Mycenaean Workshops in Domestic Contexts

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To St. Philomena,

Whose help and intercession made the completion of this work possible
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Figure 1: Site Location Map
Abstract

Palatial involvement in the Mycenaean economy has long been a subject of debate in Mediterranean archaeology and many studies have been made of workshops belonging to Mycenaean palatial complexes. This thesis seeks to determine the role, if any, of possible domestic production in Mycenaean Greece based on published reports of excavated material.

First, an outline of already existing research is given in the introduction and the research period and area of this thesis are defined. Questions that are central to this thesis are presented and the sources and methods used to answer these questions are given. A brief outline of the structure of the thesis is also given in this section.

Next follows a description of the geographical setting of the research area and the social organisation of Mycenaean states and the place household production could hold in this context. Also included in this chapter is a summary of the different economical models used to interpret the Mycenaean economy and the criteria for identifying a Mycenaean workshop is outlined.

Thirdly, sites selected using the criteria discussed in the previous section are examined for signs of industrial activity on a large scale. These sites are then compared to each other on an inter-regional as well as an intra-regional level and the possibility and role of private enterprise in Mycenaean Greece is subsequently discussed based on the evidence presented in this thesis.

In the conclusion it is seen that it is difficult to identify workshops of the Mycenaean period as it is difficult to differentiate between dependent and independent craftsmen, though the existence of local, decentralised, manufacturing activity can be demonstrated at certain sites. Finally, the need for more information by making already existing information readily accessible and conducting more research is addressed.
Introduction
Centralisation of production and craft specialisation in Late Bronze Age Greece has been the subject of much debate in Mediterranean archaeology. Many aspects, like the access to, and control of prestige items and the production of these items, have been addressed to either weaken or strengthen the central role played by the monumental, fortified megaron structures of the Late Helladic economies. Most of these facets have been studied from the viewpoint of the palace (elite) itself and literary as well as archaeological evidence has been used to analyse the problem from this perspective. The object of this thesis is to approach this subject from the opposite end of the spectrum; to determine the role of decentralised manufacturing activities conducted in domestic Mycenaean contexts in the Late Helladic III A and B periods.

1.1 Existing research into workshops in Mycenaean domestic contexts
Production is one of the most intensively studied topics in Aegean archaeology in general and the archaeology of Late Helladic Greece in particular. Most of the attention, however, is focused on the end result (trade and trade networks) rather than on the actual production process. When this subject is studied it is usually from the viewpoint of the palace (elite) itself, using literary as well as archaeological evidence to analyse the problem from this perspective.

Looking at the opposite end of the spectrum, at the amount of research carried out specifically on the level of the Mycenaean household and its economical presence, it can be seen that this approach is underrepresented. The majority of the research focusing on the common segment of the Greek population of the Late Helladic is concentrated on funerary contexts and domestic architecture. Research of the latter concentrates primarily on the classification of house types in domestic architecture but comes the closest to analysing the use of space for industrial purposes in a Mycenaean household. Two of the most recent publications on this subject are L’Habitat Mycénien; Formes et fonctions de l’espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C. by P. Darcque and Späthelladische Hausarchitektur: Studien zur Architekturgeschichte des griechischen Festlandes in der späten Bronzezeit by G. Hiesel, published in 2005 and 1990 respectively.

Information on, and research of, the use of space for industrial purposes in domestic contexts is much less organised and dealt with only rarely in articles like I. Tournavitou’s Towards an Identification of a Workshop Space published in 1986. Other more recent attempts at focusing on production at household level are made by G.C. Nordquist in her articles What About Production? Production in the Middle Helladic Frame (1997) and Who made the pots? Production in the MH society (1995), both of which examine the problem addressed in this thesis, but for an earlier period.

During the past two decades workshops on the different facets of trade and production have also been held by the Swedish Institute in Athens. This resulted in the publication of a book on each subject central to these workshops. In 1993 the workshop focused on trade itself, in 1994 the workshop concentrated specifically on production whilst the workshop held in 1995 focused on the craftsmen and his or her place in society. The final workshop, held in 1996, studied raw materials and finished products with the intention of placing production and trade in a social context. From these workshops it became apparent that it was essential to clearly define the borders of a subject as complex as trade and production if any good is to be done studying this subject (Gilles & Sjöberg 1995, 2008 and Gilles, Risberg & Sjöberg 2000).
1.2 Definition of the Research Object

1.2.1 Target Research Period and Chronology

Domestic contexts discussed in this thesis belong to the Late Helladic Period, which is usually held to start at around 1600 B.C. and continues until 1050 B.C., when most (major) Mycenaean sites show signs of destruction and the period known as the Dark Ages begins.

