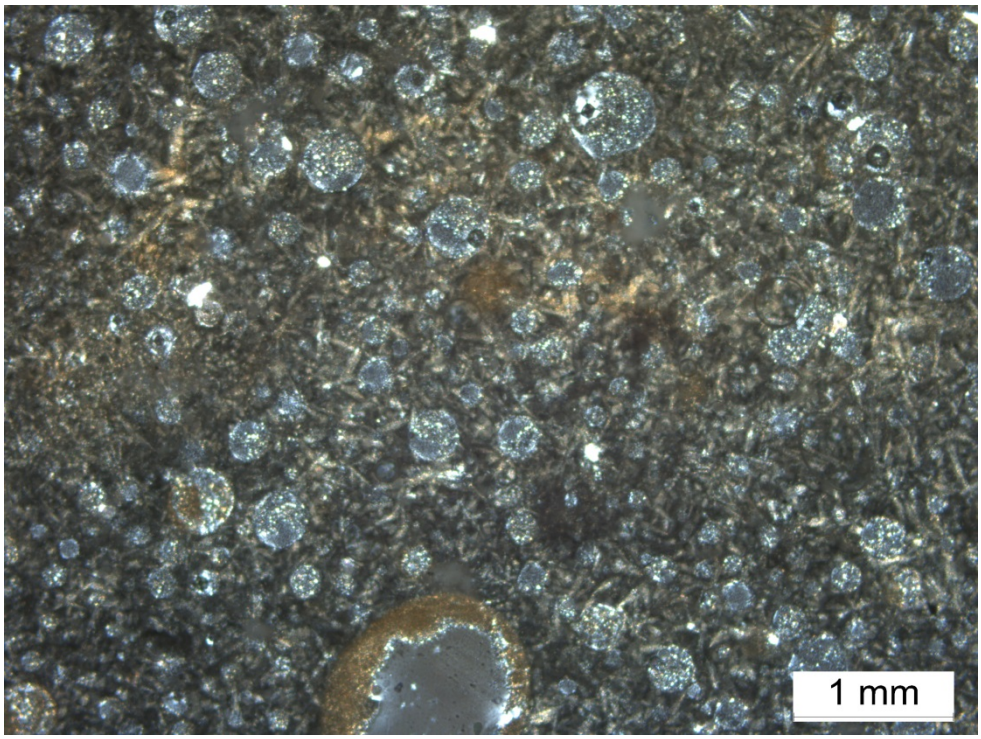
63-84%. Highly calcareous, high-fired examples to highly red, low-fired examples. Deep red to light green in XP, orange-red to yellow green in PPL. Homogeneous to highly heterogeneous, inhomogeneity related to evidence of clay mixing in the forms of striations and tcfs (samples 65, 81, 84, 85, 92, 179, 197, 204, 206, 208, 215, 220, 221, 222, 249, 279, 280, 281, 283, 284) and range of firing temperatures. Matrices range from a lower-fired red (samples 238, 275, 290) to a high-fired green (samples 245, 256, 295) to a very high-fired green with abundant to common bloating pores (samples 240, 266, 267, 271, 272). Several high-fired samples have mottled matrices (samples 239, 241, 244). Optically highly active to moderately inactive.

Voids

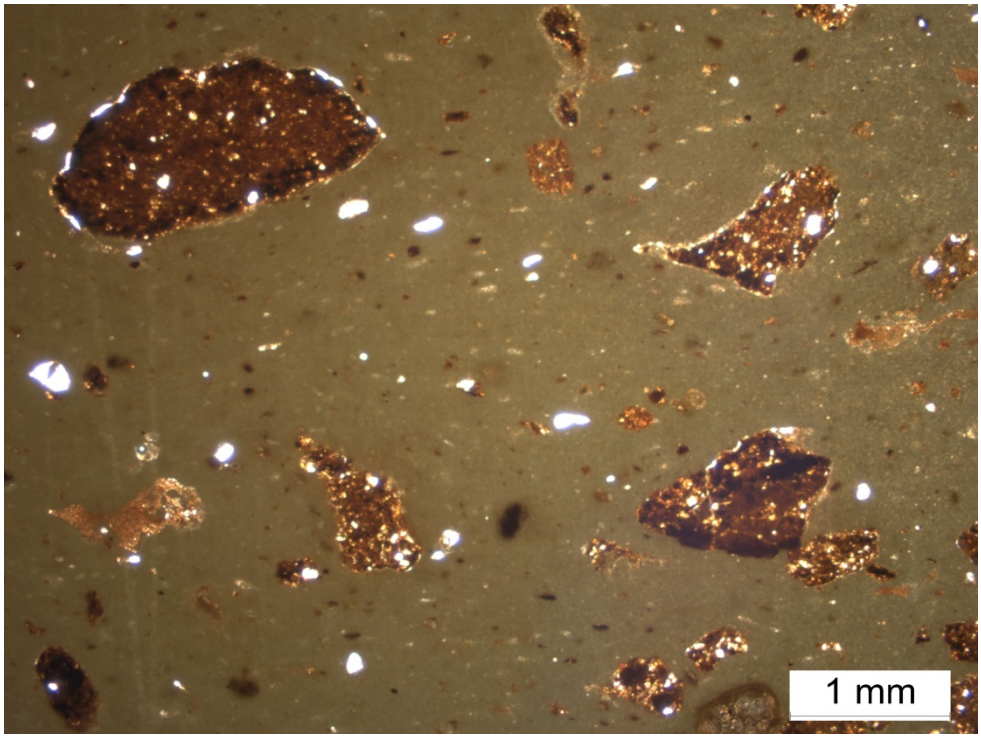
1-2% Consisting of macro and meso-vughs and vesicles. Poor alignment to margins. Many samples do not contain voids.



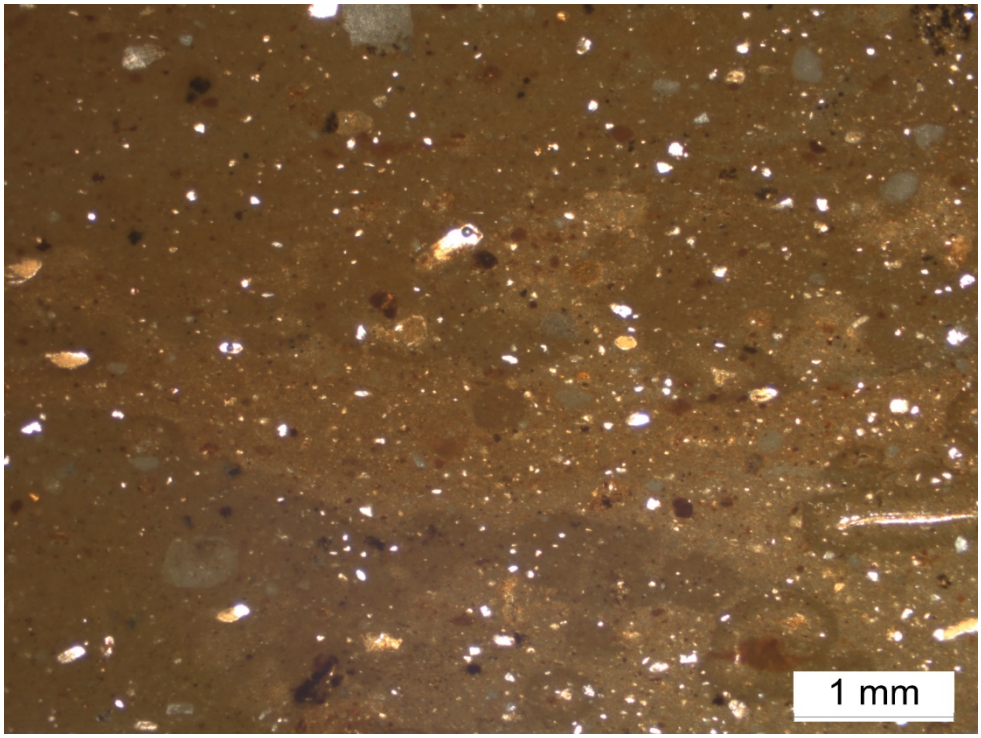
Sample 273, XP, x25. Calcareous green matrix with mudstone and micrite inclusions.



Sample 272, XP, x25. Needle-like matrix after recrystallization.



Sample 276, PPL, x25. Mudstone in green, calcareous matrix.



Sample 220, PPL. x25. Calcareous matrix displaying clay mixing and green clay pellets.

I.2. Fabric 2: Chert and Quartz

Chert and Quartz Samples: 1, 3, 7, 8, 9, 13, 16, 17, 20, 21, 25, 26, 27, 29, 30, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 46, 47, 48, 64, 66, 68, 78, 101, 102, 105, 106, 107, 108, 109, 110, 112, 113, 114, 115, 116, 117, 119, 121, 122, 124, 125, 129, 130, 131, 132, 134, 139, 147, 148, 149, 150, 151, 155, 157, 158, 160, 161, 162, 163, 165, 166, 169, 170, 171, 172, 174, 175, 177, 209

Inclusions: 20-30%. Eq. & el., a-r. Single to double spacing. Strong alignment to margins in many samples. Highly to moderately bimodal grain size distribution.

Coarse Fraction: 30-45%. 1.65-0.2 mm.

Dominant:

Chert; eq. & el., a-sr. <1.65 mm, mode 0.35 mm. A range of fine to coarser grained cherts with some examples with radiolaria (samples 16, 155), veins of chalcedonic quartz (sample 175), and iron staining which gives it is a muddy appearance (samples 42, 148).

Monocrystalline Quartz; eq. & el., a-r. <0.8mm, mode 0.2 mm. Straight or Undulose extinction.

Common:

Polycrystalline quartz/Low grade metamorphic rock fragments; eq & el., sa-r. <0.95 mm, mode 0.55 mm. A range of coarse to fine grained quartz-rich rock fragments (samples 106, 109). Some samples contain white mica (samples 115, 150). Many samples may be schist or schist related (samples 20, 21, 47, 68, 108, 109, 170)

Textual Clay Features (TCF)- clay pellets; eq., sa-r. <0.7 mm., mode 0.25 mm. Two types of clay pellets are present- red and green. Red clays pellets (samples 7, 9, 109, 112) contain fine fraction quartz, biotite, and a micaceous mudstone inclusion in a red, non-calcareous clay (sample 115). Green clay pellets are from a calcareous clay (samples 66, 102, 107, 117).

Micrite, eq. & el., sa-r. <0.7 mm, mode 0.25 mm. Fine grained limestone. Some examples contain microfossils (sample 126).

Mudstone; eq. & el., a-sa. <1.00 mm, mode 0.6 mm. Ranges from brown to red (sample 115). Some contain radiolarian (samples 148, 160, 195). Several examples are highly micaceous (13, 29, 148, 171, 174). Sample 113 is high fired and contains bloating pores.

Chalcedonic quartz; eq. & el., sa-sr. <0.5 mm, mode 0.4 mm. Most likely related to chert (samples 117, 175).

Plagioclase; eq. & el., a-sa. <0.5 mm, mode 0.2 mm. Lamellar twinning.

Biotite; eq. & el. sr <0.22 mm, mode 0.22 mm. Orange-red lathes. Includes several samples with larger wavy, fibrous masses (15, 51, 103, 118, 128, 135, 146).

Rare:

Perthite; eq., sa-r. <0.6 mm, mode 0.2 mm. Some examples have wrinkly texture similar to microcline perthite with a few accessory ferru-magnesium mineral lathes (most likely mica) within (samples 116, 121, 175).

Siltstone, eq. & el., sa-r. <1.25 mm, mode 0.6 mm. Quartz-rich (samples 1, 125), and mica-rich (sample 36) examples.

Unknown orange inclusion; pr. & eq., sa. <0.64 mm., mode 0.4 mm. .Resembles orange serpentinite with mesh-like texture visible in XP. may be bunches of minerals, metamorphic in origin, altered, may have replaced something. (Sample 21, 126, 131, 148, 173).

Sandstone; eq. & el., sr-r. <0.9 mm, mode 0.7 mm. Quartz rich examples (samples 29, 109, 175). Samples 148 contains a great deal of biotite and/or hornblende.

Iron-rich opaques; eq., sa-sr. <1.05 mm, mode 0.4 mm. Large discreet iron-rich opaque inclusions (sample 112), with smaller very iron-rich textural clay features which are isotropic in xp (samples 43, 148, 171).

Pedo Features; eq., r. <1.00 mm, mode 0.8 mm. Dark brown to red iron rich clay textual feature with swirly appearance. Sample 174 contains fine fraction quartz and chert inclusions.

Fine Fraction: 55-70%. 0.2-0.01 mm.

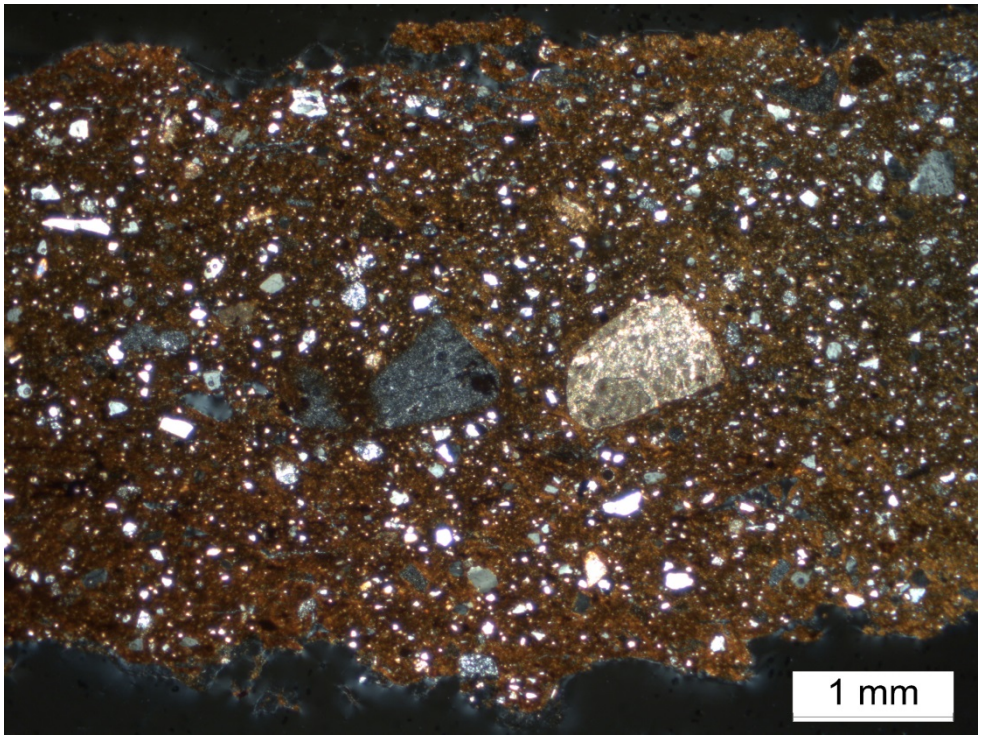
Dominant: quartz
Frequent: biotite
Common: iron-rich opaques, highly optically active red inclusion
Rare: Muscovite
Very Rare: Hornblende, pyroxene? (155, 174)

Matrix:

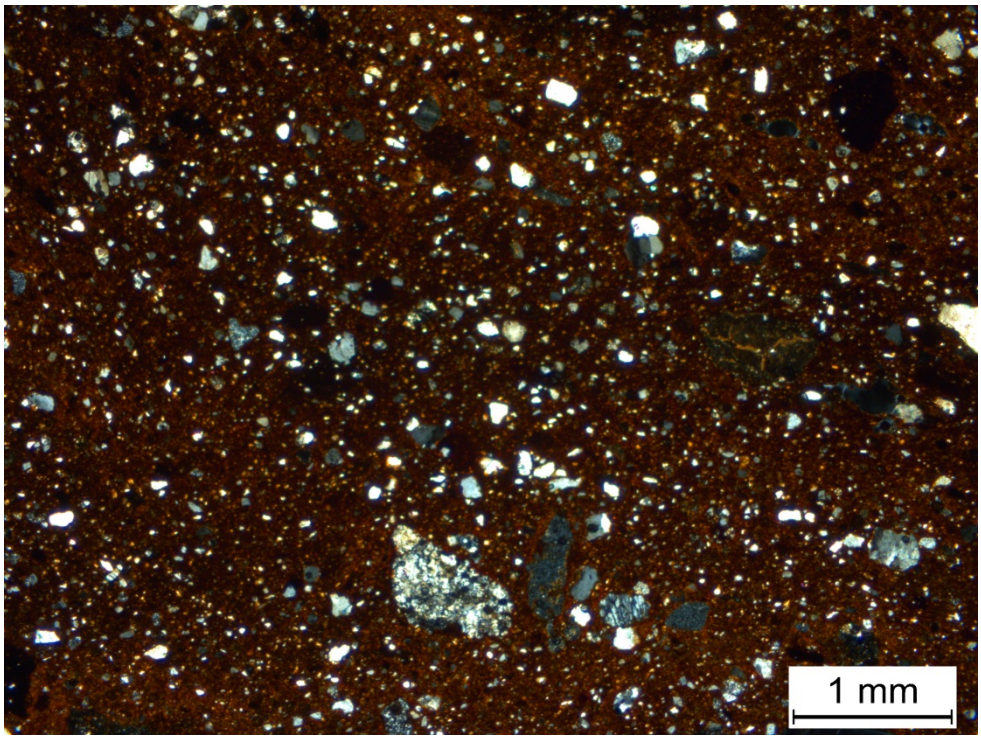
Non-calcareous. Yellow-orange (151), pinkish-red (17), reddish-brown (161) to dark gray (160) in XP, orange-brown to dark gray in PPL. Homogenous to weakly heterogenous. Inhomogenity related to visible mixing striations (sample 163) and core/margin differentiation (samples 5, 161, 209). Highly optically active to very low optical activity (samples 34, 38, 44).

Voids:

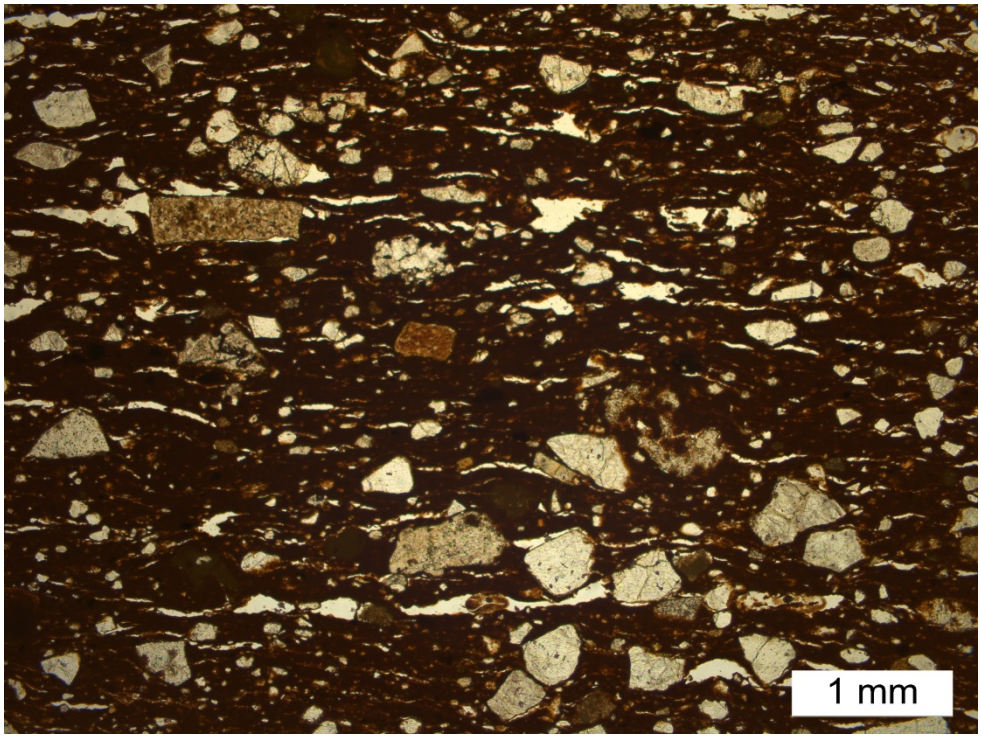
1-2%. Consisting mainly of macro-meso vughs and macro-meso vesicles. Vughs display strong alignment to margins of sections. Many samples do not contain any voids.



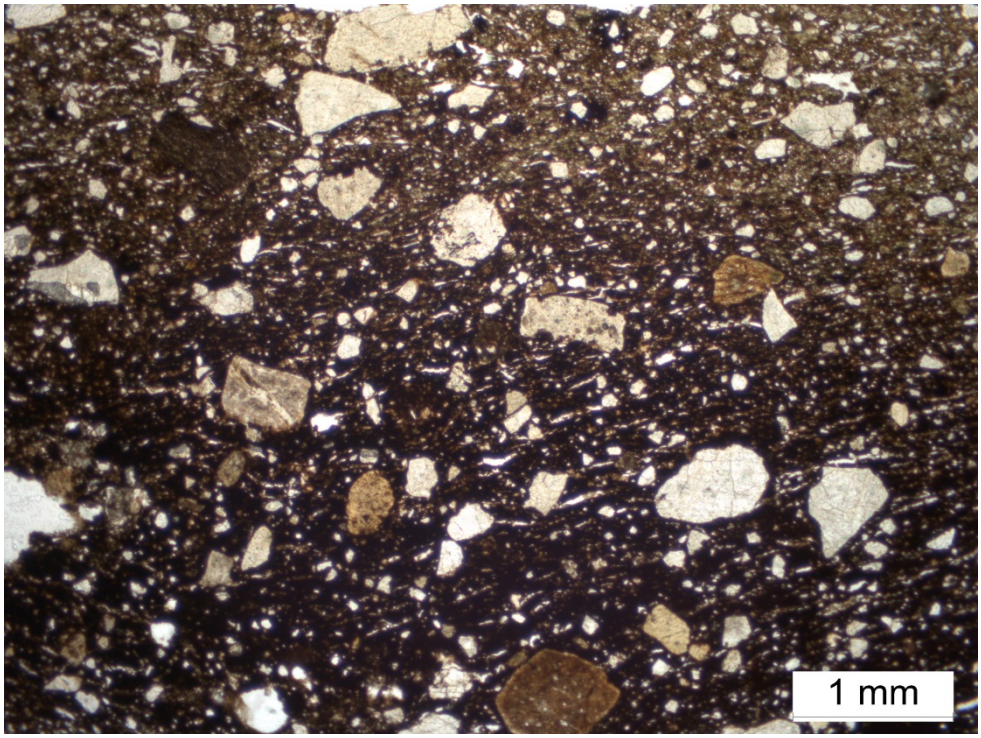
Sample 134, XP, x25. Chert and Tuffite in centre in quartz-rich red matrix**.**



Sample 116, XP, x25. Chert and mono- and poly-crystalline quartz in red matrix.



Sample 42, PPL, x25. Chert and quartz in red matrix.



Sample 105, PPL, x25. Chert, quartz, micrite, and mudstone in red matrix.

I.3. Fabric 3: Fine Quartz and Mica

Fine Quartz and Mica Samples: 52, 53, 54, 56, 58, 59, 60, 61, 69, 70, 73, 74, 76, 79, 80, 87, 88, 89, 90, 91, 99, 153, 176, 180, 181, 184, 189, 191, 194, 196, 202, 205

Inclusions: 15-25% eq. & el. a-r. <0.76 mm. Close to double spaced. Weakly bimodal grain size distribution.

Coarse Fraction: 3%, 0.76-0.24 mm

Dominant:

Quartz; eq. r-sr. <0.4 m, mode 0.2 mm. Undulose extinction in some grains.

Textual Clay Features- clay pellets; eq. r. <0.76 mm, mode 0.50 mm. Dark red brown, low optical density. Sharp to merging boundaries. Discordant. Containing fine quartz, biotite and micrite. Lots of tiny clay pellets (sample 80), highly micaceous, optically active example with mono- and polycrystalline quartz inclusions (99).

Common:

Micrite; eq. r. <0.36 mm, mode 0.24 mm. Fine grained limestone. Some microfossils present, most likely related to the mudstone (samples 74, 180).

Polycrystalline quartz; eq. & el., sr-a. <0.45 mm, mode 0.4 mm. Some containing mica, may be related to metamorphic rocks. (sample 180).

Chert; eq. &el., a-sr. <0.6 mm, mode 0.5 mm. Fine grained.

Rare:

Sandstone; eq. & el., sr. <1.00 mm, mode 0.7 mm. Quartz-rich with some biotite (sample 52, 60), mica rich (sample 53)

Mudstone; eq. & el., sa. <1.1 mm. Micaceous mudstone with iron staining (samples 53, 180). One micaceous example with metamorphic foliation, may be related to phyllite or slate (sample 194).

Plagioclase; eq. & el., sa. <0.2 mm, mode 0.15 mm. Lamellar twinning.

Tuff; eq. & el., a. <0.95 mm, mode 0.8 mm. Orange-red to gray-yellow in color with fibrous texture (samples 52, 60).

Fine Fraction: 97%, 0.24-0.01 mm

Dominant: *Biotite*

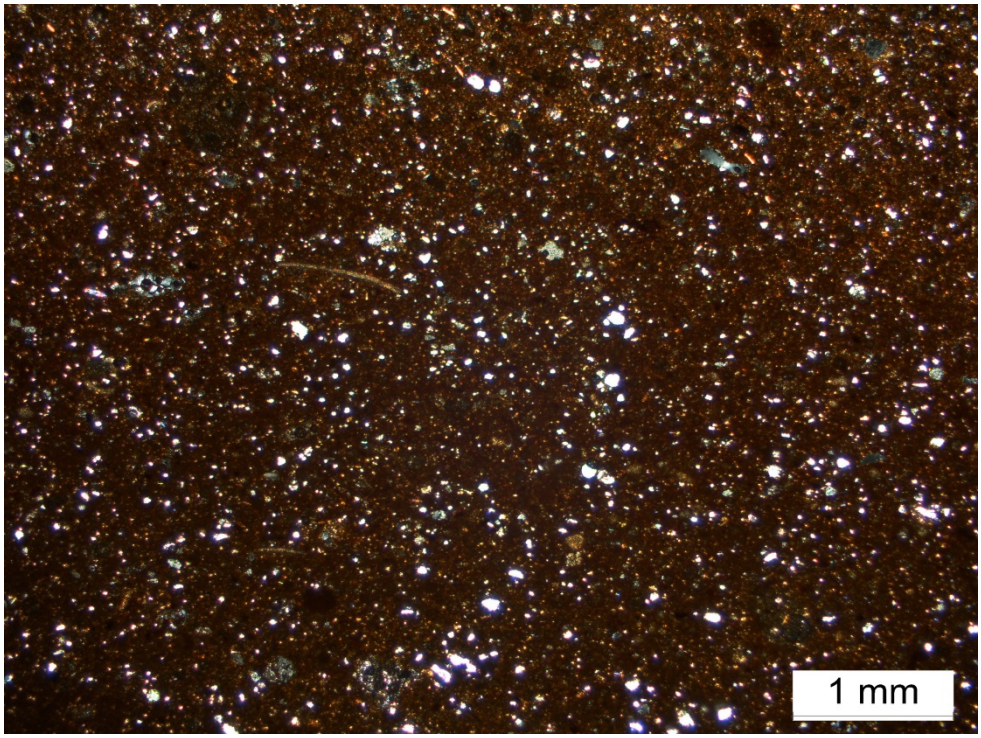
Frequent: *Textural clay features (clay pellets)*
Common: *Quartz, micrite*
Rare: *Muscovite*
Very Rare: *Polycrystalline quartz*

Matrix:

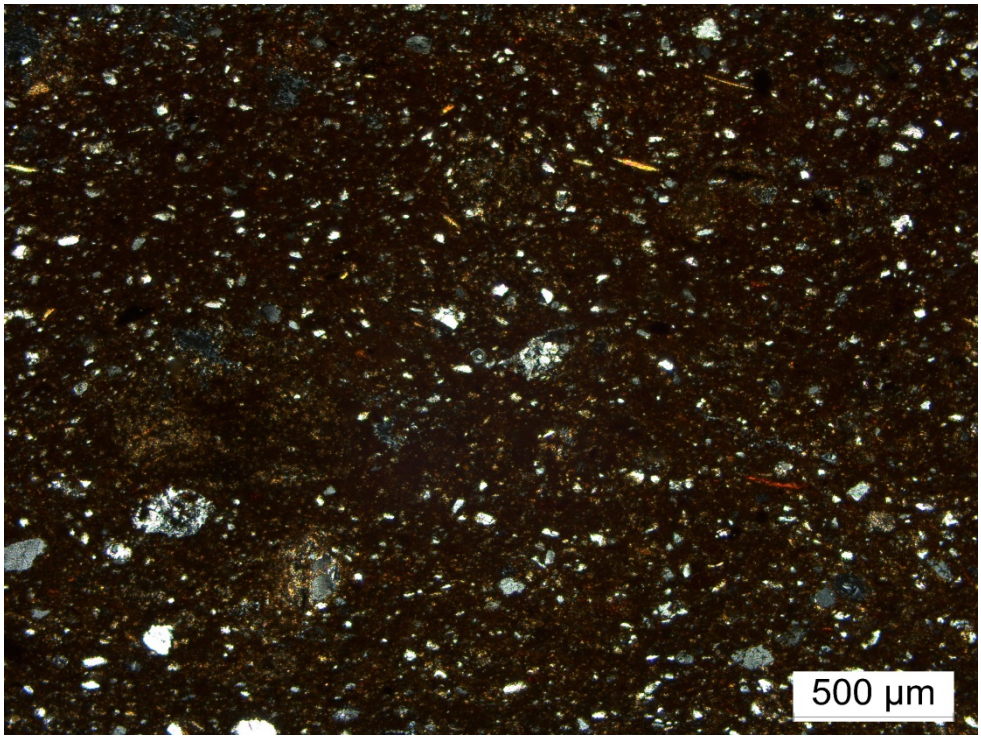
74%. Moderately to weakly calcareous. Light brown in PPL, red-brown in XP (x50). Homogenous, with clay pellets in all samples. Secondary calcite in most samples. Optically active.

Voids:

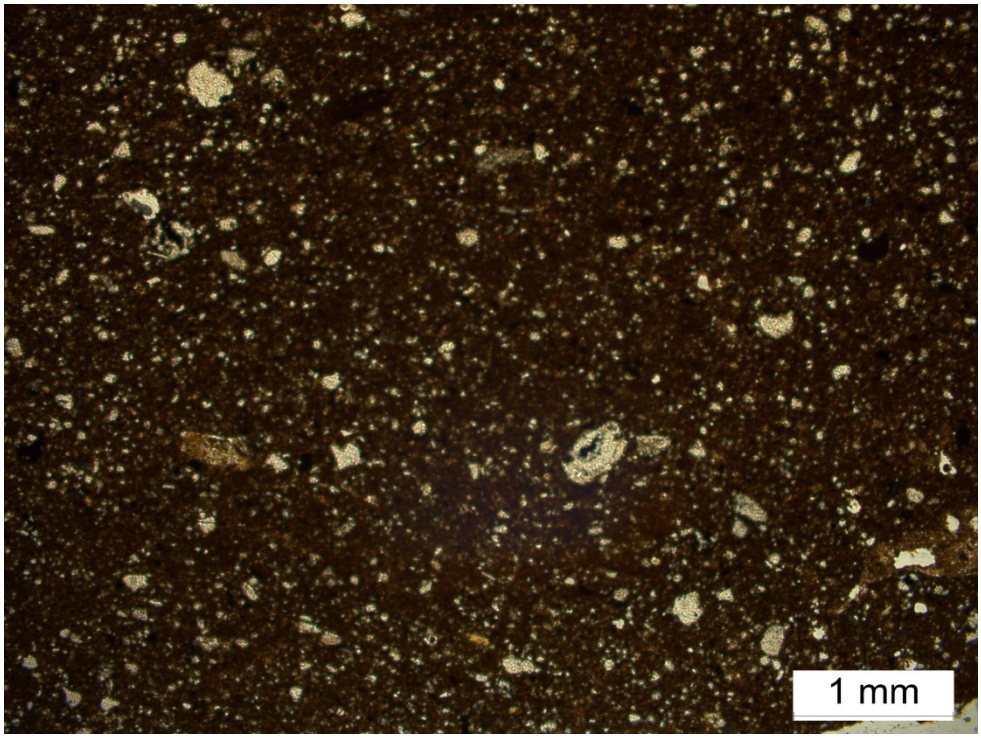
1% Consisting mainly of micro- and meso-vesicles and micro-vughs with rare macro-vughs. Some secondary calcite deposition in voids.



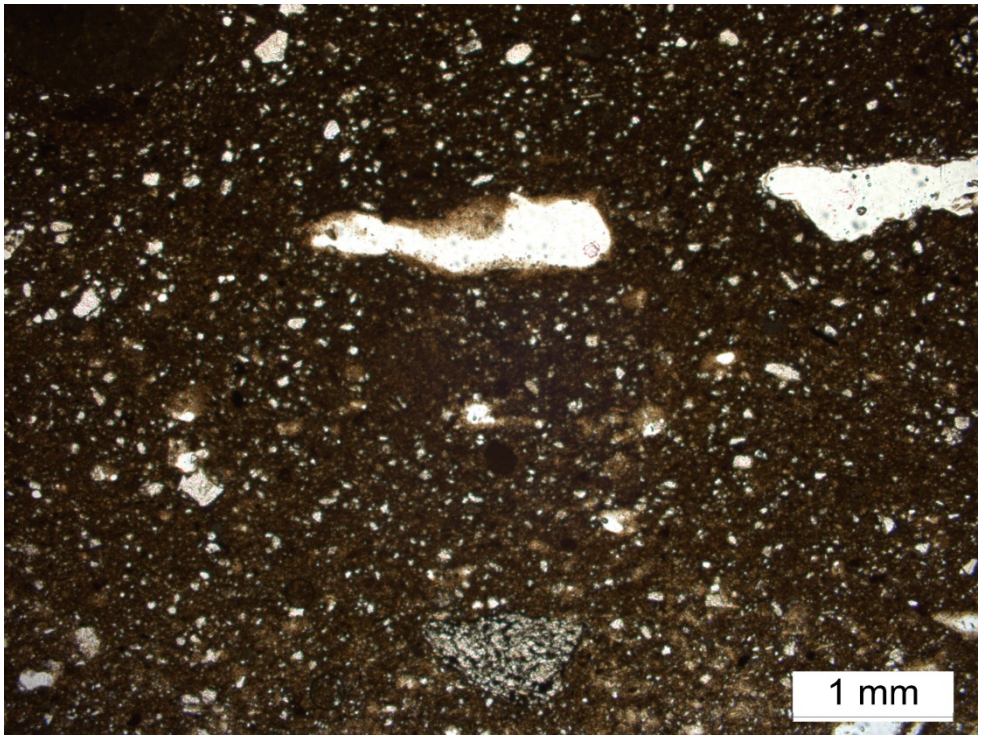
Sample 74, XP, x25. Fine fraction quartz and muscovite with fossil.



Sample 196, XP, x50. Mono- and poly-crystalline quartz and muscovite with mudstone in lower left corner.



Sample 91, PPL, x25. Quartz with micrite and mudstone.



Sample 184, PPL, x25. Fine fraction quartz and micrite with sandstone in lower centre.

I.4. Fabric 4: Intermediate Grade Metamorphic Rocks

Intermediate Grade Metamorphic Rocks Samples: 2, 4, 6, 12, 18, 19, 22, 24, 28, 31, 35, 45, 75, 111, 136, 137, 138, 140, 141, 144, 145, 152

Inclusions: 30-40% Single-spaced or less. No visible alignment with margins. Highly bimodal grain size.

Coarse Fraction 35-45%. 2.2-0.2 mm

Dominant:

Schist; eq. & el. a-sa. <2.2 mm, mode 1.05 mm. Quartz-rich schist with biotite and muscovite. Strong foliation. Includes many fragments of quartzite without mica, as well as fragments of mica, all of which derive from same parent rock.

Common:

Phyllite; eq. sa-sr. <1.1 mm, mode 0.75 mm. Mica-rich (biotite and muscovite) and fine-grained. Some examples display crenulation (sample 22).

Chert; eq. & el. a-sa. <0.8 mm, mode 0.55 mm. Fine-grained. One example is coarse-grained (sample 138), while another has a muddy appearance (sample 136).

Textural Clay Features (clay pellets); eq., sr-r. <1.9 mm, mode 0.8 mm. Red to reddish brown in XP, reddish-brown in PPL. Includes fine fraction quartz, feldspar, biotite, and muscovite inclusions.

Micrite; eq., sr-r. <1.4 mm, mode 0.7 mm. Fine grained limestone. Includes fine fraction quartz inclusions.

Rare:

Sandstone; eq., sr-r. <1.35 mm, mode 0.75 mm. Containing quartz, micas, feldspars and possible chert in dark red cementation.

Very Rare:

Fine Fraction: 55-65%. 0.2-0.01 mm.

Dominant: *Quartz (monocrystalline and polycrystalline), biotite*
Common: *Muscovite, chert*

Matrix:

58-69%. Non-calcareous. Deep red brown to orange-red in XP, red-brown to orange-brown in PPL. Extremely homogenous. Optically highly active.

Voids:

1-2%. Consisting mainly of macro-elongate vughs and meso- and macro-vesicles. Poor alignment to margins of samples.

Sub-groups:

Medium-coarse**:** 2, 4, 6, 12, 19, 24, 31, 45

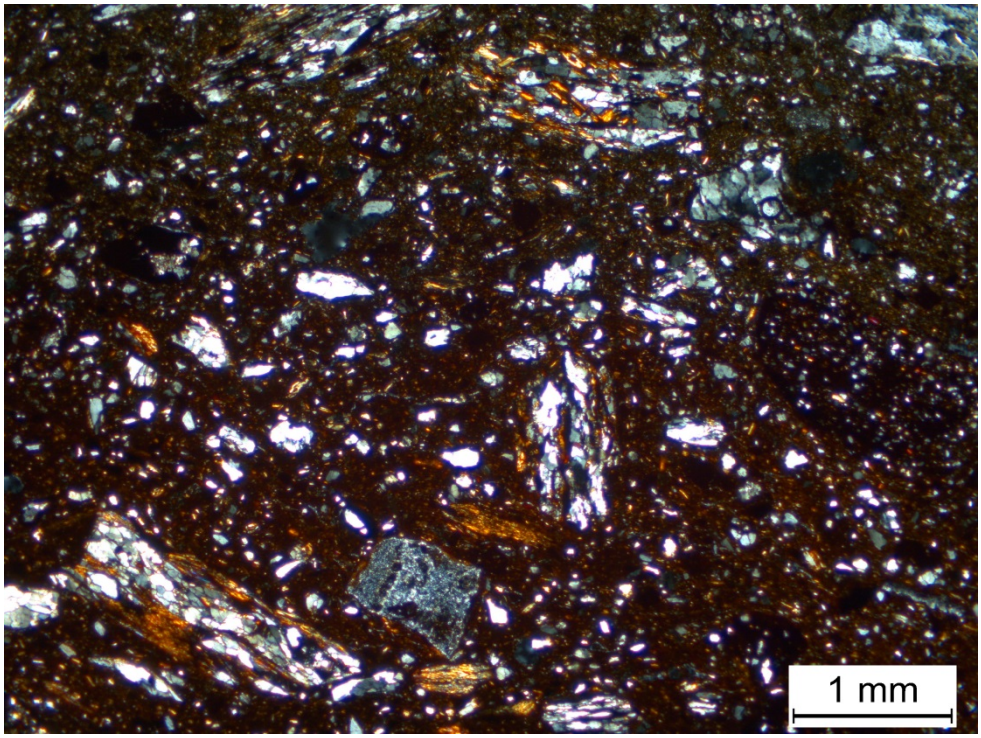
Inclusions: 10-20%.
Coarse fraction: 20-30%. 1.65-0.20 mm.
Fine fraction: 70-80%. 0.20-0.01 mm.

The medium-coarse sub-group was separated from the primary grouping because it has a ratio slightly less inclusions, with the inclusions being smaller. However, with the exception of inclusion sizes and abundance, the sub-group is exactly the same as the main grouping, with exactly the same inclusions. Sample 31 includes a larger amount of micrite.

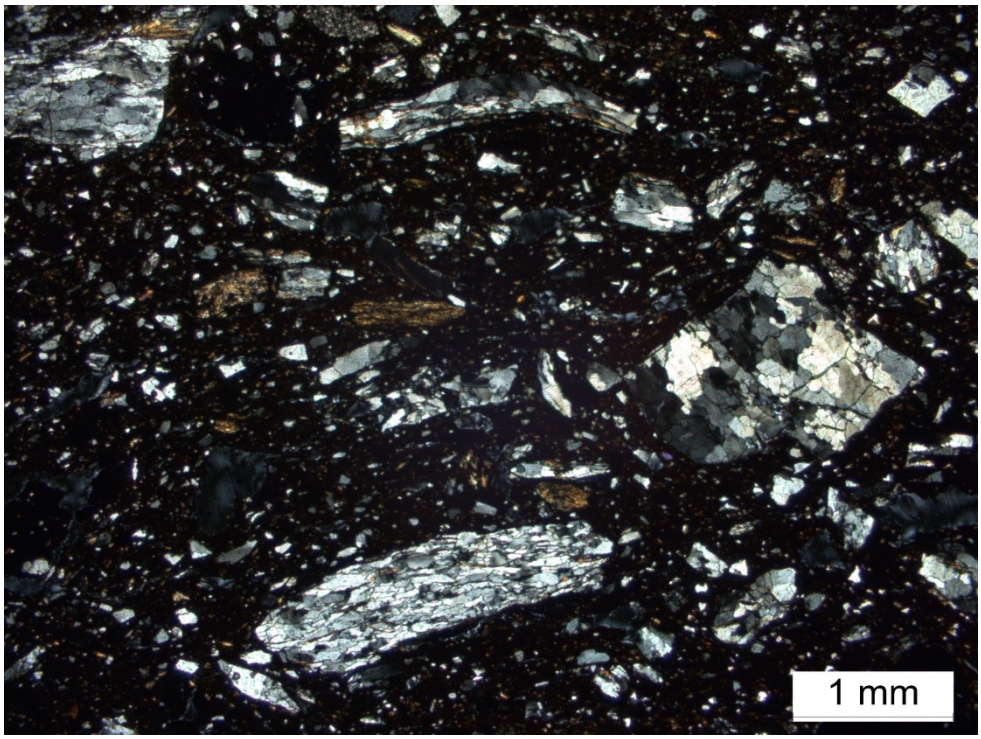
Fine**:** 18, 28, 152

Inclusions: 10-15%
Coarse fraction: 3-5%, 0.65-0.2 mm.
Fine Fraction: 95-97%. 0.2-0.01 mm.

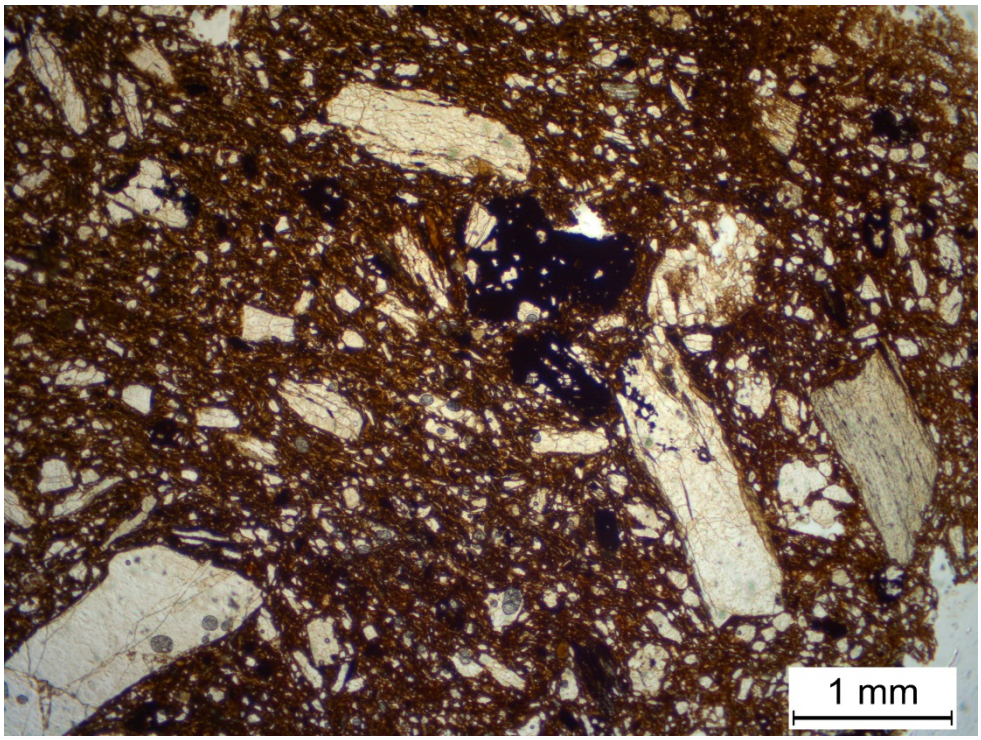
The fine sub-group was separated from the primary grouping because it is finer, much as the medium-coarse group was separated. It has the lowest ratio of inclusions, and the inclusions are the smallest of all the samples in this grouping. However, with the exception of inclusion sizes and abundance, the sub-group is exactly the same as the main grouping, with exactly the same inclusions.



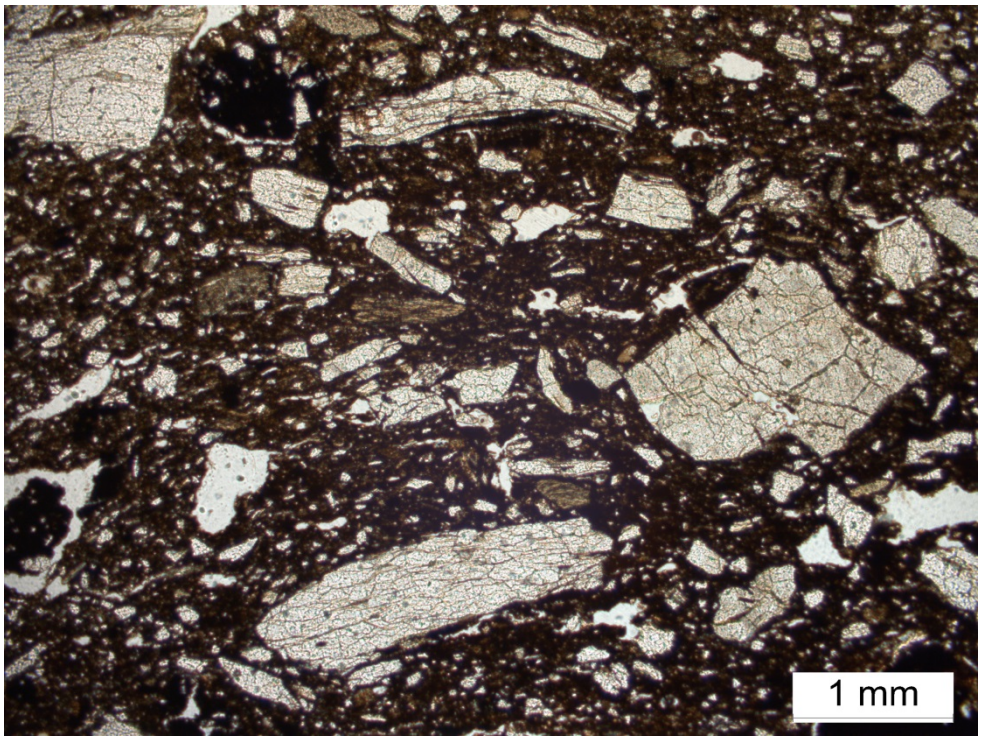
Sample 136, XP, x25. Intermediate grade metamorphic rocks with biotite lathes and chert.