Pottery typologies form the basis of the system used to divide the Greek Bronze Age into three distinct phases. Dates arrived at using this method are sensitive to the developing understanding of pottery typologies of this period with the result that the emergence or disappearance of particular cultures do not correspond with the ending or beginning of a new stage in the traditional tripartite chronology.

Traditionally, the Bronze Age in mainland Greece is called the Helladic period and is divided into Early, Middle and Late Helladic. These three stages are each subdivided into three phases; I, II and III. With the increased understanding of the Helladic chronology the existing division of this period has been refined again by dividing the earlier subdivisions into three; known as A, B and C. Often the period being discussed in the text is referred to in an abbreviated form (i.e. Late Helladic III A is noted as LH III A) (Finley 1970, 10-12).

Only the households of the LH III A and B periods which showed possible signs of industrial activity were incorporated in this thesis because they evolved and functioned in the Mycenaean state in its most stable form, with relatively little cultural and social upheaval. Sites that showed potential signs of household production in LH III C (subsequent to the destruction of the more important palatial centres) are not included in this thesis as it is possible that the social organisation concerning possible control of industries by the elite associated with these now destroyed palaces may have changed the way the Mycenaean economy originally functioned.

1.2.2 Geographical Area

During the Late Bronze Age the Greek mainland was characterised by a uniform culture (referred to as Mycenaean) found in settlements throughout Central Greece, the Peloponnese and Thessaly. Most Mycenaean sites, however, are found in the Peloponnese and Central Greece, which are the better documented areas of the Mycenaean sphere of influence. For this reason only sites from Central Greece and the Peloponnese were included in this thesis.

Due to the well-known difficulty of recognising workshops it was important to clarify at the outset which finds would (strongly) indicate that a building had been an independent industrial unit. This enabled a systematic approach for assessing the contents of an excavated building in order to ascertain whether or not it qualified for inclusion in this thesis.
Since it is difficult to establish the independence of a building with respect to the palatial complex it was decided that the position of the building within the settlement would indicate the degree of dependence on the administrative centre. Buildings located within the acropolis of a settlement were held to be dependent on the palace whilst buildings outside the acropolis have been treated as possibly (semi-) independent.

Primary indications of industrial activity in a household were held to be the presence of tools, raw materials, waste, half finished and finished products, and built-in features like drains and bothroi. Secondary indicators of household production were storage space and pottery types linked to various production processes.

1.3 Research Questions

The main question of this thesis; is quite simple but difficult to answer because too much and too little is known about it; To what extent were decentralised manufacturing activities conducted in Mycenaean domestic contexts in the Late Bronze Age?

This question is difficult to answer because there is so little archaeological evidence to be able to properly understand the role of household production in Mycenaean Greece. Much of the evidence for industrial activity is provided by the Linear B tablets; the information given by these tablets highlights the position of the palace in the economy and discourages the possibility of there being other contributors/participants in exchange relations (mainly by the tablets silence on production not associated with the palace).

Sub-questions are:

- What is the position of (domestic) production in the economy in Mycenaean Greece? Answering this question involves looking at both known production sites and possible production sites. An analysis of what was produced at these sites by who and for whom will give an idea of what place production held in the economy. Various economic models are also discussed to see where domestic production might fit into the economy of the Late Helladic period.

- What is the evidence for domestic industrial activity in Mycenaean Greece and if this aspect of production existed how did it develop? Excavation reports were examined for mention of tools and/or signs of industrial activity in a domestic context. Building plans were examined to see if any structural changes were made to cater to industrial activity on any scale.

- What place does the manufacture of artefacts take in the Mycenaean household? Positions of tools, in-built features and storage space all give an idea of how much any production process dominated Mycenaean households.

- What role would the domestic production have played in the Mycenaean economy? Using the answers of the preceding sub-questions to determine the existence of potential household production the role of this production is also analysed within both the household and the economy. This is done by comparing production sites within the settlements themselves but also comparing settlements with other settlements.
1.4 Set-up of thesis

The information presented in this thesis it has been divided into three parts. First the geographical setting, archaeological period, social organisation and economic background of the Mycenaean sites have been briefly outlined. The problems of, and criteria for, workshop recognition is also discussed in this section. Secondly, sites which show evidence for decentralised industrial activity are presented and in the third section inter-and intra regional comparisons between the sites are made. Finally a discussion of the main question follows and a conclusion is drawn based on the presented evidence and further research recommendations are given.
2.1 Geographical Setting

2.1.1 The Peloponnese

The Peloponnesian Peninsula is the southernmost part of the Greek mainland and is connected to central Greece by the isthmus of Corinth over which the Pindus Range continues into the central and southern Peloponnese. A strip of flat land forms a coastal plain on the northern and western coastlines whilst the southern and eastern coasts are fairly rugged with four peninsulas jutting into the Aegean from the southern coast. These peninsulas are, from west to east, Messenia, the Mani peninsula, Cape Malea and the Argolid. Between these peninsulas, from west to east, are the Messenian, Laconian and Argos gulfs. The most fertile plains in the Peloponnese are the Messenian, Corinthian and Argolic plains (Castleden 2005, 23-48).

The Argolid

Separated from Messenia by Laconia the Argolid was one of the most densely populated regions in Greece during Mycenaean times, despite its mountainous character. The (for Greek standards) extraordinary fertility of the plain allowed it to support large populations in various settlements. Permanent settlements in the plain with accompanying complex social structures emerged in the Neolithic with the advent of animal husbandry and agriculture. During the Late Bronze Age the citadels of Mycenae, Argos, Tiryns, Midea, Berbati and Asine were founded (Zangger 1993, 1 - 4).

Corinthia borders the region to the north and Laconia to the west. The sheltered shore of the coast of the Gulf of Argos provided an excellent anchorage for ships which brought about the founding of Bronze Age towns located on the coast and further inland. The position of the coast has fluctuated throughout history with the coastline in the Mycenaean period lying further inland than the coastline of the present day (the Mycenaean coastline was only 1 km away from Tiryns).

The plain itself provided a direct and easy land route to the isthmus of Corinth via the Kontoporeia pass and Asinaia and was used for pasture and to grow corn during the Late Bronze Age. Control of the trade routes across the peninsula generated most of the wealth which allowed the growth of the cities in the Argolid (Tomlinson 1972, 7-12).

Messenia

The western most peninsula in the southern Peloponnese is Messenia; it borders on Laconia and Arcadia to the east and Elis to the north. Messenia is separated from Laconia by the Taygetus mountains while the Alpheius river forms a boundary between Elis and Messenia and the Phigalean range separates Messenia from Arcadia. Communication between Arcadia and Messenia is made possible by two passes in the Phigalean range which give direct access to Pylos and Laconia. These routes are dominated by the town Messene, through which they pass.

Messenia can be divided into two parts; a mountainous area jutting into the Aegean and a very fertile plain on the western coast. This plain is divided by a line of low hills that run from the foothills of the Taygetus mountains to the Phigalean. Flax was grown in this region and flocks of goats and sheep were kept for their wool which was used in the textile industry that Messenia became known for. A lack of ancient remains found on this plain could be the result of a conscious decision not to build on fertile flat land in this period (McDonald 1972, 36, Roebuck 1941, 1-26).

The Corinthia

Unlike other regions of Greece this area has no natural boundaries. Borders were defined by the political influence of Corinth on the surrounding territory; what is usually seen as Corinthia today is
the area controlled by Corinth in 570/560 B.C. This is, for the most part, a fertile plain located on the north eastern coast of the Peloponnese, directly south of the isthmus of Corinth. It is formed by a series of three terraces that rise towards the south where the Arachnaion mountain range separates Attica from Corinthia. To the north-east the Saronic Gulf forms the natural boundary and to the west the boundary between Corinthia and Achaea lies near the city of Sicyon. Access to the Greek mainland is provided by the isthmus of Corinth and access to the Argos plain by the Kontoporeia and Tretos passes. Although the Tretos pass was the shorter of the two it was only suitable for pedestrian traffic and the Kontoporeia pass was considered the shortest land route for other means of transportation (Sakellariou & Faraklas 1971, 3, Hope Simpson 1981, 33).

Important cities in this region were Corinth and Sicyon whilst Zygouries and Korakou were settlements of secondary importance. As opposed to the coastline of the Argolid Corinthia does not have good natural harbours; it is possible to only anchor off the coast at certain points on this northern coast of the Peloponnese. Though the economy of this region was based on agriculture the strategic position of the isthmus allowed trade to form an important part of the economy (Hope Simpson 1981, 33).