Sample 111, XP, x25. Intermediate grade metamorphic rocks with biotite and muscovite.



Sample 145, PPL, x25. Intermediate grade metamorphic rocks with monocrystalline quartz in lower left, iron-rich opaque in centre, and phyllite in lower right.



Sample 111, PPL, x25. Intermediate grade metamorphic rocks with biotite and muscovite.

I.5. Fabric 5: Mudstone and Mudstone Breccia

Mudstone and Mudstone Breccia Samples: 63, 71, 77, 83, 86, 210, 211, 213, 214

Inclusions: 20-30%. Eq. & el., a-sr. Double to single-spaced. Strong (samples 63, 83) to crude alignment to margins. Highly bimodal grain size distribution.

Coarse Fraction: 30-40%. 3.6-0.2 mm.

Dominant:

Mudstone; eq. & el., a-sa. <1.85 mm, mode 0.7 mm. Several types of mudstone present, including micaceous red with silt-sized quartz grains throughout and rare radiolarian (samples 63, 77, 200); black with mica and quartz (samples 63, 71, 77), and grey with silt-sized grains of quartz (samples 86, 211, 213).

Common:

Mudstone brecchia; eq. & el., <3.6 mm, mode 1.35 mm. Well sorted fine grained sandstone with mud cementation, containing mudstone, radiolaria, micrite, orange and red possibly clay based material (see Whitbread 1995:287).

Micrite; eq. & el., <2.72 mm, mode 1.28 mm. Fine grained limestone.

Fine Fraction: 60-70%, 0.2-0.01 mm.

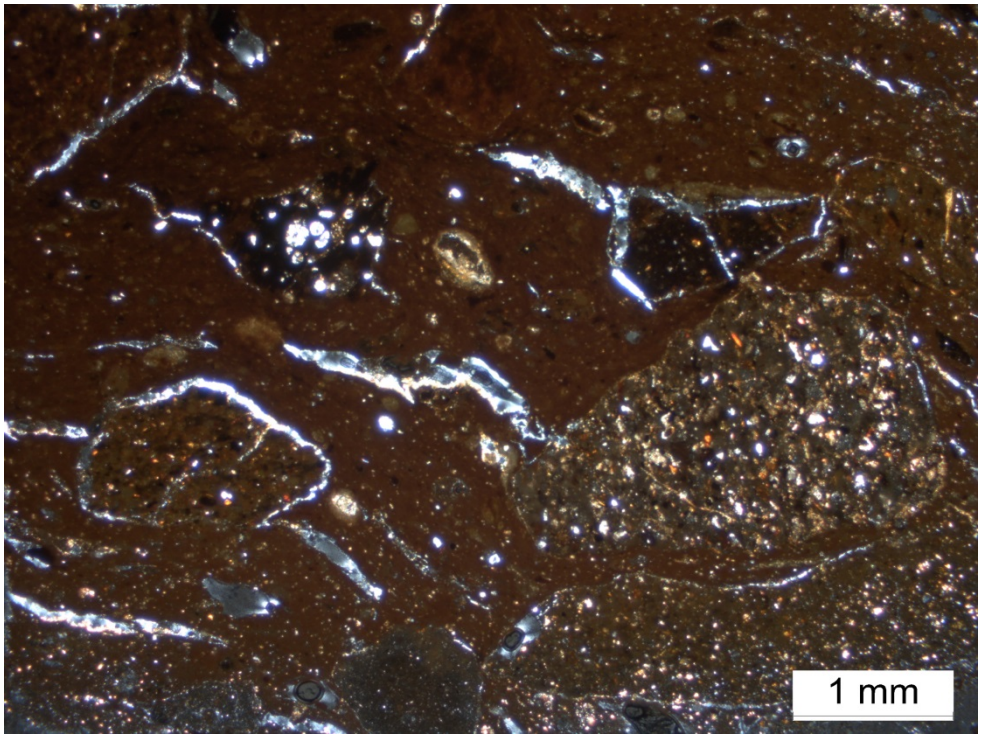
Dominant: *Quartz*
Common: *Biotite, Micrite, Iron-rich opaques (may be TCF related)*
Rare: *Muscovite*

Matrix:

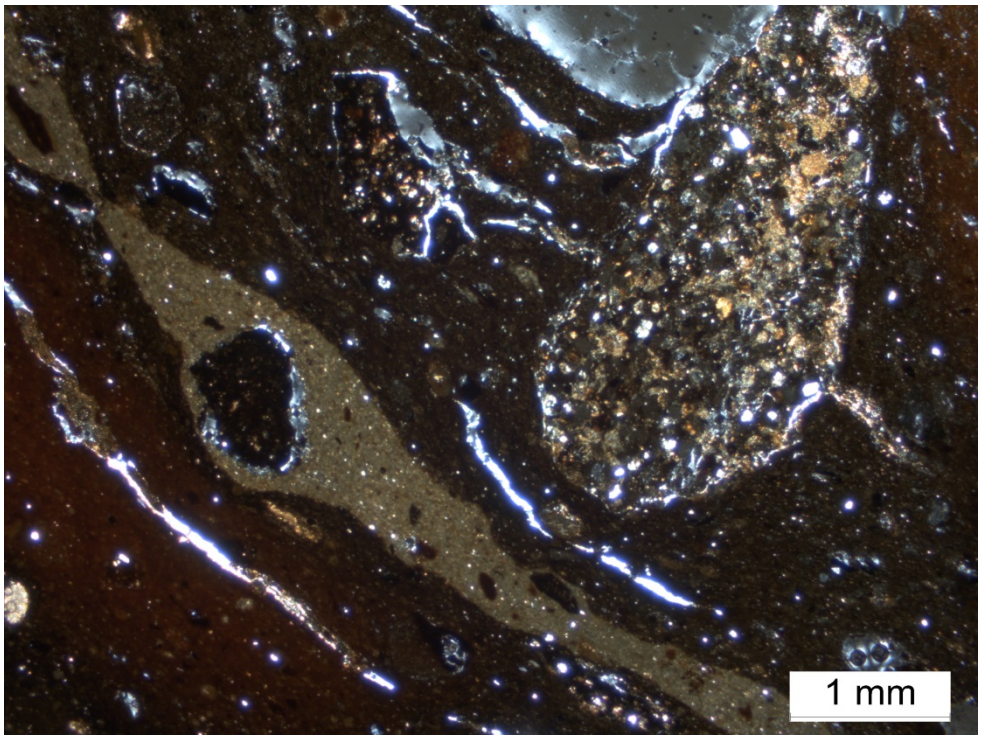
66-79%. Weakly calcareous (sample 71) to moderately calcareous (sample 63). Dark red to black in XP, brownish-red to greyish-black in PPL. Moderately to strongly heterogeneous. Heterogeneity relates to firing, as many samples have tri – or five-color cores (samples 83, 210, 213, 214). Many samples contain clay mixing striations (samples 71, 77, 83, 214). One very high-fired sample has a mottled matrix (sample 71).

Voids:

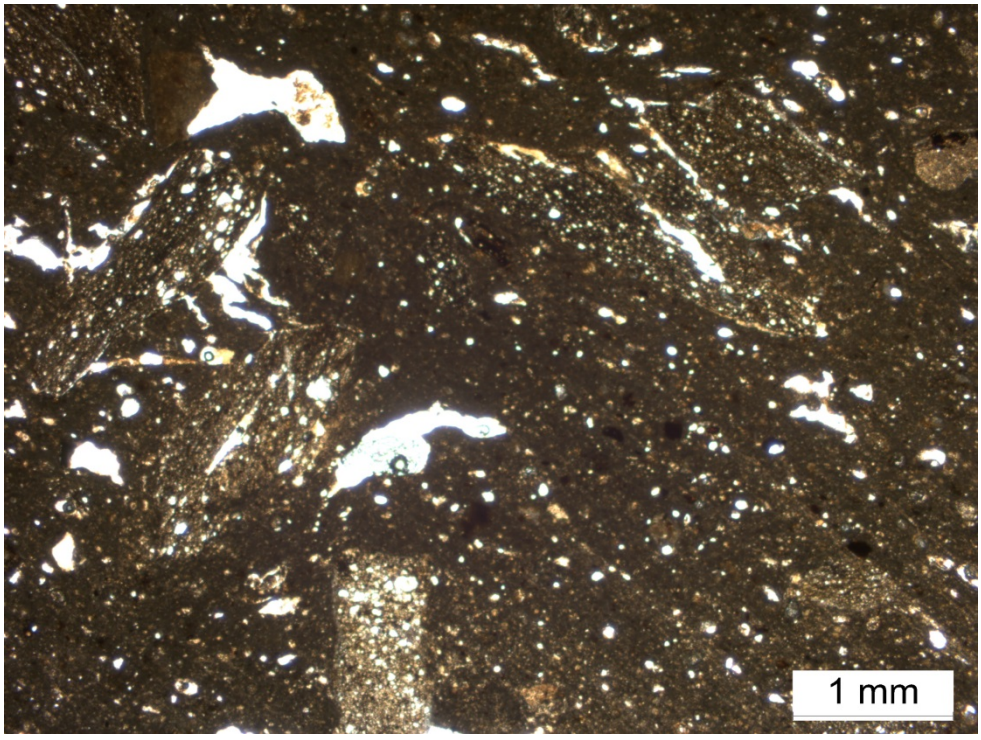
1-4%. Consisting mainly of meso- and macro-vesicles and meso- to macro-vughs. Many examples display strong alignment with margins (samples 77, 83, 86).



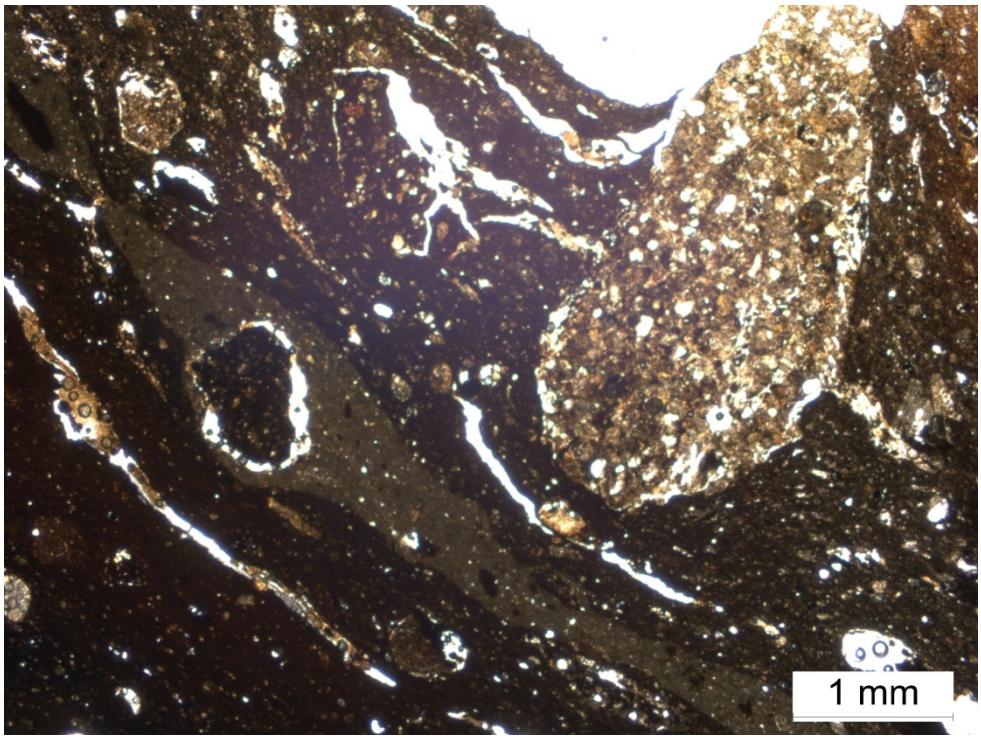
Sample 77, XP, x25. Mudstone and mudstone breccia in red matrix with green clay pellets.



Sample 83, XP, x25. Mudstone breccia in insufficiently mixed clay matrix with calcareous striation.



Sample 63, PPL, x25. Mudstones in matrix rich in fine fraction quartz, micrite, and mica.



Sample 83, PPL, x25. Mudstone breccia in insufficiently mixed clay matrix with calcareous striation.

I.6. Fabric 6: Angular Chert, Limestone, and Quartz

Angular Chert, Limestone, and Quartz Samples: 5, 10, 14, 49, 154

Inclusions: 10-40%, double spaced or less. Weak alignment to margins of samples. Bimodal grain size distribution.

Coarse Fraction: 10-30% 1.76-0.24 mm

Dominant:

Chert; pr. & eq., a-sa. <1.76 mm, mode 0.8 mm. Colourless to brownish in colour, PPL.

Frequent:

Micrite; pr. & eq., sa-sr. <1.52 mm, mode 0.65 mm. Fine grained limestone, some samples are embedded with sparry calcite (sample 14).

Monocrystalline quartz; pr. & eq., sr-r. <0.96 mm, mode 0.6 mm. Straight or undulose extinction.

Common:

Radiolarian chert; eq., r. <0.4 mm, mode 0.3 mm. Chert with siliceous microfossils.

TFs- clay pellets; eq., r. <1.36 mm, mode 0.8 mm. Two types of clay pellets present- one red type from terra rossa clay with quartz and possible mica fine fraction inclusions within. One type is from calcareous clay with no visible inclusions.

Rare:

Chalcedonic quartz; pr. & eq., sa-sr. <1.12 mm, mode 0.7 mm. Quartz with fine radial-fibrous structure.

Mudstone; pr., sr. <1.2 mm, mode 0.8 mm. Red in colour, some samples are iron-rich.

Siltstone; pr. & sr. <1.44 mm, mode 0.9 mm. Muddy in appearance, with quartz and calcareous inclusions within.

Opaque iron inclusions; pr., sa-sr. <1.36 mm, mode 0.85 mm. Opaque inclusions, some may actually be very iron rich clay pellets that are opaque.

Polycrystalline quartz; pr. & eq., sa-sr. <0.88 mm, mode 0.55 mm. Undulose extinction. One sample (5) has foliated quartz which is definitely metamorphic in origin, may be related to schist.

Plagioclase feldspar; pr. & eq., sa. <0.32 mm, mode 0.3 mm. May be related to igneous rocks. Albite twinning.

Schist; pr. & eq., r. <0.24 mm, mode 0.2 mm. Foliated mica schist with quartz, feldspar and mica (possibly muscovite). In sample 154.

Unknown orange inclusion; pr. & eq., sa. <0.54 mm, mode 0.4 mm. Resembles orange serpentinite with mesh-like texture visible in XP. may be bunches of minerals, metamorphic in origin, altered, may have replaced something.

Fine Fraction: 30-40%. 0.23- 0.1 mm.

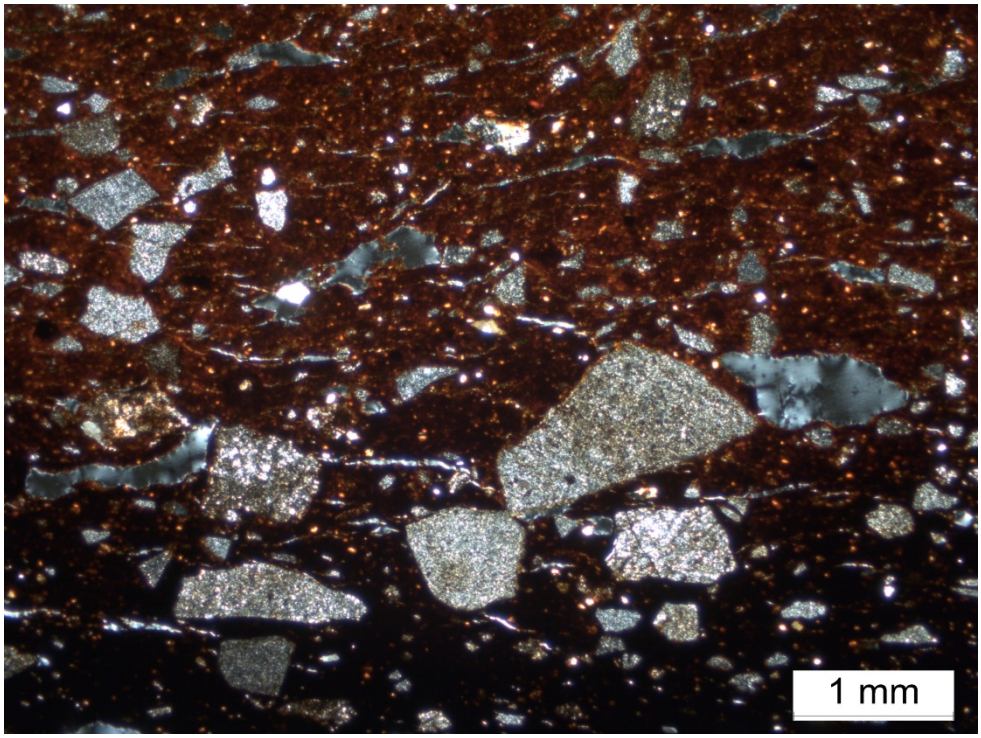
Dominant: *Micrite, quartz*
Frequent: *Mica*
Common: *TFs- clay pellets*

Matrix:

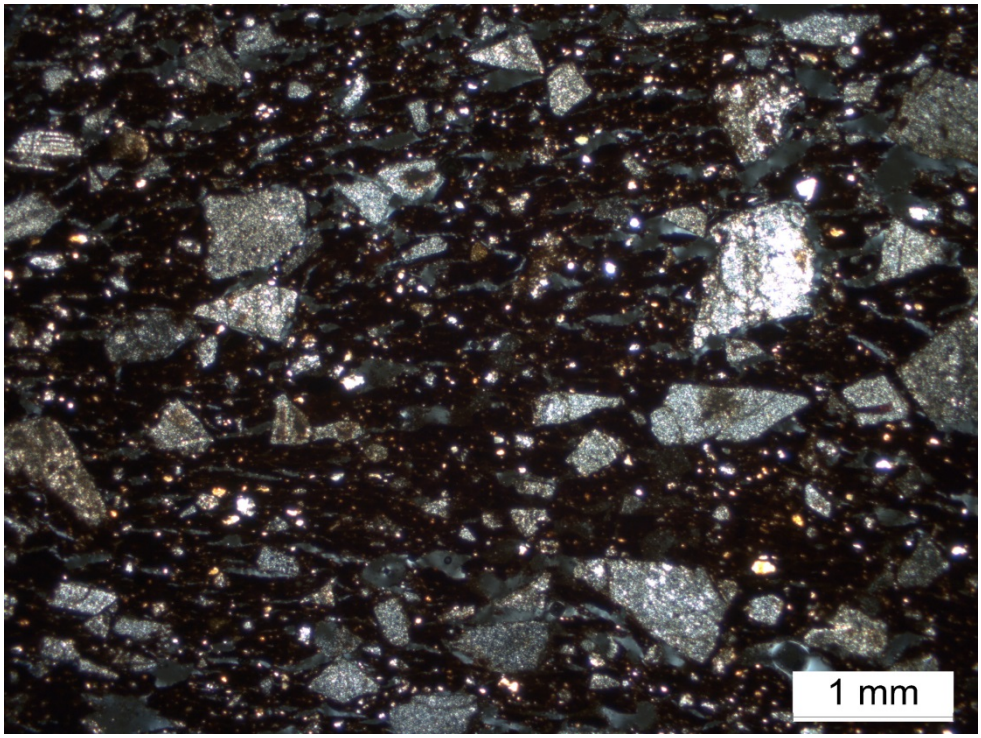
30-60%. Highly calcareous. Deep red brown in PPL, orange red in XP. Homogeneous to moderately homogenous, amount of temper and rare inclusions accounts for moderate homogeneity. Some samples have core/margin differentiation, most likely due to incomplete oxidation (samples 5, 154). Not optically active (samples 49) to very optically active (10, 14).

Voids:

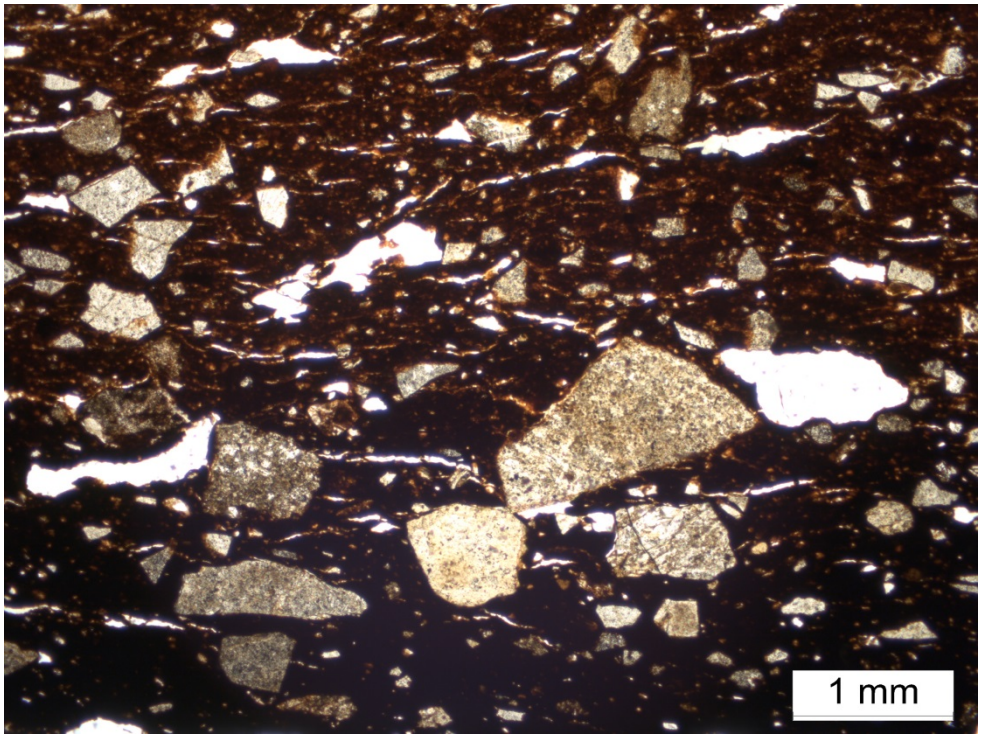
1%. Consisting mainly of some megavughs and lots of mesovughs, with a fair amount of macrovughs. Some mesovesicles also present. Strong alignment of voids to margins of samples. Some vughs contain secondary calcite. Almost every sample has fine, hairline cracks through, which are strongly aligned with margins of samples. Cracks contain secondary calcite.



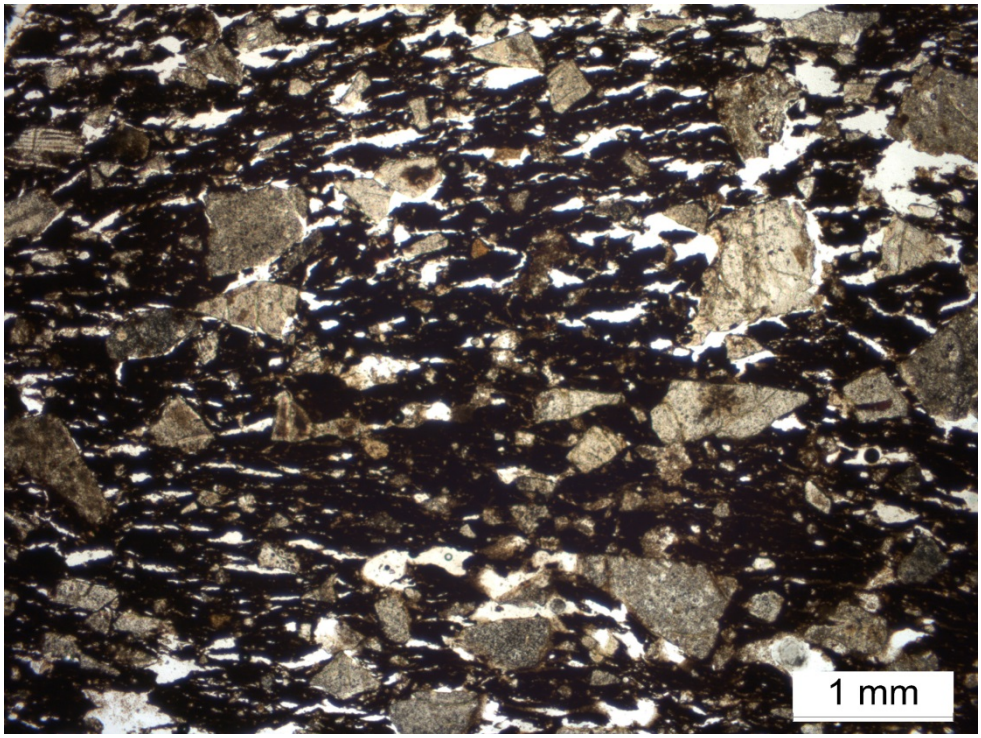
Sample 5, XP, x25. Large chert inclusions in red matrix.



Sample 14, XP, x25. Chert and quartz inclusions in red matrix with fine fraction quartz and mica.



Sample 5, PPL, x25. Large chert inclusions in red matrix.



Sample 14, PPL, x25. Chert and quartz inclusions in red matrix with fine fraction quartz and mica.

I.7. Fabric 7: Micrite and Quartz

Micrite and Quartz Samples: 50, 100, 192

Inclusions: 20-30%. Double- to single-spaced. Crude alignment to margins. Weakly to moderately bimodal grain size distribution.

Coarse Fraction: 10-15%. 2.16-0.2 mm.

Dominant

Quartz; eq., sa-r. <0.4 mm, mode 0.3 mm. Undulose or straight extinction. Most likely related to polycrystalline quartzes and possible intermediate metamorphic rocks.

Micrite; eq., sa-r. <0.6 mm, mode 0.35 mm. Fine grained limestone. Some examples contain veins of sparry calcite (sample 192). Fabric contains rare microfossils, which are most likely related, as well as grains of calcite.

Common:

Polycrystalline quartz/intermediate grade metamorphic rock fragments; eq. & el., a-sr. <1.05 mm, mode 0.45. Contains many polycrystalline quartzes with micas. Comprised of mostly
fine-grained examples. Some examples display foliation. Related to schist fragments.

Rare:

Chert; eq. & el., a-sa. <0.55 mm, mode 0.3 mm. Fine grained. Some fragments of chalcedonic quartz.

Alkali Feldspar: eq. & el., sa-sr. <0.6 mm, mode 0.2 mm. Consisting mainly of plagioclase. One example contains sericite intergrowth, may be slightly altered (sample 50).

Argillaceous Rock Fragments; pr. & el., sr-r. <1.15 mm, mode 0.8 mm. High optical density, with sharp boundaries. Containing fine quartz and micrite inclusions. Most likely mudstone.

Iron-Rich Opaques; eq., sa-sr. <2.16 mm, mode 1.6 mm. Opaque, iron-rich fragments. May be slag related.

Fine Fraction: 85-90%. 0.2-0.01 mm.

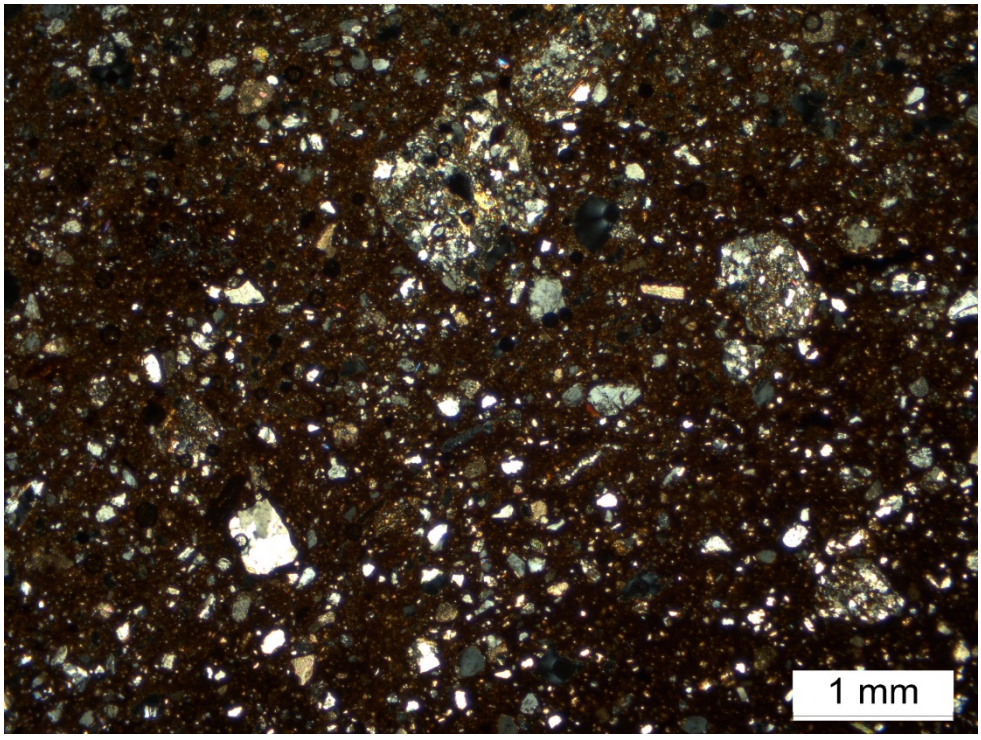
Dominant: *Quartz (mono- and polycrystalline), biotite*
Rare: *Muscovite, alkali feldspar*

Matrix:

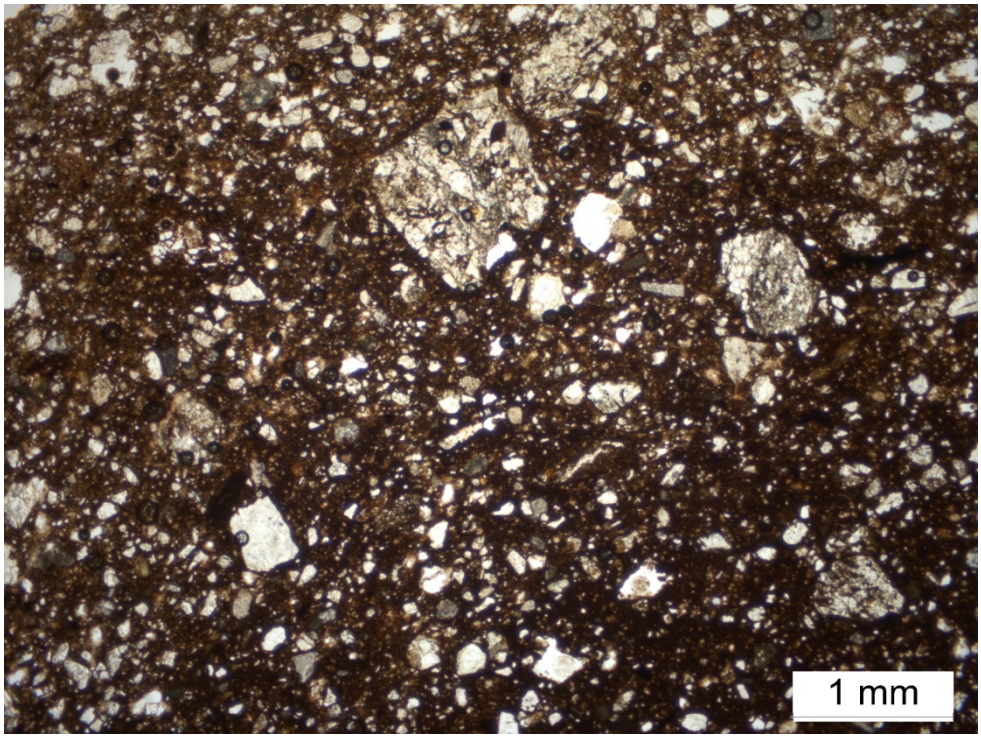
69-79%. Weakly calcareous. Brown-red (sample 100) to reddish-brown (samples 50, 192) in XP, orange-brown to reddish-browh in PPL. Homogeneous. Optically highly active.

Voids:

1%. Consisting of meso- and macro-vughs and vesicles. Crude alignment to margins of samples.



Sample 192, XP, x25. Sandstones with fine fraction quartz, micrite, and mica.



Sample 192, PPL, x25. Sandstones with fine fraction quartz, micrite, and mica

I.8. Fabric 8: Mudstone in Red Micaceous Matrix

Mudstone in Red Micaceous Matrix Sample: 200

Inclusions: 10-15%. Double-spaced. Strong to crude alignment with margins. Strongly bimodal grain size distribution.

Coarse Fraction: 10-12%. 3.04-0.4 mm.

Dominant:

Mudstone; eq. & el., a-sa. <3.04 mm, mode 1.84 mm. Highly micaceous red mudstones with abundant fine fraction quartz and mica. Highly micaceous. Some examples contain iron staining.

Common:

Micrite; eq., sr. <2.24 mm, mode 1.28 mm. Fine grained limestone. Contains fine fraction sparry calcite.

Fine Fraction: 88-90%. 0.4-0.01 mm.

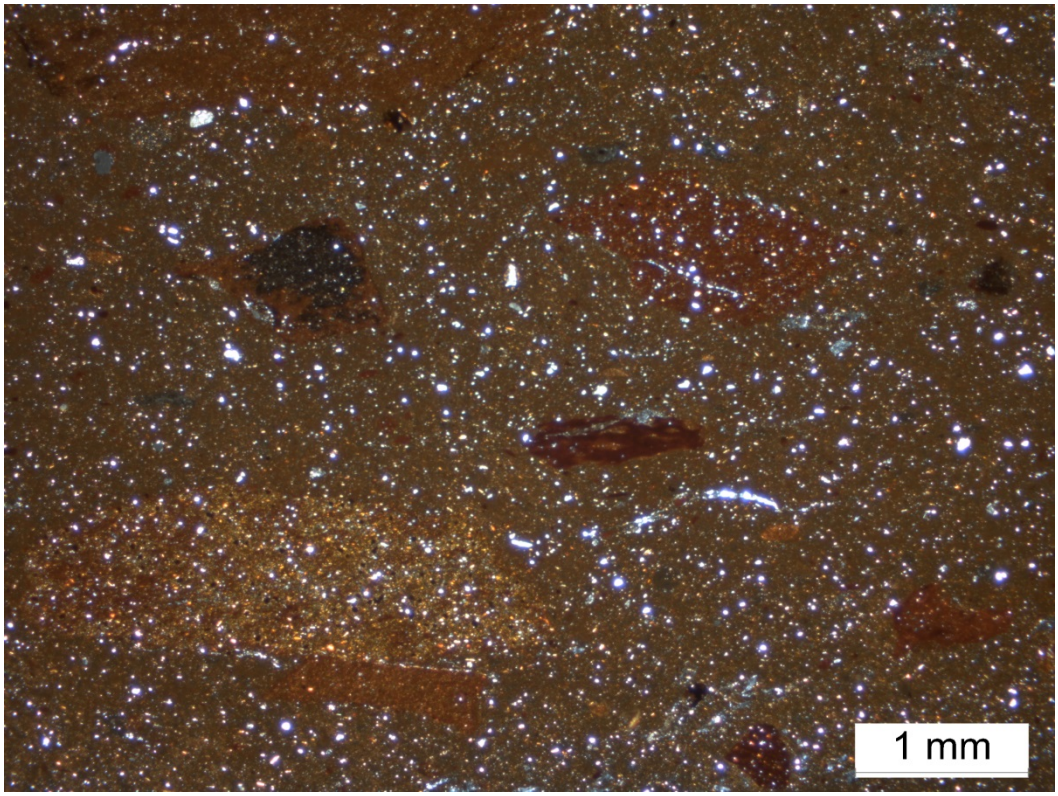
Dominant: *Quartz, mica*
Common: *TCFs- clay pellets, iron-rich opaque fragments*

Matrix:

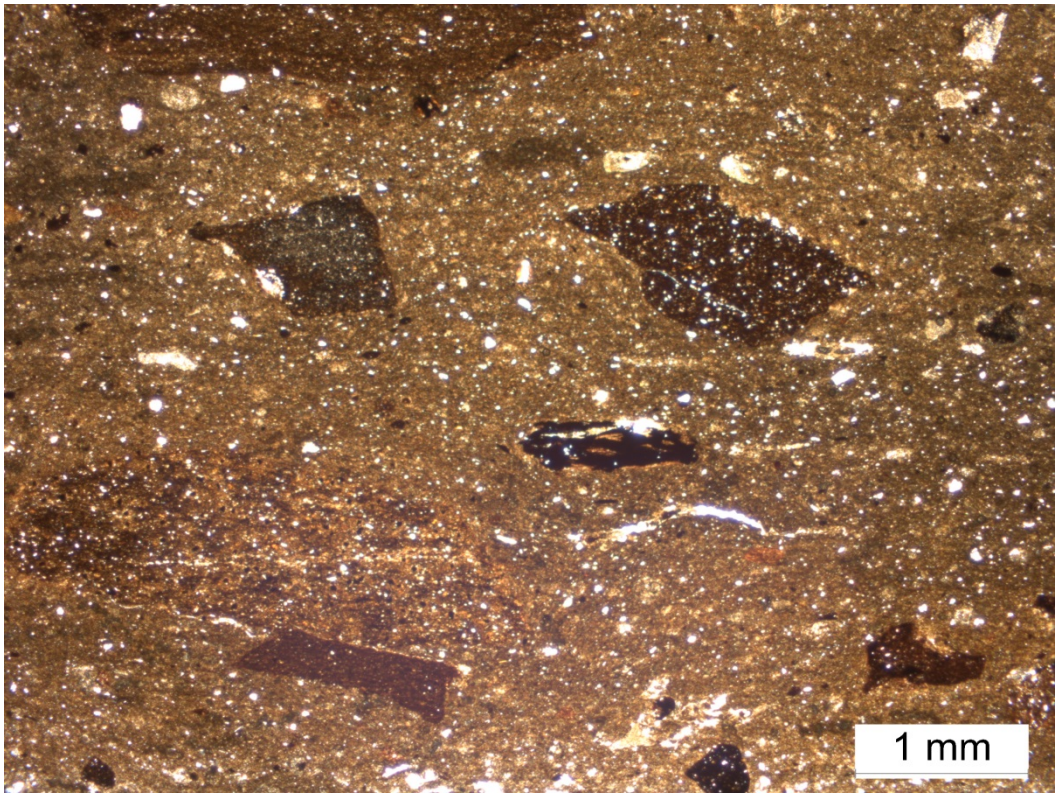
84-89%. Non-calcareous. Red-brown in XP, orange-brown in PPL. Homogeneous. Highly optically active. Clay mixing striations apparent.

Voids:

1-2%. Consisting of meso- and macro-vughs and vesicles. Many display strong alignment to margins of samples.



Sample 200, XP, x25. Micaceous mudstones in fine fraction quartz and mica-rich matrix.



Sample 200, PPL, x25. Micaceous mudstones in fine fraction quartz and mica-rich matrix.

I.9. Fabric 9: Micrite in Red Matrix

Micrite in Red Matrix Sample: 62

Inclusions: 7-10%. Eq. sa-r. Double-spaced to open-spaced. Weakly bimodal grain size distribution.

Coarse Fraction: 10-15%. 0.8-0.2 mm.

Dominant:

Micrite; eq., sr-r. <0.8 mm, mode 0.25. Fine grained limestone.

Fine Fraction: 85-90%. 0.2-0.01 mm.

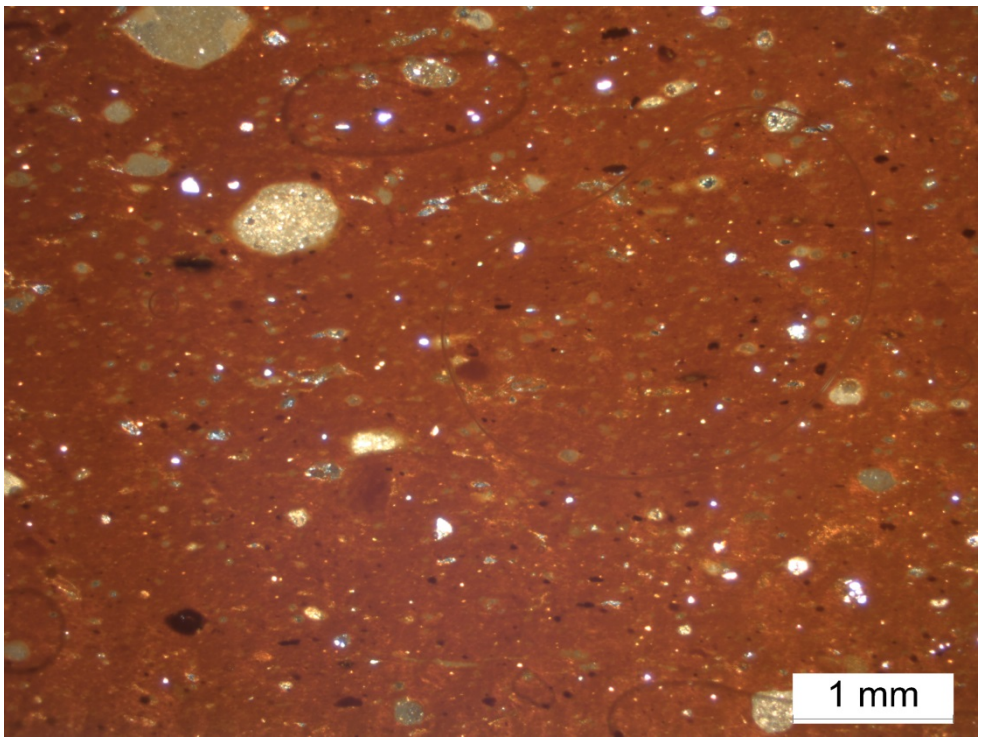
Dominant: *Quartz*
Common: *Iron-rich opaques (most likely iron-rich TCFs), biotite*
Very Rare: *Muscovite*

Matrix:

89-92%. Non-calcareous. Orange-red in XP, orange-brown in PPL. Homogeneous matrix. Highly optically active.

Voids:

1%. Rare meso-vughs and vesicles. Some show strong alignment to margins of sample.



Sample 62, XP, x25. Micrite and iron-rich opaques in red matrix.

I.10. Fabric 10: Metamorphosed Limestone

Metamorphosed Limestone Sample: 82

Inclusions: 20-30%. Eq. & el. a-sr. Single-spaced or less. Highly bimodal grain size distribution.

Coarse fraction: 35-40%. 4.56 mm-0.2 mm.

Dominant:

Mudstone; eq. & el., a-sr. <2.8 mm, mode 1.76 mm. A combination of red, black, and red-orange mudstones. Containing fine fraction quartz, mica. A few examples display polygonal cracks and darkened rims. One example contains radiolaria.

Common:

Sandstone; eq., sr-r. <4.4 mm, mode 1.84 mm. Quartz-rich with mica, feldspars, and carbonate inclusions in calcareous and non-calcareous cements. One example has sparry calcite intergrowth on one side, may be related to metamorphosed limestone.

Metamorphosed limestone; eq. & el., <4.56 mm, mode 2.88 mm. Contains two large specimens of limestone with metamorphosed textures. The first example is an elongated piece of fine grained, highly optically active limestone. The second piece resembles marble, with interlocked grains of calcite and/or dolomite.

Rare:

Chert; eq., sa. <0.64 mm, mode 0.64. Fine grained, with one example containing radiolaria.

Micrite; eq., sr-r. <0.88 mm, mode 0.72 mm. Fine grained limestone, may be related to metamorphic limestone.

Quartz; eq., sr. <1.04 mm, mode 0.72 mm. Undulose extinction.

Fine Fraction: 60-65%. 0.2-0.01 mm.

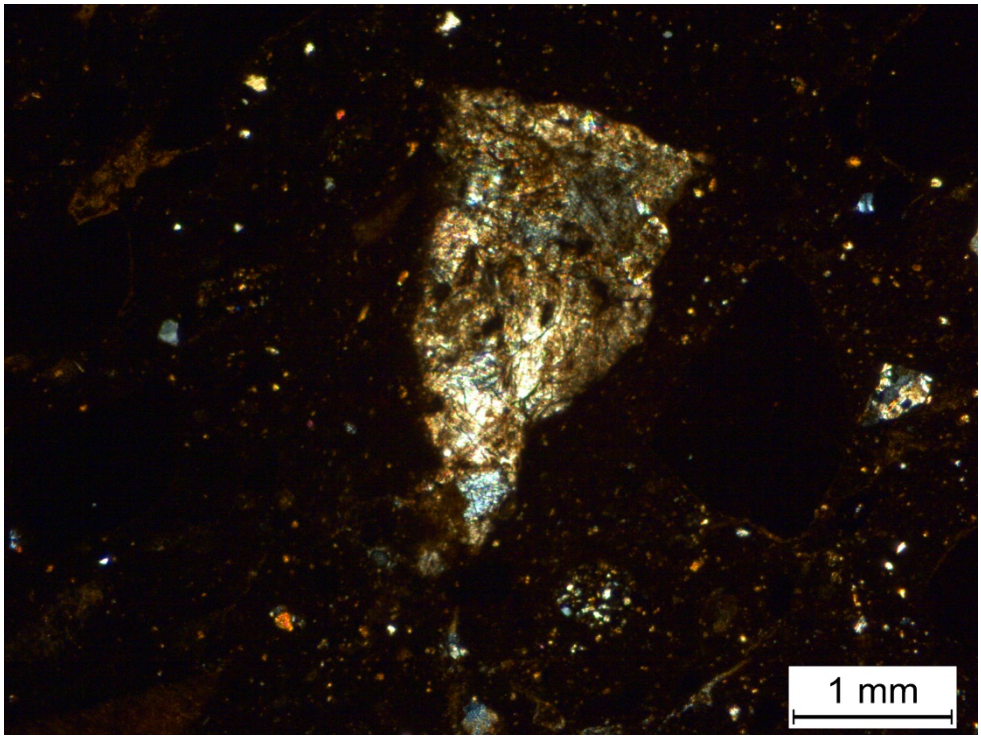
Dominant: *Quartz, biotite*
Common: *Plagioclase*
Rare: *Iron-rich opaques*

Matrix:

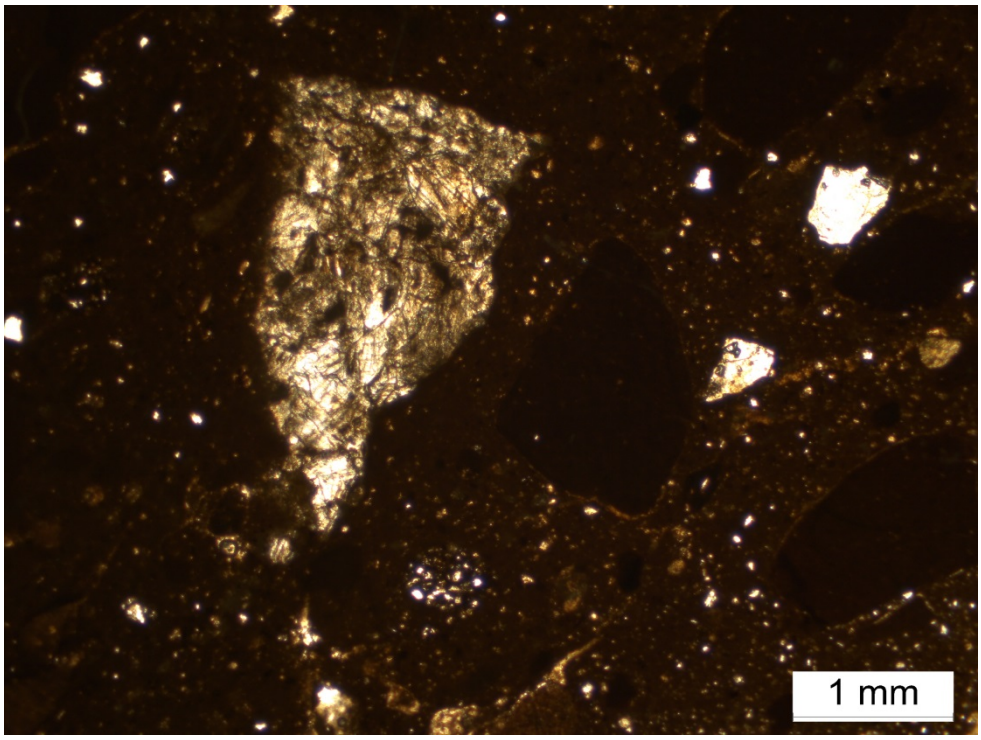
68-79%. Non-calcareous. Homogeneous. Secondary calcite present around exterior of edges and lining voids.

Voids:

1-2%. Consisting of several meso-vughs and vesicles and one macro-vugh. Secondary calcite present.



Sample 82, XP, x25. Metamorphosed limestone with sandstone and micrite.



Sample 82, PPL, x25. Metamorphosed limestone with sandstone and micrite.

I.11: Fabric 11: Chert and Clay Pellets

Chert and Clay Pellets Sample: 95

Inclusions: 15-20%. Eq. & el., a-r. Single to double-spaced. Weakly bimodal grain size distribution.

Coarse Fraction: 20-25%. 2.2-0.2 mm.

Dominant:

Textural Clay Features- Clay Pellets; eq. sr-r. <0.72 mm, mode 0.4 mm. Ranges from red with black rims to black. Some examples contain fine fraction chert, quartz and mica inclusions. Two large, angular examples may be mudstone, but appear exactly the same in colour and texture.

Common:

Chert; eq. & el., a-sa. <1.9 mm, mode 0.55 mm. Some examples containing radiolaria. One example has muddy appearance. Mostly fine-grained with one coarse-grained example.

Quartz; eq., a-sr. <0.3 mm, mode 0.25 mm. Mainly monocrystalline quartz with a few examples of polycrystalline quartz.

Micrite; eq. & el. sa-sr. <2.2 mm, mode 1.05 mm. Fine-grained limestone. Contains few microfossils, which are most likely related.

Fine Fraction: 80-85%. 0.2-0.01 mm.

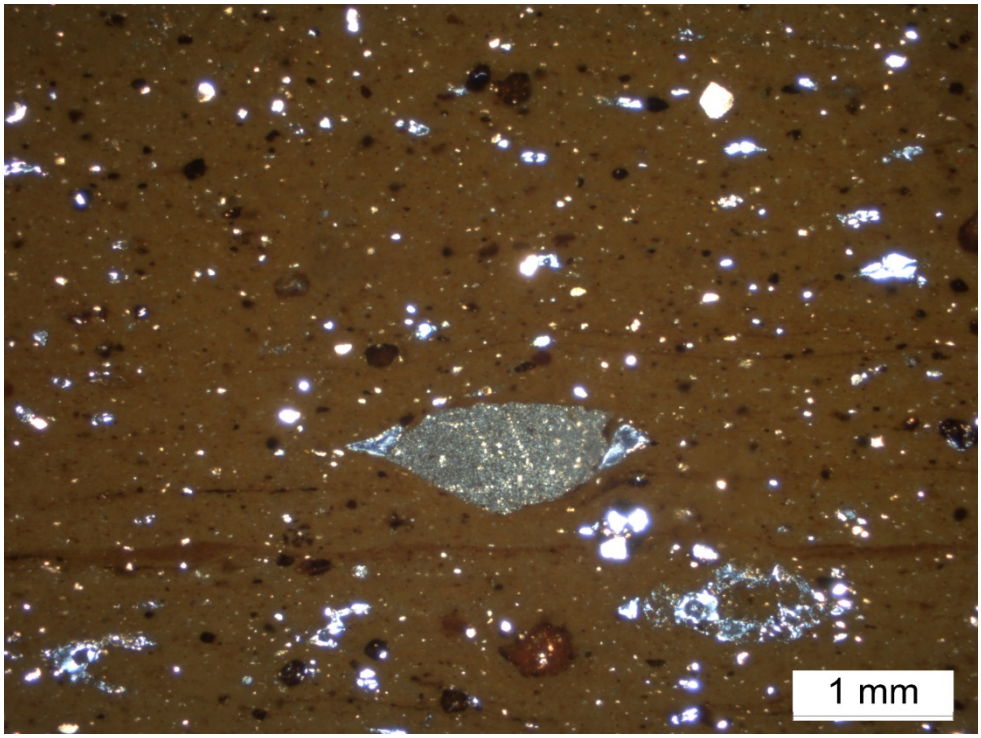
Dominant: *TCFs- clay pellets, quartz*
Common: *Chert*
Rare: *Biotite, Micrite*

Matrix:

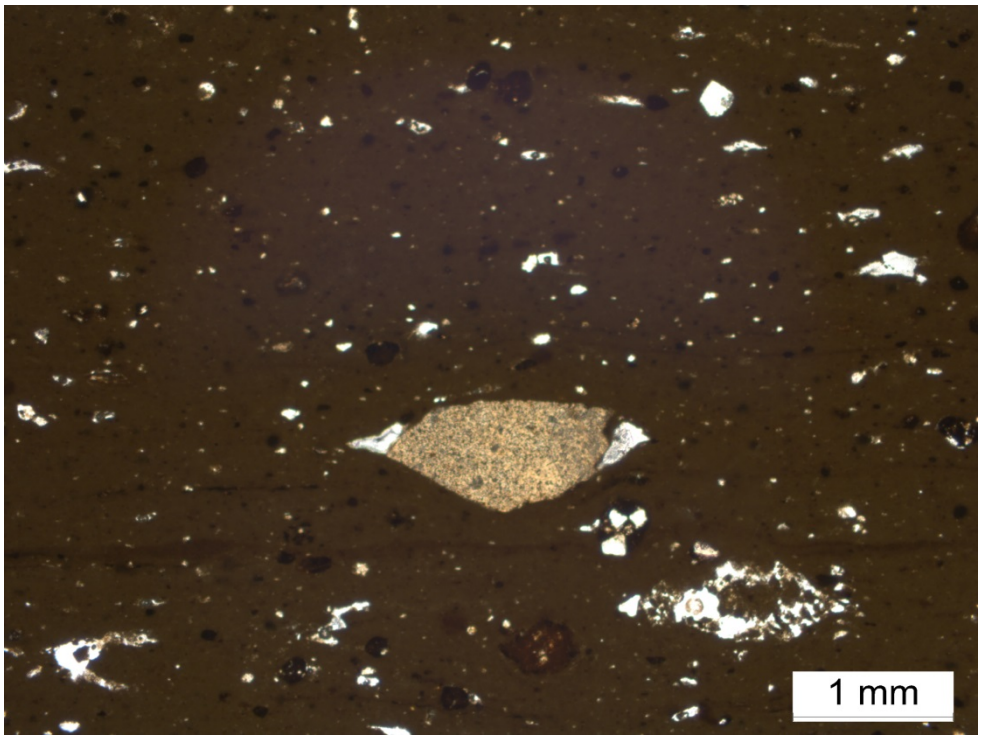
84-89%. Moderately calcareous. Greenish-red in XP, yellowish-green red in PPL. Moderately homogenous with clay mixing striations throughout. Optically weakly active.

Voids:

1%. Consisting of meso- and macro-vughs. Moderately aligned with margins of samples.



Sample 95. XP, x25. Large piece of chert with radiolaria in centre, with fine fraction clay pellets and quartz. Clay mixing striation in bottom third.



Sample 95. PPL, x25. Large piece of chert with radiolarian in centre, with fine fraction clay pellets and quartz. Clay mixing striation in bottom third.

I.12. Fabric 12: Intermediate Igneous Rocks

Intermediate Igneous Rocks Sample: 143

Inclusions: 25-30%. eq. and el. Single to open spaced. Unimodal to bimodal grain size distribution.

Coarse Fraction: 30%. 0.84-0.16 mm.

Dominant:

Plagioclase; eq. & el. a-sa. <0.36 mm, mode 0.26 mm. Dominantly fresh, few weathered.

Intermediate Volcanic Rock Fragments; eq. sa-sr. <0.48 mm, mode 0.32 mm. Most likely andesite, with porphyritic texture, containing plagioclase, amphibole (hornblende), augite, biotite, and opaques.

Common:

Amphibole; eq. & el. a-sr. <0.48 mm., mode 0.30 mm. With brown pleochroism or brown to green pleochroism, most likely hornblende.

Biotite; eq. & el. a-sa. <0.36 mm, mode 0.24 mm. Flakes and lathes.

Alkali feldspar; eq. a-sa. <0.84 mm, mode 0.5 mm. Predominantly sanidine, possible microcline.

Rare:

Quartz; eq. sa-sr. <0.32 mm., mode 0.24 mm. Monocrystalline.

Iron Rich Opaques; eq. sr-r. <0.16 mm, mode 0.15 mm. Black in PPL, black in XP.

Fine Fraction: 70%. 0.16-0.01 mm.

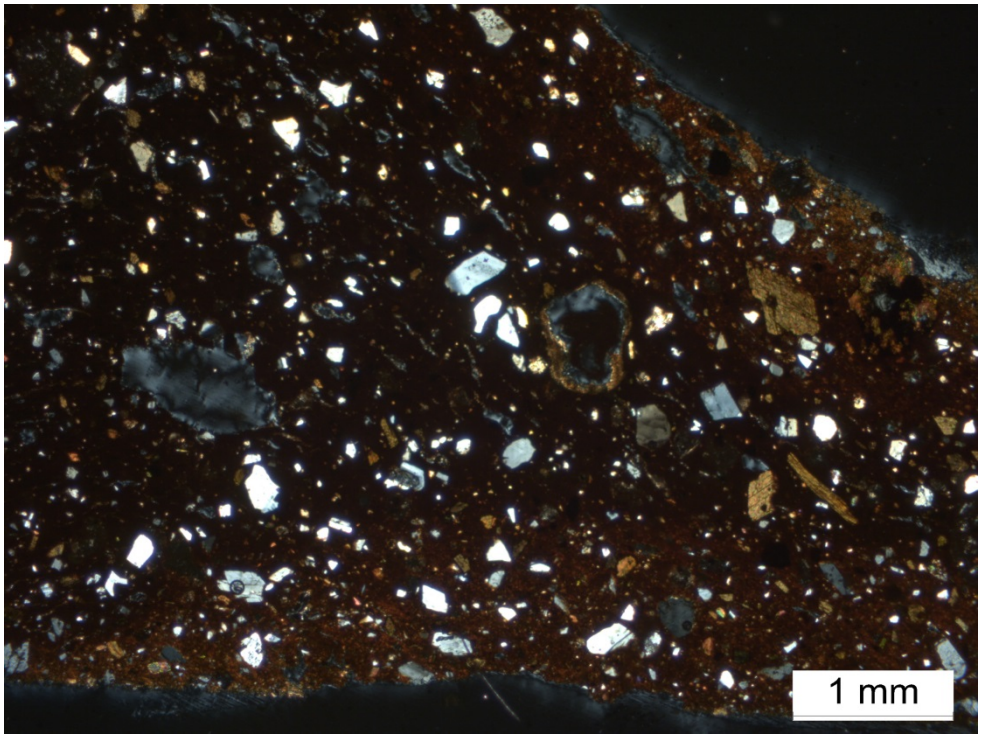
Dominant: *Alkali Feldspar*
Common: *Amphibole, quartz*
Rare: *Biotite, iron rich opaques*

Matrix:

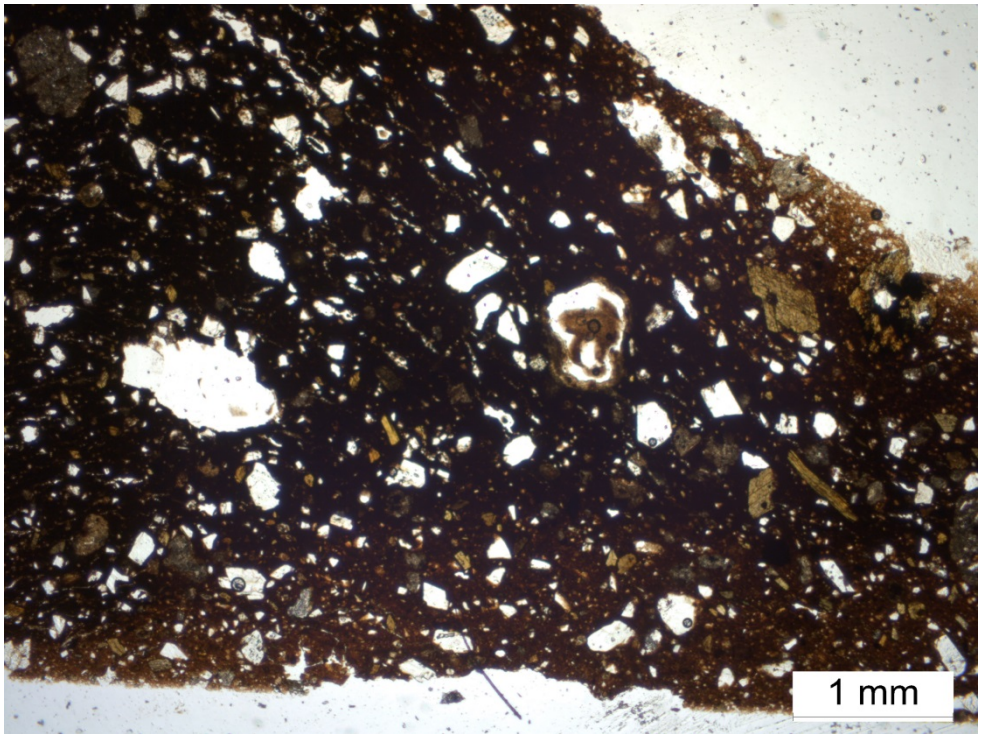
67%. Non-calcareous. Dark brown to red brown in PPL, red to dark brown in XP (x50). Homogenous and highly optically active, but with one high fired sample that is not optically active (32). Some secondary calcite deposition.

Voids:

3%. Consisting mainly of meso-planar voids and meso-vughs. Crudely aligned to margins in some samples (24, 37).



Sample 143, XP, x25. Plagioclase, amphibole, and biotite in red matrix.



Sample 143, XP, x25. Plagioclase, amphibole, and biotite in red matrix

I.13. Fabric 13: Intermediate Grade Igneous Rocks and Clay Pellets

Intermediate Grade Metamorphic Rocks and Clay Pellets Sample: 168

Inclusions: 10-12%. Double to open-spaced. No alignment to margins. Moderately bimodal grain size distribution.

Coarse Fraction: 15-20%. 4.56 mm-0.2 mm.

Dominant:

Intermediate Grade Metamorphic Rock Fragments; eq. & el., sa-sr. <1.36 mm. mode 0.72 mm. Fragments of polycrystalline quartz with biotite, muscovite, possible hornblende, and iron staining. Medium-coarse. May be related to schist.

Textural Clay Features (clay pellets); eq., r. <0.96 mm, mode 0.48 mm. Red clay pellets with low optical density. Containing fine fraction quartz inclusions and rare mica. Some specimens are iron-rich.

Common:

Monocrystalline Quartz; eq. & el. a-sr. <0.8 mm, mode 0.56 mm. Undulose extinction. May be related to intermediate grade metamorphic rock fragments.

Rare:

Sandstone; eq., sr. 4.56 mm. Quartz-rich with biotite and muscovite in orange-red cementation.

Altered Feldspar; eq., sa. <0.3 mm. Possible microcline with muddy, cloudy appearance, leaving it almost isotropic in XP. Displays yellowish color without noticeable texture, and some muddiness in center in PPL.

Fine Fraction: 80-85%. 0.2-0.01 mm.

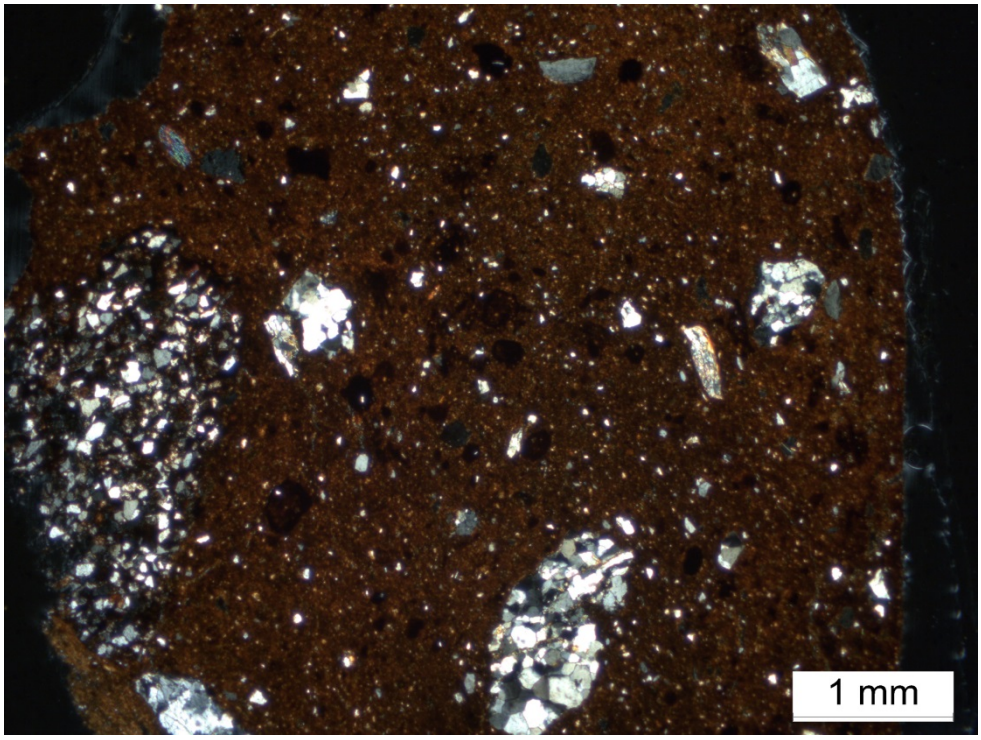
Dominant: *Monocrystalline quartz, TCFs- clay pellets*
Common: *Polycrystalline quartz/metamorphic rock fragments, muscovite, biotite, iron-rich opaques*

Matrix:

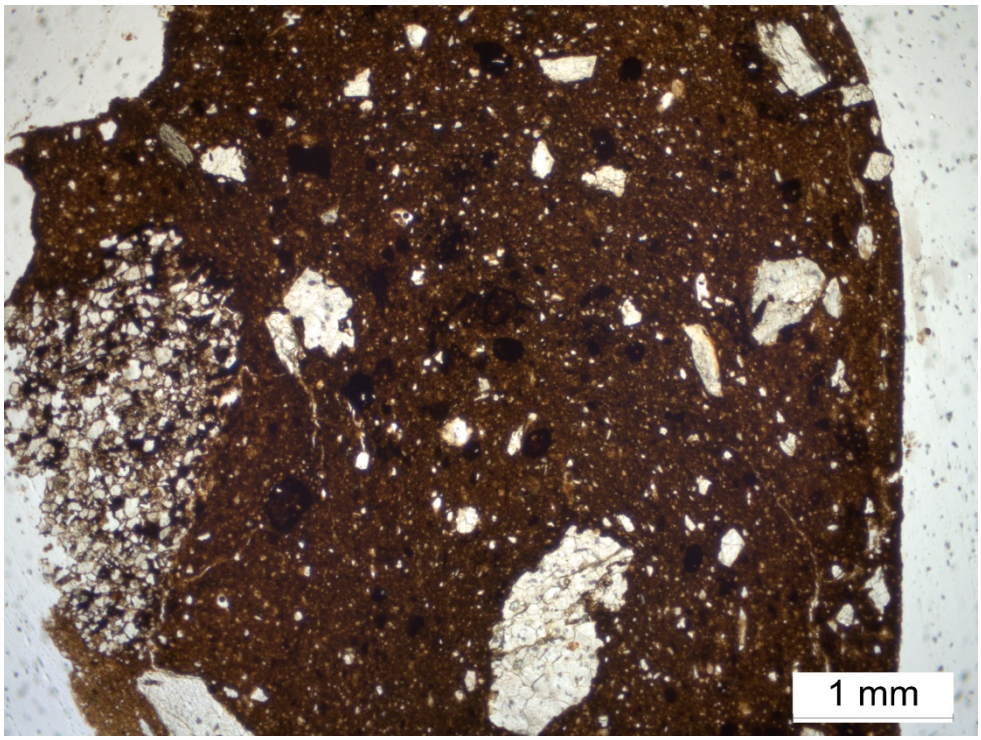
87-89%. Non-calcareous. Orange-red in XP, orange-brown in PPL. Homogeneous with high optical activity.

Voids:

1%. Few meso-vughs and very rare meso-vesicles.. Display crude alignment to margins.



Sample 168, XP, x25. Intermediate grade metamorphic rocks with sandstone in red matrix with fine fraction iron-rich opaques.



Sample 168, XP, x25. Intermediate grade metamorphic rocks with sandstone in red matrix with fine fraction iron-rich opaques.

I.14. Fabric 14: Degraded Basic Igneous Rocks

Degraded Basic Igneous Rocks Fabric Sample: 253

Inclusions: 10-12%. el. & eq., sa-sr. Double-spaced to open-spaed. No alignment to margins. Strongly bimodal grain size distribution.

Coarse fraction: 10-15%. 3.68-0.48 mm.

Common:

Tuffite; eq. & el., sr-sa. <3.68 mm, mode 1.6 mm. Orange-red to gray-yellow in color with fibrous texture. Some examples containing discreet grains of plagioclase.

Rare:

Degraded Basic Igneous Rocks; eq., sr. <1.76 mm. Dark brown containing many fine-grained relic lathes of feldspar most likely related to basalt. Also containing a medium-grained specimen containing olivine and pyroxene, most likely related to dolerite.

Micrite; eq. & el., sr. <1.92 mm, mode 1.28 mm. Fine grained limestone.

Fine fraction: 85-90%. 0.47-0.01 mm.

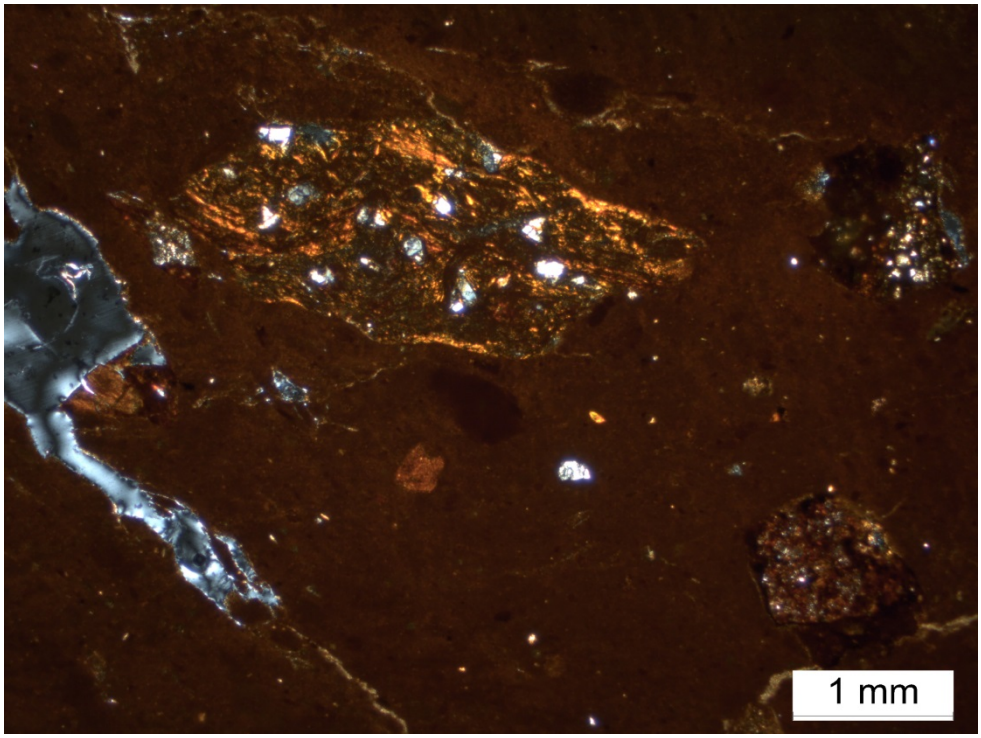
Common: *Textural clay features- clay pellets, quartz, micas*

Matrix:

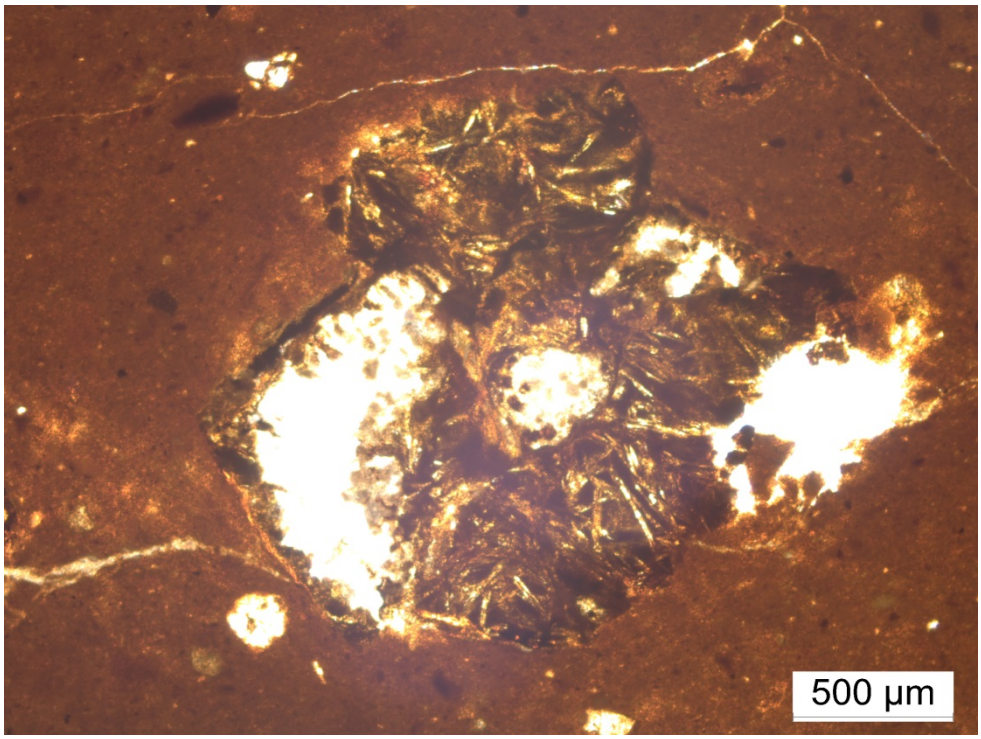
87-89%. Non-calcareous. Deep orange-red in XP, orange-brown in PPL. Homogeneous. High optical activity.

Voids:

1%. Several macro-vughs. Crude to no alignment with margins of sample.



Sample 253, XP, x25. Tuffite containing quartz in orange-red matrix with textural clay features.

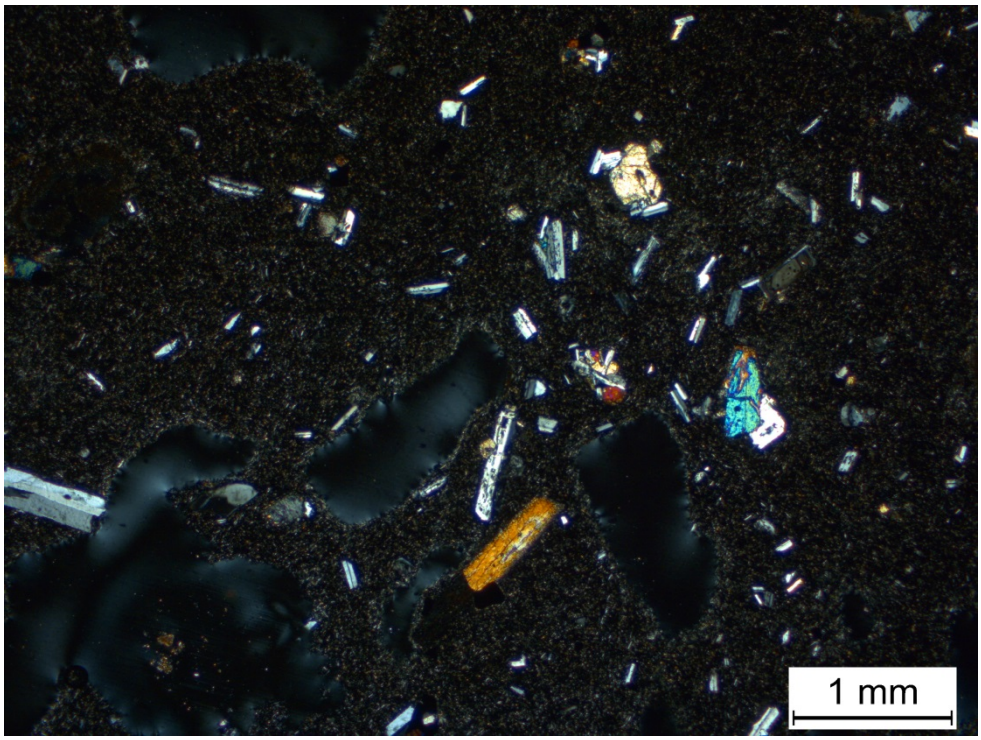


Sample 253, PPL, x25. Large piece of degraded igneous rock, may be related to basalt.

I.15. Rock Sample 264

Sample 264: Intermediate to basic porphyritic igneous rock

This sample is not ceramic, as believed at time of sampling. It is an intermediate to basic porphyritic igneous rock. It is characterized by a fine grained groundmass with large phenocrysts of plagioclase, some with zoning (sanidine), monocrystalline quartz, pyroxenes, and possible hornblende. There are abundant bloating pores, suggesting that the rock was fired at a high temperature, possibly over 1100˚ C. It is most likely andesite.



Sample 264, XP, x25. Plagioclase with pyroxenes and hornblende.

Appendix II: Catalogue of Ceramics from Nemea

Sample Number 1 **Square** K19 **Layer** 17 **Lot** 56

Artefact Number K19.56.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR4/8 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd cent BC

Sherd Type Rim

Measurements no diameter, H: 2.8 cm, W: 4.8 cm, thick: 0.4 cm

Fabric Description hard fired, somewhat smooth fabric, exterior appears to be smoothed and slightly vitrified, 25-33% moderately sorted inclusions, angular sparkly white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions, tcfs?

Sherd Description rim of chytra with preserved flange for lid on interior, rim is straight with indented line around collar that marks separation of rim and body, flange protrudes approx 0.5 cm from rim and is straight, almost no body preserved, unable to determine shape of body

Sample Number 2 **Square** K19 **Layer** 17 **Lot** 59

Artefact Number K19.59.9

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color interior: 5YR5/4 reddish brown, exterior: 2.5Yr5/6 red

Vessel Type chytra

Vessel Date late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 3.9 cm, H: 3.2 cm, W: 4.5, ext of flange: 0.4 cm, rim to flange: 1.2 cm, thick: 0.5 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description straight, rounded rim, rounded, slightly upturned flange, almost no wall preserved, wheelmade line around bottom of rim on exterior

Sample Number 3 **Square** K19 **Layer** 17 **Lot** 59

Artefact Number K19.59.10

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color interior: 5YR6/8 reddish yellow, exterior: 5YR5/4

Vessel Type chytra

Vessel Date late 2nd century BC

Sherd Type Rim

Measurements MPD of rim: 2.7 cm, H: 2.7 cm, W: 3.0, extension of flange: 0.5 cm, lip to flange: 1.3 cm, thick: 0.4 cm

Fabric Description hard fabric, gritty fabric with lots of temper, 25-33% moderately sorted inclusions, angular sparkly white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions, tcfs?

Sherd Description straight rim that is slightly point, upturned, angular protruding flange, indented line underneath rim on exterior, wall under flange is very straight

Sample Number 4 **Square** K19 **Layer** 17 **Lot** 59

Artefact Number K19.59.11

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra

Vessel Date late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4.9 cm, H: 2.4 cm, W: 4.7 cm, ext of flange: 0.3 cm, rim to flange: 1.2 cm, thick: 0.4 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description straight, slightly everted rim, pointed flange with distinct ridge , no wall preserved

Sample Number 5 **Square** K19 **Layer** 17 **Lot** 59

Artefact Number K19.59.12

Petrographic Fabric Group Large Angular Chert, Limestone, and Quartz

Fabric Type cooking ware

Fabric Color interior: 10YR5/6 red, exterior: 10YR3/1 dark reddish gray

Vessel Type chytra

Vessel Date late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 3.9 cm, H: 2.8 cm, W: 4.7 cm, extension of flange: 0.3 cm, rim to flange: 1.6 cm, thick: 0.5 cm

Fabric Description hard fired fabric with two firing colors divided in core, fairly vitirified, smooth surface,hard gritty fabric, 20-30% moderately sorted inclusions, large, angular white, black, gray and orange inclusions

Sherd Description straight rim with rounded lip that comes to a point on end, rounded, slightly protruding flange, no preserved wall

Sample Number 6 **Square** K19 **Layer** 17 **Lot** 59

Artefact Number K19.59.13

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 5YR5/6 yellowish red

Vessel Type chytra

Vessel Date late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4.5 cm, H: 3.7 cm, W: 4.5 cm, extension of flange: 0.3 cm, thick: 0.5 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description rim not completely preserved to edge, appears to have been straight and slightly rounded at edge, flange is rounded and not protruding, wall comes out of rim at 70 degree angle, incised line under rim on exterior

Sample Number 7 **Square** K19 **Layer** 17 **Lot** 59

Artefact Number K19.59.14

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra

Vessel Date late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.6 cm, H: 2.1 cm, W: 2.7 cm, extension of flange: 0.3 cm, lip to flange: 1.4 cm, thickness: 0.5

Fabric Description hard fabric, gritty fabric with lots of temper, 25-33% moderately sorted inclusions, angular sparkly white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions, tcfs?

Sherd Description lipless rim that is slightly incurved, angular flange, no wall preserved

Sample Number 8 **Square** K19 **Layer** 17 **Lot** 60

Artefact Number K19.60.4

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6

Vessel Type chytra

Vessel Date Hellenistic

Sherd Type Rim

Measurements MPD of rim: 2.7 cm, H: 2.2 cm, W: 3.0 cm. ext of flange: 0.4 cm, rim to flange: 1.2 cm, thick: 0.5 cm

Fabric Description hard fired, gritty fabric, 20-30% inclusions well sorted, angular to rounded white, gray, orange inclusions, possible tcfs

Sherd Description straight lipless rim that is slightly pointed at edge, rounded, slightly protruding flange, no preserved wall,

Sample Number 9 **Square** K19 **Layer** 18 **Lot** 63

Artefact Number K19.63.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR4/6 yellowish red

Vessel Type chytra

Vessel Date 3rd to 2nd centuries B.C.

Sherd Type Rim

Measurements MPD of rim: 2.2 cm, H: 2.9 cm, W: 2.1 cm, extension of flange: 0.3 cm, lip to flange: 1.3 cm, thick: 0.4 cm

Fabric Description hard fired, rather fine fabric, 10-25% inclusions, moderately sorted inclusions, angular sparkly white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions

Sherd Description straight rim that is slightly incurving at end and ends at point, upturned flange that does not protrude, wall appears to continue straight down with no curvature

Sample Number 10 **Square** K19 **Layer** **Lot** 64

Artefact Number K19.64.1

Petrographic Fabric Group Large Angular Chert, Limestone. and Ouartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra

Vessel Date mid to late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.7 cm, H: 3.0, W: 4.3 cm, ext of flange: 0.4 cm, rim to flange: 1.7 cm, thick: 0.5 cm

Fabric Description hard, slightly vitrified fabric with smooth surface, 10-25% inclusions, moderately sorted, sparse mica, angular red, white and gray inclusions

Sherd Description straight, rounded rim, rounded, protruding flange, no wall preserved, slightly darker on exterior from firing

Sample Number 11 **Square** K19 **Layer** 18 **Lot** 66

Artefact Number K19.66.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra

Vessel Date early 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 3.8 cm, H: 2.9 cm, W: 3.8 cm, ext of flange: 0.25 cm, rim to flange: 2.1 cm, thick: 0.5 cm

Fabric Description hard fired, gritty fabric, tri-color core, mostly like from reduction firing, 25 -33% moderately sorted inclusions, angular sparkly white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions, tcfs?

Sherd Description folded rim with interior folding that creates ridge on interior, rounded flange that does not protrude, no preserved wall,

Sample Number 12 **Square** K19 **Layer** 18 **Lot** 66

Artefact Number K19.66.2

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 5YR5/6 yellowish red

Vessel Type chytra

Vessel Date early 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4.0 cm, H: 2.4 cm, W: 4.0 cm, extension of flange: 0.4 cm, lip to flange: 1.1 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description straight, lipless rim that it slighlty pointed, rounded flange that is not very protruding

Sample Number 13 **Square** K19 **Layer** 18 **Lot** 68

Artefact Number K19.68.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR3/6 dark red

Vessel Type chytra

Vessel Date late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.6 cm, H: 2.8 cm, W: 3.1, extension of flange: 0.45 cm, rim to flange: 1.3 cm, thick: 0.45

Fabric Description hard fired fabric with lots of spalling chips, farily vitrified, 10-15% well sorted inclusions, angular white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions

Sherd Description straight, lipless rim that is slightly pointy at end, rounded flange that slightly protrudes, no preserved wall, exterior surface is very smooth, may have been smoothed or burnished

Sample Number 14 **Square** K19 **Layer** 18 **Lot** 68

Artefact Number K19.68.2

Petrographic Fabric Group Large Angular Chert, Limestone. and Ouartz

Fabric Type cooking ware

Fabric Color 2.5YR4/4 reddish brown

Vessel Type chytra

Vessel Date late 3rd century B.C,

Sherd Type Rim

Measurements MPD of rim: 1.7 cm, H: 2.9 cm, W: 2.8 cm, ext of flange: 0.4 cm, rim to flange: 2.3 cm, thick: 0.6 cm

Fabric Description hard gritty fabric, 20-30% moderately sorted inclusions, large, angular white, black, gray and orange inclusions

Sherd Description beveled rim that slopes inward in interior and forms ridge, rounded, upturned flange, no preserved wall,

Sample Number 15 **Square** K19 **Layer** 18b **Lot** 69

Artefact Number K19.69.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra

Vessel Date late 4th century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.6 cm, H: 2.1 cm, W: 3.0 cm, ext of flange: 0.2 cm, rim to flange: 1.3 cm, thick: 0.4 cm

Fabric Description hard, gritty fabric, 10-25% moderately sorted inclusions, angular blue-gray inclusions, orange-red inclusions, subangular white inclusions.

Sherd Description straight rim that is rounded on top, rounded flange that barely protrudes, no preserved wall

Sample Number 16 **Square** K19 **Layer** 19 **Lot** 70

Artefact Number K19.70.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR4/2 dark reddish gray

Vessel Type chytra

Vessel Date late 3rd to 2nd centuries B.C.

Sherd Type Rim

Measurements MPD: 2.6 cm, H: 3.4 cm, W: 5.1 cm, ext. of flange: 0.4 cm, rim to flange: 1.8 cm, thick: 0.6 cm

Fabric Description hard fabric with smooth outer surface, 10-20% well sorted inclusions, angula white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions

Sherd Description inturned beveled rim that is flat on interior, rounded, slightly protruding flange, wall extends at 70 degree angle, exterior has wheelmade indents along bottom of rim

Sample Number 17 **Square** K19 **Layer** **Lot** 70

Artefact Number K19.70.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color interior: between 2.5YR 5/4 and 5/6 reddish brown- red,

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 2.2 cm, H: 2.7 cm, W: 2.2 cm, ext of flange: 0.4 cm, rim to flange: 1.7 cm, thick: 0.5 cm

Fabric Description hard fired fabric with darker exterior, either due from firing atmosphere or prolonged exposure to fire post-production, 20-30% moderately sorted inclusions, angular white, pinkish-orange and gray inclusions

Sherd Description straight rim with rounded bump on interior, rounded flange that protrudes straight (as opposed to up), no wall preserved,

Sample Number 18 **Square** K19 **Layer** 19 **Lot** 73

Artefact Number K19.73.2

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR4/8 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 4.2 cm, H: 1.9 cm, W: 4.3 cm, extension of flange: 0.35 cm, thick: 0.55 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description straight lipless rim that is rounded at edge, rounded, slightly protruding flange, no preserved wall

Sample Number 19 **Square** K19 **Layer** 19 **Lot** 73

Artefact Number K19.73.1

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR4/6 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 4.6 cm, H: 2.7 cm, W: 4.2 cm, extension of flange: 0.4 cm, thick: 0.7 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description inturned beveled rim and rounded flange of chytra

Sample Number 20 **Square** K19 **Layer** **Lot** 73

Artefact Number K19.73.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 5.5 cm, H: 4.8 cm, W: 5.6 cm, ext of flange: 0.4 cm, rim to flange: 1.7 cm, thick: 0.5 cm,

Fabric Description hard, smooth fabric, 10-25% well sorted inclusions, angular white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions

Sherd Description staright, slightly rounded rim, rounded flange with indentation in groove, wall appears to be fairly straight with little curvature, rounded, upturned handle that would have extended past rim of vessel, shallow wheelmade groove along bottom of rim on exterior

Sample Number 21 **Square** K19 **Layer** 19 **Lot** 73

Artefact Number K19.74.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR5/6 yellowish red

Vessel Type chytra

Vessel Date late 3rd to early 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 5.0 cm, H: 2.9 cm, W: 5.0, extension of flange: 0.25, lip to flange: 0.8 cm, thick: 0.4 cm

Fabric Description hard fabric, gritty fabric with lots of temper, 25-33% moderately sorted inclusions, angular sparkly white rocks, some with red or black striations, mica, orangey-white inclusions, rounded gray inclusions

Sherd Description short, straight lip and rounded flange that does not protrude, shoulder of wall protrudes at straight angle out

Sample Number 22 **Square** K19 **Layer** 19 **Lot** 74

Artefact Number K19.74.1

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 6.4 cm, H: 3.8 cm, W: 6.5 cm, extension of flange: 0.2 cm, rim to flange: 1.3 cm, thick: 0.6 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description straight, lipless rim that is slightly pointed at end, rounded flange that does not protrude, wheelmark line under rim along exterior, wall protrudes at approx 30 degree angle

Sample Number 23 **Square** K19 **Layer** 19 pit **Lot** 75

Artefact Number K19.75.1

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 5.1 cm, H: 4.2 cm, W: 5.1, extension of flange: 0.4 cm, thick: 0.5 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description chytra rim with straight, slightly everted rim and rounded flange, slightly outcurving wall

Sample Number 24 **Square** K19 **Layer** 19 pit **Lot** 75

Artefact Number K19.75.2

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 6.1 cm, H: 3.5 cm, W: 6.1 cm, extension of flange: 0.4 cm, lip to flange: 0.9 cm, thick: 0.7 cm

Fabric Description Hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description short, lipless rim that is slightly incurving, rounded flange that slightly protrudes, wall protrudes from rim at straight +/- 70 degree angle

Sample Number 25 **Square** K19 **Layer** 19 **Lot** 77

Artefact Number K19.77.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR6/6 reddish yellow

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 2.9 cm, H: 2.4 cm, W: 3.1 cm, extension of flange: 0.2 cm, rim to flange: 0.9 cm, thick: 0.3 cm

Fabric Description hard fabric, gritty fabric, 25-33% poorly sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight lipless rim with very slight rounded flange, preserved wall is slightly curved, exterior has indented line under rim

Sample Number 26 **Square** K19 **Layer** 19 **Lot** 77

Artefact Number K19.77.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR5/6 yellowish red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 3.1 cm, H: 3.3 cm, W: 3.5, ext. of flange: 0.4 cm, rim to flange: 2.4 cm, thick: 0.7 cm

Fabric Description hard fired fabric, 20-30% moderately sorted inclusions, tcfs, opaque and translucent white, gray and orange inclusions, possible mudstone

Sherd Description beveled rim that in slanted on interior and creates interior ridge, rounded upturned flange, no preserved wall, wheelmade line under rim on exterior

Sample Number 27 **Square** K19 **Layer** 19 pit N **Lot** 78

Artefact Number K19.78.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color between 2.5YR5/8 and 4/8 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 6.3 cm, H: 4.4 cm, W: 6.2 cm, extension of flange: 0.3 cm, lip to flange: 2.5 cm, thick: 0.7 cm

Fabric Description hard fabric, 20-30% inclusions, moderately sorted, orangey-white inclusiosn, limestone, sparse mica, gray-black inclusions

Sherd Description inturned beveled rim that forms an interior ridge, rounded, upturned flange, wall extends at almost 90 degree angle from bottom of rim

Sample Number 28 **Square** K19 **Layer** 17 **Lot** 58

Artefact Number K19.58.5

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color between 5YR5/5-5/6 reddish yellow- yellowish red

Vessel Type chytra

Vessel Date 3rd to 1st centuries B.C.