2.1.2. Central Greece

Like the Peloponnese Central Greece is a well-defined geographical unit and is the part of the Greek mainland located north of the Peloponnese and south of Thessaly and Aetolia. This region is mountainous with the predominant geographical feature being the Pindus mountain range that runs through the length of Central Greece and extends into the Peloponnese. The Amvrakikos Gulf on the Ionian coast marks the northern boundary of this region and the Gulf of Corinth and the Saronic Gulf mark the southern boundary. To the west Mount Oeta separates Thessaly from Central Greece and to the east Central Greece ends in the Aegean (Hope Simpson 1981, 59).

Mountain ranges divide this area into four smaller regions which are, from north to south, Euboea, Phocis, Boeotia and Attica. As a result of the mountainous nature of this part of Greece the soil is poor, with the exception of Boeotia which has very fertile plains. The coastline does provide good natural harbours, especially in Attica, which led to an economy based mainly on trade.

Attica

Attica is a mountainous peninsula projecting into the Aegean and connected to the Peloponnese via the isthmus of Corinth and borders on the Corinthia to the south, Boeotia to the north-west and the Saronic Gulf to the south-east. A range of mountains belonging to the Cithaeron massif, which runs approximately east to west, coast to coast, forms the border between Attica and Boeotia. The Parnassian mountain range runs along the length of the peninsula south-eastward towards Athens and the landscape is very rugged. There is a general lack of fertile soil and large rivers but the region produced figs, olives and honey in large amounts during the Late Bronze Age. Remnants of a Mycenaean citadel were found at Athens and Eleusis was the site of an important sanctuary dedicated to Demeter (Vermeule 1964, 2 & Buck 1979, 2).
2.2 Archaeological Background

2.2.1 Archaeological Period

Foundation for the Late Helladic, Mycenaean culture, were laid in the preceding, Middle Helladic, period. A seemingly less developed culture replaced that of the Early Helladic although the use of metallurgy and monumental architecture remained widespread. What marks this culture as different is the introduction and widespread use of Minyan and Matt Painted Ware. After a period of comparative isolation and limited trade, social and economical developments (such as urbanisation and intensification of trade) characteristic of the EH period reappeared in the Middle Helladic period. Long distance trade routes were re-established and settlements increased in size and wealth again (Dietz 1991, 294, Finley 1970, 47-57).

The social and economical developments of the Middle Bronze Age laid the foundations for the Mycenaean period that followed. Nucleation of settlement patterns and the increase in population and wealth meant that certain segments of the population could specialise and were no longer dependant on agriculture for their survival. It has also been established that it is in this period that the Linear B script was developed.

During the LH III period the mainland of Greece was divided into several small ‘kingdoms’ which could have been either independent or subordinate to a larger centre. The main settlement of a region is usually recognised by the presence of a palace located on a fortified acropolis which was the administrative, bureaucratic and religious centre of the region and the seat of the local elite. These centres controlled, to an as yet undiscovered degree, the surrounding region with its farms, resources and other settlements (clay tablets recording palatial transactions were only found at Mycenae and Pylos). These palatial complexes were used as administrative centres where detailed documentation of the goods delivered to, and redistributed by the palace were kept on clay tablets. As the titles of the participants involved in this redistributive system were also recorded it has been possible to reconstruct (to some degree) the social hierarchy of the period (Castleden 2005, 23).

Some Mycenaean palaces bear marks of destruction that have been dated to the end of LH III A2 or the beginning of LH III B and have been rebuilt and/or enlarged; this period is known as the neo-palatial period and is seen as the most advanced stage of the Mycenaean civilisation. At the end of the LHIIB period destructions mark the beginning of the end of this bureaucracy based culture.

The palaces at Tiryns, Pylos and Mycenae, amongst others, were burnt and not rebuilt. Settlements once again decrease in size and are less affluent. The cause of these widespread destructions is not known and are a subject of debate. What has come to be called the Dark Ages follows this last period of the Bronze Age and the Iron Age succeeds it (Middleton 2008, 35-40).

2.2.2 Social Organisation

A reconstruction of the Mycenaean social hierarchy may not be entirely possible because complete records that represent all strata’s of society are missing. The source that reveals the most about the social structure of this period are the Linear B tablets, found mainly at the palatial centres of Mycenae and Pylos. These accounts of the resources delivered to, and redistributed by, these two administrative centres give some details of the economic situation in these institutions and the social hierarchy that was involved in the economical transactions of these complexes (Middleton 2008, 26).
A person with the title of wanax is generally held to be the head of state whilst a person referred to as lawagetas has been recognised as an official second in importance only to the wanax. The lawagetas is also recognised as an important landholder. What might be interpreted as an elite is formed by the telestai who are also landholders but it is unclear if their role is a religious or secular one. Heqetai are generally held to form a warrior class while the quasilei are seen as village chieftains or as men in charge of a group of workers (smiths or bakers for example) which are in turn referred to as kamaeus.