Sherd Type Rim

Measurements MPD of rim: 4.1 cm, H: 3.5 cm, W: 4.1 cm, extension of flange: 0.2 cm, lip to flange: 1.6 cm, thick: 0.6 cm

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description beveled rim that is flat on top and has slightly angular end on exterior edge and rounded on interior, rounded flange that barely protrudes at all- may not have been functional or may be worn, wall slightly extends

Sample Number 29 **Square** K19 **Layer** 18 **Lot** 66

Artefact Number K19.66.3c

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/4 reddish brown

Vessel Type chytra

Vessel Date early 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 5.6 cm, H: 4.2 cm, W: 5.6 cm, ext of flange: 0.3 cm, rim to flange: 1.3 cm, thick: 0.5 cm

Fabric Description hard fabric, highly vitrified, 10% inclusions- in some parts the fabric is so black that it is difficult to see, well sorted?, sparse mica, possible limestone, gray inclusions

Sherd Description outturned, rounded rim, rounded, vertically protruding flange, exterior has base of handle attachement preserved, appears that handle was flat and would have extended up past rim, straight wall

Sample Number 30 **Square** K19 **Layer** 19 **Lot** 70

Artefact Number K19.70.3c

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 4.7 cm, H: 3.2 cm, W: 4.7 cm. ext of flange: 0.5 cm, rim to flange: 2.0 cm, thick: 0.5 cm

Fabric Description soft, powdery fabric, 10-25% well sorted inclusions, angular blue and white inclusions, , orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description beveled rim with slanted interior that forms ridge on interior, rounded, upturned flange, very small amount of preserved wall, wheelmarks apparent on exterior of rim

Sample Number 31 **Square** K19 **Layer** 19 **Lot** 77

Artefact Number K19.77.4b

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 5YR6/6 reddish yellow

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 11.7 cm, H: 4.5 cm, ext of flange: 0.2 c, rim to flange: 1.1 cm, thick: 0.5 cm, diameter of

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description almost 40% of rim preserved, straight rim that ends in point, somewhat rounded, upright flant, rounded handle that attaches below exterior of rim and attaches to vessel at top of rim, no preserved wall except for part with handle

Sample Number 32 **Square** K19 **Layer** 17 **Lot** 61

Artefact Number K19.61.5c

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 7.5YR4/1 dark gray

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 1.0 (almost no preserved rim), H: 2.3 cm, W: 4.6 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight rim with no preserved end; flat, angular flange, almost no wall preserved

Sample Number 33 **Square** K19 **Layer** 17 **Lot** 57

Artefact Number K19.57.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type lopas

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MD likely +13 cm, H: 3.5 cm, W: 4.8 cm, thick: 0.2 cm

Fabric Description soft feeling cooking ware fabric- easily scratchable, matrix shows striations in coloring, surface is light, with dark rings just inside and deep red in center. 10 -25% inclusions, well sorted, sunangular to rounded limestone inclusions, possible buff colored grog or clay pellets, small angular translucent white inclusions, possible small black rounded inclusions

Sherd Description rim is straight and slightly everted with no line or visible indentation between rim and body on exterior, interior flange only slightly protrudes out and is sharply upturned

Sample Number 34 **Square** K19 **Layer** 17 **Lot** 58

Artefact Number K19.58.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color GLEY4/5PB dark bluish gray

Vessel Type lopas

Vessel Date late 1st century B.C.

Sherd Type Rim

Measurements H: 2.4 cm, W: 4.1 cm, thick: 0.4 cm, D not possible

Fabric Description heavily fired, most likely from secondary firing (post production), 10-25% moderately sorted inclusions, various sizes of angular to subangular limestone inclusions, rounded red inclusions, angular whitish-gray inclusions

Sherd Description rim, flange and partial wall of lopas; rim is not completely preserved, unclear what finished edge looked like, although preserved bit suggests that it was straight,incised line under rim on exterior flange is very long, protrudes at sharp upright angle, preserved wall shows strong carination under flange

Sample Number 35 **Square** K19 **Layer** 17 **Lot** 60

Artefact Number K19.60.1

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type lopas

Vessel Date late 4th to mid 3rd centuries

Sherd Type Rim

Measurements MPD: 2.4 cm, H: 2.5 cm, thick: 0.4 cm (taken from largest sherd)

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description 2 non-joining rim fragments of lopas plus 2 body fragments; straight, lipless rim that was most likely slightly everted, small bump for flange, does not protrude, exterior incised line around bottom of rim, almost no wall preserved

Sample Number 36 **Square** K19 **Layer** 19 **Lot** 77

Artefact Number K19.77.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type lopas

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 3.6 cm, H: 2.8 cm, W: 3.9 cm, ext of flange: 0.5 cm, rim to flange: 0.9 cm, thick: 0.4 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim and partial body of lopas, straight, pointed rim, angular, flat flange, sharp carination in body under flange, on exterior flange creates indent in body shape

Sample Number 37 **Square** K19 **Layer** 17 **Lot** 60

Artefact Number K19.60.2

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 2.5YR5/6 red

Vessel Type jug

Vessel Date 4th to 2nd centuries B.C.

Sherd Type Rim

Measurements MD: +7 cm, H: 4.7 cm, W: 6.1 cm, thick: 0.4 cm

Fabric Description very hard fabric, appears to be slightly vitrified on exterior, fabric has slightly mottled red-black appearance, interior is red; 25-33% inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description partial rim and neck of water jug, rim is squared and everted slightly, neck is straight, no body preserved to indicate shape of vessel

Sample Number 38 **Square** K17 **Layer** 3b **Lot** 27

Artefact Number K17.27.15

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 7.5YR6/6 reddish yellow

Vessel Type lopas

Vessel Date late 4th century B.C.

Sherd Type Rim

Measurements MPD: >12 cm, H: 2.6 cm, W: 6.7 cm, thick: 0.2 cm

Fabric Description hard fired fabric, 10-25% inclusions, moderately sorted, subangular to rounded black and gray inclusions, few small sparkling specs, subrounded white inclusions, interior rim is slightly gray

Sherd Description straight rim with incurving lip on interior of rim for placement of lid, partial handle attachment on one side of rim- horizontal rim sloping up, fairly flat, would have become rounded loop handle that connected on other side of irm

Sample Number 39 **Square** K17 **Layer** 3 **Lot** 25

Artefact Number K17.25.3

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 2.5YR5/3 reddish brown

Vessel Type jug

Vessel Date late 4th century B.C.

Sherd Type Rim

Measurements Max diameter: 6 cm; H: 2.6 cm, W: 6.1 cm, thick: 0.4 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description neck and rim of jug; straight, everted rim that comes out a 90 degree angle, with straight neck, no indication of body shape

Sample Number 40 **Square** K19 **Layer** 17 **Lot** 56

Artefact Number K19.56.4

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR6/8 light red

Vessel Type jug

Vessel Date 3rd to 2nd centuries B.C.

Sherd Type Rim

Measurements MPD: > 11 cm, H: 2.5 cm, W: 6.9 cm, thick: 0.6 cm

Fabric Description hard fired fabric, with 3 different color layers in matrix, suggests either incomplete oxidization or reduction firing, 25-33% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim sherd of medium coarse jug, simple rolled rim that turns outward, partial part of neck preserved, no body preserved- based off associated pieces, vessel may have been one handled with globular body

Sample Number 41 **Square** K17 **Layer** 3b **Lot** 27

Artefact Number K17.27.16

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR6/8 light red

Vessel Type lopas

Vessel Date late 4th century B. C.

Sherd Type Rim

Measurements MPD: approx. 12 cm, H: 3.4 cm, W: 8.8 cm, thick: 0.3 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight rim with incurving lip on interior for placement of lid, carination below lip, suggests that body continues at sharp angle, shallow vessel

Sample Number 42 **Square** K17 **Layer** 3 **Lot** 25

Artefact Number K17.25.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type lopas

Vessel Date 4th century B.C.

Sherd Type Rim

Measurements rim too fragmentary for diameter measurement; H: 4.7 cm, W: 4.0 cm, Thick: 0.6 cm

Fabric Description hard fired fabric, 30-40% moderately sorted inclusions; interior near rim and core of handle attachement are gray from incomplete oxidization (handle core) or exposure to fire (interior), angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description lopas with squat boday, straight, outturned rim, place of attachment for rounded, thick handle preserved- handle would have gone up and curved in possibly loop style; slight curvature in body

Sample Number 43 **Square** K17 **Layer** 3 **Lot** 25

Artefact Number K17.25.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color exterior: 2.5yr6/8 light red, core: GLEY1 5/N gray

Vessel Type chytra/lopas

Vessel Date 4th century B.C.

Sherd Type Rim

Measurements too fragmentary for diameter measurement; H: 2.1 cm; W: 4.2 cm, Thick: 0.4 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim and lid lip of lopas or chytra shape; straight rim with slight lip on interior for holding a lid in place, no wall is preserved, therefore unable to tell what body shape was

Sample Number 44 **Square** K19 **Layer** 17 **Lot** 61

Artefact Number K19.61.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR4/6 red

Vessel Type chytra

Vessel Date 2nd century BC

Sherd Type Rim

Measurements MPD: 4.5 cm, H: 2.7 cm, thick: 0.5 cm

Fabric Description very hard, slightly brittle fabric, +/- 25% inclusions, moderately sorted, subangular soft limestone, angular milky white inclusions, subrounded red inclusions, fine fraction white, yellowish white inclusions

Sherd Description rim sherd of lopas, top of rim is bevelled with the slope inward with slight interior flange for cover, exterior has incised line under rim, no body preserved

Sample Number 45 **Square** K19 **Layer** 17 **Lot** 61

Artefact Number K19.61.2

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD: 4.8 cm, H: 4.1 cm, thick: 0.4 cm

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description rim and partial body sherd of chytra, straight, lipless rim that is slightly everted, small ridge on interior of rim for flange, but does not protrude, body extends from rim in outturning, almost gloublar fashion

Sample Number 46 **Square** K17 **Layer** **Lot** 11

Artefact Number K17.11.5

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/3 reddish brown

Vessel Type jug

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Rim

Measurements H: 6.3 cm, W: 4.8 cm, thick: 0.5 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description partial neck and shoulder of globular jug, no rim preserved

Sample Number 47 **Square** K19 **Layer** 17 **Lot** 57

Artefact Number K19.57.2

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/6 red

Vessel Type cooking lid

Vessel Date 4th-2nd centuries BC

Sherd Type

Measurements H: 1.6 cm, W: 8.1 cm, thick: 0.2 cm

Fabric Description hard fabric, 10% well sorted inclusions, angular to subrounded white inclusions, subrounded pinkish inclusions, core is fairly dark, hard to see inclusions

Sherd Description slightly domed with with large knob in center; knob is tapered, from narrow neck into protruding top with large indent, rim of top of knob is straight with possible beveling underneath, no edges of lid preserved

Sample Number 48 **Square** K17 **Layer** 3b **Lot** 28

Artefact Number K17.28.8

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 10YR5/1 gray

Vessel Type chytra

Vessel Date 320-300 BC

Sherd Type Rim

Measurements MPD: approx. 7 cm, H: 8. cm, W: 12.4 cm, thick: 0.3 cm

Fabric Description very hard fabric with uneven coloring- mostly gray colored above, but slightly red around rim, most likely due to cooking practices, core is mostly gray with red stripe close to interior, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description 4 non-joining pieces of chytra, including 2 rim fragments, largest rim fragment has good body profile, although no trace of base; straight, everted rim with interior lip just below for placing lid, body slopes down to slightly carinated shoulder, vessel was probably quite globular with rounded base

Sample Number 49 **Square** K17 **Layer** 2 **Lot** 38

Artefact Number K17.38.3

Petrographic Fabric Group Large Angular Chert, Limestone. and Ouartz

Fabric Type coarseware

Fabric Color 2.5YR5/8 red

Vessel Type perforated cylindical vessel

Vessel Date late 3rd to mid 2nd century

Sherd Type Rim

Measurements MPD: approx. 6 cm, H: 7.6 c,. W: 11.5 cm, thick: 0.6 cm

Fabric Description hard gritty fabric, 20-30% moderately sorted inclusions, large, angular white, black, gray and orange inclusions

Sherd Description perforated cylindrical vessel with curved, straight body similar to neck of jug with outturned straight rim; interior by rim has 4 semi-circular holes punched into it

Sample Number 50 **Square** K19 **Layer** 19 **Lot** 77

Artefact Number K19.77.4

Petrographic Fabric Group Micrite and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 10.4 cm, H: 3.5, thick: 1.1 cm (rim), 0.7 cm (wall)

Fabric Description hard fabric, 20-30% moderately sorted inclusions, common small rounded white and gray inclusions with sparse, fine mica

Sherd Description flat, projecting rim of lekane with straight wall, very little wall is preserved

Sample Number 51 **Square** K19 **Layer** 19 pit **Lot** 75

Artefact Number K19.75.7

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 11.8 cm, H: 6.3 cm, thick: 1.0 (rim), 0.7 (wall)

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description flat, projecting rim of lekane, with small part of straight wall

Sample Number 52 **Square** K19 **Layer** **Lot** 75

Artefact Number K19.75.4

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 8.1 cm, H: 3.3 cm, thick: 0.7 cm (rim), 0.45 cm (wall)

Fabric Description hard fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description flat, projecting rim of lekane with small bit of wall preserved, wall is very straight, approx. 15% of rim preserved

Sample Number 53 **Square** K19 **Layer** 17 **Lot** 56

Artefact Number K19.56.3

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 2.5YR6/8 light red

Vessel Type lekane

Vessel Date 3rd to 2nd centuries B.C.

Sherd Type Base

Measurements diameter of base: +/-10 cm, max preserved diameter: 7 cm, H: 3.1 cm, W: 7.2 cm, thick: 0.7 cm

Fabric Description hard fired fabric that feels slightly soft fabric with 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids, fugitive red slip on interior

Sherd Description ring foot base of lekane with interior red slip, partially preserved wall indicates that vessel was fairly deep. no indication of type of rim

Sample Number 54 **Square** K19 **Layer** 19 **Lot** 77

Artefact Number K19.77.6

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 11.6, H: 4.4 cm, thick: 1.5 (rim), 1.0 (wall)

Fabric Description hard fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description outturned, projecting rim with rounded profile, almost no wall preserved, from large vessel, apprx 5-10% of rim preserved; fugitive red gloss on interior and top of rim

Sample Number 55 **Square** K19 **Layer** 19 pit **Lot** 74

Artefact Number K19.74.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5Yr7/3 pink

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD: 8.2 cm, H: 3.1 cm, thick: 1.1 cm

Fabric Description 10-12% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description flat, projecting rim of lekane, almost no body preserved, approx 20% of rim

Sample Number 56 **Square** K19 **Layer** 19 pit **Lot** 75

Artefact Number K19.75.6

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 2.5YR6/8 light red

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 7.7 cm, H: 6.8 cm, thick: 3.1 (rim), 0.9 (body)

Fabric Description hard fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description slightly triangular collared rim, rectangle shaped clay lump on exterior, approx. 0.9 cm long- may be accidental piece that adhered to vessel before firing, part of wall preserved, very straight with slight sloping at bottom

Sample Number 57 **Square** K19 **Layer** 17 **Lot** 57

Artefact Number K19.57.5

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 7.5YR7/4 pink

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD: 11.5 cm, H: 2.8 m, thick: 1.9 cm (rim), 0.9 cm (wall)

Fabric Description very soft fabric, 10-12% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description squared, straight rim of lekane; rim is completely flat on top, sits on wall at almost 90 degree angle, only tiny stub of wall preserved, no interior surface treatment visible

Sample Number 58 **Square** K19 **Layer** 19 pit **Lot** 74

Artefact Number K19.74.4

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 20.6 cm, H: 3.4 cm, thick: 1.4 cm (rim), 0.6 (wall)

Fabric Description very hard fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description flat, projecting rim, approx 30% preserved, almost no wall preserved

Sample Number 59 **Square** K19 **Layer** 19 **Lot** 81

Artefact Number K19.81.1

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 2.5YR6/8 light red

Vessel Type lekane

Vessel Date Hellensitic

Sherd Type Rim

Measurements MPD of rim: 17.7 cm, H: 6.5 cm, thick: 3.0 (rim), 0.6 (wall)

Fabric Description very hard fabric, 20-30% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description collared rim of lekane, with very little wall preserved, large lekane, approx 20% preserved?

Sample Number 60 **Square** K19 **Layer** 19 pit **Lot** 75

Artefact Number K19.75.5

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/8 red

Vessel Type lekane

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 10.6 cm, H: 9.9, thick: 1.1 (of wall), 2.4 cm (of rim)

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description horizontal rim that in slightly collared in appearance, with sharp diagonal slant on underside, wall is very straight, vessel was probably very tall and staight in profile without a great amount of body curvature

Sample Number 61 **Square** K19 **Layer** 18a **Lot** 64

Artefact Number K19.64.3

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR5/6 yellowish red

Vessel Type lekane

Vessel Date mid to late 2nd century B.C.

Sherd Type Base

Measurements MPD of base: 6.4 cm, H: 9.4 cm, thick: 0.6 (of wall), 2.0 (from bottom of foot to interior)

Fabric Description hard fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description partial lekane base, approx 40% preserved, slightly splayed ring foot, strong wheelmarks on exterior, evidence of partial post-production firing on one side; red gloss on interior of base

Sample Number 62 **Square** K17 **Layer** 3b **Lot** 28

Artefact Number K17.28.9

Petrographic Fabric Group Micrite in Red Matrix

Fabric Type medium-coarseware

Fabric Color 2.5YR6/8 light red

Vessel Type lekane

Vessel Date Hellenistic

Sherd Type Rim

Measurements max p diameter: 19 cm, H: 5.1 cm, W: 14.4 cm, thick: 0.6 cm

Fabric Description hard fabric, slightly powdery in feel, 10-25% inclusions, well sorted, small to large subangular to rounded white inclusions, subrounded red inclusions, subrounded black inclusions

Sherd Description 2 sherds from same vessel that don't join; flat, projecting rim, some striations on underside of rim from wheel, partial part of body reserved seems to be very straight, vessel was probably fairly tall

Sample Number 63 **Square** K17 **Layer** **Lot** 11

Artefact Number K17.11.3

Petrographic Fabric Group Mudstone and Mudstone Brecchia

Fabric Type coarseware

Fabric Color 2.5YR6/8 light red

Vessel Type lekane

Vessel Date late 4th century B.C.

Sherd Type rim

Measurements H: 3.9 cm, W: 5.2 cm, thick: 1.3 cm

Fabric Description hard fired, very coarse fabric with reddish brown core and pinkish red outer layers of core, 15-20& poorly sorted inclusions, very large angular inclusions including black mudstone, limestone, textural clay features

Sherd Description thickened, flat projecting rim of lekane with ridging on top exterior

Sample Number 64 **Square** K19 **Layer** 19 **Lot** 77

Artefact Number K19.77.11

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color core: 7.5YR4/2 brown, exterior: 5YR5/8 yellowish red

Vessel Type jug

Vessel Date late 3rd to mid 2nd century

Sherd Type Rim

Measurements MPD of rim: 5.1 cm, H: 3.8 cm, W: 5.5 cm, thick: 0.4 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rounded rim that is outturned with indented line on underside, partial neck preserved

Sample Number 65 **Square** K19 **Layer** 19 **Lot** 67

Artefact Number K19.67.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color core: 2.5YR6/6 light red, exterior: 7.5YR7/4 pink

Vessel Type lekane

Vessel Date early 3rd century B.C.

Sherd Type Base

Measurements MPD of base: 6.5 cm, H: 4.8 cm, W: 10.4 cm, thick: 0.9 cm

Fabric Description very soft fabric, slightly powderly, easily scratchable, 10-12% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description flat base of large, thick lekane, preserved wall indicates that wall was fairly straight

Sample Number 66 **Square** K19 **Layer** 18 **Lot** 62

Artefact Number K19.62.3

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 2.5YR5/8 red

Vessel Type jug

Vessel Date early 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 5.4 cm, H: 4.0 cm, W: 5.4 cm, thick: 0.5 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rounded, slightly rolled, outturned rim of jug with partial neck preserved, interior of rim has slight indent from wheel

Sample Number 67 **Square** K19 **Layer** 17 **Lot** 59

Artefact Number K19.59.19

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date mid to late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 60.1 cm, H: 2.7 cm, W: 7.2 cm, thick: 1.1 cm

Fabric Description soft, powdery fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description squared, flat rim of large lekane, no wall preserved

Sample Number 68 **Square** K19 **Layer** 18a **Lot** 64

Artefact Number K19.64.8

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 2.5YR5/6 red

Vessel Type jug

Vessel Date late 2nd century B.C.

Sherd Type Base

Measurements Diameter of base: 12.1 cm, H: 5.0 cm, W: 15.3 cm, thick: 0.8 cm

Fabric Description very hard fabric, slightly vitrified and smooth although very coarse, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description 2 joining fragment, one frag from lot 59, ring foot base with 2 raised bands on exterior of base, center of underside of base may have formed nipple type protrusion, bottom of ring foot is flat, preserved wall are slightly splayed so jug may have been fairly globular

Sample Number 69 **Square** K19 **Layer** 18a **Lot** 64

Artefact Number K19.64.7

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/4 light reddish brown

Vessel Type jug

Vessel Date mid to late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 7.3 cm, H: 2.9 cm, thick: 0.5 cm

Fabric Description very hard brittle fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description rounded rim of jug with exterior wheel-made indented lines below rim. almost no preserved neck

Sample Number 70 **Square** K19 **Layer** 18a **Lot** 64

Artefact Number K19.64.6

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 7.5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date mid to late 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 11.1 cm, H: 4.7 cm, W: 11.1 cm, thick: 0.6 cm

Fabric Description soft, powdery fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description large lekane rim with flat, outturned rim, evidence of burning on bottom of preserved wall, wall is straight

Sample Number 71 **Square** K19 **Layer** 18 **Lot** 62

Artefact Number K19.62.5

Petrographic Fabric Group Mudstone and Mudstone Breccia

Fabric Type coarseware

Fabric Color 5YR5/4 reddish brown

Vessel Type Corinthian A amphora

Vessel Date early 3rd century B.C.

Sherd Type Body sherd

Measurements H: 11.3 cm, W: 9.3 cm, thick: 1.1 cm

Fabric Description hard fired, very coarse fabric with reddish brown core and pinkish red outer layers of core, 15-20& poorly sorted inclusions, very large angular inclusions including black mudstone, limestone, textural clay features

Sherd Description Body sherd from Corinthian A amphora

Sample Number 72 **Square** K19 **Layer** 18b **Lot** 65

Artefact Number K19.65.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 7.5YR7/4 pink

Vessel Type jug

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 5.5 cm, H: 3.3 cm, W: 5.9 cm, thick: 0.9 cm

Fabric Description very soft fabric, although not powdery, but with cracked outer surface, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description jug neck with outturned rim not completely preserved, part of jug neck preserved

Sample Number 73 **Square** K19 **Layer** 19 pit **Lot** 74

Artefact Number K19.74.6

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 7.5YR7/6 reddish yellow

Vessel Type jug

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 6.5 cm, H: 5.5 cm, W: 6.5 cm, thick: 0.4 cm

Fabric Description hard fabric, slightly powdery, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description plain rim with slightly outturned edge, partial neck preserved

Sample Number 74 **Square** K19 **Layer** 19 pit **Lot** 74

Artefact Number K19.74.7

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/8 reddish yellow

Vessel Type jug

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 8.1 cm, H: 6.5 cm, W: `2.9 cm, thick: 0.6 cm

Fabric Description soft, powdery fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description 3 pieces, 2 joining of jug neck with outturned collared rim and partial neck preserved

Sample Number 75 **Square** K19 **Layer** 19 **Lot** 76

Artefact Number K19.76.2

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type coarseware

Fabric Color 2.5YR5/6 red

Vessel Type jug

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Base

Measurements D of rim: 7.3 cm, H: 2.2 cm, W: 9.5 cm, thick: 0.6 cm

Fabric Description hard, very gritty coarse fabric, hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description completely preserved ring foot with flattened underside of jug, interior of base has nipple like projection, partial wall preserved, vessel appears to be very globular

Sample Number 76 **Square** K19 **Layer** **Lot** 93

Artefact Number K19.93.5

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type jug

Vessel Date mid 3rd to 2nd centuries B.C.

Sherd Type Base

Measurements MPD of base: 9.9 cm, H: 6.3 cm, W: 11.6 cm, thick: 0.7 cm

Fabric Description hard fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description flat base of jug with outcurving body, appears that body would have been fairly globular

Sample Number 77 **Square** K19 **Layer** 19 pit **Lot** 75

Artefact Number K19.75.9

Petrographic Fabric Group Mudstone and Mudstone Breccia

Fabric Type coarseware

Fabric Color exterior: 5YR6/6 reddish yellow, core: pinkish red to

Vessel Type pithos

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Body sherd

Measurements H: 24.6 cm, W: 15.2 cm, thick: 3.0 cm

Fabric Description hard fired, very coarse fabric with reddish brown core and pinkish red outer layers of core, 15-20& poorly sorted inclusions, very large angular inclusions including black mudstone, limestone, textural clay features

Sherd Description large body sherd of pithos with vertical molded lines on top and bottom with curving line in center

Sample Number 78 **Square** K19 **Layer** **Lot** 78

Artefact Number K19.78.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color interior of core: 2.5YR4/1 dark reddish gray, exterior of core:

Vessel Type jug

Vessel Date late 3rd to mid 2nd century

Sherd Type Base

Measurements MPD of base: 8.8 cm, H: 7.2 cm, W: 14.3 cm, thick: 0.6 cm

Fabric Description hard fired, almost vitrified fabric with evidence of reduction or incomplete oxidation in core, very gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description jug base with true ring foot, approx +50% of foot preserved, some body preserved, very globular

Sample Number 79 **Square** K19 **Layer** 19 pit **Lot** 75

Artefact Number K19.75.10

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 2.5YR7/6 light red

Vessel Type krater

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 15.1, H: 8.0 cm, W: 18.9, thick: 0.9 cm, D of handle: 1.8 cm

Fabric Description very hard fabric, fairly fine, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description krater with straight rim that is slightly rounded at end, under rim on exterior is downturned flange for gripping, horizontal rounded handle attached under flange and connects to flange at top

Sample Number 80 **Square** K19 **Layer** 17 **Lot** 60

Artefact Number K19.60.5

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type jug

Vessel Date Hellenistic

Sherd Type Rim

Measurements MPD of rim: 6.1 cm, H: 2.9 cm, W: 6.1 cm, thick: 0.7 cm

Fabric Description hard, powdery fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description slightly outturned rim of jug, rounded at end

Sample Number **81** **Square** K19 **Layer** 19 **Lot** 67

Artefact Number K19.67.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR7/3 pink

Vessel Type pithos

Vessel Date early 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 14.4 cm, H: 9.3 cm, W: 17.8 cm, thick: 1.7 cm

Fabric Description hard, very coarse fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description large collared rim of pithos, rim is flat on top and forms triangular collar around top of vessel

Sample Number **82** **Square** K19 **Layer** 18 **Lot** 62

Artefact Number K19.62.6

Petrographic Fabric Group Metamorphosed Limestone

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type pithos

Vessel Date early 3rd century B.C.

Sherd Type Base

Measurements Diameter of base: 11.9 cm, H: 7.3 cm, W: 12.9 cm, thick: 2.0 cm

Fabric Description soft, powdery, very coarse fabric, 33% poorly sorted inclusions, large angular black and red inclusions, large subrounded white inclusions

Sherd Description completely preserved flat base of pithos with partial preserved wall that is slightly splayed out

Sample Number 83 **Square** K19 **Layer** 18b **Lot** 69

Artefact Number K19.69.4

Petrographic Fabric Group Mudstone and Mudstone Breccia

Fabric Type coarseware

Fabric Color gray core: GLEY 1 4/Ndark gray, red: 10YR5/6 red

Vessel Type pithos

Vessel Date 4th century B.C.

Sherd Type Body sherd

Measurements H: 12.3 cm, W: 8.1 cm, thick: 1.2

Fabric Description hard fabric, very gritty, with 5 layers of coloring in core from gray-red-gray-red-gray and gray exterior, 25% inclusions, mudstone, limestone, textural clay features

Sherd Description 2 joining body sherds of large pithos with 3 raised horizontal bands across lower portion of body

Sample Number 84 **Square** K17 **Layer** 3 **Lot** 25

Artefact Number K17.25.4

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5Y8/2 pale yellow

Vessel Type pithos

Vessel Date late 4th century B.C.

Sherd Type Rim

Measurements max diameter: greater than 27 cm; H: 10.9 cm; W: 24.1 cm, thick: 1.2 cm (body) 4.2 (thickest part of

Fabric Description hard fired, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description large pithos rim fragment with horizontal rim that sharply downslopes at edge, fairly straight body, very regular was probably either wheelmade or wheelturned

Sample Number 85 **Square** K17 **Layer** 3b **Lot** 28

Artefact Number K17.28.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type pithos

Vessel Date late 4th century B.C.

Sherd Type Rim

Measurements max p diameter: approx 14 cm, H: 4.9 cm, W: 16.4 cm, thick: 4.7 cm

Fabric Description very coarse, gritty fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description large pithos rim, outturned flat rim, no parts of body preserved

Sample Number 86 **Square** K17 **Layer** 2 **Lot** 38

Artefact Number K17.38.1

Petrographic Fabric Group Mudstone and Mudstone Breccia

Fabric Type coarseware

Fabric Color exterior: 7.5YR7/6 reddish yellow, core: GLEY 1 5/n gray

Vessel Type pithos

Vessel Date 4th century B.C.

Sherd Type Rim

Measurements L: 15.7 cm, W: 8.5 cm, thick: 6.6 cm

Fabric Description very gritty fabric, 2 distinct layers in core from incomplete oxidization, 33-50% inclusions, poorly sorted, subangular to subrounded black and gray inclusions, angular red inclusions, big chunks of limestone

Sherd Description pithos rim with downturned rim, slightly rounded, end of rim not preserved

Sample Number 87 **Square** K19 **Layer** 19 **Lot** 70

Artefact Number K19.70.5

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 2.5YR6/8 light red

Vessel Type lekane

Vessel Date mid to late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.7 cm, H: 3.8 cm, W: 5.9 cm, thick: 0.6 cm

Fabric Description hard, powdery fabric, fairly fine, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description lekane with folded, angular rim that is slightly triangular in profile with pointed, downturned edge, preserved wall is straight

Sample Number 88 **Square** K19 **Layer** 18 **Lot** 62

Artefact Number K19.62.4

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 2.5YR5/4 reddish brown

Vessel Type jug

Vessel Date early 3rd century B.C.

Sherd Type Neck

Measurements H: 4.5 cm, W: 10.6 cm, thick: 0.7 cm

Fabric Description hard fired fabric, slightly powdery, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description neck and partial body of jug with no preserved rim, appears to have been a large jug with globular body

Sample Number 89 **Square** K19 **Layer** 18b **Lot** 69

Artefact Number K19.69.2

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type mortar

Vessel Date 4th century B.C.

Sherd Type Rim

Measurements MPD of rim: 5.2 cm, H: 3.7 cm, W: 6.3 cm, thick: 0.7 cm

Fabric Description soft, powdery fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description mortar rim with folded, overhanging rim that slightly turns out at bottom, area in between top and bottom of rim has clay strip with finger indents to be used for gripping, a few remaining grits on interior

Sample Number 90 **Square** K19 **Layer** 19 **Lot** 77

Artefact Number K19.77.10

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/8 reddish yellow

Vessel Type jug

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 8.7 cm, H: 6.3 cm, W: 10.3 cm, thick: 0.5 cm

Fabric Description soft, powdery fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description collared neck jug rim, approx 30-40% of rim preserved with flat outturned collar with wheel-marks on flat surface, partial neck preserved

Sample Number 91 **Square** K19 **Layer** 19 pit **Lot** 74

Artefact Number K19.74.8

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5Yr6/6 reddish yellow

Vessel Type jug

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 5.4 cm, H: 3.7 cm, W: 5.4 cm, thick: 0.7 cm

Fabric Description soft, powdery fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description straight rim that is slightly rounded at end, incised line under rim, partial neck preserved, very straight and in line with rim

Sample Number 92 **Square** K19 **Layer** 19 pit **Lot** 75

Artefact Number K19.75.11

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 7.5YR7/4 pink

Vessel Type mortar

Vessel Date late 3rd to mid 2nd century

Sherd Type Rim

Measurements MPD of rim: 6.1 cm, H: 4.6 cm, W: 6.5, thick: 1.2 cm

Fabric Description soft, powdery fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description mortar rim with rounded, outturned rim, slightly domed on top, fine red and black grits on interior

Sample Number 93 **Square** K19 **Layer** **Lot** 88

Artefact Number K19.88.1

Vessel Type mortar

Petrographic Fabric Group Mudstone and Micrite

Vessel Date late 4th century B.C.

Sherd Type Rim

Fabric Type medium-coarseware

Measurements MPD of rim: 5.7 cm, H: 4.1 cm, thick: 1.4 cm

Fabric Color between 2.5YR 6/4-6/6 light reddish brown to light red

Fabric Description hard fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description rounded rim of mortar with very little interior body preserved, black grits on interior surface and vertical banding in bg on rim on exterior, bottom of rim is flat for gripping

Sample Number 94 **Square** K17 **Layer** 3b **Lot** 27

Artefact Number K17.27.14

Vessel Type mortar

Petrographic Fabric Group Mudstone and Micrite

Vessel Date late 4th century B.C.

Sherd Type Rim

Fabric Type coarseware

Measurements too fragmentary to measure diameter, H: 3.2 cm, W: 4.1 cm, Thick: 1.6 cm

Fabric Color 7.5YR7/6 reddish yellow

Fabric Description very soft, powdery feeling fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description rim of mortar with borad, overhanging rim, , rounded at top, one side of tab handle preserved- tab is circular and flat on end, continues into rope type attachement, large grits visible in interior

Sample Number 95 **Square** K19 **Layer** 17 **Lot** 59

Artefact Number K19.59.7

Petrographic Fabric Group Chert and Clay Pellets

Fabric Type coarseware

Fabric Color core: 10YR7/4 very pale brown, exterior: 10YR8/2 very pale

Vessel Type mortar

Vessel Date 2nd century B.C.

Sherd Type Body sherd

Measurements H: 4.1 cm, L: 6.6 cm, thick: 0.6 cm

Fabric Description very soft fabric, 25-33% moderately sorted inclusions, large, angular red and black inclusions, including heavy gritting on interior, abundant irregular voids in matrix

Sherd Description non-descript body sherd, possible wheelmarks on exterior

Sample Number 96 **Square** K17 **Layer** 2 **Lot** 38

Artefact Number K17.38.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 10R6/6/ light red

Vessel Type mortar

Vessel Date late 4th century B.C.

Sherd Type Rim

Measurements too small for max p. diameter, H: 4.9 cm, W: 6.4 cm, thick: 0.6 cm

Fabric Description soft, powdery fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description mortar with broad, downturned rim, lip is straight with sharp angle, smoothed area under rim for gripping, interior is very rough with lots of grits

Sample Number 97 **Square** K17 **Layer** **Lot** 11

Artefact Number K17.11.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 10R6/6/ light red

Vessel Type mortar

Vessel Date late 4th century B.C.

Sherd Type rim

Measurements H: 5.8, W: 5.4 cm, thick: 0.6 cm

Fabric Description fairly soft fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description peaked rim mortar rim with interior gritting

Sample Number 98 **Square** K17 **Layer** 3b **Lot** 27

Artefact Number K17.27.17

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 7.5YR7/6 reddish yellow

Vessel Type mortar

Vessel Date late 4th century B.C.

Sherd Type Rim

Measurements max p. diameter: 24 cm, H: 4.5 cm, W: 6.7 cm, thick: 0.9 cm

Fabric Description soft, fairly powdery fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description broad, overhanging rim of mortar, possibly slipped or wiped on exterior, interior is very gritty

Sample Number 99 **Square** K19 **Layer** 17 **Lot** 56

Artefact Number K19.56.1

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 7.5YR6/6 reddish yellow

Vessel Type mortar

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements approx diameter: 24 cm, H: 5.6 cm, W: 7.1 cm, thick: 0.9 cm

Fabric Description powdery feeling fabric with reddish core, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description rim sherd with straight rim and protruding exterior lip below rim, "pie crust" style handle partially preserved- indents most likely made with thumb between rim and lip,preserved body sharply turns inward, most likely somewhat shallow, although no foot or body portion of body is preserved to be able to tell for sure

Sample Number 100 **Square** L17 **Layer** 8 **Lot** 39

Artefact Number L17:2.39.2

Petrographic Fabric Group Micrite and Quartz

Fabric Type coarseware with grits

Fabric Color 5YR6/6 reddish yellow

Vessel Type mortar

Vessel Date 4th century B.C.

Sherd Type rim/body

Measurements D: 30 cm, H: 9.7 cm, W: 4.2 cm, thick: 1.1 cm

Fabric Description hard fabric, 20-30% moderately sorted inclusions, common small rounded white and gray inclusions with sparse, fine mica

Sherd Description mortar with projecting, slightly overhanging rim

Sample Number 101 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.4

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 7.5YR6/6 reddish yellow

Vessel Type chytra

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 6.1 cm, estimated max diameter: 14 cm, H: 2.3 cm, thick: 0.4 cm

Fabric Description hard fired, smooth fabric, abundant pitting on surface, 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim and partial neck of lidless chytra, slightly outturned straight pointed rim with slight curvature out in neck, prominent wheelmarks on exterior

Sample Number 102 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.7

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 2.5YR5/7 red

Vessel Type chytra

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 6.7 cm, estimated max diameter: 16 cm, H: 4.4 cm, W: 8.4 cm, thick: 0.4 cm

Fabric Description hard fired, slightly gritty fabric with cracked and slighly spalling surface, moderate pitting on exterior and interior surfaces, 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description flat outturned rim of lidless chytra with partial neck preserved

Sample Number 103 **Square** K20 **Layer** 9 **Lot** 16

Artefact Number K20.16.5

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra

Vessel Date 2nd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4.3 cm, H: 3.6 cm, thick: 0.4 cm, estimated max diameter: 10 cm

Fabric Description hard fired fabric, smooth, 15-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description outturned rim of lidless chytra; flat, outturned rim and partial neck with slight exterior bulge

Sample Number 104 **Square** K20 **Layer** 14 **Lot** 26

Artefact Number K20.26.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color e2.5YR6/8 light red with 7.5YR5/6 strong brown exterior

Vessel Type lopas

Vessel Date late 4th to mid 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 3.3 cm, H: 3.9 cm, thick: 0.5 cm, EMD: 11 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description lipless lopas, flat outturned rim, sharp carination in body

Sample Number 105 **Square** K20 **Layer** 20 **Lot** 36

Artefact Number K20.36.5

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red (core) gray exterior

Vessel Type lopas

Vessel Date 3rd century B.C. or later

Sherd Type Rim

Measurements MPD of rim: 4.5 cm, W: 6.1 cm, H: 5.2 cm, thick: 0.7 cm, flange: 0.4 cm, rim to flange: 1.8 cm

Fabric Description very hard fired fabric, 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description 2 joining fragments of lopas, not enough preserved rim to determine maximum diameter, slightly incurving rim, pronounced upturned, rounded flange, very straight wall, slight groove on exterior under rim

Sample Number 106 **Square** K20 **Layer** 17 **Lot** 5

Artefact Number K20.31.5

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 25YR5/6 red

Vessel Type lopas

Vessel Date mid to late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 3.9 cm, H: 3.5 cm, W: 5.6 cm, thick: 04 cm, EMD: 34 cm,

Fabric Description hard, smooth fabric with slightly cracked surface, 10% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description beveled rim of lopas, slight interior downsloping edge, small slight bump for flange on interior, no preserved wall, seems to be lopas based on breakage of wall

Sample Number 107 **Square** K20 **Layer** 9 **Lot** 15

Artefact Number K20.15.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR4/4 reddish brown

Vessel Type chytra

Vessel Date late 4th to mid 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 5.0 cm, H: 3.2 cm, W: 5.0 cm, thick: 0.5 cm, EMD: 14 cm

Fabric Description hard fired, smooth fabric, 25-33% moderately sorted inclusions, abundant angular translucent white inclusions with texture and angular opaque orange-white inclusions, sparse mica, rounded black-gray-blue inclusions

Sherd Description chytra with inturning beveled rim and small rounded flange, partially preserved wall that turns out sharply from rim- vessel was probably globular

Sample Number 108 **Square** K20 **Layer** 20 **Lot** 38

Artefact Number K20.38.5

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR4/1 dark reddish gray

Vessel Type chytra

Vessel Date mid 2nd century B.C.

Sherd Type Rim

Measurements MPD: 3.4 cm, H: 2.4 cm, W: 4.0 cm, thick: 0.4 cm, EMD: 17 cm

Fabric Description very hard fired fabric, 10% well sorted rounded inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description beveled rim, upturned, flat flange, exterior has 3 incised groove under rim, no preserved wall

Sample Number 109 **Square** K20 **Layer** 8 **Lot** 14

Artefact Number K20.14.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type chytra/lopas

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.6 cm, H: 2.7 cm, thick: 0.3 cm, W of flange: 0.2 cm, Rim to flange: 1.2 cm

Fabric Description softish, slightly powdery fabric, 10-15% moderately sorted inclusions, angular white, orangey-white, gray-white, red, and tanslucent white inclusions, fine mica

Sherd Description very small fragment of chytra/lopas with no preserved body; straight, lipless rim; very slight, upturned rounded flange, exterior horizontal indent under rim

Sample Number 110 **Square** L20 **Layer** 9 **Lot** 10

Artefact Number L20.10.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type lopas

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.7 cm, H: 2.6 cm, W: 3.4 cm, thick: 0.3 cm, extension of flange: 0.4 cm, rim to flange: 1.5

Fabric Description hard fabric, gritty fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight, lipless rim of lopas, fairly irregular with varying thickness along rim, flat projecting flange

Sample Number 111 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.14

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type lopas

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Rim

Measurements MPD: 7.0 cm, H: 2.6 cm, W: 7.3 cm, thick: 0.4 cm, H of handle: 2.7 cm

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description lopas with straight lipless rim that is slightly outturned, flat projecting flange, rounded oval shaped handle that attaches at bulbous part of body under rim

Sample Number 112 **Square** K20 **Layer** 17 **Lot** 32

Artefact Number K20.32.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type lopas

Vessel Date mid 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 3.2 cm, H: 5.2 cm, W: 6.6 cm, thick: 0.4 cm, rim to flange: 2.1 cm, extension of flange: 0.4 cm

Fabric Description very hard fired, smooth fabric, heavily encrusted, slight cracking on interior surface; 10% poorly sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight rim of lopas with slight bulge on interior; thin pointed upturned flange, sharp carination of body under rim, exterior has incised horizontal groove under rim

Sample Number 113 **Square** K20 **Layer** 20 **Lot** 38

Artefact Number K20.38.6

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color possibly burnt, very gray

Vessel Type krater

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 3.7 cm, H: 2.7 cm, W: 5.7 cm, thick: 0.7 cm, EMD: 29-30 cm

Fabric Description very hard fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description raised lip form krater, with slightly incurved rim with interior groove, exterior dropped ledge, no body preserved

Sample Number 114 **Square** K20 **Layer** 19a **Lot** 35

Artefact Number K20.35.3

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color core: 2.5YR6/4 light reddish brown, exterior: 7.5YR5/2

Vessel Type krater

Vessel Date 3rd to 2nd centuries B.C.

Sherd Type Rim

Measurements MPD of rim: 5.8 cm, H: 2.0 cm, W: 6.1 cm, thick: 0.5 cm, EMD: not measureable

Fabric Description very hard fabric, 10% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim of krater, concave rim offset from body, molded, overhanging lip on exterior; fugitive dull black glaze on interior

Sample Number 115 **Square** K20 **Layer** 9 **Lot** 16

Artefact Number K20.16.1

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR5/6 yellowish red

Vessel Type krater

Vessel Date mid 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD: 5.3 cm, H: 2.5 cm, thick: 0.5 cm, estimated MD: 19 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight rim with dropped exterior ridge along exterior, neck curves out sharply, 2 non-joining pieces in lot 21

Sample Number 116 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.19

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type lopas

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of base: 4.8 cm, H: 2.7 cm, W: 4.3 cm, thick: 0.3 cm, rim to flange: 1.4 cm, extension of flange:

Fabric Description hard fabric with spalling surface, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description lopas with slightly outturned lipless rim and upturned flat flange, sharp rounded carination in body under rim, exterior has 2 incised horizontal grooves under rim

Sample Number 117 **Square** K20 **Layer** 12 **Lot** 21

Artefact Number K20.21.4

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type lopas

Vessel Date 2nd century B.C.

Sherd Type Rim

Measurements (taken of all 5 fragments together) MPD: 12 cm, H: 4.2 cm, thick: 0.3 cm, EMD: 20 cm,

Fabric Description hard fabric, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description 5 joining fragments of lopas- 4 rim fragments and attaching handle, straight lipless rim, and flat pointed slightly upturned flange, handle attaches just below rim and rises up above rim in V shape; sharp carination under rim, exterior indent below rim

Sample Number 118 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra or lopas

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 6.2 cm, W: 6.2 cm, H: 2.4 cm, thick: 0.3 cm, W of flange: 0.4 cm, Rim to flange: 1.4 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description Rim of chytra or lopas; straight, lipless rim, upturned pointed flat flange, slight horizontal indent on exterior at same level of flange, no preserved body

Sample Number 119 **Square** K20 **Layer** 8 **Lot** 14

Artefact Number K20.14.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra/lopas

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 3.5 cm, H: 2.8 cm, W: 4.5 m, thick: 0.5 cm, W of flange: 0.5 cm, EMD: 15 cm

Fabric Description hard, heavily encrusted fabric with some surface cracking, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim of chytra or lopas- no preserved body so unable to determine, straight lipless rim, upturned rounded flange

Sample Number 120 **Square** L20 **Layer** 2 **Lot** 60

Artefact Number L20.60.5

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type lopas

Vessel Date 3rd to early 2nd centuries B.

Sherd Type Rim

Measurements MPD of rim: 3.9 cm, H: 3.6 cm, W: 4.6 cm, thick: 0.4 cm, extension of flange: 0.3 cm, rim to flange: 1.6

Fabric Description hard fabric, gritty fabric, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description lopas rim with partial handle preserved, straight, lipless rim, pointy, slightly upturned flange, handle attaches at rim and goes up straight, slight indent on exterior under rim

Sample Number 121 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra

Vessel Date late 4th to early 3rd century

Sherd Type Rim

Measurements MPD of rim: 12.4 cm, EMD: 22. cm, H: 3.7 cm, thick: 0.4 cm

Fabric Description very hard fired fabric with abundant surface cracks and spalling, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description 4 rim fragments of chyta, 2 fragments are joining, straight, lipless rim, upturned flat pointed flange, no body preserved, one sherd has preserved handle attachment- flat tab handle that was pointed upward, exterior is darkened in places from burning, incised horizontal line on exterior under rim

Sample Number 122 **Square** K20 **Layer** 9 **Lot** 15

Artefact Number K20.15.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR4/4 reddish brown

Vessel Type lopas

Vessel Date late 4th to mid 3rd centuries

Sherd Type Rim

Measurements MPD: 3.9 cm, W: 4.1 cm, H: 3.4 cm, thick: 0.5 cm, extension of flange: 0.7 cm, rim to flange: 1.8

Fabric Description hard, smooth fabric, 5-10% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim of lopas, straight, lipless rim with slight carination above flange, pointed flat slightly upturned flange, very partially preserved body with inturned carination, slight indent on interior from carination above flange

Sample Number 123 **Square** K20 **Layer** 8 **Lot** 12

Artefact Number K20.12.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR5/6 yellowish red

Vessel Type lopas

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 4.0 cm, H: 2.7 cm, thick: 0.5 cm, W of flange: 0.6 cm,

Fabric Description hard fired, slightly smooth fabric with cracked surface and moderate pitting, 5 -10% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description very fragmentary rim of lopas, no preserved rim edge, sharply upturned, flat pointed flange, partial preserved body indicating that vessel is lopas

Sample Number 124 **Square** L20 **Layer** 9 **Lot** 10

Artefact Number L20.10.4

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR6/8 to 4/2 light red to weak red

Vessel Type lopas

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.3 cm, H: 3.2 cm, W: 4.9 cm, thick: 0.4 cm, EMD: 12 cm

Fabric Description hard fired fabric, 10% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight, lipless rim of lopas, outturned flat projecting flange, incised line on exterior under rim, no body preserved

Sample Number 125 **Square** K20 **Layer** 11 **Lot** 20

Artefact Number K20.20.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type lopas

Vessel Date mid to late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 3.2 cm, H: 4.4 cm, W: 4.9 cm, thick: 0.4 cm, extension of flange: 0.8 cm, rim to flange: 1.5

Fabric Description hard fired, smooth fabric with cracked surface on interior and exterior, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim and partial body of lopas with base of strap handle preserved along rim; flat, strap handle is slightly upturned, long, pointed flat and straight flange, sharp incurving carination of body under rim, exterior has indented line under rim

Sample Number 126 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.13

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 7.5YR5/3 brown

Vessel Type lopas

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD: 9.9 cm, H: 4.8 cm, W: 12.3 cm, thick: 0.4 cm, H of handle: 7.2 cm

Fabric Description hard fabric, gritty fabric, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description lopas rim with preserved handle, straight lipless rim with flat upturned flange, rounded oval shaped handle, incised line on exterior under rim

Sample Number 127 **Square** L20 **Layer** 9 **Lot** 10

Artefact Number L20.10.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5Y6/2 light brownish gray

Vessel Type chytra or lopas

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 7.5 cm, H: 5.6 cm, thick: 0.3 cm, H of handle: 5.8 cm,

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description chytra/lopas rim with completely preserved handle; straight, lipless rim with slightly upturned, flat straight flange; no preserved body, handle attaches at rim on both sides and raises up in oval shape

Sample Number 128 **Square** K20 **Layer** 14 **Lot** 26

Artefact Number K20.26.6

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type lopas

Vessel Date late 4th to mid 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 7.0 cm, H: 7.9 cm, W: 7.0 cm, thick: 0.4 cm, H of handle: 4.7 cm, EMD: 22 cm?

Fabric Description hard fired, smoothed fabric with cracking surface, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim, handle, and partial body of lopas, straight lipless rim and slightly upturned pointed flange, upturned U shaped handle that attaches below rim, sharp carination in body under flange that turns in to form bottom of vessel, exterior incised line under rim

Sample Number 129 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type lopas

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 6.8 cm, H: 3.8 cm, W: 6.8 cm, thick: 0.3 cm, EMD: 18 cm

Fabric Description hard fabric, gritty fabric, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim of lopas, straight, lipless rim, slightly upturned flat, pointed flange, sharp inward carination of body approx. 1.5 cm below flange, horizontal indented line around exterior where flange is

Sample Number 130 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.25

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type lopas

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD: 14 cm, H: 4.5 cm, W: 5.5 cm, thick: 0.3 cm, lip to flange: 1.4 cm, flange: 0.7 cm

Fabric Description hard fabric, 5-10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description flanged lopas rim with straight, lipless rim; flange is flat and slightly upturned, horizontal incised line on exterior under lip

Sample Number 131 **Square** K20 **Layer** 10 **Lot** 19

Artefact Number K20.19.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR5/8 yellowish red

Vessel Type lopas

Vessel Date late 4th century B.C.,

Sherd Type Rim

Measurements MPD of rim: 2.2 cm, H: 4.0 cm, W: 7.0 cm, extension of flange: 0.5 cm, rim to flange: 1.5 cm, thick: 0.3 cm

Fabric Description soft, slightly powdery fabric, 5-10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description lopas with straight lipless rim, slightly upturned pointed flange, sharp carination under rim on body

Sample Number 132 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color yh2.5YR5/6 red

Vessel Type lopas

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: none, no preserved rim, H: 4.5 cm, W: 5.9 cm

Fabric Description highly fired, smooth fabric with surface cracking on interior, 10% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description upper portion of lopas with no preserved rim edge, preserved rim is straight, slightly upturned flat, pointy flange; sharply inturning carination on body approx. 1.5 cm below bottom of rim, exterior has horizontal grooved line underneath rim, very burned interior and exterior

Sample Number 133 **Square** L20 **Layer** 6a **Lot** 32

Artefact Number L20.32.5

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR5/8 yellowish red

Vessel Type chytra

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD: 2.7 cm, H: 1.7 cm, W: 2.8 cm, thick: 0.3 cm, extension of flange: 0.3 cm, rim to flange: 1.2

Fabric Description hard fabric, 5-10% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight, lipless rim with slightly upturned, rounded flange, small grooves on interior of flange, no preserved body

Sample Number 134 **Square** L20 **Layer** 3 **Lot** 61

Artefact Number L20.61.5

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.8 cm, H: 3.4 cm, W: 4.3 cm, thick: 0.5 cm, extension of flange: 0.7 cm, rim to flange: 1.9

Fabric Description hard fabric, gritty fabric, 5-10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description chytra with straight, lipless rim, elongated, upturned pointy flange, slight indent under rim on exterior

Sample Number 135 **Square** K20 **Layer** nonw **Lot** 44

Artefact Number K20.44.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 5YR5/6 yellowish red

Vessel Type lopas

Vessel Date 3rd century B.C.

Sherd Type Complete profile

Measurements MPD: 3.3 cm, H: 3.8 cm, W: 3.9 cm, thick: 0.2 cm, EMD: +/- 20 cm,

Fabric Description hard fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description complete profile of small lopas, straight lip, slightly rounded, upturned flange, sharp carination under rim to form base

Sample Number 136 **Square** K20 **Layer** 9 **Lot** 16

Artefact Number K20.16.7

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR6/6 light red

Vessel Type chytra

Vessel Date mid 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 4.1 cm, H: 3.7 cm, thick: 0.4 cm, extension of flange: 0.4 cm, rim to flange: 1.7 cm

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description partial rim of chytra, straight lipless rim, rounded upturned bump style flange, sharply outturned body

Sample Number 137 **Square** K20 **Layer** 13 **Lot** 24

Artefact Number K20.24.7

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR6/8 light red

Vessel Type chytra

Vessel Date mid 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 2.9 cm, H: 2.9 cm, W: 3.1 cm, thick: 0.6 cm, extension of flange: 0.3 cm, rim to flange: 1.7

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description chytra with straight, lipless rim and slightly upturned bump style flange, no preserved body, slight horizontal wheelmarks on exterior near top and bottom of rim

Sample Number 138 **Square** K20 **Layer** 13 **Lot** 24

Artefact Number K20.24.6

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 5YR4/3 reddish brown

Vessel Type chytra

Vessel Date late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 1.9 cm, H: 3.2 cm, W: 3.9 cm, thick: 0.6 cm, extension of flange: 0.4 cm, rim to flange: 1.5

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description chytra with beveled rim and small bump style flange, partially preserved wall suggest chytra is globular

Sample Number 139 **Square** K20 **Layer** 8 **Lot** 11

Artefact Number K20.11.2

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 5YR5/8 yellowish red

Vessel Type lopas

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 2.7 cm, H: 3.3 cm, W: 3.7 cm, W of flange: 0.4 cm, Rim to flange: 1.2 cm, thick: 0.4 cm

Fabric Description hard fired fabric with cracked and spalling surface, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim of lopas; straight, lipless rim, slightly upturned rounded flange, sharp inward carination of body approx. 1.6 below bottom of rim, slight horizontal indentation on exterior below rim

Sample Number 140 **Square** K20 **Layer** 9 **Lot** 16

Artefact Number K20.16.4

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra

Vessel Date mid 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 6.8 cm, H: 3.1 cm, W: 7.4 cm, thick: 0.6 cm, estimated MD: 15 cm

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description chytra rim, short rounded lipless rim, slightly upturned pointed flange, partial body preserved under rim- suggests vessel was globular, partial preserved handle attachment under rim- appears that handle may have been downturned

Sample Number 141 **Square** K20 **Layer** 13 **Lot** 24

Artefact Number K20.24.3

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type chytra

Vessel Date late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 2.4 cm, H: 2.3 cm, W: 3.3 cm, thick: 0.4 cm, extension of flange: 0.2 cm, rim to flange: 0.9

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, striated white and pink rocks, subrounded yellow-beige inclusions, fine mica, rounded red and gray inclusions

Sherd Description chytra rim with small rounded interior flange, exterior incised line below rim, sharp curvature of body suggesting that vessel was very round

Sample Number 142 **Square** L20 **Layer** mixed **Lot** 62

Artefact Number L20.62.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color between 2.5YR5/6 and 5/8 red

Vessel Type lopas

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4. cm, H: 3.9 cm, thick: 0.4 cm, W: 4.9 cm

Fabric Description soft, easily scratchable fabric, 20% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description straight, lipless rim of lopas with pointy upturned flange, carination of body under flange, slight indent on exterior under rim

Sample Number 143 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.18

Petrographic Fabric Group Intermediate Igneous Rocks

Fabric Type cooking ware

Fabric Color 2.5YR6/8 light red

Vessel Type lopas

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 5.7 cm, H: 3.6 cm, thick: 0.2 cm, extension of flange: 0.7 cm, rim to flange: 1.4 cm

Fabric Description hard fired fabric, 10% moderately sorted inclusions, angular black and silver mica/ sparkling inclusions, rounded whitish black inclusions

Sherd Description lopas with slightly outturned rim at edge, upturned flat flange, body is sharply rounded under rim, base of handle at slightly outturned part of body, handle sharply upturns but does not connect to rim

Sample Number 144 **Square** K20 **Layer** 11 **Lot** 20

Artefact Number K20.20.3

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type cooking lid

Vessel Date mid to late 3rd century B.C.

Sherd Type Lid

Measurements W: 7.5 cm, L: 6.2 cm, thick: 0.5 cm, MPD of rim: 5.4 cm, estimated MD: 20 cm

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description piece of cooking lid with one preserved edge, slightly rounded with flat beveled bottom for resting on cooking pot flange, no preserved knob

Sample Number 145 **Square** K20 **Layer** 19a **Lot** 35

Artefact Number K20.35.1

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type jug

Vessel Date 3rd to 2nd centuries B.C.

Sherd Type Handle

Measurements H: 5.7 cm, W: 3.9 cm, thick: 1.2 cm, diameter of rondelle: 1.9 cm

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description partial strap handle from jug with double sided rondelle on top

Sample Number 146 **Square** K20 **Layer** 8 **Lot** 14

Artefact Number K20.14.4

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type cooking lid

Vessel Date late 4th- early 3rd century

Sherd Type Lid

Measurements W: 3.9 cm, L: 4.8 cm, H: 2.1, Diameter of knob: 2.1 cm, thick: 0.4 cm

Fabric Description soft, slightly powdery fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description partial lid of of cooking pot with preserved knob, knob is rounded and mushroom shaped, slight indent on interior where knob is

Sample Number 147 **Square** L20 **Layer** 3 **Lot** 67

Artefact Number L20.67.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 7.5YR3/1 very dark gray

Vessel Type cooking lid

Vessel Date 3rd century B.C.

Sherd Type Lid

Measurements W: 9.7 cm, L: 9.2 cm, thick: 0.4 cm, H of knob: 1.5 cm, D of knob: 2.2 cm

Fabric Description very high fired fabric, black in core and brown on surface, cracked, heavily encrusted surface, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description fairly flat lid with circular, mushroom shaped knob in center, no preserved edges of lid

Sample Number 148 **Square** L20 **Layer** 5a **Lot** 34

Artefact Number L20.34.1

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type cooking lid

Vessel Date 3rd century B.C.

Sherd Type Lid

Measurements H: 1.9 cm, W: 5.7 cm, thick: 0.5 cm, diameter of knob: 2.5 cm, H of knob: 1.4 cm

Fabric Description slightly soft, easily scratchable fabric, 15-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description partial lid with no preserved edges; rounded mushroom shaped knob on top center

Sample Number 149 **Square** L20 **Layer** 3 **Lot** 67

Artefact Number L20.67.2

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type cooking lid

Vessel Date 3rd century B.C.

Sherd Type Lid

Measurements W: 5.6 cm, L: 7.7 cm, thick: 0.5 cm, H of knob: 1.6 cm, D of knob: 1.9 cm

Fabric Description fairly soft, scratchable fabric, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description partial lid of cooking pot with circular, mushroom shaped knob, no preserved edges

Sample Number 150 **Square** K20 **Layer** 13 **Lot** 24

Artefact Number K20.24.11

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/6 red

Vessel Type cooking lid

Vessel Date mid 3rd to mid 2nd centuries

Sherd Type Lid

Measurements H: 2.2 cm, W: 7.7 cm, thick: 0.5 cm, diameter of knob: 1.9 cm

Fabric Description hard, smooth fabric with slight surface cracking on interior, 25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions lots of pitting along surface

Sherd Description slightly concave cooking lid with tall rounded knob that is slightly flat on top

Sample Number 151 **Square** K20 **Layer** 9 **Lot** 16

Artefact Number K20.16.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color 2.5YR5/8 red

Vessel Type cooking lid

Vessel Date mid 3rd to mid 2nd centuries

Sherd Type Body sherd

Measurements W: 6.6 cm, L: 4.9, H: 2.5, thick: 0.6 cm, D of knob: 3.2 cm

Fabric Description soft fabric with cracked exterior, 10-25% moderately sorted inclusions, subrounded orange-white inclusions, angular gray inclusions, angular red-brown mudstone, angular translucent white inclusions, moderate rounded voids throughout

Sherd Description partial lid of cooking pot with preserved mushroom shaped know

Sample Number 152 **Square** L20 **Layer** 2 **Lot** 60

Artefact Number L20.60.4

Petrographic Fabric Group Intermediate Grade Metamorphic Rocks

Fabric Type medium-coarseware

Fabric Color 2.5YR5/8 red

Vessel Type spouted vessel

Vessel Date 3rd to early 2nd centuries B.

Sherd Type Spout

Measurements L: 4.7 cm, W: 5.9 cm, H: 2.9 cm, diameter of spout: 3.4 cm, diameter of spout hole: 0.8 cm

Fabric Description hard fired fabric, 25-33% moderately sorted inclusions, angular, clearly foliated white and pink rocks, subrounded yellow-beige inclusions, abundant fine mica

Sherd Description slightly elongated round spout with small center hole, attached to slightly rounded body (almost none preserved), unclear what type of vessel this spout may have come from

Sample Number 153 **Square** K20 **Layer** 13 **Lot** 24

Artefact Number K20.24.17

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type fineware

Fabric Color 5YR6/6 reddish yellow

Vessel Type jug

Vessel Date late 3rd century B.C.

Sherd Type Handle

Measurements H of handle: 8.7 cm, W: 2.6 cm, thick: 1.2 cm

Fabric Description soft, powdery, easily scratchable fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description curved strap handle from jug, top of handle has two coil type decorations on each end, most likely trying to replicated decoration from metal vessel

Sample Number 154 **Square** K20 **Layer** 17 **Lot** 32

Artefact Number K20.32.1

Petrographic Fabric Group Large Angular Chert, Limestone. and Ouartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/8 red

Vessel Type jug

Vessel Date mid 3rd century B.C.

Sherd Type Body sherd

Measurements H: 6.6 cm, W: 7.7 cm, thick: 0.5 cm

Fabric Description high fired, yet easily scratchable fabric, 20-30% moderately sorted inclusions, large, angular white, black, gray and orange inclusions

Sherd Description neck and partial shoulder of jug, wheelmade striations on exterior, exterior is slightly gray, core and interior are red

Sample Number 155 **Square** K20 **Layer** 20 **Lot** 36

Artefact Number K20.36.4

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR5/6 yellowish red

Vessel Type jug

Vessel Date 3rd century B.C. or later

Sherd Type Rim

Measurements MPD of rim: 2.4 cm, H: 2. cm, thick: 0.5 cm, too small to measure EMD

Fabric Description very red fired fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rounded, ouuturned rim of jug with very little neck preserved

Sample Number 156 **Square** K20 **Layer** 10 **Lot** 19

Artefact Number K20.19.3

Petrographic Fabric Group Chert and Quartz

Fabric Type cooking ware

Fabric Color GLEY2 5/5PB bluish gray

Vessel Type chytra

Vessel Date late 4th century B.C.

Sherd Type Rim

Measurements MPD of rim: 3.8 cm, H: 2.8 cm, W: 5.2 cm, thick: 0.5 cm, extension of flange: 0.5 cm, rim to flange: 1.7

Fabric Description high fired fabric, some orange mottling on exterior, 25-33% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim of chytra, straight rim that is square at end, upturned flat pointed flange, incised horizontal ridge on exterior under rim, no body preserved

Sample Number 157 **Square** L20 **Layer** 3 **Lot** 61

Artefact Number L20.61.7

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR5/2 reddish gray

Vessel Type jug

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4.3 cm, H: 4.5 cm, W: 6.6 cm, thick: 0.2 cm, EMD: 8 cm

Fabric Description hard fabric, gritty fabric, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description "baggy" jug with outturned rim and partial body preserved

Sample Number 158 **Square** L20 **Layer** 3 **Lot** 61

Artefact Number L20.61.8

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR5/2 reddish gray

Vessel Type jug

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 6.7 cm, H: 7.7 cm, thick: 0.4 cm, W: 6.2 cm, EMD: 10 cm

Fabric Description hard fabric, gritty fabric, 10% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description jug with slightly outturned rolled rim, curvature of neck into body

Sample Number 159 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.7

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5Y5/1 gray

Vessel Type jug

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Rim

Measurements MPD: 9 cm, H: 2.9 cm, W: 5.2 cm, thick: 0.3 cm

Fabric Description hard fabric, gritty fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description outturned, flat rim of jug

Sample Number 160 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.4

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color GLEY15/N, 2.5YR5/6 very mottled surface that is both

Vessel Type juglet

Vessel Date 3rd century B.C.

Sherd Type Handle, body, partial rim

Measurements MPD of rim: 2.9 cm, H: 7.5 cm, W: 4.1 cm, thick: 0.3 cm, L of handle: 7.3 cm, W of handle: 1.3 cm

Fabric Description hard fired fabric, 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description handle and partial body of small jug or juglet, neck is straight with slightly outcurved body, somewhat slender in profile, thin strap handle attaches at rim and shoulder, rim appears to be flat and slightly outturned

Sample Number 161 **Square** K20 **Layer** 14 **Lot** 26

Artefact Number K20.26.4

Vessel Type jug

Petrographic Fabric Group Chert and Quartz

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Rim

Fabric Type medium-coarseware

Measurements MPD of rim: 5.1 cm, H: 6.1 cm, W: 6.7 cm, thick: 0.4 cm, EMD: 12 cm

Fabric Color 7.5YR5/2 brown to 2.5YR5/8 red

Fabric Description hard fabric, gritty fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim and neck of jug, slightly outturned rim that is rolled or thickened at the end, no preserved body or shoulder

Sample Number 162 **Square** K20 **Layer** 8 **Lot** 11

Artefact Number K20.11.1

Vessel Type jug

Petrographic Fabric Group Chert and Quartz

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Fabric Type medium-coarseware

Measurements MPD of rim: 3.6 cm, estimated max diameter: 11 cm, H: 2.1 cm, thick: 0.3 cm

Fabric Color core: 2.5YR5/8 red, exterior: 5YR5/3 reddish brown

Fabric Description hard fired, slightly gritty fabric, 10-12% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description flat, outturned rim and partial neck of thin walled jug

Sample Number 163 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.7

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR5/1 gray

Vessel Type jug

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 12.3 cm, EMD: 12.3 cm, H: 6.3 cm, thick: 0.4 cm

Fabric Description hard fired fabric, smooth surface, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description 3 joining fragments of rim and neck of large jug, slightly outturned plain rim

Sample Number 164 **Square** L20 **Layer** 7 **Lot** 21

Artefact Number L20.21.2

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color GLEY 1 6/N gray

Vessel Type jug

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD: 8.6 cm, H: 5.0 cm, W: 9.7 cm, thick: 0.5 cm, EMD: 16 cm

Fabric Description hard fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description 3 joining fragments of rim and neck of water jug, flat outturned rim

Sample Number 165 **Square** K20 **Layer** 17 **Lot** 31

Artefact Number K20.31.1

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 7.5YR5/3 brown

Vessel Type jug

Vessel Date mid to late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4.9 cm, H: 2.5 cm, thick: 0.3 cm, EMD: 11 cm

Fabric Description hard fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black -striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description outturned rim of thin walled water jug

Sample Number 166 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.5

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 7.5YR5/4 brown

Vessel Type jug

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4.9 cm, H: 4.1 cm, thick: 0.4 cm, EMD: 13 cm

Fabric Description hard fabric, gritty fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim and partial neck of jug, outturned slightly rolled rim with slightly flat edge on top

Sample Number 167 **Square** K20 **Layer** 8 **Lot** 14

Artefact Number K20.14.1

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR6/6 with gray core

Vessel Type jug

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 4.2 cm, H: 1.9 cm, thick: 0.3 cm, estimated max diamter: 8 cm

Fabric Description slightly soft fabric, 10-15% well sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description flat outturned rim of jug

Sample Number 168 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.1

Petrographic Fabric Group Intermediate Metamorphic Rocks and Clav Pellets

Fabric Type coarseware

Fabric Color 2.5YR5/6 red

Vessel Type jug

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 6.2 cm, estimated max diamter: 12 cm, H: 5.1 cm, thick: 0.3 cm

Fabric Description hard fired, smooth fabric with slight surface cracking, 10-12% well sorted inclusions, abundant fine to medium mica, rounded tcfs, small limestone inclusions

Sherd Description 2 non-joining sherds of jug with preserved neck and very partial body, slightly outturned rolled rim, horizontal wheelmark on exterior under rim,

Sample Number 169 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.5

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 2.5YR5/8 red

Vessel Type jug

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 5.7 cm, EMD: 18 cm, H: 2.8 cm, W: 7.2 cm

Fabric Description hard fired, gritty fabric with cracked surface and spalling, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description jug with flat outturned rim, partial neck preserved that extends at almost 90 degree angle under rim

Sample Number 170 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.6

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/8 red

Vessel Type jug

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 6.6 cm, H: 3.9 cm, thick: 0.3 cm, EMD: 9 cm

Fabric Description slightly powdery fabric with slight pitting on surface, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim and partial neck of jug, flat,outturned rim that slightly slopes down on exterior, wheelmarks apparent on exterior, slightly mottled fabric color

Sample Number 171 **Square** L20 **Layer** 9 **Lot** 44

Artefact Number L20.44.1

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR4/8 red

Vessel Type jug

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Neck

Measurements W: 9.9 cm, H: 6.3 cm, thick: 0.7 cm

Fabric Description very hard fired, smooth fabric; 10-20% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rounded neck of water jug with no rim preserved, very partial shoulder preserved

Sample Number 172 **Square** L20 **Layer** 5a **Lot** 34

Artefact Number L20.34.2

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/8 red

Vessel Type jug

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 5.6 cm, H: 3.7 cm, W: 5.8 cm, thick: 0.4 cm, EMD: 10 cm

Fabric Description hard fabric, easily scratchable, 25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description flat, outturned rim of jug with partially preserved neck

Sample Number 173 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.8

Petrographic Fabric Group Chert and Quartz

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type jug

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 4.2 cm, EMD: 8 cm, H: 3.8 cm, thick: 0.3 cm

Fabric Description hard fired, slightly gritty fabric with slight pitting on surface, interior fired completely gray, 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description slightly outturned straight rim of globular jug with partial body preserved

Sample Number 174 **Square** L20 **Layer** 9 **Lot** 44

Artefact Number L20.44.1b

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR5/6 yellowish red

Vessel Type jug

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Rim

Measurements MPD of rim: 7.7 cm, H: 4.4 cm, W: 7.7 cm, thick: 0.5 cm, EMD: 14 cm

Fabric Description very hard fabric, heavily encrusted, 15% moderately sorted inclusions, subrounded orange inclusions, subrounded white inclusions, angular dark and light gray inclusions

Sherd Description 2 non-joining fragments of jug- one rim sherd and one neck sherd; rim has slightly outturned lip and grooved horizontal striations on exterior under rim, neck is rounded with no diagnostic features

Sample Number 175 **Square** L20 **Layer** mixed **Lot** 63

Artefact Number L20.63.2

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR4/8 red

Vessel Type jug

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Rim

Measurements MPD of rim: 4.3 cm, H: 2.9 cm, W: 7.2 cm, thick: 0.5 cm, EMD: 9 cm

Fabric Description hard fabric with very cracked surface, 15% moderately sorted inclusions, subangular to subrounded white and gray inclusions, subangular black inclusions, rounded brown inclusions, fine mica

Sherd Description outturned rim of jug with partial neck preserved

Sample Number 176 **Square** K20 **Layer** 13 **Lot** 24

Artefact Number K20.24.10

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type jug

Vessel Date late 3rd century B.C.

Sherd Type Neck

Measurements H: 8.0 cm, W: 10.9 cm, thick: 0.6 cm, MPD of neck: 8.2 cm

Fabric Description soft, powdery fabric, slightly spalling outer surface, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids,

Sherd Description partial neck and shoulder of globular jug, surface is slightly lighter than core or interior

Sample Number 177 **Square** L20 **Layer** 7 **Lot** 31

Artefact Number L20.31.2

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/8 red

Vessel Type jug

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Base

Measurements D of base: 5.8 cm. H: 2.8 cm, W: 11.3 cm, thick: 0.3 cm

Fabric Description slightly powdery, easily scratchable fabric, 10-15% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description flat, slightly inwardly indented base with partially preserved globular wall

Sample Number 178 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.8

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR8/3 very pale brown

Vessel Type mortar

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 6.8 cm, H: 6.1 cm, W: 8.9 cm, thick: 1.1 cm, EMD: 22 cm

Fabric Description very soft, powdery fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description oeaked rim of mortar with partial preserved body, interior is heavily encrusted but appears to be slipped with very thick red slip on interior with grits underneath

Sample Number 179 **Square** L20 **Layer** 3 **Lot** 61

Artefact Number L20.61.4

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5YR7/6 reddish yellow

Vessel Type mortar

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 6.2 cm, W: 7.1 cm, H: 4.6 cm, thick: 0.9 cm

Fabric Description soft, powdery fabric, 15-25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description peaked rim of mortar, no surface treatment, added grits on interior surface

Sample Number 180 **Square** L20 **Layer** 10 **Lot** 9

Artefact Number L20.9.2

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type mortar

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 9.2 cm, H: 6.1 cm, W: 9.2 cm, thick: 0.7 cm, EMD of rim: 28 cm

Fabric Description very hard fired fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description peaked rim mortar with remnants of bolster spool type handle that is very worn and partially broken off, many fine grits on interior, no painted decoration

Sample Number 181 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.13

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 7.5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 4th to early 3rd century

Sherd Type Rim

Measurements MPD of rim: 9.9 cm, H: 4.2 cm, W: 12.7 cm, EMD: 20 cm

Fabric Description fairly soft, easily scratchable fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description rim of thick lekane with no preserved body, triangular rim with flat top

Sample Number 182 **Square** K20 **Layer** 8 **Lot** 11

Artefact Number K20.11.3

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR8/4 very pale brown

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 14.2 cm, H: 5.2, thick: 0.6 cm, EMD: 40 cm

Fabric Description very soft, smooth fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description 2 joining rim fragments of lekane- smaller fragment is from K20.10; rounded overhanging rim that is slightly pointed on bottom, almost no body preserved

Sample Number 183 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.15

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5YR5/6 to 5YR7/6

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 6.9 cm, H: 2.9 cm, W: 7.3 cm, thick: 0.8 cm, EMD: 36 cm

Fabric Description slight soft, powdery fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description lekane rim with almost no preserved body, flat, projecting rim that is squared off; small hole approx. 0.9 cm in diameter drilled into rim near interior edge-definitely made before firing due to slight excess bulge of clay on underside-NOT repair

Sample Number 184 **Square** K20 **Layer** 8 **Lot** 14

Artefact Number K20.14.5

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 4th to 3rd centuries B.C.

Sherd Type Rim

Measurements MPD: 15.3 cm, H: 4.4 cm, thick: 1.1 cm, EMD: 40 cm

Fabric Description soft, powdery fabric; 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description rim of lekane with no preserved body, triangular collared rim with flat top

Sample Number 185 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.10

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/4 reddish brown

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 8.9 cm, H: 7.7 cm, thick: 0.7 cm, EMD: 56+ cm

Fabric Description very hard fired, smooth fabric, blackened exterior with red core, heavily encrusted, 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description rim and partial body of very large lekane, flat, outturned rim with slightly collared underside, body curves in, may have been fairly shallow

Sample Number 186 **Square** K20 **Layer** 19a **Lot** 35

Artefact Number K20.35.7

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 2.5Y7/4 pale yellow

Vessel Type lekane

Vessel Date 3rd to 2nd centuries B.C.

Sherd Type Base

Measurements Diameter of base: 12.1 cm, H: 4.6 cm, W: 15.5 cm, thick: 0.8 cm

Fabric Description hard fired fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description slightly splayed ring foot of large lekane, underside of base is slightly protruding, very apparent wheelmarks

Sample Number 187 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.9

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 4th to late 3rd centuries

Sherd Type Rim

Measurements MPD: 14.9 cm; H: 5.9 cm, W: 18.2 cm, thick: 0.7 cm; EMD: 25 cm

Fabric Description slightly soft, powdery fabric, 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description triagular collared rim of lekane with partially preserved wall, flat top, preserved wall is fairly straight

Sample Number 188 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.11

Petrographic Fabric Group Mudstone and Micrite

Fabric Type cooking ware

Fabric Color 10YR8/3 very pale brown

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements (2 joining sherds) MPD: 17.1 cm, H: 9.9 cm, W: 20.9 cm, thick: 1.2 cm, EMD: 34 cm

Fabric Description soft, powdery fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description 3 rim fragments of Corinthian lekane- 2 joining, partial wall preserved; flat square projecting rim, wall indicates that lekane would be rather shallow

Sample Number 189 **Square** L20 **Layer** 2 **Lot** 60

Artefact Number L20.60.6

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 2.5YR5/8 red

Vessel Type lekane

Vessel Date 3rd to early 2nd centuries B.

Sherd Type Rim

Measurements MPD of rim: 12.4 cm, H: 10.8 cm, W: 14. 2 cm, thick: 0.9 cm

Fabric Description soft fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description triangular rim of large lekane with large part of wall preserved,

Sample Number 190 **Square** K20 **Layer** 5 **Lot** 6

Artefact Number L20.6.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR7/6 yellow

Vessel Type lekane

Vessel Date 3rd-2nd centuries B.C.

Sherd Type Rim

Measurements MPD: 4.7 cm, H: 5.1 cm, W: 6.9 cm, thick: 0.7 cm, EMD: 29 cm

Fabric Description hard fired, slightly powdery fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description large lekane with outturned, rounded rim, very faint streaky red wash on interior and top of rim, part of rim suggests that it was burned from gray color, straight wall with little curvature- lekane was most likely fairly tall

Sample Number 191 **Square** K20 **Layer** 20 **Lot** 36

Artefact Number K20.36.2

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR5/6 yellowish red

Vessel Type lekane

Vessel Date 3rd century B.C. or later

Sherd Type Rim

Measurements MPD of rim: 9.1 cm, H: 3.9 cm, W: 10.2 cm, thick: 0.5 cm, EMD: 22 cm

Fabric Description very hard fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description flat, outturned rim of lekane with 2 grooves on exterior of rim, streaky, thin red slip on interior and outside of rim, no preserved body

Sample Number 192 **Square** K20 **Layer** 11 **Lot** 20

Artefact Number K20.20.1

Petrographic Fabric Group Micrite and Quartz

Fabric Type medium-coarseware

Fabric Color 5YR5/6 yellowish red

Vessel Type lekane

Vessel Date mid to late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 7.9 cm, H: 3.1 cm, W: 9.0, thick: 0.7 cm estimated MD: 29 cm

Fabric Description soft, slightly powdery fabric, 20-30% moderately sorted inclusions, common small rounded white and gray inclusions with sparse, fine micalusions

Sherd Description flat, projecting rim of lekane, fugitive red slip on interior

Sample Number 193 **Square** K20 **Layer** 13 **Lot** 24

Artefact Number K20.24.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5YR6/8 reddish yellow

Vessel Type lekane

Vessel Date mid 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 8.4 cm, H: 4.2 cm, thick: 1.1 cm, EMD: 40 cm

Fabric Description soft, powdery fabric, 15-25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description large lekane rim with flat, square outturned rim, very partial wall preserved

Sample Number 194 **Square** L20 **Layer** 8t **Lot** 65

Artefact Number L20.65.1

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 6.2 cm, H: 4.1 cm, W: 7.5 cm, thick: 0.8 cm, EMD: +/- 36 cm

Fabric Description very soft, easily scratchable fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description squared, outturned rim of lekane with no preserved body

Sample Number 195 **Square** K20 **Layer** 17 **Lot** 31

Artefact Number K20.31.4

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/6 red

Vessel Type lekane

Vessel Date mid to late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 9.7 cm, H: 5.4 cm, W: 12.3 cm, thick: 1.0 cm, EMD: greater than 56 cm

Fabric Description soft, powdery fabric, 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description triangular folded type lekane rim with flat top

Sample Number 196 **Square** K20 **Layer** 20 **Lot** 36

Artefact Number K20.36.1

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color between 2.5YR5/4 to 5/6 reddish brown to red

Vessel Type lekane

Vessel Date 3rd century B.C. or later

Sherd Type Rim and base

Measurements MPD: 7.9 cm, H: 6.7 cm, W: 9.9 cm, thick: 0.8 cm, EMD: 44 cm

Fabric Description very hard fabric, with , 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voidssmall gray core, 10% moderately sorted inclusions, rounded limestone and possible tcfs

Sherd Description 2 joining fragments of lekane rim, triangular folded type rim with flat top

Sample Number 197 **Square** K20 **Layer** 19a **Lot** 35

Artefact Number K20.35.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date 3rd to 2nd centuries B.C.

Sherd Type Rim

Measurements MPD of rim: 9.7 cm, H: 7.1 cm, W: 12 cm, thick: 1.0 cm, EMD: 49 cm

Fabric Description soft, easily scratchable fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description large triangular folded rim of lekane with flat top, all sides of rim and interior are heavily tempered while exterior wall is not

Sample Number 198 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5YR6/8 reddish yellow

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD: <51 cm; H: 63 cm, W: 16.6 cm, thick: 1.1 cm

Fabric Description soft fabric, 5-10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description triangular, collared rim of large lekane, no decoration, very crackly surface on interior

Sample Number 199 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5YR7/4 pink

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD: apprx. 40 cm, H: 12 cm, W: 13.9 c,. thick: 0.9 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description triangular collared rim of lekane, no decoration, although there is pink discoloration on interior of vessel, possibly due to stacking the kiln

Sample Number 200 **Square** K20 **Layer** 20 **Lot** 38

Artefact Number K20.38.1

Petrographic Fabric Group Mudstone in Red Micaceous Matrix

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type pithos

Vessel Date late 3rd to mid 2nd centuries

Sherd Type Rim

Measurements MPD of rim: 14.3 cm, H: 5.1 cm, W: 14.3 cm, thick of preserved wall: 0.8 cm, EMD: +/- 36 cm

Fabric Description fairly soft, powdery fabric, 25-33% poorly sorted inclusions, including very large black to red mudstones

Sherd Description slightly triangulated, folded type rim of large pithos, almost no wall preserved

Sample Number 201 **Square** L20 **Layer** 6a **Lot** 32

Artefact Number L20.32.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR7/6 yellow

Vessel Type lekane

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD: 16.4 cm, H: 8.9 cm, W: 17.9 cm, thick: 1.2 cm, EMD: 50 cm

Fabric Description slight powdery, easily scratchable fabric, 15-25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description large lekane with flat, squared outturned rim and straight wall, may have been fairly tall

Sample Number 202 **Square** L20 **Layer** 9 **Lot** 10

Artefact Number L20.10.2

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 2.5YR5/6 red

Vessel Type lekane

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 7.6 cm, H: 8.8 cm, thick: 0.9 cm, EMD: 44 cm

Fabric Description hard fired fabric, slightly powdery, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description flat, folded rim of lekane with very straight wall, most likely very tall

Sample Number 203 **Square** L20 **Layer** mixed **Lot** 62

Artefact Number L20.62.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR7/4 very pale brown

Vessel Type lekane

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 5.7 cm, H: 6.1 cm, W: 8.6 cm, thick: 1.3 cm, EMD: 33 cm

Fabric Description soft fabric, 10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description flat, outturned rim of lekane, surface is slightly lighter than core

Sample Number 204 **Square** L20 **Layer** 5a **Lot** 34

Artefact Number L20.34.4

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 7.5YR6/4 light brown

Vessel Type lekane

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD: 17.8 cm, H: 7.2 cm, W: 17.8 cm, thick: 0.7 cm, EMD: +/- 40 cm

Fabric Description hard fabric, 10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description 2 joining fragments of lekane rim, outturned, squared rim and straight wall, no surface treatment

Sample Number 205 **Square** L20 **Layer** 3 **Lot** 8

Artefact Number L20.8.1

Petrographic Fabric Group Fine Quartz and Mica

Fabric Type medium-coarseware

Fabric Color 5YR5/6 yellowish red

Vessel Type lekane

Vessel Date mid 3rd to early 2nd

Sherd Type Rim

Measurements MPD: 7.2 cm, H: 3.3 cm, W: 8.9 cm, thick: 1.3 cm, EMD: +/- 37 cm

Fabric Description hard fired fabric, 10-25% well sorted inclusions, subrounded opaque white inclusions, small subangular translucent white inclusions, small subrounded black inclusions, common sparkling inclusions, few small to large voids

Sherd Description flat, outturned lekane rim with fugitive black glaze on top of rim and brownish-red glaze on interior of vessel; top of rim has incised wavy line going around and 2 indented straight lines at either side of edges

Sample Number 206 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.3

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD: 40 cm, H: 14.9 cm, W: 19.9 cm, thick: 0.8 cm

Fabric Description soft fabric, 5-10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description triangular, collared rim of lekane, surface on interior and exterior slightly paler than in core

Sample Number 207 **Square** L20 **Layer** 6a **Lot** 32

Artefact Number L20.32.6

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR8/3 very pale brown

Vessel Type lekane

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 11.7 cm, H: 6.4 cm, W: 13.1 cm, thick: 0.9 cm, EMD: +/- 37 cm

Fabric Description very hard, unscratchable fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description lekane with folded rim- flat top, slightly incurving triangular exterior, almost no body preserved

Sample Number 208 **Square** L20 **Layer** 6a **Lot** 32

Artefact Number L20.32.3

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR7/4 very pale brown

Vessel Type lekane

Vessel Date 3rd century B.C.

Sherd Type Rim

Measurements MPD: 3.3 cm, H: 9.3 cm, W: 4.3 cm, thick: 0.9 cm, EMD: too fragmentary to measure

Fabric Description soft, very easily scratchable fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description flat, triangular rim of lekane with horizontal groove in rim at top, incurving body

Sample Number 209 **Square** L20 **Layer** 8 **Lot** 45

Artefact Number L20.45.1

Petrographic Fabric Group Chert and Quartz

Fabric Type medium-coarseware

Fabric Color 2.5YR5/8 red, core: GLEY1 4/N dark gray

Vessel Type lekane

Vessel Date 4th to 3rd centuries B.C.

Sherd Type Base

Measurements MPD of base: 11.4 cm, H: 3.7 cm, W: 12.9 cm, thick: 0.8 cm, EMD of base: +/- 16 cm

Fabric Description hard fired fabric with striated core (red/gray/red), 10-25% moderately sorted inclusions, angular white rocks, some with red or black striations, orangey-white inclusions, rounded gray inclusions, sparse sparkling inclusions

Sherd Description ring foot base of lekane with almost no preserved wall

Sample Number 210 **Square** N17 **Layer** 6F **Lot** 29

Artefact Number N17.29.6

Petrographic Fabric Group Mudstone and Mudstone Breccia

Fabric Type blisterware

Fabric Color interior: 2.5YR6/8 light red, exterior: 5YR7/4 pink, dark

Vessel Type pithos

Vessel Date la.te 4th century B.C

Sherd Type Body sherd

Measurements W: 13.8 cm, L:10.1 cm, thick: 1.9 cm

Fabric Description hard fired, very coarse fabric with reddish brown core and pinkish red outer layers of core, 15-20& poorly sorted inclusions, very large angular inclusions including black mudstone, limestone, textural clay features

Sherd Description body sherd of blisterware pithos with 3 raised horizontal grooves across exterior, black glaze above grooves

Sample Number 211 **Square** K20 **Layer** 15 **Lot** 28

Artefact Number K20.28.1

Petrographic Fabric Group Mudstone and Mudstone Breccia

Fabric Type blisterware

Fabric Color 2.5YR7/6 light red

Vessel Type Corinthian A amphora

Vessel Date mid to late 3rd century B.C.

Sherd Type Rim

Measurements MPD of rim: 11.1 cm, H: 6.8 cm, thick: 1.2 cm, EMD: +/- 18 cm (rim is very irregular and hard to

Fabric Description hard fired, very coarse fabric with reddish brown core and pinkish red outer layers of core, 15-20& poorly sorted inclusions, very large angular inclusions including black mudstone, limestone, textural clay features

Sherd Description flaring rim of narrow necked vessel, most likely some type of amphora, mottled gray and orange surface but no core color striation

Sample Number 212 **Square** K20 **Layer** 8 **Lot** 11

Artefact Number K20.11.4

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 10YR8/3 very pale brown

Vessel Type pithos

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD: 4.4 cm, W: 8.9 cm, H: 7.7 cm, thick: 1.1 cm, EMD: >31 cm (inner edge not well preserved so

Fabric Description very soft, powdery, calcareous fabric; 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions ; on one edge there is evidence of clay mixing with red striations

Sherd Description rim of pithos with triangular collared rim, flat on top, possible incised horizontal lines below rim, no body preserved

Sample Number 213 **Square** K20 **Layer** 14 **Lot** 26

Artefact Number K20.26.1

Petrographic Fabric Group Mudstone and Mudstone Breccia

Fabric Type blisterware

Fabric Color 5YR7/6 reddish yellow

Vessel Type pithos

Vessel Date 4th to 3rd centuries B.C.

Sherd Type Body sherd

Measurements H: 9.7 cm, W: 9.4 cm, thick: 0.8 cm

Fabric Description hard fired, very coarse fabric with reddish brown core and pinkish red outer layers of core, 15-20& poorly sorted inclusions, very large angular inclusions including black mudstone, limestone, textural clay features

Sherd Description slightly curved body sherd with moldmade or plastic decoration on exterior, including one nipple type protrusion, one part of what appears to be a circle and at least 2 horizontal lines

Sample Number 214 **Square** K20 **Layer** 8 **Lot** 12

Artefact Number K20.12.3

Petrographic Fabric Group Mudstone and Mudstone Breccia

Fabric Type medium-coarseware

Fabric Color GLEY1 4/N very dark gray

Vessel Type lekane

Vessel Date late 4th to early 3rd centuries

Sherd Type Body sherd

Measurements W: 5.5 cm, L: 6.1 cm, thick: 2.1 cm

Fabric Description very hard fired fabric with slight color variation to very dark gray-red, 15-20& poorly sorted inclusions, very large angular inclusions including black mudstone, limestone, textural clay features

Sherd Description partial rim fragment of lekane with no preserved edges; part of flat, protruding rim with 2 wheelmade ridges near outer edge on underside

Sample Number 215 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.9

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color between 7.5YR8/6- 7/6 pink

Vessel Type pithos

Vessel Date late 4th to early 3rd centuries

Sherd Type Lid

Measurements W: 25.7 cm, H: 7.0 cm, thick: 2.0 cm, EMD: 36 cm

Fabric Description very soft, powdery fabric, 15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description 2 joining fragments, approx. 40% of pithos lid, rounded edge sits flat on surface, body curves up, broken ring on top of lip, presumably for knob, interior is concave

Sample Number 216 **Square** K20 **Layer** 8 **Lot** 13

Artefact Number K20.13.10

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type pithos

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD: 9.4 cm, W: 21 cm, H: 10.1 cm, thick: 1.2 cm, EMD: 14 cm

Fabric Description slightly soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description pithos rim with partially preserved neck; projecting, downsloping rim with flat top, exterior edge is squared off and bottom slopes down to neck,

Sample Number 217 **Square** K20 **Layer** 8 **Lot** 10

Artefact Number K20.10.14

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type pithos

Vessel Date late 4th to early 3rd centuries

Sherd Type Rim

Measurements MPD of rim: 15.9 cm, H: 6.9 cm, W: 20.9 cm, EMD: >32 cm (inner edge of rim not completely

Fabric Description soft, powdery fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description large pithos rim with no preserved body; flat, slightly downsloping rim that is squared off on exterior; slight neck that is outcurving to form body

Sample Number 218 **Square** N17 **Layer** 6d **Lot** 35

Artefact Number N17.35.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type Lakonian pan tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type tile

Measurements L: 12.6 cm, W: 11.7 cm, thick: 1.9 cm

Fabric Description soft, powdery fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description fragmentary pan tile with no edges preserved

Sample Number 219 **Square** N17 **Layer** 6b **Lot** 35

Artefact Number N17.35.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type Lakonian pan tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 15.7 cm, W: 11.7 cm, thick: 1.7 cm

Fabric Description hard fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description preserved edge of pan tile, 2 joining fragments

Sample Number 220 **Square** N17 **Layer** 5a **Lot** 36

Artefact Number N17.36.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type Lakonian pan tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 12.1 cm, W: 16.9 cm, thick: 2.2 cm

Fabric Description hard fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description Fragmentary pan tile with one preserved edge. Example is covered with fugitive red paint on underside, pan tile.

Sample Number 221 **Square** N17 **Layer** 5a **Lot** 36

Artefact Number N17.36.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type Lakonian pan tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 12.8 cm, W: 10.4 cm, thick: 1.3 cm

Fabric Description hard fabric; 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragmentary pan tile with no preserved edges

Sample Number 222 **Square** N17 **Layer** 5a **Lot** 36

Artefact Number N17.36.3

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type eave tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L 9.8 cm, W: 7.7 cm, thick: 3.7 cm

Fabric Description fairly soft, powdery fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description one preserved edge of triangular end of eave tile with notched underside

Sample Number 223 **Square** N17 **Layer** 5a **Lot** 36

Artefact Number N17.36.4

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5Y8/2 pale yellow

Vessel Type pan tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 11.1 cm, W: 5.1 cm, thick: 2.2 cm

Fabric Description hard fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description this fabric is most common in N17 kiln assemblages and likely represents the primary tile fabric produced in the kilns. Both thin and thick tiles, as well as more complex tiles such as edge pieces, are produced in this fabric.

Sample Number 224 **Square** N17 **Layer** 5a **Lot** 36

Artefact Number N17.36.5

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5Y8/2 pale yellow

Vessel Type eave tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 11.9 cm, 8.9 cm, thick: 5.1 cm

Fabric Description hard fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragmentary eave tile with no preserved edges;
this fabric is most common in N17 kiln assemblages and likely represents the primary tile fabric produced in the kilns. Both thin and thick tiles, as well as more complex tiles such as edge pieces, are produced in this fabric.

Sample Number 225 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.30

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 6.4 cm, W: 5.2 cm

Fabric Description very brittle, soft fabric, falling apart, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description large. slightly conical shaped lump of badly fired clay, falling apart most likely used as a test cone for temperatures, or perhaps a loomweight waster, definitely a waste product that was most likely produced locally

Sample Number 226 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.31

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR7/3 very pale brown

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 9.1, W: 6.4 cm, D of base: 4.7 cm

Fabric Description soft fabric, 5-10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description almost complete conical loomweight, few chips around base but full diameter preserved, one hole in underside of base

Sample Number 227 **Square** L20 **Layer** 2 **Lot** 60

Artefact Number L20.60.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 7.5YR8/3 pink

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type Complete profile

Measurements H: 7.9 cm, MD: 6.6 cm

Fabric Description hard fabric, 10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description conical loom weight, top is broken off, partial hole for threading preserved, slightly carinated botton, flat base

Sample Number 228 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.11

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 2.5YR7/6 light red

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 10.1 cm, W: 6.2 cm, D of base: 4.6 cm

Fabric Description hard, slightly powdery fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description conical loomweight with complete profile reserved, slight carination near base, small hole in center of underside of base

Sample Number 229 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.22

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5Y8/2 pale yellow

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 7.9 cm, W: 6.5, D of base: 4.2 cm

Fabric Description soft fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description conical loomweight, base almost completely preserved, one side and top broken off, pierced hole in center of underside of base

Sample Number 230 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.9

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 2.5Y8/2 pale yellow

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 4.6 cm, Diameter: 7.1 cm

Fabric Description hard fired fabric with uneven coloring in break- may have been misfired, 10 -15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description conical loomweight with slight carination above base, narrow poked hole in center of underside of base- depth of hole 2.1 cm

Sample Number 231 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.26

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5Y8/3 pale yellow

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 6.7 cm, W: 5.7 cm

Fabric Description medium hard fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description broken conical loomweight, approx 1/4 preserved, top and base not preserved

Sample Number 232 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.6

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5Y8/2 pale yellow

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 4.4 cm, D of base: 6.2 cm

Fabric Description medium hard fabric, 10-12% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description broken conical loomweight with 90% of base preserved; slight indentation near base, one pierced hole near center of bottom of base

Sample Number 233 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.9

Petrographic Fabric Group Mudstone and Micrite

Fabric Type fineware

Fabric Color 10YR7/4 very pale brown to 5YR7/6 reddish yellow

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 8.4 cm, W: 7.3 cm

Fabric Description medium hard fabric, 5-10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description partial conical loomweight, approx 1/3 preserved

Sample Number 234 **Square** L20 **Layer** 2 **Lot** 60

Artefact Number L20.60.3

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color d7.5YR7/2 pinkish gray

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type Body sherd

Measurements H: 10.3 cm, W: 6.9 cm

Fabric Description hard fabric, 5-10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description conical loomweight, base broken off, top preserved with hole for threading, slightly carinated body near base

Sample Number 235 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.10

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 7.5YR8/3 pink

Vessel Type loomweight

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements D: 6.4, H: 7.7 cm

Fabric Description powdery fabric, 10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description conical loomweight with slight carination above base, single poked hole in center of underside of base

Sample Number 236 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.4

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR7/3 very pale browm

Vessel Type kiln separator

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 7.4 cm, W: 2.6 cm

Fabric Description soft fabric, 5% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description long, finger type object with fingernail style indentation at end on one side; broken on other side, most likely part of kiln separator with adjoining fingers-number unknown as no complete samples have been found to date, and this style is slightly different from common tripod kiln separators

Sample Number 237 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.5

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR7/3 very pale browm

Vessel Type kiln separator

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 6.8 cm, W: 1.9 cm

Fabric Description soft fabric, 2-5% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description long, finger type object with fingernail style indentation at end on one side; broken on other side, most likely part of kiln separator with adjoining fingers- number unknown as no complete samples have been found to date, and this style is slightly different from common tripod kiln separators

Sample Number 238 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.7

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type kiln separator

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 10.8 cm, W: 5.7 cm, thick: 2.1 cm

Fabric Description hard fired fabric with very cracked surface, 2-5% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description one long "finger" of kiln separator with indent on end similar to fingernail in shape, partial stub of second finger preserved

Sample Number 239 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.3

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 10YR6/2 light brownish gray

Vessel Type kiln separator

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 6.9 cm, L: 6.4 cm, H: 3.2 cm

Fabric Description highly vitrified fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description three fingered kiln separator, all ends broken off

Sample Number 240 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type cooking ware

Fabric Color 5Y7/3 pale yellow

Vessel Type kiln separator

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 9.4 cm, L: 8.7 cm, H: 2.7 cm

Fabric Description highly vitrified fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description three fingered kiln separator, all ends broken off

Sample Number 241 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.23

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5Y7/3 pale yellow

Vessel Type kilin separator

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 8.6, W: 6.2 cm, H: 2.7 cm

Fabric Description hard, slightly vitrified fabric, 25-33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description tripod kiln separator with all 3 legs partially preserved but broken off at ends, formed from 2 joining pieces

Sample Number 242 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR8/1 white

Vessel Type kiln separator

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 9.6 cm, L: 6.4 cm, H: 4.8 cm

Fabric Description highly calcareous fabric with flaky, spalling surface, 10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description three fingered kiln separator, all ends broken

Sample Number 243 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.24

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 10YR7/3 very pale brown

Vessel Type klin separator

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 10.1 cm, W:4.3

Fabric Description soft fabric, 15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description one leg from tripod kiln separator, leg completely preserved

Sample Number 244 **Square** N17 **Layer** 6b **Lot** 32

Artefact Number N17.32.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color light whitish brown

Vessel Type kiln wedge

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 4.8 cm, W: 3.5 cm, thick: 2.7 cm

Fabric Description hard fired fabric, 10-15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description slightly misshapen pyramidal kiln wedge, complete profile preserved with only a few chips missing, looks like it slightly melted or was hastily produced, wrinkle in clay also present

Sample Number 245 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.34

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5YR8/3 pale yellow

Vessel Type kiln wedge

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 5.2 cm, W: 3.7 cm, thick: 2.6 cm

Fabric Description soft powdery fabric, 5-10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description pyramidal shaped wedge, rectangular shape with widest point at base and tapers to a thinner, more narrow shape at the top

Sample Number 246 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.5

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5Y8/3 pale yellow

Vessel Type kiln wedge

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 5.0 cm, W: 4.5 cm, thick: 2.3 cm

Fabric Description hard fabric, 15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description pyramidal shaped wedge, complete

Sample Number 247 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.6 **Vessel Type** kiln wedge

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements

Fabric Color 10YR7/4 very pale brown to 5YR7/6 reddish yellow

Fabric Description soft fabric with flaking surface, one side has pink section in middle- from having vessel on top in kiln?; 15-20% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions

Sherd Description pyramidal shaped wedge, complete

Sample Number 248 **Square** N17 **Layer** 6b **Lot** 32

Artefact Number N17.32.1 **Vessel Type** vitrified kiln wedge

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type medium-coarseware

Measurements H: 3.7 cm, W: 3.4 cm, thick: 1.7 cm

Fabric Color bluish gray interior with yellow-green vitrified surface

Fabric Description very hard, vitrified fabric; 5-10% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description pyramidal shaped kiln wedge that was heavily fired and vitrified, 2 pieces joined together form complete profile with only a few chips missing; slightly squashed appearance, and very glassy exterior

Sample Number 249 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.33

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 10YR7/4 very pale brown

Vessel Type klin wedge

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 5.1 cm, W: 4.5 cm, thick: 2.5 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description pyramidal shaped wedge, rectangular shape with widest point at base and tapers to a thinner, more narrow shape at the top

Sample Number 250 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.4

Petrographic Fabric Group Mudstone and Micrite

Fabric Type medium-coarseware

Fabric Color 5Y8/2 pale yellow

Vessel Type kiln wedge

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 5.1 cm, W: 4.5 cm, thick: 2.4 cm

Fabric Description hard fabric, 15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description pyramidal shaped wedge , complete

Sample Number 251 **Square** N17 **Layer** 6F **Lot** 29

Artefact Number N17.29.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 7.5YR7/6 reddish yellow

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 19.5 cm, W: 14.3 cm, thick: 2.1

Fabric Description hard, slightly powdery fabric, 15-25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Lakonian tile with one preserved edge

Sample Number 252 **Square** N17 **Layer** 6F **Lot** 29

Artefact Number N17.29.5

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5YR7/8 light red

Vessel Type eave tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 11.7 cm, L: 11.2 cm, thick: 2.9 cm

Fabric Description hard fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Corinthian tile with one preserved edge

Sample Number 253 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.16

Petrographic Fabric Group Degraded Basic Igneous Rocks

Fabric Type coarseware

Fabric Color 5YR6/6 reddish yellow

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 11.8 cm, L: 9.4 cm, thick: 2.2 cm

Fabric Description 20% moderately sorted inclusions, angular red to brown inclusions that appear to be very friable and sometimes shiny, rounded limestone

Sherd Description piece of Lakonian tile with no preserved edges

Sample Number 254 **Square** N17 **Layer** 6F **Lot** 29

Artefact Number N17.29.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5Yr6/6 reddish yellow

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type Body sherd

Measurements W: 5.2 cm, L: 6.5 cm, thick: 1.9 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Lakonian tile fragment with one preserved edge

Sample Number 255 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.20 **Vessel Type** tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements W: 9.0 cm, L: 6.9 cm, thick: 2.0 cm

Fabric Color 10YR8/4 very pale brown

Fabric Description hard fabric, 33% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment of Lakonian tile with no preserved edges, heavily tempered on one side

Sample Number 256 **Square** N17 **Layer** 5b **Lot** 37

Artefact Number N17.37.1 **Vessel Type** tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements MPD: 9.6 cm

Fabric Color greenish-yellow

Fabric Description hard, slightly crumbly fabric, 15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description piece of thick tile with 2 preserved sides, great deal of spalling- eave tile?

Sample Number 257 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.15

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5Y8/3 pale yellow

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 10.7 cm, H: 9.4 cm, thick: 3.9 cm

Fabric Description hard fabric, 15% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description large piece of tile, shape unknown, has ridge lowered down from flat body, several edge preserved

Sample Number 258 **Square** N17 **Layer** 6E **Lot** 27

Artefact Number N17.27.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5Y8/2 pale yellow

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 11.7 cm, L: 11.9 cm, thick: 4.1 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description possible Corinthian tile with 2 preserved edges

Sample Number 259 **Square** N17 **Layer** 6F **Lot** 29

Artefact Number N17.29.4

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5Y8/3 pale tellow

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 10.6 cm, L: 11.9 cm, thick: 1.9 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Lakonian tile with 2 preserved edges and preserved corner

Sample Number 260 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.12

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5Y8/3 pale yellow

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 13.4 cm, H: 6.3 cm, thick: 3.1 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description one preserved edge of Lakonian tile

Sample Number 261 **Square** N17 **Layer** 6F **Lot** 29

Artefact Number N17.29.3

Petrographic Fabric Group Mudstone and Micrite

Fabric Type cooking ware

Fabric Color 2.5Y8/3 pale yellow

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 13.3 cm, W: 7.1 cm, thick: 2.0 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Lakonian tile with one preserved edge

Sample Number 262 **Square** N17 **Layer** 6E **Lot** 27

Artefact Number N17.27.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 7.5YR8/3 pink

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements W: 12.4 cm, L: 12.3 cm, thick: 2.2 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Lakonian tile with no preserved edges

Sample Number 263 **Square** N17 **Layer** **Lot** 14

Artefact Number N17.14.11

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 7.5YR7/6 reddish yellow

Vessel Type waster

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 7,9 cm ,W: 7.9 cm

Fabric Description highly vitrified fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant elongated voids- evidence of chaff temper

Sherd Description conical object, loomweight type shape, broken at bottom; use unknown- failed loomweight? firing cone used to test temperature?, waster? very unevenly tempered, looks like clay was not treated

Sample Number 264 **Square** N17 **Layer** 6c **Lot** 33

Artefact Number N17.33.1

Petrographic Fabric Group ROCK

Fabric Type coarseware

Fabric Color dark gray

Vessel Type millstone

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 12.9 cm, W: 11.5 cm, thick: 4.9 cm

Fabric Description very hard fabric, 40% + inclusions and voids, abundant elongated and rounded voids, very highly vitrified

Sherd Description very thick, vitrified millstone, broken on all sides

Note: Petrographic analysis showed that this sample is actually a rock, most likely andesite.It was originally believed to be a piece of highly vitrified mudbrick. Instead, this object is most likely a burnt millstone

Sample Number 265 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.21 **Vessel Type** tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type blisterware

Measurements W: 18.9 cm, L: 18.8 cm, thick: 3.9 cm

Fabric Color 10YR7/4 very pale brown with gray and red core

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description flat tile with one preserved edge, may have been slipped on exterior

Sample Number 266 **Square** N17 **Layer** N17:1 **Lot** 26

Artefact Number N17.26.28 **Vessel Type** klin lining

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements W: 8.8 cm, H: 7.2 cm

Fabric Color GLEY 1 6/10GY greenish gray

Fabric Description very hard and vitrified, 33-50% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description flattened, slightly curved blob of vitrified clay with partial finished edge, exterior coated in plaster/cement

Sample Number 267 **Square** N17 **Layer** 6d **Lot** 34

Artefact Number N17.34.2

Petrographic Fabric Group Mudstone and Micrite

Fabric Type

Fabric Color light yellowish green

Vessel Type kiln lining

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 13.5 cm, W: 14.0 cm, thick: 2.1 cm

Fabric Description vitrified, cracked fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant elongated voids-evidence of chaff tempering

Sherd Description large vitrified fragment from cylindrical shaped chamber, very similar to N17.34.1- it is however different due to the abundance of large black inclusions and is not quite as vitrified, exterior made up of not vitrified chaff tempered clay, no plaster apparent

Sample Number 268 **Square** N17 **Layer** 6d **Lot** 34

Artefact Number N17.34.1

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color gray-green

Vessel Type kiln lining

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 13.4 cm, W: 25.5 cm, thick (wall): 1.0 cm

Fabric Description highly vitrified fabric, 33-50% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded and elongated voids

Sherd Description partial wall of cylindrical part of kiln with highly vitrified interior and plaster covered exterior; top or bottom forms ledge much an outturned rim; other side has dippy "finished" edges that haven't been broken, exterior plaster tempered with chaff- most has burnt out but some may still remain, small smudge of vitrified plaster on interior

Sample Number 269 **Square** N17 **Layer** 6d **Lot** 34

Artefact Number N17.34.3 **Vessel Type** waster

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type

Measurements MPD: 5.8 cm

Fabric Color dark gray with greenish tinge

Fabric Description very highly vitrified fabric, 25% poorly sorted inclusions, too vitrified to describe inclusions

Sherd Description melted mass of vitrified ceramic with a few edges, may be from vessel or kiln lining

Sample Number 270 **Square** N17 **Layer** 5c **Lot** 38

Artefact Number N17.38.1 **Vessel Type** vitrified tile covered with

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements MPD: 5.1 cm

Fabric Color reddish-purple

Fabric Description vitrified fabric, exterior and interior coated in thin layer of white plaster

Sherd Description small fragment of vitrified tile covered in plaster, most likely part of stoking chamber floor

Sample Number 271 **Square** I17 **Layer** 9 **Lot** 19

Artefact Number AT 445

Vessel Type vitrified tile waster

Petrographic Fabric Group Mudstone and Micrite

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements MPD: 9.9 cm

Fabric Color dark gray

Fabric Description highly vitrified with glassy surface with many voids; 10% poorly sorted inclusions, abundant large sub-rounded to angular red inclusions, large to small rounded to sub-angular white inclusions, abundant fine rounded voids

Sherd Description amorphous lump of vitrified tile with large drips on top; catalogue card states that it may be from early Temple of Zeus, but matches other wasters found in Hellenistic kilns, drips suggest that it may have been lining in stoking chamber under perforated floor

Sample Number 272 **Square** I17 **Layer** 9 **Lot** 20

Artefact Number AT 446

Vessel Type vitrified tile waster

Petrographic Fabric Group Mudstone and Micrite

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements MPD: 11.2 cm

Fabric Color dark gray with patches of dark red

Fabric Description highly vitrified fabric with glassy surface; 10% poorly sorted inclusions, abundant large sub-rounded to angular red inclusions, large to small rounded to sub-angular white inclusions, abundant fine rounded voids

Sherd Description amorphous lump of vitrified tile with large drips on top; catalogue card states that it may be from early Temple of Zeus, but matches other wasters found in Hellenistic kilns; appears to be either 2 tiles stuck together or one tile that bent over itself; one side has dark red, glassy surface- may be indication of slip from weather side of tile

Sample Number 273 **Square** N17 **Layer** 5b **Lot** 37

Artefact Number AT 30

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color greenish buff

Vessel Type Corinthian cover tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 76.5 cm, W: 16.7 cm, H: 9.1 cm

Fabric Description heavily encrusted with secondary calcite, hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description complete Corinthian tile mended from 13 fragments, missing one piece from center and small pieces at one end; Corinthian cover tile with 2 flanges at one end and closed peaked face at other. It appears to be a misfire due to curvature in its length.

Sample Number 274 **Square** N17 **Layer** 6 **Lot** 59

Artefact Number AT 31

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color pinkish-beige

Vessel Type Cover tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 31 cm, W: 15.1 cm, H: 10.2 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description preserved 3 sides and 2 top surfaces of cover tile from hipped roof. Missing most of one side and apex of the tile; chipped and slightly worn, showing full length and angle of ascent.

Sample Number 275 **Square** N17 **Layer** 6 **Lot** 64

Artefact Number AT 32

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color pinkish-red

Vessel Type antefix

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 4.1 cm, L: 11.0 cm, W: 8.8 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description molded terracotta antefix, broken at one side, triangular fragment preserves molded 5 leaf palmette on proper right side.

Sample Number 276 **Square** K18 **Layer** ? **Lot** ?

Artefact Number AT 10

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color pinkish-buff

Vessel Type antefix

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements H: 11.2 cm, W: 13.2 cm, thick: 7.8 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description terracotta antefix broken away on all sides; most of central fronds of palmette missing; 7 fronds in relief rising from center, with long spirals curling downwards from center, background in brown slip, and deep red "eyes" and center, with beige fronds

Sample Number 277 **Square** SACW **Layer** **Lot** 68

Artefact Number AT 375 **Vessel Type** Lakonian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** early 3rd century B.C.

Sherd Type

Fabric Type coarseware

Fabric Color 7.5YR8/4 pink **Measurements** L: 22.5 cm, W: 24.2 cm, thick: 2.0 cm

Fabric Description hard fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment broken around except for portion of edge (to right of stamp); weather surface with red wash, edge bevelled. On non-weathered surface is an incised line, parallel to and 8 cm from the right edge, for whole length of tile as preserved, as the right portion of a stamp with a preserved length of 12.3 cm and an original height of 3 cm with relief letter]OKLEIOS

Sample Number 278 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 380 **Vessel Type** Type 2 Lakonian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** context dates to circa 300 B.

Sherd Type

Fabric Type coarseware

Fabric Color 5Y8/3 pale yellow **Measurements** L: 16.2 cm, W: 14.6 cm, thick: 1.8 cm

Fabric Description soft fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment brokne all around with reddish-brown wash on weather surface; on non-weather surface a stamp broken on both ends, with a preserved length of 10.7 cm and an original height of 3 c, with relief letters: OKLEIOS

Sample Number 279 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 381

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 7.5YR7/4 pink

Vessel Type Type 2 Lakonian Pan Tile

Vessel Date context dates to circa 300 B.

Sherd Type

Measurements L: 14.2 cm, W: 14.6 cm, thick: 3.1 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment broken around except for portion of top edge, weather surface with red-orange wash, top edge raised. On non-weather (convex) surface, 11.4 cm from top edge but upside down, a stamp with preserved dimensions of 11.7 x 2.2 cm with raised letter]OKLEI[

Sample Number 280 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 384

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 7.5YR8/4 pink

Vessel Type Type 2 Lakonian pan tile

Vessel Date context dates to circa 300 B.

Sherd Type

Measurements L: 17.1 cm, W: 9.1 cm, thick: 3.4 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment broken around except for portion of top edge, weather surface with birck-red wash, top edge raised. On non-weather surface 12.5 cm from top edge, the left end of a stamp with a preserved length of 2.1 cm and an original height of 3 cm, with the left end of a sigma.

Sample Number 281 **Square** SACW **Layer** **Lot** 64

Artefact Number AT 368

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 7.5YR8/4 pink

Vessel Type Type 2 Lakonian pan tile

Vessel Date context dates to early

Sherd Type

Measurements L: 17.1 cm, W: 16.1 cm, thick: 2 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment broken all around with traces of reddish-orange wash on weather side; on non-weather surface the lower right half of a stamp with preserved dimensions of 10.8 cm x 3.0 cm with relief letters]KLEIOS[

Sample Number 282 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 382

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 5YR7/4 pink

Vessel Type Type 2 Lakonian tile

Vessel Date context dates to circa 300 B.

Sherd Type

Measurements L: 12.4 cm, W: 17,5 cm, thick: 2 c,

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment broken around except for portion of bevelled vertical edge 13.8 right of stamp, with red wash on weather surface; on non-weather surface the right end of a stamp with preserved length of 4.6 cm and an original height of 3.0 cm with relief letters]IOS[

Sample Number 283 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 379 **Vessel Type** Type 2 Lakonian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** context dates to circa 300 B.

Sherd Type

Fabric Type coarseware

Measurements L: 20.4 cm, W: 16.2 cm, thick: 3.6 cm

Fabric Color 7.5YR7/4 pink

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment broken around except for portion of top edge, weather surface with traces of red wash, top edge raised. On non-weather surface some random bumps (encrustation) and a couple of incised lines, and 16.4 cm from top edge a stamp, broken on both ends, with a preserved length of 9.3 cm and an original height of 3 cm, with relief letters]KLEIOS[

Sample Number 284 **Square** SACW **Layer** 1 **Lot** 70

Artefact Number AT 387 **Vessel Type** Type 2 Lakonian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** context dates to circa 300 B.

Sherd Type

Fabric Type coarseware

Measurements L: 20.4 cm, W: 36.3 cm, thick: 1.9 cm

Fabric Color 7.5YR7/4 pink

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Two joining fragments broken around except fro bevelled edge 15.3 cm to right of stamp, weather surface with orange-red wash. On non-weather (convex) surface a stamp which sags toward the center like a banner, and which has a full length of 17.3 cm and a full height of 3 cm at left, 2.7 cm at right, with relief letters]SOKLEIOS[

Sample Number 285 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 349

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5Y8/2 white

Vessel Type Type 1B Lakonian pan tile

Vessel Date context dates to circa 300 B.

Sherd Type

Measurements L: 10.8 cm, W: 13.5 cm, thick: 2.2 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment broken all around, weather surface with traces of reddish-brown wash; on non-weather surface a complete stamp, 8.3 cm x 1.7 cm, with raised letters

Sample Number 286 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 350

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5Y8.2 white

Vessel Type Type 1B Lakonian pan tile

Vessel Date context dates to circa 300 B.

Sherd Type

Measurements L: 9.5 cm, W: 15 cm, thick: 2.1 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Two joining fragments broken al laround, weather surface with traces of brown wash. On non-weather surface a fragment of a stamp, 1.6 cm high, with raised letters
]SOSI[

Sample Number 287 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 351

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5Y8/2 white

Vessel Type Type 1B Lakonian pan tile

Vessel Date context dated to circa 300 B.

Sherd Type

Measurements L: 17.5 cm, W: 9 cm, thick: 3.2 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Two joining fragments broken around except portion of top edge, weather surface with some traces of brownish wash, raised top edge. On non-weather surface, 8.7 cm from top edge, a stamp, preserved length 7.4 x 1.7 cm high, with raised letters S[O]SIKLEO[

Sample Number 288 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 353

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 10YR8/2.5 very pale brown

Vessel Type Type 1B Lakonian pan tile

Vessel Date context dated to circa 300 B.

Sherd Type

Measurements L: 17.8 cm, W 11.3 cm, thick: 3.4 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Fragment broken around except for portion of top edge, weather surface with traces of brownish wash, raised top edge. On non-weather surface, 7.1 from top edge, a stamp, preserved length 4.4 cm x 1.7 cm with raised letters: SOSIK[

Sample Number 289 **Square** SACW **Layer** **Lot** 69

Artefact Number AT 354 **Vessel Type** Type 1B Lakonian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** context dated circa 300 B.C.

Sherd Type

Fabric Type coarseware

Measurements L: 11 cm, W: 20.2 cm, thick: 3 cm

Fabric Color 10YR8/2.5 very pale brown

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Fragment broken around except for portion of top edge, weather surface with reddish-brown wash, raised top edge. On non-weather 9.1 cm from top edge, a stamp, 8.6 x 1.7 cm, with raised letters: SOSIK[L]E[O]S

Sample Number 290 **Square** SACW **Layer** **Lot** 68

Artefact Number AT 393 **Vessel Type** Corinthian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** early 3rd century B.C.

Sherd Type

Fabric Type coarseware

Measurements L: 7.9 cm, W: 9.2 cm, thick: 6 cm

Fabric Color 10R6/8 light red

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Fragment from lower right corner. Top has beginning of curve up of typical raised lip along right edge beginning 4 cm from the front, but broken along right edge. On the face a fragmentary meander reserved by dark gray (but color not measurable). Bottom surface with traces of bead-and-reel reserved and maroon bad. Pink wash over light red clay

Sample Number 291 **Square** SACW **Layer** **Lot** ?

Artefact Number AT 392 **Vessel Type** Corinthian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** ca. 300 B.C.

Sherd Type

Fabric Type coarseware

Measurements L: 19.5 cm, W: 20.5 cm, thick: 6.7 cm

Fabric Color 10R6/8 light red

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Fragment of lower right corner of eave pan tile. Top has typical raised lip along right edge for joint with next tile except for first 4.2 cm which is cut away for seat of antefix. Right edge projects toward right for bottom-most 15 cm with a roughly V-shaped groove (as if crude anathyrosis) above which the surface is smooth

Sample Number 292 **Square** SACW **Layer** 4g **Lot** 52

Artefact Number AT 306 **Vessel Type** Lakonian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements L: 8.4 cm, W: 6.4 cm, thick: 2.4 cm

Fabric Color 10R6/8 light red

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment broken all around and found during wash. Upper surface preserves groove near one broken edge. Lower surface preserves stamp 2 x 4. cm in size. Poorly preserved relief lettering

Sample Number 293 **Square** SACW **Layer** 5w **Lot** 46

Artefact Number AT 286

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 10R6/8 light red

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 10 cm, W: 6.5 cm, thick: 3.2 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Found among other tiles during cleaning. part of curved Laconian tile, preserving raised edge thereof. On upper surface, parallel to preserved edge, is stamp. Now measures 8 x 1.9 cm in its partial state. No letters visible.

Sample Number 294 **Square** SACW **Layer** 3a/e **Lot** 45

Artefact Number AT 292

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 10R6/8 light red

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 14.3 cm, W: 13.1 cm, thick: 3.1 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Fragment, Found among other tiles during washing. 4 broken edges and one preserved with raised rim. shape of rim and curvature may indicate Laconian piece. Lower surface has brown wash and groove running parallel to edge, som 4 cm from it, groove is 12 cm wide, concave surface.
Upper surface is convexm has partial stamp parallel to preserved edge, 4.7 cm

Sample Number 295 **Square** SACW **Layer** **Lot** 64

Artefact Number AT 334 **Vessel Type** Lakonian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements L: 13.8 cm, W: 14.2 cm, thick: 3.2 cm

Fabric Color 10YR8/2.5 very pale brown

Fabric Description soft, powdery fabric, 15-25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description fragment of tile broken around except for top edge, weather surface with traces of blackened wash, raised top edge. On non-weather surface, 5.4 cm from top edge, a stamp with preserved length of 8.3 cm and original width of 1.7 cm, with relief bracketing design and relief letters:].OSIKLEOS[

Sample Number 296 **Square** SACW **Layer** **Lot**

Artefact Number AT 328 **Vessel Type** Lakonian pan tile

Petrographic Fabric Group Mudstone and Micrite **Vessel Date** late 4th to mid 3rd centuries

Sherd Type

Fabric Type coarseware

Measurements L: 12.3 cm, W: 10.2 cm, thick: 2 cm

Fabric Color 2.5Y8/2 light yellow

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Fragment broken all around with no surviving trace of wash on weather surface; on non-weather surface part of a stamp with preserved dimensions of 8.3 x 1.7 cm with relief letters]SOSIKLEOS[

Sample Number 297 **Square** SACW **Layer** 2f **Lot**

Artefact Number AT 294

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color 2.5Y8/2 white

Vessel Type tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 11.5 cm, W: 9.7 cm, thick: 1.9 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Fragmentary, profile shows curvature of a Laconian tile, four broken edges; upper convex surface has partial stamp with 2 corners, now measuring 3 x 2 cm, no letters visible

Sample Number 298 **Square** SACW **Layer** 3A/E **Lot**

Artefact Number AT 290

Petrographic Fabric Group Mudstone and Micrite

Fabric Type coarseware

Fabric Color pinkish-beige

Vessel Type Lakonian tile

Vessel Date late 4th to mid 3rd centuries

Sherd Type

Measurements L: 11.2 cm, W: 7 cm, thick: 1.9 cm

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description Fragmentary, found among other tiles during cleaning; slight curvature in profile may indicate it is Lakonian. All edges are broken, parallel to shortest edge is what looks like a partial stamp 0.9 x 2.8 cm, no lettering visible; weathering surface had black/dark brown slip, non-weather surface has stamp, no letters visible

Sample Number	**299**	**Square**	SACW	**Layer**	**Lot**
Artefact Number	AT 330			**Vessel Type**	Lakonian pan tile
Petrographic Fabric Group	Mudstone and Micrite			**Vessel Date**	late 4th to mid 3rd centuries
				Sherd Type	
Fabric Type	coarseware			**Measurements**	L: 8.5 cm, W: 5.4 cm, thick: 2.3 cm
Fabric Color	5YR8/2 pinkish white				

Fabric Description soft, powdery fabric, 25% poorly sorted inclusions, abundant angular to sub-rounded brown/pink/red mudstone inclusions ranging from large to small in size; sparse large sub-rounded white-pink inclusions, abundant fine fraction rounded white inclusions, abundant rounded voids

Sherd Description small fragment broken all around with light brown wash on weather surface; on non-weather surface a stamp with preserved length of 2.4 cm and a full height of 1.6 cm with relief letters]SO[

Appendix III: Catalogue of Lots from Nemea

This catalogue represents all the data recorded by the original excavators at the time of excavation. A blank field in a catalogue entry means that that data was not recorded. These records were kept in their original state, without the addition of the author's interpretations, in order to accurately present the nature of the excavation records at the site.

Square K17
Layer 1
Lot 12
Excavator James Clauss
Date Excavated 1978
Area B, K/14,20- 17/15,18
Top El. 333,157
Bottom El. 332,457
NB Pages K17 I, 79-81

Description of Excavated Area area B

Physical Characteristics soil: soft, black earth

Unit Date (Exc.) 5th-4th centuries BC

Unit date (Author) 5th-4th century BC

Square K17
Layer 2
Lot 20
Excavator James Clauss
Date Excavated 1978
Area B K/7,20-17/13,20
Top El. 333,307
Bottom El. 333,047
NB Pages K17 I, 95-105

Description of Excavated Area Area B

Physical Characteristics Soil: sandy reddish brown

Unit Date (Exc.) 4th century BC

Unit date (Author) 4th century BC

Square K17
Layer 2a
Lot 21
Excavator James Clauss
Date Excavated 1978
Area B, K/18,19-17/18
Top El. 333,307
Bottom El. 332,657
NB Pages K17 I, 97

Description of Excavated Area Area B

Physical Characteristics Soil: soft dark red earth

Unit Date (Exc.) 4th century BC

Unit date (Author) undatable

Square K17
Layer 2
Lot 22
Excavator James Clauss
Date Excavated 1978

Area B, K/6,20-17/20
Top El. 333,257
Bottom El. 333,927
NB Pages K17 I, 99

Description of Excavated Area area B, foundation trench of xenon?

Physical Characteristics soil: light sandy brown, filled with working chips

Unit Date (Exc.) 5th century BC

Unit date (Author) undatable

Square K17
Layer 2, pit
Lot 23
Excavator James Clauss
Date Excavated 1978

Area B, K/15,18-17/13,15
Top El. 333,047
Bottom El. 332,867
NB Pages K17 I, 101

Description of Excavated Area Area B, area around foundation trenches

Physical Characteristics soil: mixed red and white earth

Unit Date (Exc.) late 4th century BC

Unit date (Author) late 4th century BC

Square K17
Layer 3
Lot 25
Excavator James Clauss
Date Excavated 1978

Area B, K/7,20-17/16,20
Top El. 333,047
Bottom El. 333,007
NB Pages K 17 I 109, 119

Description of Excavated Area

Physical Characteristics Soil: very hard white earth, sandy in consistency

Unit Date (Exc.) 4th century BC

Unit date (Author) 4th century BC

Square K17
Layer 3b
Lot 28
Excavator James Clauss
Date Excavated 1978
Area B, K/19,20-17/16,18
Top El. 333,047
Bottom El. 332,157
NB Pages K 17 I, 115-117

Description of Excavated Area deposit K17:2

Physical Characteristics soil: dark brown earth densely filled with marble chips

Unit Date (Exc.) 3rd quarter of 4th century BC (325-300 BC)

Unit date (Author) late 4th century BC

Square K17
Layer 3c
Lot 29
Excavator James Clauss
Date Excavated 1978
Area B, K/7,20-17/13,16
Top El. 332,687
Bottom El. 332,657
NB Pages K 17 I, 123-125

Description of Excavated Area area B "kiln"

Physical Characteristics soil: mixed red and white consistency

Unit Date (Exc.) 4th century BC

Unit date (Author) 4th century BC

Square K17
Layer 4a
Lot 31
Excavator James Clauss
Date Excavated 1978
Area B, K/7,20-17/13,16
Top El. 332,657
Bottom El. 332,627
NB Pages K 17 I, 127

Description of Excavated Area area B 'kiln'

Physical Characteristics soil: light reddish brown, sandy constistency

Unit Date (Exc.) 4th century BC

Unit date (Author) 4th century BC

Square K17
Layer 3d
Lot 30
Excavator James Clauss
Date Excavated 1978
Area B; K/10,14-17/14,16
Top El. 332,777
Bottom El. 332,697
NB Pages K 17 I, 129

Description of Excavated Area area B 'kiln'

Physical Characteristics soil: mixed red and white earth

Unit Date (Exc.) 4th century BC

Unit date (Author) 4th century BC

Square K17
Layer A
Lot 32
Excavator James Clauss
Date Excavated July 7, 1978
Area B: K/8,18-17/12,13
Top El. 332,846
Bottom El. 332,787
NB Pages K 17 I, 131

Description of Excavated Area area B 'kiln'

Physical Characteristics soil: sandy, medium dark brown earth

Unit Date (Exc.) 4th century BC

Unit date (Author) 4th century BC

Square K17
Layer 2
Lot 38
Excavator Olga Palagia
Date Excavated June 27-28, 1983
Area Test trench 1, Pit A
Top El. 331,907
Bottom El. 331,507
NB Pages K17 I, 149-153

Description of Excavated Area Pit A

Physical Characteristics dark, red soil

Unit Date (Exc.) Classical

Unit date (Author) Classical

Square K17
Layer 2
Lot 40
Excavator Olga Palagia
Date Excavated June 29, 1983
Area Test trench 1, pit B
Top El. 332,227-332,127
Bottom El. 331,667
NB Pages K 17 I 159-160

Description of Excavated Area Pit B

Physical Characteristics soil: light brown earth

Unit Date (Exc.) late 5th century BC

Unit date (Author) late 4th century BC

Square K17
Layer 2b
Lot 24
Excavator James Clauss
Date Excavated July 4, 1978
Area K/18,19-17/14,15
Top El. 333,307
Bottom El. 333,047
NB Pages K17 I, 105

Description of Excavated Area raised area next to pit

Physical Characteristics Soil: sandy reddish brown with marble chips

Unit Date (Exc.) 4th century BC

Unit date (Author) 4th century BC

Square K17
Layer 1
Lot 11
Excavator James Clauss
Date Excavated June 22, 1978
Area B, K/18,20-17/13,19
Top El. 333,317
Bottom El. 333,027
NB Pages K17 I, 71-89

Description of Excavated Area

Physical Characteristics Soil: mixed brown and black, sandy

Unit Date (Exc.) no earlier than late 4th cent AD, probably later

Unit date (Author) 5th/4th BC to late 4th/5th AD

Square K17
Layer 3a
Lot 26
Excavator James Clauss
Date Excavated July 7, 1978
Area B, K/8,10-17/17,20
Top El. 333,887
Bottom El. 333,722
NB Pages K 17 I 121-123

Description of Excavated Area pit

Physical Characteristics soil: white hard clay-like earth with heavy density of marble chips

Unit Date (Exc.) 3rd quarter of 4th century BC

Unit date (Author) late 4th century BC

Square K17
Layer 3b
Lot 27
Excavator James Clauss
Date Excavated July 4, 1978
Area B, K/7,20-17/13,16
Top El. 333,047
Bottom El. 332,687
NB Pages K 17 I, 111-113

Description of Excavated Area SE corner of trench, east of well K17:1, east of nave of church

Physical Characteristics Soil: mixed red and white soil

Unit Date (Exc.) 3rd quarter of 4th century BC

Unit date (Author) late 4th century BC

Square K19
Layer 17
Lot 56
Excavator D. Birge, C.M.
Date Excavated 29 October 1985
Area baskets 1, 2, 4
Top El. 334,180
Bottom El. 333,945
NB Pages NB 1, 105-117

Description of Excavated Area Corner house, room 1

Physical Characteristics light brown, sandy soil with broken tiles

Unit Date (Exc.) last 1/4 of 3rd- mid 2nd BC

Unit date (Author) 3rd- 2nd century BC

Square K19 **Area** baskets 3, 5
Layer 17 **Top El.** 334,219
Lot 57 **Bottom El.** 334,005
Excavator D. Birge, C.M. **NB Pages** NB I, 109-119
Date Excavated 29-30 October 1985

Description of Excavated Area Corner House, Rooms 3, 5, 6

Physical Characteristics sandy reddish-brown soil

Unit Date (Exc.) last quarter 3rd- mid 2nd centuries BC

Unit date (Author) late 3rd- mid 2nd centuries BC

Square K19 **Area** basket 6
Layer 17 **Top El.** 334,005
Lot 58 **Bottom El.** 333,821
Excavator D. Birge, C.M. **NB Pages** NB I, 119-123
Date Excavated 31 October 1981

Description of Excavated Area Corner House, rooms 5, 6 (N-S trench)

Physical Characteristics reddish-brown soil

Unit Date (Exc.) mid to late 1st centuries BC

Unit date (Author) 3rd to 1st centuries BC

Square K19 **Area**
Layer 17 **Top El.** 334,006
Lot 59 **Bottom El.** 333,737
Excavator C.M. Lehmann **NB Pages** K19 1, 125
Date Excavated 1 November, 1985

Description of Excavated Area Corner house, room 4

Physical Characteristics light reddish-brown sandy soil

Unit Date (Exc.) late 2nd century BC

Unit date (Author) 2nd century B.C.

Square K19
Layer 17
Lot 60
Excavator C.M. Lehmann
Date Excavated 31 October 1985

Area
Top El. 333,913
Bottom El. 333,832
NB Pages K19 I, p. 123, 125-129

Description of Excavated Area Corner House, room south of room 2

Physical Characteristics light reddish-brown sandy soil

Unit Date (Exc.) Hellenistic

Unit date (Author) 4th to 2nd centuries BC

Square K19
Layer 17
Lot 61
Excavator C.M. Lehmann
Date Excavated 4 November 1985

Area
Top El. 333,855
Bottom El. 333,756
NB Pages K19 I, 131

Description of Excavated Area Corner house, room 4 (N-S trench)

Physical Characteristics light reddish-brown sandy soi

Unit Date (Exc.) late 3rd to mid 2nd centuries BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19
Layer 18
Lot 62
Excavator C.M. Lehmann
Date Excavated 5 November 1985

Area
Top El. 333,991
Bottom El. not stated
NB Pages K19 I 133, 137-139

Description of Excavated Area Corner house, room 1

Physical Characteristics reddish sandy soil with many broken tiles

Unit Date (Exc.) early 3rd century BC

Unit date (Author) early to mid 3rd century BC

Square K19
Layer 18
Lot 63
Excavator C.M. Lehmann
Date Excavated 4 November 1985

Area
Top El. 334,005
Bottom El. 333,94
NB Pages K19 I 133-135

Description of Excavated Area Corner house, room 3

Physical Characteristics reddish sandy soil

Unit Date (Exc.) 3rd century BC, possibly to mid 2nd BC

Unit date (Author) 3rd to 2nd centuries BC

Square K19
Layer 18a
Lot 64
Excavator C.M. Lehmann
Date Excavated 5 November 1985

Area
Top El. 333,839
Bottom El. 333,540
NB Pages K19 I, 135-141

Description of Excavated Area Corner house, rooms 3, 4, N-S trench

Physical Characteristics light brown sandy soil

Unit Date (Exc.) 2nd half 2nd century BC

Unit date (Author) mid to late 2nd century BC

Square K19
Layer 18b
Lot 65
Excavator C.M. Lehmann
Date Excavated 6 November 1985

Area
Top El. 333,940
Bottom El. 333,571
NB Pages K19 I, 139, 143, 151-152

Description of Excavated Area Corner house, room 3

Physical Characteristics red sandy soil with little pottery, almost gravely in patches with very small pebbles

Unit Date (Exc.) 300 BC, with lots of 5th century material

Unit date (Author) late 4th to early 3rd centuries BC

Square K19
Layer 18
Lot 66
Excavator C.M. Lehmann
Date Excavated 6 November 1985
Area
Top El. 333,906
Bottom El. 333,347
NB Pages K19 I, 143-145

Description of Excavated Area Corner house, room 4

Physical Characteristics reddish sandy soil with broken tiles

Unit Date (Exc.) early 3rd century BC

Unit date (Author) early 3rd century BC

Square K19
Layer 19
Lot 67
Excavator C.M. Lehmann
Date Excavated 6 November 1985
Area basket 22
Top El. 333,835
Bottom El. 333,369
NB Pages K19 I 145-147

Description of Excavated Area Corner house, room 1, east probe

Physical Characteristics red sandy soil, not very compact

Unit Date (Exc.) early 3rd century BC

Unit date (Author) early 3rd century BC

Square K19
Layer 18
Lot 68
Excavator C.M. Lehmann
Date Excavated 7 November 1985
Area
Top El. 333,901
Bottom El. 333,720
NB Pages K19 I, 147

Description of Excavated Area Corner house, room 4, west side

Physical Characteristics rather compact reddish sandy soil

Unit Date (Exc.) late 3rd century BC

Unit date (Author) late 3rd century BC

Square K19 **Area**
Layer 18b **Top El.** 333,844
Lot 69 **Bottom El.** 333,635
Excavator C.M. Lehmann **NB Pages** K19 I, 149
Date Excavated 7 November 1985

Description of Excavated Area Corner house, room 4, broken tiles

Physical Characteristics rather soft, sandy reddish soil with many broken tiles

Unit Date (Exc.) 4th century BC

Unit date (Author) late 4th century BC

Square K19 **Area** basket 29
Layer 19 **Top El.** 333,587
Lot 71 **Bottom El.** 333,295
Excavator C.M. Lehmann **NB Pages** K19 III, 153, 417
Date Excavated 11 November 1985

Description of Excavated Area Corner House, room 3

Physical Characteristics reddish, sandy soil, with some small pebbles

Unit Date (Exc.) 5th century BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19 **Area** baskets 38, 80
Layer 19 **Top El.** none recorded (below lot
Lot 77 **Bottom El.** 333,820
Excavator C.M. Lehmann **NB Pages** K19 III, 427, 431
Date Excavated 13 November 1985

Description of Excavated Area Corner house, room 4, pit, bottom

Physical Characteristics soft brown sandy soil

Unit Date (Exc.) last quarter 3rd to mid 2nd centuries BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19
Layer 19 pit N
Lot 78
Excavator C.M. Lehmann
Area basket 39, 50 (tiles)
Top El. 333,932 (N), 333,113 (S),
Bottom El. not stated
NB Pages K19 III, 429-433
Date Excavated 14 November 1985

Description of Excavated Area Corner house, room 4, pit N

Physical Characteristics soft, slightly reddish brown sandy soil

Unit Date (Exc.) late 3rd to mid 2nd centuries BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19
Layer 19
Lot 81
Excavator C.M. Lehmann
Area basket 43
Top El. 333,670
Bottom El. 333,560
NB Pages K19 III, 433
Date Excavated 14 November 1985

Description of Excavated Area Corner house, room 4, west side, floor

Physical Characteristics reddish brown compact soil

Unit Date (Exc.) last quater 5th century BC

Unit date (Author) Hellenistic, late 4th century BC?

Square K19
Layer 19
Lot 87
Excavator C.M. Lehmann
Area basket 48
Top El. 333,710
Bottom El. 333,540
NB Pages K19 III, 439-441
Date Excavated 15 November 185

Description of Excavated Area North probe

Physical Characteristics rather soft brown soil

Unit Date (Exc.) 5th century BC

Unit date (Author) 5th century BC

Square K19 **Area** basket 53
Layer 19a **Top El.** 333,670
Lot 88 **Bottom El.** 333,570
Excavator C.M. Lehmann **NB Pages** K19 III, 443
Date Excavated 18 November 1985

Description of Excavated Area Corner house, north probe

Physical Characteristics

Unit Date (Exc.) 1st half 5th century BC

Unit date (Author) late 4th century BC

Square K19 **Area** basket 54
Layer 19b **Top El.** 333,720
Lot 89 **Bottom El.** none given
Excavator C.M. Lehmann **NB Pages** K19 III, 443
Date Excavated 18 November 1985

Description of Excavated Area Corner house, north probe

Physical Characteristics soft reddish soil, some pebbles

Unit Date (Exc.) 6th-5th centuries BC

Unit date (Author) not datable, probably not as early as 6th-5th BC

Square K19 **Area** basket 57
Layer 20a **Top El.** 333.540
Lot 91 **Bottom El.** 333,270
Excavator C.M. Lehmann **NB Pages** K19 III, 445
Date Excavated 19 November 1985

Description of Excavated Area Corner house, north probe

Physical Characteristics compact light brown to reddish brown sand with gravel, some pebbles- edge of road

Unit Date (Exc.) 2nd half 5th century BC or earlier

Unit date (Author) 5th century BC

Square K19 **Area** baskets 55, 56
Layer 20 **Top El.** 333,600
Lot 90 **Bottom El.** 333,270
Excavator C.M. Lehmann **NB Pages** K19 III, 443-445
Date Excavated 18 November 1985

Description of Excavated Area Corner house, north probe (road along north side of house)

Physical Characteristics very compact reddish brown sand and gravel

Unit Date (Exc.) 2nd half 5th century BC

Unit date (Author) late 5th century BC

Square K19 **Area** basket 44
Layer 20 **Top El.** 333,570
Lot 82 **Bottom El.** 333,230
Excavator C.M. Lehmann **NB Pages** K19 III, 435
Date Excavated 14 November 1985

Description of Excavated Area Corner house, room 4, SW probe, foundation trench

Physical Characteristics reddish brown, rather compact soil, foundation trench for W and S walls

Unit Date (Exc.) Classical

Unit date (Author) disturbed Hellenistic with many Classical sherds

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Square K19 **Area** basket 68
Layer 20 **Top El.** 333,650
Lot 100 **Bottom El.** 333,380
Excavator **NB Pages** K19 III, 461
Date Excavated

Description of Excavated Area Corner house, room 2, SW probe

Physical Characteristics

Unit Date (Exc.) Classical?

Unit date (Author)

Square K19 **Area** basket 47
Layer 21 **Top El.** 333,573
Lot 83 **Bottom El.** 333,170
Excavator C.M. Lehmann **NB Pages** K19 III, 439
Date Excavated 15 November 1985

Description of Excavated Area Corner house, room 4, SW probe

Physical Characteristics reddish brown sandy soil

Unit Date (Exc.) 5th century BC

Unit date (Author) 5th century BC

Square K19 **Area** basket 58
Layer 21 **Top El.** 333,290
Lot 92 **Bottom El.** 333,180
Excavator C.M. Lehmann **NB Pages** K19 III, 445
Date Excavated 19 November 1985

Description of Excavated Area Corner house, north probe

Physical Characteristics borwn coarse soil, some gravel, road surface

Unit Date (Exc.) non-descript, not dated

Unit date (Author) not datable

Square K19 **Area** basket 59, 60 (tiles)
Layer 17 **Top El.** 334,000
Lot 93 **Bottom El.** 333,770
Excavator C.M. Lehmann **NB Pages** K19 III, 447-449
Date Excavated 20 November 1985

Description of Excavated Area Room 2, east side

Physical Characteristics soft brown soil, some broken roof tiles

Unit Date (Exc.) late 2nd- possibly 1st century BC

Unit date (Author) mid 3rd to 2nd centuries BC

Square K19 **Area** basket 41
Layer 17 **Top El.** 334,287
Lot 84 **Bottom El.** 333,781
Excavator C.M. Lehmann **NB Pages** K19 III, 431-435
Date Excavated 14 November 1985

Description of Excavated Area Corner House, North probe

Physical Characteristics soft reddish brown soil with some gravel

Unit Date (Exc.) 1st half 5th century to 2nd half 4th century BC

Unit date (Author) 5th century BC

Square K19 **Area** basket 19
Layer 18a **Top El.** 333,970
Lot 72 **Bottom El.** 333,350
Excavator C.M. Lehmann **NB Pages** K19 I, 139-141
Date Excavated 5 November 1985

Description of Excavated Area Corner House, room 1

Physical Characteristics

Unit Date (Exc.) early 3rd century BC

Unit date (Author) 3rd to mid 2nd centuries BC

Square K19 **Area** basket 45
Layer 18 **Top El.** 333,781
Lot 85 **Bottom El.** 333,560
Excavator C.M. Lehmann **NB Pages** K19 III, 435
Date Excavated 14 November 1985

Description of Excavated Area Corner House, north probe

Physical Characteristics road surface, gravel and reddish brown sandy soil

Unit Date (Exc.) 1st half 5th century BC

Unit date (Author) 5th century BC

Square K19 **Area** baskets 26, 27
Layer 19 **Top El.** 333,868
Lot 70 **Bottom El.** 333,670
Excavator C.M. Lehmann **NB Pages** K19 I, 149-155
Date Excavated 7 November 1985

Description of Excavated Area Corner House, room 4, west side

Physical Characteristics rather soft, reddish brown sandy soil

Unit Date (Exc.) 2nd half 3rd century BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19 **Area** basket 30, 31
Layer 19 **Top El.** 333,796
Lot 73 **Bottom El.** 333,580
Excavator C.M. Lehmann **NB Pages** K19 I, 155; K19 III, 417
Date Excavated 11 November 1985

Description of Excavated Area Corner house, room 4, east side

Physical Characteristics rather soft reddish brown sandy soil

Unit Date (Exc.) late 3rd- first half 2nd century BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19 **Area** baskets 32, 33
Layer 19 pit **Top El.** 333,610
Lot 74 **Bottom El.** not stated
Excavator C.M. Lehmann **NB Pages** K19 III, 417-423
Date Excavated 11 November 1985

Description of Excavated Area Corner house, Room 4, pit, east side

Physical Characteristics brown soft sandy soil

Unit Date (Exc.) late 3rd to mid 2nd centuries BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19 **Area** baskets 34, 35
Layer 19 pit **Top El.** 333,350
Lot 75 **Bottom El.** 332,990?
Excavator C.M. Lehmann **NB Pages** K19 III, 423-425
Date Excavated 12 November 1985

Description of Excavated Area Corner house, room 4, pit, east side

Physical Characteristics soft brown sandy soil with many broken roof tiles and coobles and stones

Unit Date (Exc.) late 3rd- first 1/2 2nd centuries BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19 **Area** baskets 36, 37
Layer 19 **Top El.** 333,640
Lot 76 **Bottom El.** 333,170
Excavator C.M. Lehmann **NB Pages** K19 III, 425-429
Date Excavated 12 November 1985

Description of Excavated Area Corner house, room 4 pit, west side

Physical Characteristics soft brown sandy soil, some broken tiles, burned patches

Unit Date (Exc.) late 3rd to mid 2nd centuries BC

Unit date (Author) late 3rd to mid 2nd centuries BC

Square K19 **Area** baskets 49, 50
Layer 18 **Top El.** 334,113
Lot 79 **Bottom El.** 334,000
Excavator C.M. Lehmann **NB Pages** K19 III, 439
Date Excavated 15 November 1985

Description of Excavated Area Corner house, rooms 5, 6

Physical Characteristics soft reddish soil, pebbles, many broken tiles

Unit Date (Exc.) not later than 1st quarter 4th century BC

Unit date (Author) late 4th century BC

Square K19 **Area** basket 51
Layer 18a **Top El.** 334,100
Lot 80 **Bottom El.** 334,040
Excavator C.M. Lehmann **NB Pages** K19 III, 441
Date Excavated 15 November 1985

Description of Excavated Area Corner house, room 6

Physical Characteristics dark red sandy soil in K/20, 19/17,18

Unit Date (Exc.) 4th century BC

Unit date (Author) late 4th century BC

Square K19 **Area** basket 46
Layer 18b **Top El.** 334,287
Lot 86 **Bottom El.** 333,530
Excavator C.M. Lehmann **NB Pages** K19 III, 437
Date Excavated 15 November 1985

Description of Excavated Area Corner house, north probe

Physical Characteristics reddish brown sandy soil

Unit Date (Exc.) 1st half 5th century BC

Unit date (Author) 5th century BC

Square K20 **Area** north trench
Layer 9 **Top El.** 333,72
Lot 15 **Bottom El.** 333,61
Excavator Phyllis Allen **NB Pages** K20 I, 57-61, 96
Date Excavated June 3, 1981

Description of Excavated Area south section of house 1, deposit K20:1

Physical Characteristics soft, red-brown, somewhat clayey soil

Unit Date (Exc.) 4th to 3rd centuries BC

Unit date (Author) late 4th to mid 3rd century BC

Square K20
Layer 9
Lot 16
Excavator Phyllis Allen
Date Excavated June 3, 1981

Area north trench
Top El. 333,86
Bottom El. 333,44
NB Pages K20 I, 52, 57-69, 96

Description of Excavated Area south section of house 1

Physical Characteristics red layer with clayey areas to east near EW wall

Unit Date (Exc.) 2nd century BC

Unit date (Author) mid 3rd and to mid 2nd centuries BC

Square K20
Layer 8
Lot 14
Excavator Phyllis Allen
Date Excavated June 8, 1981

Area
Top El. 333,700
Bottom El. 333,440
NB Pages K20 I, 79-84, 96

Description of Excavated Area south section of house 1

Physical Characteristics rather red closer to wash, red-brown toward N scarp

Unit Date (Exc.) later 3rd century BC

Unit date (Author) late 4th to mid 3rd centuries BC

Square K20
Layer 8
Lot 10
Excavator Phyllis Allen
Date Excavated June 3, 1981

Area K/1,2-20/4,5
Top El. 333,530
Bottom El. 332,420
NB Pages K20 I, 57, 84-85, 96-103,

Description of Excavated Area pit 3

Physical Characteristics white earth

Unit Date (Exc.) 4th-3rd centuries BC

Unit date (Author) late 4th to early 3rd centuries BC

Square K20
Layer 8
Lot 12
Excavator Phyllis Allen
Date Excavated June 3, 1981

Area avlaki 1
Top El. 333,650
Bottom El. 333,090
NB Pages K20 I, 110-111, 128, 142,

Description of Excavated Area south section of house 1

Physical Characteristics brown earth, darkers than pit 3, not red

Unit Date (Exc.) 4th-3rd centuries BC

Unit date (Author) late 4th- early 3rd centuries BC

Square K20
Layer 8
Lot 13
Excavator Phyllis Allen
Date Excavated June 3, 1981

Area Aulaki 2
Top El. 333,610
Bottom El. 332,980
NB Pages K20 I, 110, 115, 128, 142,

Description of Excavated Area south section of house 1, aulaki 2

Physical Characteristics white earth similar to pit 3 and distinct from brown of aulaki 1

Unit Date (Exc.) At least 3rd, probably late 3rd century BC

Unit date (Author) late 4th- early 3rd centuries BC

Square K20
Layer 9b
Lot 17
Excavator Phyllis Allen
Date Excavated June 4, 1981

Area north trench
Top El. 333,65
Bottom El. 333,62
NB Pages K20 I, 62-65, 68, 96

Description of Excavated Area south section of house 1

Physical Characteristics red with gravel

Unit Date (Exc.) 4th-3rd centuries BC, although probably undatable

Unit date (Author) not datable

Square K20
Layer 9c
Lot 18
Excavator Phyllis Allen
Date Excavated June 8, 1981

Area north trench
Top El. 333,62
Bottom El. 333,49
NB Pages K20 I, pp. 64, 74-79, 96

Description of Excavated Area south section of house 1

Physical Characteristics mixed earth of red and white with traces of burning, stones

Unit Date (Exc.) 4th-3rd centuries BC

Unit date (Author) not datable

Square K20
Layer 10
Lot 19
Excavator Phyllis Allen
Date Excavated June 5, 1981

Area north trench
Top El. none, not recorded
Bottom El. 333,640
NB Pages K20 I, 71-73, 96

Description of Excavated Area south section of house 1

Physical Characteristics red and sandy soil with pebbles near wash, red with darker and lighter patches near well

Unit Date (Exc.) 4th century BC or later

Unit date (Author) late 4th century BC and later

Square K20
Layer 11
Lot 20
Excavator Phyllis Allen
Date Excavated June 8, 1981

Area north trench
Top El. 333,75-80 (approx)
Bottom El. 333,23
NB Pages K20 I, p. 73, 75-83, 85-87,

Description of Excavated Area south section of house 1, tile dump

Physical Characteristics very soft dark earth at well head blocks, harder and redder to N

Unit Date (Exc.) no earlier than late 3rd century BC

Unit date (Author) mid 3rd century BC

Square K20
Layer 13
Lot 24
Excavator Phyllis Allen
Date Excavated June 16, 1981

Area pit
Top El. 333,560
Bottom El. 332,660
NB Pages K20 I, p. 125, 135, 141

Description of Excavated Area south section of house 1

Physical Characteristics dark earth

Unit Date (Exc.) late 3rd century BC or later

Unit date (Author) mid 3rd to mid 2nd centuries BC

Square K20
Layer 9
Lot 25
Excavator Phyllis Allen
Date Excavated June 8, 1981

Area bottom of layer,
Top El. 333,62
Bottom El. 333,110
NB Pages K20 I, 73, 90, 91, 96

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) late 3rd century to 146 BC

Unit date (Author) mid 3rd to mid 2nd centuries BC

Square K20
Layer 14
Lot 26
Excavator Phyllis Allen
Date Excavated June 11, 1981

Area north trench
Top El. 333,83
Bottom El. 333,57
NB Pages K20 I, 111-117

Description of Excavated Area south section of house 1, area south of wash in SE corner of square

Physical Characteristics soft brown to red brown soil

Unit Date (Exc.) 4th-3rd centuries BC

Unit date (Author) late 4th to mid 3rd century BC

Square K20
Layer 15
Lot 27
Excavator Phyllis Allen
Date Excavated June 12, 1981

Area pit
Top El. 333,570
Bottom El. 333,090
NB Pages K20 I, p. 116-127, 142

Description of Excavated Area south section of house 1, SE corner of trench

Physical Characteristics ash, charcoal, baked earth and clayey soil

Unit Date (Exc.) 4th-3rd centuries BC? (none given)

Unit date (Author) late 4th to mid 3rd centuries BC

Square K20
Layer 15
Lot 28
Excavator Phyllis Allen
Date Excavated June 12, 1981

Area north trench
Top El. 333,810
Bottom El. 333,350
NB Pages K20 I, 116-123

Description of Excavated Area south section of house 1

Physical Characteristics red to very red earth

Unit Date (Exc.) late 3rd century BC

Unit date (Author) mid 3rd- mid 2nd century BC, perhaps late 3rd

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Square K20
Layer 16
Lot 29
Excavator Phyllis Allen
Date Excavated June 15, 1981

Area north trench
Top El. 333,560
Bottom El. 333,350
NB Pages K20 I, 121, 129-133

Description of Excavated Area south section of house 1

Physical Characteristics red earth, redder than layer 15 above

Unit Date (Exc.) late 3rd century BC or earlier

Unit date (Author) mid 3rd- mid 2nd century BC

Square K20 **Area** north trench
Layer 17 **Top El.** 333,440
Lot 30 **Bottom El.** 333,340
Excavator Phyllis Allen **NB Pages** K20 I, 135-145
Date Excavated June 17, 1981

Description of Excavated Area south section of house 1

Physical Characteristics mixed earth, yellow to red, white sandy areas

Unit Date (Exc.) none given

Unit date (Author) mid 3rd century BC or later

Square K20 **Area** pit west
Layer 17 pit west **Top El.** 333,380
Lot 31 **Bottom El.** 332,860
Excavator Phyllis Allen **NB Pages** K20 I, 137-145
Date Excavated June 17, 1981

Description of Excavated Area south section of house 1

Physical Characteristics darker soft earth than layer 17

Unit Date (Exc.) late 3rd century BC or earlier

Unit date (Author) mid to late 3rd century BC

Square K20 **Area** pit at east scarp
Layer 17 **Top El.** 333,350
Lot 32 **Bottom El.** 332,910
Excavator Phyllis Allen **NB Pages** K20 I, 141-142
Date Excavated June 18, 1981

Description of Excavated Area south section of house 1

Physical Characteristics darker earth than 17

Unit Date (Exc.) not closely datable, maybe 4th or later

Unit date (Author) mid 3rd century BC

Square K20
Layer 18a
Lot 33
Excavator Phyllis Allen
Date Excavated June 19, 1981
Area north trench
Top El. 333,640
Bottom El. 333,220
NB Pages K20 I, 146-154, 172

Description of Excavated Area south section of house 1

Physical Characteristics black earth with pellocudia

Unit Date (Exc.) none given

Unit date (Author) 3rd century BC

Square K20
Layer 18b
Lot 34
Excavator Phyllis Allen
Date Excavated June 19, 1981
Area north trench
Top El. 333,640
Bottom El. 333,220
NB Pages K20 I, p. 149-154

Description of Excavated Area south section of house 1

Physical Characteristics brown earth with small stones and pieces of cement

Unit Date (Exc.) probably 4th- 3rd century BC

Unit date (Author) 3rd century BC

Square K20
Layer 19a
Lot 35
Excavator Phyllis Allen
Date Excavated June 18, 1981
Area north trench
Top El. 333,530
Bottom El. 332,810
NB Pages K20 I, 147-155, 167-172

Description of Excavated Area south section of house 1

Physical Characteristics brown to dark brown, tile filled earth

Unit Date (Exc.) later 3rd century at earliest

Unit date (Author) 3rd-2nd century BC with earlier intrusions

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Square K20
Layer 19b
Lot 36
Excavator Phyllis Allen
Date Excavated 1981
Area north of well
Top El. 333,530
Bottom El. 332,760
NB Pages K20 I, 167-170, 172

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) 4th century or later

Unit date (Author) 3rd century BC or later

Square K20
Layer 19
Lot 37
Excavator Phyllis Allen
Date Excavated 1981
Area area north of well-head
Top El. 333,530
Bottom El. 333,260
NB Pages K20 I, 170-174

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) not closely datable, perhaps 4th century or later

Unit date (Author) late 3rd -mid 2nd century BC

Square K20
Layer 20
Lot 38
Excavator Phyllis Allen
Date Excavated 1981
Area area around wash
Top El. 333,650
Bottom El. 333,210
NB Pages K20 I, 155-161

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) 2nd century BC, 160-146 BC at earliest

Unit date (Author) late 3rd- mid 2nd BC

Square K20
Layer 1t
Lot 39
Excavator Phyllis Allen
Date Excavated 1981

Area test trench A
Top El. 333,540
Bottom El. 333,440
NB Pages K20 I, 161-167, 172, 174

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) nothing obviously later than 4th century BC

Unit date (Author) undatable, definitely Hellenistic, probably 3rd or later

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Square K20
Layer 2t
Lot 40
Excavator Phyllis Allen
Date Excavated 1981

Area test trench A
Top El. 333,440
Bottom El. 333,290
NB Pages K20 I, 165, 167, 172, 174

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) nothing obviously later than 3rd century BC

Unit date (Author) 3rd century BC, nothing closely datable, pre- 235 BC

Square K20
Layer 3t
Lot 41
Excavator Phyllis Allen
Date Excavated 1981

Area test trench A
Top El. 333,290
Bottom El. 333,010
NB Pages K20 I, 167, 172, 175

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) 4th century or later BC

Unit date (Author) Hellenistic

Square K20
Layer 4t
Lot 42
Excavator Phyllis Allen
Date Excavated 1981

Area test trench A
Top El. 333,270
Bottom El. 333,810
NB Pages K20 I, 167, 172, 176

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) none

Unit date (Author) not datable

Square K20
Layer 20a
Lot 43
Excavator Phyllis Allen
Date Excavated 1981

Area
Top El. none
Bottom El. none
NB Pages K20 I, 161, 172

Description of Excavated Area south section of house 1

Physical Characteristics

Unit Date (Exc.) late 3rd century BC or later

Unit date (Author) late 3rd- mid 2nd centuries BC

Square K20
Layer 8
Lot 11
Excavator Phyllis Allen
Date Excavated June 12, 1981

Area
Top El. 332,42 min.
Bottom El. none fiven, top elevation
NB Pages K20 I, 119, 121

Description of Excavated Area bottom of pit 3

Physical Characteristics white earth, slightly sandy area near wash

Unit Date (Exc.) 4th-3rd centuries BC

Unit date (Author) late 4th to early 3rd centuries BC

Square K20
Layer 12
Lot 22
Excavator Phyllis Allen
Date Excavated June 11, 1981
Area bottom of gouva
Top El. 333,600
Bottom El. not stated
NB Pages K20 I, 107,142

Description of Excavated Area north trench

Physical Characteristics lighter than red strosis below layer 12

Unit Date (Exc.) 4th century BC and later

Unit date (Author) late 4th century BC and later

Square K20
Layer 13
Lot 23
Excavator Phyllis Allen
Date Excavated June 11, 1981
Area north of pit
Top El. 333,590
Bottom El. 333,280
NB Pages K20 I, 109, 142

Description of Excavated Area north trench

Physical Characteristics clean brown earth

Unit Date (Exc.) at least late 3rd century BC, probably later

Unit date (Author) mid 3rd to mid 2nd centuries BC

Square K20
Layer 12
Lot 21
Excavator Phyllis Allen
Date Excavated June 9, 1981
Area north trench
Top El. 333,720
Bottom El. 333,280
NB Pages K20 I, pp.97, 101-107, 142

Description of Excavated Area south section of house 1

Physical Characteristics brown to red-brown earth, rather hard

Unit Date (Exc.) 2nd century or later (c. 160 BC)

Unit date (Author) early to mid 2nd century BC

Square L20
Layer 5
Lot 6
Excavator Caroline Belz
Date Excavated May 27, 1978
Description of Excavated Area Trench B
Physical Characteristics
Area
Top El. 334,155
Bottom El. 334,050
NB Pages NB I, 57-59

Unit Date (Exc.) 4th-3rd centuries BC

Unit date (Author) 3rd century BC

Square L20
Layer 4
Lot 7
Excavator Caroline Belz
Date Excavated May 29, 1978
Description of Excavated Area Trench B
Physical Characteristics
Area
Top El. 334,240
Bottom El. 334,145
NB Pages NB I, p. 53-55

Unit Date (Exc.) 3rd century BC or later

Unit date (Author) mid 3rd to mid 2nd centuries BC

Square L20
Layer 3
Lot 8
Excavator Caroline Belz
Date Excavated May 25, 1978
Description of Excavated Area Trench B
Physical Characteristics
Area L/9,15-20/1,9
Top El. 334, 730
Bottom El. 334,240
NB Pages NB I, pp. 51-53

Unit Date (Exc.) 3rd century BC

Unit date (Author) mid 3rd century BC

Square L20
Layer 10
Lot 9
Excavator Caroline Belz
Date Excavated May 18, 1978
Description of Excavated Area East Trench
Physical Characteristics
Area
Top El. 334,825
Bottom El. 334,225
NB Pages NB I, p. 27
Unit Date (Exc.) Hellenistic or early Roman
Unit date (Author) late 4th to 3rd centuries BC

Square L20
Layer 9
Lot 10
Excavator Caroline Belz
Date Excavated May 17, 1978
Description of Excavated Area East Trench
Physical Characteristics
Area L/16,20- 20/1,15
Top El. 334,455
Bottom El. 334,085
NB Pages NB I, p.25
Unit Date (Exc.) 3rd century BC or later
Unit date (Author) 3rd century BC

Square L20
Layer 9
Lot 11
Excavator Caroline Belz
Date Excavated May 31, 1978
Description of Excavated Area Trench B
Physical Characteristics
Area L/9,15-20/1,9
Top El. 334,110
Bottom El. 333,820
NB Pages NB I, 75-77
Unit Date (Exc.) Hellenistic
Unit date (Author) late 4th-mid 3rd centuries BC

Square L20
Layer 9a
Lot 12
Excavator Caroline Belz
Date Excavated May 31, 1978
Description of Excavated Area Trench B
Physical Characteristics
Unit Date (Exc.) not closely datable
Unit date (Author) 3rd century BC

Area L/9,15-20/1,9
Top El. 334,110
Bottom El. 333,820
NB Pages NB I, p.75-77

Square L20
Layer 8a
Lot 20
Excavator Caroline Belz
Date Excavated May 16, 1978
Description of Excavated Area east trench
Physical Characteristics
Unit Date (Exc.) 5th-6th century AD
Unit date (Author) mid 3rd to mid 2nd centuries BC

Area L/16,20-20/1,15
Top El. 334,040
Bottom El. 334,085
NB Pages NB I, p.19-21

Square L20
Layer 7
Lot 21
Excavator Caroline Belz
Date Excavated May 12, 1978
Description of Excavated Area East Trench
Physical Characteristics
Unit Date (Exc.) 1st-2nd centuries AD
Unit date (Author) 3rd century BC'

Area L/16,20-20/1,15
Top El. 334,555
Bottom El. 334,040
NB Pages NB I, 17-19

Square L20
Layer 6b
Lot 25
Excavator Caroline Belz
Date Excavated July 25, 1978

Area
Top El. 333,989
Bottom El. 333,679
NB Pages NB I, 107-111

Description of Excavated Area West trench (south), black zone

Physical Characteristics

Unit Date (Exc.) 3rd or 2nd centuries BC, possibly earlier

Unit date (Author) 3rd century, possible slightly later BC

Square L20
Layer 7
Lot 31
Excavator Caroline Belz
Date Excavated July 24, 1978

Area
Top El. 333,659
Bottom El. 333,579
NB Pages NB I, p.113

Description of Excavated Area South trench

Physical Characteristics

Unit Date (Exc.) end of the 5th century BC or earlier

Unit date (Author) late 4th to3rd centuries BC

Square L20
Layer 6a
Lot 32
Excavator Caroline Belz
Date Excavated July 24-25, 1978

Area
Top El. 333,889
Bottom El. 333,659
NB Pages NB I, p. 107-111

Description of Excavated Area West trench, south scarp

Physical Characteristics

Unit Date (Exc.) 4th century BC or later

Unit date (Author) 3rd century BC

Square L20
Layer 6c
Lot 33
Excavator Caroline Belz
Date Excavated July 25, 1978
Description of Excavated Area South scarp
Physical Characteristics
Unit Date (Exc.) 300 BC at earliest
Unit date (Author) 3rd century BC

Area
Top El. 334,064
Bottom El. 333,649
NB Pages NB I, p. 107-111

Square L20
Layer 5a
Lot 34
Excavator Caroline Belz
Date Excavated July 21-24, 1978
Description of Excavated Area South scarp
Physical Characteristics
Unit Date (Exc.) none
Unit date (Author) not datable

Area
Top El. 333,889
Bottom El. 333,784
NB Pages NB I, p.103-105

Square L20
Layer 4b
Lot 39
Excavator Caroline Belz
Date Excavated July 21, 1978
Description of Excavated Area West trench, south scarp
Physical Characteristics
Unit Date (Exc.) 3rd century BC at earliest
Unit date (Author) 3rd century BC

Area
Top El. 334,064
Bottom El. 333,799
NB Pages NB I, p.96-101

Square L20
Layer 4
Lot 41
Excavator Caroline Belz
Date Excavated July 20, 1978

Area
Top El. 334,100
Bottom El. 333,900
NB Pages NB I, p.91-95

Description of Excavated Area West trench, south scarp

Physical Characteristics

Unit Date (Exc.) 3rd cent BC at earliest

Unit date (Author) 3rd century BC

Square L20
Layer 7d
Lot 50
Excavator Caroline Belz
Date Excavated July 26, 1978

Area
Top El. 333,809
Bottom El. 333,779
NB Pages NB I, 121-125

Description of Excavated Area West trench, north scarp

Physical Characteristics

Unit Date (Exc.) late 5th centuries BC

Unit date (Author) late 4th to early 3rd centuries BC

Square L20
Layer 7c
Lot 51
Excavator Caroline Belz
Date Excavated July 26, 1978

Area
Top El. 333,900
Bottom El. 333,800
NB Pages NB I, pp.117-119

Description of Excavated Area West trench, north scarp

Physical Characteristics

Unit Date (Exc.) late Roman

Unit date (Author) mixed- 3rd century BC and late Roman

Square L20
Layer 1
Lot 59
Excavator Phyllis Allen
Date Excavated June 22, 1981
Description of Excavated Area South trench
Physical Characteristics

Area
Top El. 334,900
Bottom El. 334,800
NB Pages NB I 149-152, 156

Unit Date (Exc.) later 3rd century or later

Unit date (Author) late 3rd to early 2nd centuries BC

Square L20
Layer 2
Lot 60
Excavator Phyllis Allen
Date Excavated June 23, 1981
Description of Excavated Area South trench
Physical Characteristics

Area
Top El. 334,240
Bottom El. 333,750
NB Pages NB I 153-156, NB III 596

Unit Date (Exc.) 160-146 BC at earliest

Unit date (Author) 3rd to early 2nd centuries BC

Square L20
Layer 3
Lot 61
Excavator Phyllis Allen
Date Excavated June 24, 1981
Description of Excavated Area South trench
Physical Characteristics

Area
Top El. 334,110
Bottom El. 333,710
NB Pages NB I 155, 157-163, NB III

Unit Date (Exc.) late 3rd cenuryt BC at earliest

Unit date (Author) 3rd century BC

Square L20
Layer 3,4
Lot 62
Excavator Phyllis Allen
Date Excavated June 29, 1981
Area
Top El. 333,83
Bottom El. 333,41
NB Pages NB 1, 159-166, NB III,

Description of Excavated Area South trench, aulakia 3 and 4

Physical Characteristics

Unit Date (Exc.) 3rd century BC

Unit date (Author) 3rd century BC

Square L20
Layer 3, 5a, 5b, 6, 7
Lot 63
Excavator Phyllis Allen
Date Excavated June 30- July 1, 1981
Area south trench
Top El. 333,89
Bottom El. 333,44
NB Pages NB I, 162-171, NB III

Description of Excavated Area South trench, pit at north scarp

Physical Characteristics

Unit Date (Exc.) late 4th to 2nd centuries BC

Unit date (Author) late 4th to 3rd centuries BC

Square L20
Layer 8t
Lot 64
Excavator Phyllis Allen
Date Excavated July 1, 1981
Area
Top El. 333,45
Bottom El. 333,34
NB Pages NB III, 409-413, 420

Description of Excavated Area South trench, test trench A

Physical Characteristics rather blonde with white flecks

Unit Date (Exc.) not earlier than 4th century BC

Unit date (Author) late 4th century BC

Square L20
Layer 8t pit
Lot 65
Excavator Phyllis Allen
Date Excavated July 1, 1981

Area
Top El. 333,41
Bottom El. 332,65
NB Pages NB III, 409, 411-413, 420

Description of Excavated Area South trench, test trench A

Physical Characteristics soft, dark earth with some charcoal

Unit Date (Exc.) 4th-3rd century BC

Unit date (Author) late 4th to early 3rd centuries BC

Square L20
Layer 9t
Lot 66
Excavator Phyllis Allen
Date Excavated July 2, 1981

Area
Top El. 333,41
Bottom El. 333,17
NB Pages NB III, 413, 415, 417, 420

Description of Excavated Area South trench, test trench A

Physical Characteristics blonde earth, brown to yellow-brown

Unit Date (Exc.) not later than 4th century BC

Unit date (Author) late 4th century BC, not really datable

Square L20
Layer 3, bottom of pit
Lot 67
Excavator Phyllis Allen
Date Excavated June 29, 1981

Area
Top El. 333,89
Bottom El. 333,48
NB Pages NB I, 162-166

Description of Excavated Area South trench, pit at north scarp

Physical Characteristics dark earth containing carbon and ash

Unit Date (Exc.) 4th to 3rd centuries BC

Unit date (Author) 3rd century BC

Square L20
Layer 4
Lot 68
Excavator Phyllis Allen
Date Excavated June 29, 1981
Description of Excavated Area South trench
Physical Characteristics red earth, harder than layer 3
Unit Date (Exc.) late 4th century BC
Unit date (Author) late 4th century BC

Area
Top El. 333,80
Bottom El. 333,59
NB Pages NB I, 163-166

Square N17
Layer 6a
Lot 29
Excavator James Wright
Date Excavated May 14-15, 1975
Description of Excavated Area kiln antechamber
Physical Characteristics
Unit Date (Exc.) late 4th century B.C.
Unit date (Author) late 4th-early 3rd centuries BC

Area
Top El. 332.15
Bottom El.
NB Pages NB III, 416-418, 421

Square N17
Layer Kiln Fill
Lot 26
Excavator James Wright
Date Excavated 1.1122e+13
Description of Excavated Area Deposit 17:1 of kiln fill: from antechamber, basin, and dromoi
Physical Characteristics
Unit Date (Exc.) late 4th to early 3rd centuries BC
Unit date (Author) late 4th to 3rd centuries BC

Area
Top El. 332.655
Bottom El. 332.335
NB Pages NB I p. 125-139, 139-140

Square N17
Layer
Lot 14
Excavator James Wright
Date Excavated July 7-10, 1974
Description of Excavated Area bothros fill
Physical Characteristics fill of soft brown earth with numerous rooftiles, bricks and rough stones
Unit Date (Exc.) 5th to 4th centuries BC
Unit date (Author) late 4th to early 3rd centuries BC
Area N/11,13-17/15,17
Top El. 333.671
Bottom El. 332.435
NB Pages NB I, 87, 93, 119-121, 164

Square N17
Layer 6e
Lot 27
Excavator James Wright
Date Excavated May 13, 1975
Description of Excavated Area Kiln antechamber, pit B
Physical Characteristics mixed red, brown, green soil with carbon flakes
Unit Date (Exc.) no earlier than late 5th BC
Unit date (Author) late 4th to mid 3rd centuries BC
Area
Top El. 332.27
Bottom El. 332.26
NB Pages NB III, 413, 463

Square N17
Layer 6e
Lot 28
Excavator James Wright
Date Excavated May 13-14, 1975
Description of Excavated Area kiln antechamber, pit B
Physical Characteristics soft ash atop hard white-yellow clay patched with hard red with fine san and poros granules
Unit Date (Exc.) no earlier than 4th century BC
Unit date (Author) late 4th to early 3rd centuries BC
Area N/6-8, 17/12-17
Top El. 332.13
Bottom El. 332.09
NB Pages NB III, 415, 419

Square N17
Layer 5a
Lot 36
Excavator James Wright
Date Excavated May 27, June 10, 1975
Area
Top El. 333.57
Bottom El. 332.88
NB Pages NB III, 461, 501

Description of Excavated Area south kiln, east stoking chamber

Physical Characteristics dark brown silt-like soil mixed with carbon flakes, crushed red ceramic material, poros

Unit Date (Exc.) late 4th century BC

Unit date (Author) late 4th to early 3rd centuries BC

Square N17
Layer 6
Lot 30
Excavator James Wright
Date Excavated May 20, 1975
Area
Top El. 333.01
Bottom El. 332.61
NB Pages NB III, 425

Description of Excavated Area north kiln, west stoking chamber

Physical Characteristics hard burnt white-green clay, tiles, clackened clay, red-brown softer dense soil

Unit Date (Exc.) no date given

Unit date (Author) not datable

Square N17
Layer 6a
Lot 31
Excavator James Wright
Date Excavated May 15, 1975
Area
Top El. 332.93
Bottom El.
NB Pages NB IIi, 423

Description of Excavated Area North kiln, east stoking chamber, floor 1

Physical Characteristics creamy clay plaster with hard creamy gray fill with some rubble, some poros and tiles

Unit Date (Exc.) no date given

Unit date (Author) not datable

Square N17
Layer 6b
Lot 32
Excavator James Wright
Date Excavated May 20, 1975

Area N/5,7-17/8,12
Top El. 332.61
Bottom El. 332.58
NB Pages NB III, 429

Description of Excavated Area North kiln, east stoking chamber, floor 2

Physical Characteristics none given

Unit Date (Exc.) no date given

Unit date (Author) not datable

Square N17
Layer 6c
Lot 33
Excavator James Wright
Date Excavated May 21, 1975

Area N/5,7-17/8,12
Top El. 332.67
Bottom El. 332.54
NB Pages NB III, 431

Description of Excavated Area North kiln, east stoking chamber, floor 3

Physical Characteristics beige buff plaster surface ca, 0.015 m thick. It was very sandy with limestone granules and pebble

Unit Date (Exc.) late 5th BC

Unit date (Author) late 4th to early 3rd centuries BC

Square N17
Layer 6d
Lot 34
Excavator James Wright
Date Excavated May 21, 1975

Area N/5,7-17/8,12
Top El. 332.62
Bottom El. 332.47
NB Pages NB III, 433-435

Description of Excavated Area North Kiln, East stoking chamber, floor 4

Physical Characteristics beige buff plaster surface

Unit Date (Exc.) no date given

Unit date (Author) not datable

Square N17
Layer 6d
Lot 35
Excavator James Wright
Date Excavated May 21-22, 1975

Area
Top El. 332.53
Bottom El. 332.43
NB Pages NB III, 434,435,437

Description of Excavated Area North Kiln, East Stoking Chamber and Entrance, Fill of Floor 4/Floor 5

Physical Characteristics bright red soil under Floor 4

Unit Date (Exc.) no date given

Unit date (Author) not datable

Square N17
Layer 5c
Lot 38
Excavator James Wright
Date Excavated May 29, 1975

Area
Top El. 332.44
Bottom El. 332.20
NB Pages NB III, 471

Description of Excavated Area South Kiln, East Stoking Chamber

Physical Characteristics baked limey soil

Unit Date (Exc.) not datable

Unit date (Author) not datable

Square N17
Layer 5b
Lot 37
Excavator James Wright
Date Excavated May 28, 1975

Area
Top El. 332.91
Bottom El. 332.44
NB Pages NB III, 467-468

Description of Excavated Area South Kiln, East Stoking Chamber

Physical Characteristics top with scattered white clay mixed with red brick and red brown earth with carbon

Unit Date (Exc.) not datable

Unit date (Author) not datable

Square N17 **Area**
Layer 5b **Top El.** 333.19
Lot 41 **Bottom El.** 332.68
Excavator James Wright **NB Pages** NB III, 455,537
Date Excavated May 26/June 1, 1975

Description of Excavated Area North Kiln, East Stoking Chamber, Found trench

Physical Characteristics brown soil with brown clay with some red sand, poros granules, carbon flakes

Unit Date (Exc.) 4th century BC

Unit date (Author) late 4th century BC

Square N17 **Area**
Layer 5 **Top El.** 333.16
Lot 52 **Bottom El.** 332.88
Excavator James Wright **NB Pages** NB III, 539
Date Excavated June 27, 30, 1975

Description of Excavated Area Fill between well, rectangular building, and North Kiln

Physical Characteristics silty brown mixed with yellow-red, some pebbles, some sand

Unit Date (Exc.) 4th cent BC, possibly later

Unit date (Author) late 4th to 3rd century BC

Square SACWAY **Area**
Layer **Top El.** 354.993
Lot 69 **Bottom El.** none given
Excavator Alison Futrell **NB Pages** NB III, 475-481
Date Excavated July 18, 1991

Description of Excavated Area red and white destruction on southeast quadrant of apodyterion

Physical Characteristics

Unit Date (Exc.) 300 BC

Unit date (Author) early 3rd century BC

Appendix IV: Catalogue of Ceramics from Corinth

Sample Number 1

Artifact Number COR2013/1

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Very Fine Calcareous

Form Shallow lekane

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description 7.5YR6/6 reddish yellow, 15% moderately sorted inclusions, moderate sub-angular to sub-rounded white calcareous inclusions, sparse elongated red inclusions, moderate elongated and rounded voids, soft fabric that is easily scratchable

---

Sample Number 2

Artifact Number COR2013/2

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Fine Micaceous Matrix

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description 7.5YR6/6 reddish yellow, fine fabric with less that 2% inclusions, sparse rounded white calcareous inclusions, soft, easily scratchable fabric

---

Sample Number 3

Artifact Number COR2013/3

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Very Fine Calcareous

Form Deep lekane

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description surface 10YR8/6 yellow, core 5YR7/6 reddish yellow; 5 -10% moderately sorted inclusions, moderate angular opaque white calcareous inclusions, sparse sub-rounded milky white inclusions, abundant elongated large to small voids; soft, easily scratchable fabric

---

Sample Number 4

Artifact Number COR2013/4

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description 10YR7/4 pink; fine fabric with less than 2% inclusions, sparse very small sub-rounded white calcareous inclusions; soft, easily scratchable fabric

---

Sample Number 5

Artifact Number COR2013/5

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description 10YR7/4 very pale brown; 15-20% well sorted inclusions, abundant small angular to sub-angular red inclusions, sparse yellowish brown sub-rounded inclusions, sparse elongated white opaque inclusions; soft, easily scratchable fabric

---

Sample Number 6

Artifact Number COR2013/6

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description surface 10YR7/4 very pale brown, core 7.5YR7/4 pink; fine fabric with no visible inclusions, moderate large elongated voids, hard fired fabric that is not easily scratchable

---

Sample Number 7

Artifact Number COR2013/7

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description 10YR7/4 very pale brown; very fine fabric with sparse, fine white inclusions; hard fabric that is not easily scratchable

---

Sample Number 8

Artifact Number COR2013/8

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Micrite, Microfossils, and Clay Pellets

Form Unflanged stewpot

Vessel Part body sherd

Type cooking ware

Date of vessel Ca. 265-250 BC

Macroscopic Description 7.5YR6/4 light brown; 25% well sorted inclusions, abundant rounded gray and white inclusions; soft, easily crumbled fabric

---

Sample Number 9

Artifact Number COR2013/9

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form Casserole, probably type

Vessel Part rim

Type cooking ware

Date of vessel Ca. 265-250 BC

Macroscopic Description 2.5YR4/6 red to 2.5YR2.5/1 reddish black; 10% well sorted inclusions, fine sub-rounded orange to yellowish white inclusions, sparse fine fraction sparkling inclusions, moderate rounded voids and possible few pits on exterior; hard fired fabric with burnt exterior

---

Sample Number 10

Artifact Number COR2013/10

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form Flanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 265-250 BC

Macroscopic Description 2.5YR5/6 red; 10-12% moderately sorted inclusions, sub-angular to sub-rounded white inclusions, both opaque and milky, sub-rounded orange inclusions, fine fraction white and black sparkling inclusions, hard fabric

---

Sample Number 11

Artifact Number COR2013/11

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form Unflanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 265-250 BC

Macroscopic Description 2.5YR5/8 red; 5-10% well sorted inclusions, small, sub-rounded yellowish white and rounded gray inclusions; hard fabric

---

Sample Number 12

Artifact Number COR2013/12

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form Stewpot

Vessel Part handle

Type cooking ware

Date of vessel Ca. 265-250 BC

Macroscopic Description 2.5YR4/8 red; 5-8% moderately sorted inclusions, sub-rounded to rounded gray inclusions, small sub-angular white inclusions, sparse fine fraction sparkling inclusions, very hard fabric

---

Sample Number 13

Artifact Number COR2013/13

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form Round mouth pitcher

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description surface 5YR5/1 gray, core 2.5YR5/6 red; 8% well sorted inclusions, sub-rounded opaque white calcareous inclusions, sub-rounded reddish orange inclusions, hard fabric

---

Sample Number 14

Artifact Number COR2013/14

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form Lid

Vessel Part lid

Type cooking ware

Date of vessel Ca. 265-250 BC

Macroscopic Description 5YR4/6 yellowish red; 10% moderately sorted inclusions, large to small sub-angular white inclusions, sub-rounded gray inclusions, moderate fine fraction sparkling inclusions, hard fabric

---

Sample Number 15

Artifact Number COR2013/15

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form Round mouth pitcher

Vessel Part rim

Type cooking ware

Date of vessel Ca. 265-250 BC

Macroscopic Description surface 5YR5/4 reddish brown, core 5YR5/2 reddish gray; 10-15% moderately sorted inclusions, sub-angular whitish gray inclusions with some sparkly bits, sparse sub-rounded white opaque inclusions, sub-rounded orange inclusions, moderate fine fraction sparkling inclusions, hard fabric

---

Sample Number 16

Artifact Number COR2013/16

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form type 1 casserole

Vessel Part rim

Type cooking ware

Date of vessel Ca. 265-250 BC

Macroscopic Description 2.5Yr5/6 red; 15% moderately sorted inclusions, moderate large to small sub-rounded opaque white inclusions, sub-rounded gray inclusions, sub-rounded pake red to orange inclusions, sparse fine fraction sparkling inclusions; soft, easily scratchable fabric

---

Sample Number 17

Artifact Number COR2013/17

Context Cellar 2005-1 (Lot 05-23)

Petroraphic Fabric Group Chert and Quartz

Form Round mouth pitcher

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 265-250 BC

Macroscopic Description 2.5YR5/8 red; 10-15% moderately sorted inclusions, sub-rounded opaque white inclusions, elongated angular red inclusions, rounded orange inclusions, fine rounded black inclusions, sub-rounded gray to translucent white inclusions, sparse fine fraction sparkling inclusions, soft fabric but doesn't scratch too easily

---

Sample Number 18

Artifact Number COR2013/18

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Cooking lid

Vessel Part lid

Type cooking ware

Date of vessel Late 4th to early 3rd c. BC

Macroscopic Description 5YR5/4 reddish brown, 5% well sorted inclusions, small sub-rounded white, brown, and whitish orange inclusions, sparse fine sparkling inclusions, hard fabric

---

Sample Number 19

Artifact Number COR2013/19

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Round mouth pitcher

Vessel Part body sherd

Type semi-coarse

Date of vessel Late 4th to early 3rd c. BC

Macroscopic Description surface 2.5YR5/6 red, core 5YR4/3 reddish brown, 15-20% moderately sorted inclusions, angular to sub-angular opaque white calcareous inclusions, sub-rounded translucent orange inclusions, sub-rounded black inclusions, sub-angular milky white inclusions, very hard fabric with glassy surface

---

Sample Number 20

Artifact Number COR2013/20

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Unflanged stewpot

Vessel Part body sherd

Type cooking ware

Date of vessel Late 4th to early 3rd c. BC

Macroscopic Description surface 2.5Y4/1 dark gray, core 2.5YR5/6 red, 15-20% moderately sorted inclusions, angular to sub-angular opaque white calcareous inclusions, sub-rounded translucent orange inclusions, sub-rounded black inclusions, sub-angular milky white inclusions, very hard fabric with glassy surface

---

Sample Number 21

Artifact Number COR2013/21

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Unid. casserole

Vessel Part rim

Type cooking ware

Date of vessel Late 4th to early 3rd c. BC

Macroscopic Description 5YR5/4 reddish brown with blackened lower interior and most of exterior, 5-10% well sorted inclusions, sub-angular white inclusions, rounded white-orange inclusions, moderate fine fraction sparkling inclusions, very hard fabric with glassy surface

---

Sample Number 22

Artifact Number COR2013/22

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Late 4th to early 3rd c. BC

Macroscopic Description 7.5YR6/4 light brown, 5% moderately sorted inclusion, moderate rounded red inclusions (tcfs), elongated whitish red inclusions, moderate fine fraction sparkling inclusions

---

Sample Number 23

Artifact Number COR2013/23

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Late 4th to early 3rd c. BC

Macroscopic Description 10YR7/4 very pale brown, very fine fabric with no visible inclusions, soft fabric but not easily scratchable

---

Sample Number 24

Artifact Number COR2013/24

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Late 4th to early 3rd c. BC

Macroscopic Description 2.5Y8/3 pale yellow; frine fabric, less than 2% inclusions, sparse fine fraction rounded black inclusions, one large void filled with orange substance (from clay mixing?)

Sample Number 25

Artifact Number COR2013/25

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Calcareous Sand

Form Wide necked pitcher

Vessel Part neck

Type semi-coarse

Date of vessel Late 4th to early 3rd c. BC

Macroscopic Description 10YR7/3 very pale brown, 8% moderately sorted inclusions, sub-rounded white opaque calcareous inclusions, sub-angular red inclusions (some elongated), rounded pale inclusions the color of the clay (tcfs?), soft, easily scratchable fabric

---

Sample Number 26

Artifact Number COR2013/26

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Cooking lid

Vessel Part body sherd

Type cooking ware

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR5/6 yellowish red, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 27

Artifact Number COR2013/27

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form type 2 casserole

Vessel Part rim

Type cooking ware

Date of vessel Ca. 215-200 BC

Macroscopic Description 2.5YR5.6 red, hard fabric, not easily scratchable, 15-2% moderately sorted inclusions, moderate subangular gray, white, milky white inclusions, fine fraction gray and white inciusions, common rounded voids

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Sample Number 28

Artifact Number COR2013/28

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Unflanged stewpot with

Vessel Part rim

Type cooking ware

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR5/6 yellowish red, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated inclusions

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Sample Number 29

Artifact Number COR2013/29

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form type 1 casserole

Vessel Part rim

Type cooking ware

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR5/6 yellowish red, very hard, smooth fabric with evidence of burning on exterior, 15% moderately sorted inclusions, common subangular to subrounded white and gray inclusions, rare to common rounded voids

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Sample Number 30

Artifact Number COR2013/30

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Round mouth pitcher

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR5/6 yellowish red (interior), 5YR4/1 dark gray (exterior), very hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 31

Artifact Number COR2013/31

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Low Grade Fine Grained Metamorphic

Form Round mouth pitcher

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR6/6 reddish yellow, smooth fabric that is easily scratchable, highly micaceous surface, 15-20% moderately sorted inclusions, subrounded milky white and gray inclusions, abundant to common fine sparkling inclusions, rare to common rounded and elongated voids

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Sample Number 32

Artifact Number COR2013/32

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Flanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR5/6 yellowish red, hard fabric with smooth surface, not easily scratchable; 15-20% moderately sorted inclusions, abundant subrounded white, gray and orange-red, fine fraction white inclusions and rare sparkling inclusions, common to rare rounded and elongated voids

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Sample Number 33

Artifact Number COR2013/33

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form bowl

Vessel Part rim

Type cooking ware

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR5/6 yellowish red, hard fabric with smooth surface, not easily scratchable; 15-20% moderately sorted inclusions, abundant subrounded white, gray and orange-red, fine fraction white inclusions and rare sparkling inclusions, common to rare rounded and elongated voids

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Sample Number 34

Artifact Number COR2013/34

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form krater

Vessel Part rim

Type cooking ware

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR5/6 yellowish red, hard fired fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated inclusions

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Sample Number 35

Artifact Number COR2013/35

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Pyroxene

Form Brazier

Vessel Part rim

Type cooking ware

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR6/6 reddish yellow, 15/18% well sorted inclusions, sandy texture in break, abundant subrounded to rounded white inclusions, rare to common rounded voids, softish easily scratchable fabric

---

Sample Number 36

Artifact Number COR2013/36

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz Sand

Form amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description Interior: 10R5/4 weak red, exterior:5YR5/1 gray; very hard, brittle, almost friable fabric with very sandy texture; mottled whitish inclusions as if they are powdery in the sherd (look at diamond saw cut and fresh surface), 30% well sorted inclusions, common rounded white and gray inclusions

---

Sample Number 37

Artifact Number COR2013/37

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Mudstone in Calcareous Matrix

Form aryballos

Vessel Part body sherd

Type blisterware

Date of vessel Ca. 215-200 BC

Macroscopic Description 10YR5/1 gray, very hard, almost vitrified fabric, many large visible blisters in breaks, some appear to have burnt material inside blisters, 5% poorly sorted inclusions, subrounded white inclusions, rare subrounded red inclusions, abundant elongated inclusions

---

Sample Number 38

Artifact Number COR2013/38

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Mudstone in Calcareous Matrix

Form filter vase

Vessel Part body sherd

Type blisterware

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR7/1 light gray (core), 5YR6/4 light reddish brown (surface), 5% poorly sorted inclusions, rare to common subangular limestone, common voids full of burnt incllusions- limestone.tcfs?, very hard fabric

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Sample Number 39

Artifact Number COR2013/39

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Very Fine Calcareous

Form broad bowl

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR6/6 reddish yellow, high fired smooth, hard fabric, 5% moderately sorted inclusions, common subangular to subrounded white inclusions, rare elongated and rounded voids

---

Sample Number 40

Artifact Number COR2013/40

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Mortar

Vessel Part rim

Type coarseware

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR6/6 reddish yellow, poorly sorted hard fabric with 20% inclusions, abundant large rounded white and angular red/brown inclusions, sub-rounded yellow inclusions, moderate fine fraction rounded white inclusions

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Sample Number 41

Artifact Number COR2013/41

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Mortar

Vessel Part body sherd

Type coarseware

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR7/4 pink, hard fabric with smooth surface, 10% moderately sorted inclusions with abundant mudstones adhered to surface of interior of vessel, common to abundant angular red and black, common rounded white and orange-red inclusions, common elongated and rounded voids

---

Sample Number 42

Artifact Number COR2013/42

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Lekane

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR6/6 reddish yellow, 3-5% well sorted inclusions, common fine rounded white inclusions, sparse fine sparkling inclusions, rare rounded voids, soft fabric that scratches easily with nail

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Sample Number 43

Artifact Number COR2013/43

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Corinthian A' amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR7/6 reddish yellow, hard fabric, hard fabric with 15 -20% poorly sorted inclusions, common large subangular gray, subrouned yellow and white, and few subangular red and black inclusions, common fine yellow-white inclusions, abundant large elongated and rounded voids

---

Sample Number 44

Artifact Number COR2013/44

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR6/6 reddish yellow, 3-5% well sorted inclusions, common fine rounded white inclusions, sparse fine sparkling inclusions, rare rounded voids, soft fabric that scratches easily with nail

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Sample Number 45

Artifact Number COR2013/45

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Lekane

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR8/3 pink (interior), 7.5YR7/6 reddish yellow (core), hard fabric with smooth surface, 3-5% well sorted inclusions, sparse rounded white and yellow inclusions, sparse fine sparkling inclusions, common rounded and elongated voids

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Sample Number 46

Artifact Number COR2013/46

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Lekane

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR7/4 pink, hard fabric not easily scratchable, 5-10% poorly sorted inclusions, rare subangular red, gray and sparkling white inclusions, fine fraction subrounded to rounded white inclusions,

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Sample Number 47

Artifact Number COR2013/47

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Lekane

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 2.5Y8/2 white, hard fabric with smooth surface, possible red wash on exterior of rim, fine fabric with less than 5% well sorted inclusions, rare subangular black, subrounded to rounded white and orange inclusions, rare to common elongated voids

---

Sample Number 48

Artifact Number COR2013/48

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR6/6 reddish yellow, 3-5% well sorted inclusions, common fine rounded white inclusions, sparse fine sparkling inclusions, rare rounded voids, soft fabric that scratches easily with nail

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Sample Number 49

Artifact Number COR2013/49

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Fine Micaceous Matrix

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR8/4 pink, hard fabric with powdery feel, not easily scratchable, fine fabric with less than 3% inclusions, rare rounded white/yellow inclusions, fine sparkling inclusions, rare rounded voids

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Sample Number 50

Artifact Number COR2013/50

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Very Fine Calcareous

Form Lekane

Vessel Part handle

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR7/6 reddish yellow, high fired smooth fabric that is not easily scratchable, 15% poorly sorted inclusions, rare large rounded white inclusions, common subangular red inclusions, fine fraction white inclusions, common rounded and elongated voids

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Sample Number 51

Artifact Number COR2013/51

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Chert and Quartz

Form Corinthian B amphora

Vessel Part neck

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR6/6 reddish yellow, hard fabric, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 52

Artifact Number COR2013/52

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian A' amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 5YR7/6 reddish yellow, hard fabric that is not easily scratchable, 10-15% poorly sorted inclusions, rare large rounded white inclusions, , common subrounded red and orange inclusions rare subangular gray inclusions, abundant round and elongated voids

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Sample Number 53

Artifact Number COR2013/53

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Mortar

Vessel Part rim

Type coarseware

Date of vessel Ca. 215-200 BC

Macroscopic Description 10YR8/3 very pale brown, 15% poorly sorted inclusions, common angular gray to red inclusions, subangular red inclusions, rare rounded white inclusions, rare to common rounded and elongated voids, hard fabric not easily scratchable

---

Sample Number 54

Artifact Number COR2013/54

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 10YR8/6 yellow, 3-5% well sorted inclusions, common fine rounded white inclusions, sparse fine sparkling inclusions, rare rounded voids, soft fabric that scratches easily with nail

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Sample Number 55

Artifact Number COR2013/55

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR8/4 pink, hard fabric with smooth exterior, wet fingerprint marks on interior from forming, fine fabric with less that 5% well sorted inclusions, fine rounded white inclusions, sparse fine fraction sparkling inclusions, common elongated and rounded voids

---

Sample Number 56

Artifact Number COR2013/56

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Fine Micaceous Matrix

Form Wide necked pitcher

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR7/6 reddish yellow, hard fabric with soft texture, small patch of red slip on exterior, fine fabric with less than 3% inclusions, rare rounded white/yellow inclusions, rare rounded voids

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Sample Number 57

Artifact Number COR2013/57

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Chert Sand

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR8/3-4 pink, 5% moderately sorted inclusions, common subrounded white and gray inclusions, rare to common fine sparkling inclusions, moderate to abundant rounded voids

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Sample Number 58

Artifact Number COR2013/58

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Calcareous Sand

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR6/6 reddish yellow, 3-5% well sorted inclusions, common fine rounded white inclusions, sparse fine sparkling inclusions, rare rounded voids, soft fabric that scratches easily with nail

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Sample Number 59

Artifact Number COR2013/59

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Chert Sand

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR8/3 pink, hard fabric with smooth surface that is not easily scratchable, 5-10% moderately sorted inclusions, common subrouned black and red, rounded gray and white/beige, fine fraction sparkling inclusions, common elongated voids

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Sample Number 60

Artifact Number COR2013/60

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 75YR8/4 pink, very hard, fine fabric, 5-7% inclusions, rare large angular reddish-orange inclusions (mudstone), rare rounded white inclusions, common to abundant rounded voids

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Sample Number 61

Artifact Number COR2013/61

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Very Fine Calcareous

Form Mortar

Vessel Part rim

Type coarseware

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR8/4 pink, hard fabric with smooth surface that is not easily scratchable, 5% moderately sorted inclusions, rare subangular red and black, rounded white inclusions, common amorphous and elongated voids

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Sample Number 62

Artifact Number COR2013/62

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Calcareous Sand

Form Wide necked pitcher

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR7/4 pink, hard fabric that is not easily scratchable, 10 -15% moderately sorted inclusions, common subrounded to rounded white and red inclusions, common rounded voids

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Sample Number 63

Artifact Number COR2013/63

Context Well 2002-2 (Lot 05-6)

Petroraphic Fabric Group Quartz and Mica

Form Lekane

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 215-200 BC

Macroscopic Description 7.5YR7/6 reddish yellow, soft fabric with powdery surface but does not scratch easily, fine fabric with less than 5% well sorted inclusions, fine fraction white and sparkling inclusions, common rounded voids

---

Sample Number 64

Artifact Number COR2013/64

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Quartz and Mica

Form Lekane

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 175 BC

Macroscopic Description 10YR8/3 very pale brown, hard fabric that is not easily scratchable, 1-3% well sorted inclusions, fine fraction black and red inclusions, rare elongated voids

---

Sample Number 65

Artifact Number COR2013/65

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Unflanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR5/4 reddish brown, smooth and hard surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 66

Artifact Number COR2013/66

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Unflanged stewpot

Vessel Part body sherd

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR6/6 reddish yellow, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 67

Artifact Number COR2013/67

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form type 2 casserole

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR6/6 reddish yellow (exterior), 5YR4/1 dark gray (interior), hard, smooth fabric, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated inclusions

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Sample Number 68

Artifact Number COR2013/68

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Unflanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR6/6 reddish yellow, hard fabric no easily scratchable, 20 -25% moderately sorted inclusions, common sunangular gray and rounded white inclusions, common to abundant rounded voids

---

Sample Number 69

Artifact Number COR2013/69

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Round mouth pitcher

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 175 BC

Macroscopic Description 7.5YR6/6 reddish yellow, hard fabric with smooth surface and evidence of burning/discoloration on exterior, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 70

Artifact Number COR2013/70

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Trefoil mouth pitcher

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 175 BC

Macroscopic Description 7.5YR6/6 reddish yellow, hard fired fabric with mottled gray-pink surface on interior and exterior, 10-15% moderately sorted inclusions, 10% moderately sorted inclusions, common subrounded to rounded gray and white-yellow inclusions, common ofvoid voids

---

Sample Number 71

Artifact Number COR2013/71

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Lid knob type 1

Vessel Part knob, body

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR5/4 reddish brown, hard and smooth fabric, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

---

Sample Number 72

Artifact Number COR2013/72

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Lid knob type 3

Vessel Part knob

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 7.5YR6/6 reddish yellow, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated inclusions

---

Sample Number 73

Artifact Number COR2013/73

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Lid knob type 1

Vessel Part knob, body

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR5/6 yellowish red (exterior), 5YR4/1 dark gray (interior), very hard and smooth fabric with evidence of burning or discoloration, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 74

Artifact Number COR2013/74

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Flanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR5/6 yellowish red, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 75

Artifact Number COR2013/75

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Saucepan

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR6/6 reddish yellow (core), 5YR4/1 dark gray (exterior), hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

---

Sample Number 76

Artifact Number COR2013/76

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form krater

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR5/6 yellowish red, hard fabric, not easily scratchable, 10 -15% moderately sorted inclusions, common subangular gray, rounded white and subrounded yellow inclusions

---

Sample Number 77

Artifact Number COR2013/77

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form type 1 casserole

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR5/6 yellowish red, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

---

Sample Number 78

Artifact Number COR2013/78

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Flanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR6/6 reddish yellow (interior), 5YR4/1 dark gray (exterior), hard fabric with smooth surface, lots of angular to rounded white inclusions on surface, 30% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions

---

Sample Number 79

Artifact Number COR2013/79

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form Round mouth pitcher

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 5YR5/6 yellowish red, hard surface not easily scratchable, 25% poorly sorted inclusions, large common subangular to subrounded white inclusions, common subrounded red and orange inclusions, rare rounded black inclusions, common rounded voids

---

Sample Number 80

Artifact Number COR2013/80

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Chert and Quartz

Form type 1 casserole

Vessel Part rim

Type cooking ware

Date of vessel Ca. 175 BC

Macroscopic Description 7.5YR4/2 brown, very hard with almost vitrified exterior, 25 -30$ moderately sorted inclusions, abundant subrounded to rounded gray, white and yellow inclusions,rare angular red inclusions, common elongated voids

---

Sample Number 81

Artifact Number COR2013/81

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 175 BC

Macroscopic Description 7.5YR8/3 pink soft, powdery fabric that scratches easily, very fine fabric with no visible inclusions, rare rounded voids

---

Sample Number 82

Artifact Number COR2013/82

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Quartz and Mica

Form wide-necked pitcher

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 175 BC

Macroscopic Description 7.5YR7/6 reddish yellow, 5-10% moderately sorted inclusions, common subrounded white inclusions, rare rounded red inclusions and subangular to subrounded gray inclusions, rare fine fraction sparkling, soft fabric that scratches easily with nail

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Sample Number 83

Artifact Number COR2013/83

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part neck

Type semi-coarse

Date of vessel Ca. 175 BC

Macroscopic Description 10YR8/4 very pale brown, 2-5% moderately sorted inclusions, rare angular white inclusions, subrounded orange-red inclusions, very fine sparkling inclusions, moderate elongated voids, hard fabric not easily scratchable

---

Sample Number 84

Artifact Number COR2013/84

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Quartz and Mica

Form peaked rim mortar

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 175 BC

Macroscopic Description 7.5YR5/4 pink, hard fabric, not easily scratchable, 5-10% moderately sorted inclusions, common to rare subangular to subrounded white and red inclusions, very rare sparkling fine fraction inclusions, common elongated voids

---

Sample Number 85

Artifact Number COR2013/85

Context Cistern 2003-2 (Lot 03-83)

Petroraphic Fabric Group Quartz and Mica

Form Shallow lekane

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 175 BC

Macroscopic Description 7.5YR6/6 reddish yellow, hard fired fabric that is not easily scratchable, 5-10% moderately sorted inclusions, common subangular to subrounded white inclusions, rare subangular red and black inclusions, , sparse fine fraction sparkling inclusions, common rounded and elongated voids

---

Sample Number 86

Artifact Number COR2013/86

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Quartz and Mica

Form Corinthian B amphora

Vessel Part body sherd

Type semi-coarse

Date of vessel Ca. 125-75 BC

Macroscopic Description 7.5YR7/6 reddish yellow, 5-10% moderately sorted inclusions, common subangular gray and subrounded red, no sparkling inclusions visible, very rare elongated voids

---

Sample Number 87

Artifact Number COR2013/87

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Krater

Vessel Part base

Type coarseware

Date of vessel Ca. 125-75 BC

Macroscopic Description 5YR6/8 reddish yellow, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated and rounded voids

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Sample Number 88

Artifact Number COR2013/88

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Krater

Vessel Part rim

Type semi-coarse

Date of vessel Ca. 125-75 BC

Macroscopic Description 5YR6/6 reddish yellow, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, common round and elongated voids

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Sample Number 89

Artifact Number COR2013/89

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Flanged stewpot

Vessel Part body sherd

Type cooking ware

Date of vessel Ca. 125-75 BC

Macroscopic Description 5YR6/6 reddish yellow, hard fired sherd with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 90

Artifact Number COR2031/90

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Lid

Vessel Part lid

Type cooking ware

Date of vessel Ca. 125-75 BC

Macroscopic Description 2.5YR5/6 red, 25% moderately sorted inclusions, common angular to subrounded white inclusions, rounded red inclusions, rare angular black inclusions, fine fraction rounded white inclusions

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Sample Number 91

Artifact Number COR2013/91

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Unflanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 125-75 BC

Macroscopic Description 5YR6/8 reddish yellow, 25% moderately sorted inclusions, common angular to subrounded white inclusions, rounded red inclusions, rare angular black inclusions, fine fraction rounded white inclusions

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Sample Number 92

Artifact Number COR2013/92

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Flanged stewpot

Vessel Part rim

Type cooking ware

Date of vessel Ca. 125-75 BC

Macroscopic Description 5YR6/6 reddish yellow, 25% moderately sorted inclusions, common angular to subrounded white inclusions, rounded red inclusions, rare angular black inclusions, fine fraction rounded white inclusions

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Sample Number 93

Artifact Number COR2013/93

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Round mouth pitcher

Vessel Part body sherd

Type cooking ware

Date of vessel Ca. 125-75 BC

Macroscopic Description 5YR5/6 yellowish red (interior), 5YR4/1 dark gray (exterior), very hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated inclusions

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Sample Number 94

Artifact Number COR2013/94

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Saucepan

Vessel Part rim

Type cooking ware

Date of vessel Ca. 125-75 BC

Macroscopic Description 7.5YR4/2 brown, hard smooth fabric that is fairly burnt, 10 -15% well sorted inclusions, sandy fabric, common subrounded to rounded white and gray inclusions, common rounded and elongated inclusions

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Sample Number 95

Artifact Number COR2013/95

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form type 1 casserole

Vessel Part rim

Type cooking ware

Date of vessel Ca. 125-75 BC

Macroscopic Description 5YR5/6 yellowish red (interior) 5YR5/1 gray (exterior), hard, smooth surface that may show traces of burning, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, common elongated voids

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Sample Number 96

Artifact Number COR2013/96

Context Floor Deposit (Lot 06-6)

Petroraphic Fabric Group Chert and Quartz

Form Casserole

Vessel Part handle, body sherd

Type cooking ware

Date of vessel Ca. 125-75 BC

Macroscopic Description 5YR5/6 yellowish red (interior) 5YR4/1 dark gray (exterior), hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 97

Artifact Number COR2013/97

Context Well 1960-1 (Lot 545)

Petroraphic Fabric Group Chert and Quartz

Form Flanged stewpot

Vessel Part body sherd

Type cooking ware

Date of vessel Ca. 10 BC

Macroscopic Description 5YR5/6 yellowish red, hard fabric with smooth surface, 15% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, fine fraction sparkling inclusions, rare elongated voids

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Sample Number 98

Artifact Number COR2013/98

Context Well 1960-1 (Lot 545)

Petroraphic Fabric Group Chert and Quartz

Form Flanged stewpot

Vessel Part body sherd

Type cooking ware

Date of vessel Ca. 10 BC

Macroscopic Description 5YR5/6 yellowish rd (interior), mottled red and grayish black exterior, hard fabric with smooth surface, 20% moderately sorted inclusions, common subangular to subrounded white inclusions, subangular gray inclusions, subrounded orange inclusions, rare angular black inclusions, common rounded voids

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Appendix V: Catalogue of Ceramics from Lerna

Sample Number 1

Publication Number 409

Context Well D1

Petrographic Fabric Group Clay Pellet and Mudstone

Form pithos

Vessel Part rim

Type coarseware

Date of vessel 420-400

Macroscopic Description Fabric 10YR 7/4, with yellow slip 10YR 8/3 to 2.5Y 8/3. Moderate medium to large black subangular and sparse medium red subuangular inclusions. Rim has flat top 4.8 cm wide. Possibly Corinthian fabric.

Sample Number 2

Publication Number 236

Context Well BA1

Petrographic Fabric Group Mudstone and Fine Quartz

Form pithos

Vessel Part body sherd

Type coarseware

Date of vessel 500-480 BC

Macroscopic Description Fabric 7.5YR 7/6, with grey core 7.5YR 5/1-6/1. Sparse fine sparkling, moderate small round light red, sparse small subangular dark grey to black inclusions. Impressed decoration.

Sample Number 3

Publication Number

Context

Petrographic Fabric Group

Form

Vessel Part

Type

Date of vessel

Macroscopic Description NO SAMPLE 3

Sample Number 4

Publication Number

Context

Petrographic Fabric Group

Form

Vessel Part

Type

Date of vessel

Macroscopic Description NO SAMPLE 4

Sample Number 5

Publication Number 264b

Context Well BA1

Petrographic Fabric Group Fine Quartz and Mica

Form roof tile

Vessel Part edge

Type coarseware

Date of vessel 500-480 BC

Macroscopic Description Fabric 5YR6/3. Moderate angular red inclusions.

Sample Number 6

Publication Number 551

Context Well BB

Petrographic Fabric Group Mudstone and Fine Quartz

Form lekane

Vessel Part rim, handle

Type semi-coarse

Date of vessel 400-375 BC

Macroscopic Description Fabric 7.5YR 7/4. Sparse small reddish brown, black and white subangular inclusions.

Sample Number 7

Publication Number 185

Context Well BA1

Petrographic Fabric Group Fine Quartz and Mica

Form krater

Vessel Part body sherd

Type semi-coarse

Date of vessel 500-480 BC

Macroscopic Description Fabric 7.5YR 7/4, with 10YR 8/3 slip and white wash interior. Moderate small to medium round white inclusions (max. diam. 0.3 cm), small reddish brown subangular inclusions, black subangular inclusions, small light grey shells. Exterior band of brown to reddish-brown gloss at lower body below handle zone.

Sample Number 8

Publication Number 296

Context Well BD1

Petrographic Fabric Group Chert and Quartz Group

Form cooking pot

Vessel Part rim

Type cooking ware

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR6/4. Mderate rounded red and sparkling inclusions.

Sample Number 9

Publication Number 72

Context PA4, lot 11

Petrographic Fabric Group Metamorphic Rock

Form cooking pot

Vessel Part rim, handle

Type cooking ware

Date of vessel 800-750, MG II

Macroscopic Description Reddish brown 5YR 5/4 to grey 10YR 5/2 fabric. Dense small to medium black angular (max. diam. 0.3 cm.), dense small to medium quartz (max. diam. 0.2 cm.), moderate brown subangular inclusions. Flat rim 1.1 cm wide. Round impression where handle meets rim. Handmade.

Sample Number 10

Publication Number 396

Context Well D1

Petrographic Fabric Group Quartz and Micrite

Form krater

Vessel Part rim

Type plainware

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 6/4. Sparse fine sparkling, sparse fine rounded white, fine subangular voids. Black gloss interior rim, exterior rim and band lower down. Top of rim reserved. Horizontal strap handle has black on outer face. Traces of white wash interior.

Sample Number 11

Publication Number 408

Context Well D1

Petrographic Fabric Group Quartz and Micrite

Form mortar

Vessel Part base

Type

Date of vessel 450-400 BC

Macroscopic Description Fabric 10YR 6/3-6/4. Sparse fines sparkling inclusions. Interior surface dense small to medium round and subangular black inclusions. Black gloss band exterior face of base and lower body.

Sample Number 12

Publication Number 397

Context Well D1

Petrographic Fabric Group Quartz and Micrite

Form krater

Vessel Part rim

Type plainware

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR 6/4-7/4. Sparse fine sparkling, fine subangular black, fine round white (thin and hollow). Reddish brown gloss on interior and exterior rim, exterior reserved zone near handle, and band or gloss lower down exterior. Interior white slip. Handle root preserves gloss.

Sample Number 13

Publication Number not published

Context Well BA1

Petrographic Fabric Group Mudstone and Fine Quartz

Form jug

Vessel Part rim

Type semi-coarse

Date of vessel 500-480 BC

Macroscopic Description Fabric 5YR6/4. Moderate rounded white inclusions.

Sample Number 14

Publication Number 345

Context Well A1

Petrographic Fabric Group Mudstone and Fine Quartz

Form lekane

Vessel Part rim

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Red fabric 5YR 6/6 and 5YR 6/6 slip. Moderate medium subangular grey inclusions, quartz.

Sample Number 15

Publication Number 404

Context Well D1

Petrographic Fabric Group Mudstone and Clay Pellet

Form table amphora

Vessel Part rim and upper body

Type plainware

Date of vessel 450-400 BC

Macroscopic Description Fabric 2.5Y 6/3, with 2.5Y7/4 slip. Moderate small subangular black and small round white to grey hollow inclusions (max. diam. 0.1 cm).

Sample Number 16

Publication Number 356b

Context Well A1

Petrographic Fabric Group Mudstone and Fine Quartz

Form mortar

Vessel Part rim

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fine sparkling, small subangular reddish-brown, white, and black inclusions. Dense medium to large grey and black subangular inclusions. Rolled rim.

Sample Number 17

Publication Number 179

Context Well BA1

Petrographic Fabric Group Fine Quartz and Mica

Form krater

Vessel Part rim, shoulder

Type plainware

Date of vessel 500-480 BC

Macroscopic Description Fabric 7.5YR 7/4-6/4. Sparse fine sparkling inclusions, small to medium round white (max. diam. 0.2 cm) and small subangular white, small subangular black inclusions. Small grey and white inclusions (max. diam. 0.1 cm). Reddish-brown gloss interior and top of rim; exterior band of reddish-brown gloss at rim and upper shoulder. Everted rim.

Sample Number 18

Publication Number 276

Context Well BD1

Petrographic Fabric Group Quartz and Micrite

Form krater

Vessel Part rim, shoulder

Type plainware

Date of vessel 450-400 BC

Macroscopic Description Black gloss interior and exterior. Fabric 7.5YR 6/4-7/4. Moderate fine sparkling and sparse fine round black inglusions. Flat rim 1.4 cm wide. Similar to early type in Well A and more square and better gloss than BA.

Sample Number 19

Publication Number 359

Context Well A1

Petrographic Fabric Group Mudstone and Fine Quartz

Form lekane or small pithos

Vessel Part rim

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR6/3. Moderate angular white and red inclusions.

Sample Number 20

Publication Number 221

Context Well BA1

Petrographic Fabric Group Mudstone and Clay Pellet

Form lekane

Vessel Part rim

Type semi-coarse

Date of vessel 500-480 BC

Macroscopic Description Yellow fabric 2.5Y 8/4. Sparse fine sparkling, dense medium to large subangular black and reddish black inclusions.

Sample Number 21

Publication Number 222

Context Well BA1

Petrographic Fabric Group Micrite, Microfossil and Clay Pellet

Form lekane

Vessel Part rim

Type semi-coarse

Date of vessel 500-480 BC

Macroscopic Description Fabric 10YR 7/4, with 10YR 8/3 slip. Sparse fine sparkling, sparse small round white (max. diam. 0.2 cm), small subangular dark grey inclusions. Rim has flat top 3.3 cm wide.

Sample Number 22

Publication Number not published

Context Well BA1

Petrographic Fabric Group Mudstone and Fine Quartz

Form closed vessel

Vessel Part base

Type semi-coarse

Date of vessel 500-480 BC

Macroscopic Description Fabric 5YR 7/6 to 7.5YR 6/4, with cream slip 10YR 7/2. Sparse fine sparkling, dense small to medium subangular dark grey to black inclusions, subangular small to medium reddish brown to reddish black (max. diam. 0.4 cm).

Sample Number 23

Publication Number 223

Context Well BA1

Petrographic Fabric Group Mudstone and Fine Quartz Group

Form lekane

Vessel Part rim

Type semi-coarse

Date of vessel 500-480 BC

Macroscopic Description Fabric 7.5YR 7/6. Dense large subangular reddish brown and reddish black inclusions (max. diam. 0.4 cm), moderate small round white inclusions. Rim has flat top 3.5 cm wide.

Sample Number 24

Publication Number 232

Context Well BA1

Petrographic Fabric Group Andesite

Form chytra

Vessel Part rim, shoulder

Type cooking ware

Date of vessel 500-480 BC

Macroscopic Description Fabric 5YR 6/6, with 5YR 5/4 core. Moderate fine gold mica, dense small subangular black inclusions, small to medium round light grey to yellow inclusions (max. diam. 0.2 cm), quartz. Brown wash. Faint vertical burnishing lines on shoulder.

Sample Number 25

Publication Number 528

Context Well BE

Petrographic Fabric Group Chert and Quartz

Form chytra

Vessel Part rim, shoulder

Type cooking ware

Date of vessel 450-400 BC

Macroscopic Description Fabric 2.5YR 5/6. Small white round and subangular inclusions, quartz (max. diam. 0.1 cm). Vertical strap handle.

Sample Number 26

Publication Number 350

Context Well A1

Petrographic Fabric Group Mudstone and Fine Quartz

Form lekane

Vessel Part rim

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 10YR 7/3, with 10YR 8/3 slip. Moderate medium to large subangular brown, subangular reddish black, and subangular dark grey to black inclusions (max. diam. 0.6 cm), sparse medium rounded to subangular white inclusions. Rim has flat top 3.4 cm wide.

Sample Number 27

Publication Number 517

Context Well BE

Petrographic Fabric Group Chert and Quartz

Form lekane

Vessel Part rim and upper body

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR 6/6. Small round white, quartz, and light grey subangular inclusions (max. diam. 0.2 cm). Interior surface coated with reddish-brown and dark grey inclusions (max. diam. 0.6 cm).

Sample Number 28

Publication Number

Context

Petrographic Fabric Group

Form

Vessel Part

Type

Date of vessel

Macroscopic Description NO SAMPLE 28

Sample Number 29

Publication Number 358

Context Well A1

Petrographic Fabric Group Mudstone and Fine Quartz

Form pithos

Vessel Part rim

Type coarseware

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 7/6. Sparse fine sparkling, moderate small subangualar red, moderate small to medium rounded to subangular dark grey inclusions (max. diam. 0.3 cm). Rim has slightly rounded top 6.7 cm wide.

Sample Number 30

Publication Number 227

Context Well BA1

Petrographic Fabric Group Fine Quartz and Mica

Form mortar

Vessel Part rim

Type semi-coarse

Date of vessel 500-480 BC

Macroscopic Description Brown fabric 10YR 6/4. Sparse small subangular black inclusions. Black gloss interior and exterior. Flat rim 1.6 cm wide.

Sample Number 31

Publication Number 521

Context Well BE

Petrographic Fabric Group Mudstone and Fine Quartz

Form mortar

Vessel Part rim and upper body

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR 6/6, with cream slip exterior, top of rim, and interior upper wall (7.5YR 8/4). Interior surface coated with sparse fine gold mica and dense medium to large subangular reddish brown and black inclusions (max. diam. 0.4 cm).

Sample Number 32

Publication Number not published

Context Well A1

Petrographic Fabric Group Andesite

Form cooking pot

Vessel Part handle

Type cooking ware

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR4/1. Sparse angular white and sparkling inclusions.

Sample Number 33

Publication Number 528b

Context Well BE

Petrographic Fabric Group Chert and Quartz

Form cooking pot

Vessel Part rim

Type cooking ware

Date of vessel 450-400 BC

Macroscopic Description Fabric 10YR 5/3. Striations on neck.

Sample Number 34

Publication Number 224

Context Well BA1

Petrographic Fabric Group Mudstone and Clay Pellet

Form lekane

Vessel Part rim, handle

Type semi-coarse

Date of vessel 500-480 BC

Macroscopic Description Fabric 2.5Y 7/4, with yellow slip 2.5Y 8/3. Sparse large round white inclusions (max. diam. 0.4 cm), moderate large red/black exterior inclusions (max. diam. 0.4 cm), moderate medium black subangular inclusions (max. diam. 0.2 cm). Well BA1.

Sample Number 35

Publication Number not published

Context PA4, Lot 11

Petrographic Fabric Group Metamorphic Rock

Form cooking pot

Vessel Part rim

Type cooking ware

Date of vessel 800-750, MG II

Macroscopic Description Fabric 5YR5/2. Moderate angular white and sparkling inclusions.

Sample Number 36

Publication Number 350

Context Well A1

Petrographic Fabric Group Clay Pellet and Mudstone

Form mortar

Vessel Part rim and upper body

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 6/4, with buff slip 10YR 8/3 to 2.5Y 8/3. Dense small to medium subangular dark grey, black, reddish black, and red inclusions (max. diam. 0.4 cm). Interior surface with dense medium subangular dark grey to black.

Sample Number 37

Publication Number 527

Context Well BE

Petrographic Fabric Group Andesite

Form chytra

Vessel Part body sherd

Type cooking ware

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR5/1. Moderate angular white and sparkling inclusions.

Sample Number 38

Publication Number

Context

Petrographic Fabric Group

Form

Vessel Part

Type

Date of vessel

Macroscopic Description NO SAMPLE 38

Sample Number 39

Publication Number 233b

Context Well BA1

Petrographic Fabric Group Andesite

Form cooking pot

Vessel Part rim

Type cooking ware

Date of vessel 500-480 BC

Macroscopic Description Fabric 5YR5/1. Moderate angular white and sparkling inclusions. Striation along rim.

Sample Number 40

Publication Number not published

Context PA4, lot 11

Petrographic Fabric Group Metamorphic Rock

Form cooking pot

Vessel Part handle

Type cooking ware

Date of vessel 800-750, MG II

Macroscopic Description Sparse small sparkling inclusions, sparse small gold mica, moderate small round light grey inclusions, moderate small subangular dark grey to black inclusions, sparse small subangular reddish black inclusions, moderate angular light grey inclusions, moderate small quartz. Handmade.

Sample Number 41

Publication Number 512

Context Well BE

Petrographic Fabric Group Clay Pellet and Mudstone

Form louterion

Vessel Part rim

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric: buff (10YR 7/4) with pink core (2.5YR 7/4). Buff slip 10YR 8/4. Small round white (max. diam. 0.1 cm) and large dark grey and reddish brown subangular inclusions (max. diam. 0.3 cm), with possibly a fleck of silver mica. Black gloss on outer edge of top of rim and outer face, red band on outer face, black band at bottom outer face

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Sample Number 42

Publication Number 77

Context PA4, Lot 11

Petrographic Fabric Group Metamorphic Rock

Form chytra

Vessel Part rim and upper body

Type cooking ware

Date of vessel 800-750, MG II

Macroscopic Description Sparse small sparkling inclusions, sparse small gold mica, moderate small round light grey inclusions, moderate small subangular dark grey to black inclusions, sparse small subangular reddish black inclusions, moderate angular light grey inclusions, moderate small quartz. Handmade.

Sample Number 43

Publication Number 233

Context Well BA1

Petrographic Fabric Group Chert and Quartz

Form cooking pot

Vessel Part rim

Type cooking ware

Date of vessel 500-480 BC

Macroscopic Description Fabric 5YR 6/6, with grey core 5YR 5/4. Moderate small round white inclusions (max. diam. 0.1 cm).

Sample Number 44

Publication Number

Context PB2, Lot 3

Petrographic Fabric Group Metamorphic Rock

Form cooking pot

Vessel Part body sherd

Type cooking ware

Date of vessel 875-750, EG II or MG

Macroscopic Description Fabric 5YR4/1. Moderate angular white and sparkling inclusions.

Sample Number 45

Publication Number 519

Context Well BE

Petrographic Fabric Group Mudstone and Fine Quartz

Form mortar

Vessel Part rim and upper body

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 7/6, with cream slip on top of rim (10YR 8/3) Slip on rim. Interior surface coated with sparse fine gold mica and dense medium to large subangular dark grey to black inclusions (max. diam. 0.4 cm).

Sample Number 46

Publication Number 528b

Context Well BE

Petrographic Fabric Group Andesite

Form cooking pot

Vessel Part rim and upper body

Type cooking ware

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 5/4, with 5YR 6/4 surface. Moderate fine gold mica, dense fine subangular black, and fine round white inclusions.

Sample Number 47

Publication Number 457

Context Well GK1

Petrographic Fabric Group Mudstone and Fine Quartz

Form pithos

Vessel Part rim

Type coarseware

Date of vessel 450-400 BC

Macroscopic Description Red fabric 2.5YR 6/6 to 5YR 6/6, with yellow slip 2.5Y 8/3 on rim and collar. Dense small to medium rounded to subangular white inclusions.

Sample Number 48

Publication Number 614

Context Well DB1, lot C

Petrographic Fabric Group Quartz and Micrite

Form cup

Vessel Part rim

Type fineware

Date of vessel 300-275 BC

Macroscopic Description Black gloss interior and exterior. Fabric 7.5YR 6/4-7/4. Moderate fine sparkling and sparse fine round black inclusions.

Sample Number 49

Publication Number

Context

Petrographic Fabric Group

Form

Vessel Part

Type

Date of vessel

Macroscopic Description NO SAMPLE 49

Sample Number 50

Publication Number

Context PB2, lot 3

Petrographic Fabric Group Micrite and Quartz

Form cooking pot

Vessel Part body sherd

Type cooking ware

Date of vessel 875-750, EG II or MG

Macroscopic Description Fabric 5YR5/4. Abundant angular white, milky and red inclusions.

Sample Number 51

Publication Number 352b

Context Well A1

Petrographic Fabric Group Mudstone and Fine Quartz

Form lekane

Vessel Part rim

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR7/4. Moderate angular red inclusions.

Sample Number 52

Publication Number 348

Context Well A1

Petrographic Fabric Group Mudstone and Fine Quartz

Form lekane or pithos

Vessel Part rim

Type coarseware

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR 7/4 and 10YR 8/3 slip. Sparse small white round inclusions (max. diam. 0.3 cm); dense medium to large subangular black and reddish brown inclusions (max. diam. 0.6 cm).

Sample Number 53

Publication Number 516

Context Well BE

Petrographic Fabric Group Mudstone and Fine Quartz

Form lekane

Vessel Part rim

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 7/6, with slip 10YR 8/4. Fine sparkling inclusions and large rounded white and angular reddish-brown inclusions. Flat rim 3.5 cm wide.

Sample Number 54

Publication Number 620

Context DB1, Lot 35

Petrographic Fabric Group Quartz and Micrite

Form bowl

Vessel Part rim, shoulder

Type semi-coarse

Date of vessel 300-275 BC

Macroscopic Description Fabric 7.5YR 6/4-7/4. Sparse fine sparkling, sparse small white rounded and yellowish light grey rounded inclusions. Black gloss interior rim and outer edge of rim.

Sample Number 55

Publication Number not published

Context DB1, lot 35

Petrographic Fabric Group Chert and Quartz

Form cooking pot

Vessel Part rim

Type cooking ware

Date of vessel 300-275 BC

Macroscopic Description Not catalogued

Sample Number 56

Publication Number 31

Context PA3, lot 17

Petrographic Fabric Group Quartz and Micrite

Form amphora

Vessel Part neck

Type semi-coarse

Date of vessel 800-750 BC

Macroscopic Description Fabric 7.5YR 6/4-7/4, with 10YR 7/4 slip. Sparse fine sparkling, moderate fine round black, moderate medium subangular reddish brown inclusions, moderate medium subangular white inclusions, sparse medium round yellowish grey inclusions. Dark reddish brown to black gloss exterior rim with bands at neck and gear pattern.

Sample Number 57

Publication Number 522

Context Well BE

Petrographic Fabric Group Mudstone and Micrite

Form pithos

Vessel Part rim

Type coarseware

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 7/6, with buff yellow slip 10YR 7/4-8/4. Large angular white, dark grey, and black inclusions (max. diam. 0.4 cm). Flat top 6.0 cm wide.

Sample Number 58

Publication Number 583

Context Well BC

Petrographic Fabric Group Quartz and Micrite

Form lekane

Vessel Part rim and upper body

Type semi-coarse

Date of vessel 300-275 BC

Macroscopic Description Fabric 7.5YR 6/4. Sparse fine sparkling, sparse fine rounded to subangular white, sparse fine subangular black inclusions.

Sample Number 59

Publication Number 635

Context Well DB1, lot C

Petrographic Fabric Group Quartz and Serpentinite

Form cooking pot

Vessel Part rim

Type cooking ware

Date of vessel 300-275 BC

Macroscopic Description Red fabric 2.5YR 5/4. Moderate fine rounded to subangular white, fine subangular black, quartz.

Sample Number 60

Publication Number

Context

Petrographic Fabric Group

Form

Vessel Part

Type

Date of vessel

Macroscopic Description NO SAMPLE 60

Sample Number 61

Publication Number 356

Context Well A1

Petrographic Fabric Group Quartz and Micrite

Form mortar

Vessel Part base

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 6/4, with polished 7.5YR 7/4 surface. Sparse fine sparkling inclusions. Interior surface with dense medium rounded to subangular dark grey to black (max. diam. 0.3 cm), sparse small rounded to subangular white inclusions.

Sample Number 62

Publication Number 587

Context Well BC

Petrographic Fabric Group Quartz and Micrite

Form lekane

Vessel Part rim and upper body

Type semi-coarse

Date of vessel 300-275 BC

Macroscopic Description Fabric 2.5YR6/6 to 5YR 6/6, with 7.5YR 7/4 slip. Sparse fine sparkling, sparse rounded yellowish light grey inclusions, sparse fine rounded to subangular white inclusions. Rim has flat top 3.2 cm wide.

Sample Number 63

Publication Number 472b

Context Well GK1

Petrographic Fabric Group Chert and Quartz

Form cooking pot

Vessel Part rim and upper body

Type cooking ware

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR 5/4, with grey 10YR 4/1 surface. Sparse fine sparkling, moderate small white rounded to subangular, small yellowish light grey round, and quartz (no mica). Striated lines on shoulder from burnishing.

Sample Number 64

Publication Number 346

Context Well A1

Petrographic Fabric Group Quartz and Micrite

Form lekane

Vessel Part rim

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Fabric 5YR 6/4, with yellow 10YR 8/3 to 2.5Y 8/3 slip. Sparse small white rounded to subangular, sparse small black subangular.

Sample Number 65

Publication Number 458

Context Well GK1

Petrographic Fabric Group Mudstone and Fine Quartz

Form pithos

Vessel Part rim

Type coarseware

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 7/4, with polished surface 10YR 7/4. Sparse fine sparkling inclusions, moderate to dense medium red subangular, moderate small black subangular inclusions.

Sample Number 66

Publication Number 459

Context Wekk GK1

Petrographic Fabric Group Mudstone and Fine Quartz

Form pithos

Vessel Part rim

Type coarseware

Date of vessel 450-400 BC

Macroscopic Description Fabric 7.5YR 6/3, with polished surface 10YR 7/3. Dense medium to large subangular black (max. diam. 0.5 cm), sparse small to medium round white inclusions.

Sample Number 67

Publication Number 457

Context Well GK1

Petrographic Fabric Group Mudstone and Fine Quartz

Form pithos

Vessel Part rim

Type coarseware

Date of vessel 450-400 BC

Macroscopic Description Red fabric 2.5YR 6/6 to 5YR 6/6, with yellow slip 2.5Y 8/3 on rim and collar. Dense small to medium rounded to subangular white inclusions.

Sample Number 68

Publication Number 228

Context Well BA1

Petrographic Fabric Group Mudstone and Fine Quartz

Form pithos

Vessel Part rim

Type coarseware

Date of vessel 500-480 BC

Macroscopic Description Fabric 5YR 6/6-7/6 to 7.5YR 7/6. Sparse fine sparkling inclusions, dense large subangular dark grey to black, dense large subangular reddish brown inclusions (max. diam. 0.9 cm). Rounded rim 7.4 cm wide.

Sample Number 69

Publication Number

Context

Petrographic Fabric Group

Form

Vessel Part

Type

Date of vessel

Macroscopic Description NO SAMPLE 69

Sample Number 70

Publication Number 405

Context Well D1

Petrographic Fabric Group Clay Pellet and Mudstone

Form louterion

Vessel Part rim and upper body

Type semi-coarse

Date of vessel 450-400 BC

Macroscopic Description Orangish brown fabric 7.5YR 6/4-7/4, with 7.5YR 7/4 polished surface. Sparse fine sparkling, moderate medium to large rounded to subangular white inclusions (max. diam. 0.6 cm), moderate small to medium subangular dark grey to black inclusions, sparse medium quartz. Rim has flat top 5.3 cm wide.

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