At the bottom of this social structure is a large class referred to as doeros/doera which encompasses not only chattel-slaves but also semi-independent individuals that could be assigned by the palace to perform certain tasks but who could also be sent to the palace to fulfil an obligation owed by their owner to the palace (de Fidio 2001, 15-24 & Killen 2006, 90).

It is generally thought that the bureaucracy evidenced by the content of the clay tablets found at the two palatial centres was the mainstay of the social organization, which was based largely on agriculture and trade. The administration was extremely detailed and appears to be centred on the palace to such a degree that a debate has been waged for some time about the nature of the economy of this period. One theory that has gained in popularity is that the palaces were large storehouses where a Marxist system of scribes gathered all the produce of the region for redistribution. Another, older theory, is that the palaces are Bronze Age equivalents of feudal centres of a region where an overlord lived and the palace was equipped with the characteristic large amounts of storage place to be able to accommodate all the taxes paid in natura to the feudal overlord (Deger-Jalkotzy, S. & Lemos, I.S (ed) et al 2006, 73-85).

2.2.3 Economical Models

Any attempt to understand the economy of the mainland in the Late Bronze Age becomes immediately and inextricably linked to the social structure of the period. As mentioned in the previous paragraphs this is because of the literary evidence provided by the clay tablets found in the palatial centres that document the seemingly centralised and redistributive role of these administrative centres in various areas of the economy. A lack of recognisable (independent) workshops in domestic contexts and an abundance of workshops found near administrative centres also strengthens the connection between production and the occupants of the palaces.

According to the records, the palace not only controlled (a portion) of the agricultural production of olives, wine, figs, cereals, linen and hides, but could also allocate land to individuals and levy a tax in the form of (agricultural) produce and service. As the known sources suggest a controlling and redistributive character for the palaces the Mycenaean economy is often seen as a static, redistributive economy, with either no room or limited room for free economic enterprise. In this model the Mycenaean elite is generally held to have had a monopoly on wealth and prestige items. Archaeological studies of the distribution of prestige items and luxury goods seem to corroborate this viewpoint (Voutsaki 1995, 60).

There are, however, indications that the economy in the Late Bronze Age might not have been as static and controlled as just described but that there was leeway for private individuals to own land and participate in trade. Palatial control is still present in this alternative model but the palaces are seen as major nodal points in a trade network with individual (private) traders fulfilling the role of minor nodal points that redistribute traded goods at a more local level (McGeough 359, 2007, Dickenson 81, 1994 & de Fidio 22-23, 2001).
Economic models
The earliest attempts at explaining the economical activity of Mycenaean Greece is the substantivist theory that projected a modern interpretation of the term economy and market onto the Mycenaean period. The prehistoric society was divided into cores and peripheries; the cores providing the markets for both the produce of the peripheries and the cores themselves. In this model the cores are held to have a monopoly on the production of prestige items because of their size, which indicates a market big enough to be able to absorb high cost goods such as prestige items. The discontent with this substantivist theory generated a lot of debate and over the years of two approaches, one from a Marxist point of view and one from a capitalistic viewpoint, have emerged as favourites. Both are based on a core-periphery economic model.

Marxist model
A model suggested for the Near Eastern and Mycenaean economies sees the palaces as administrative centres that control all resources of a region and are responsible for the redistribution of these resources. Relationships are static core-periphery ones between settlements, with the palace seen as the ultimate authority. The population considers itself obliged to give the resources and labour to the palace which is then obliged to redistribute the collected products. International trade is also monopolised by these palatial centres which controls the access to prestige items and luxury goods by also monopolising the workshops and artisans that convert luxury goods into prestige items. In this way the accumulation of wealth is channelled, and through the wealth the power of the community is also channelled. Access to prestige items and luxury goods by private individuals is not possible or severely limited in this model, as are the private individuals possibilities to engage directly in the economy by manufacturing and/or trading products (Heltzer 1988, 7).

Redistribution of the accumulated wealth would be used as a method of reinforcing the power and social position of the ruling elite in this model. An example of this could be the lavish grave gifts of the Shaft Graves; (possibly) controlled luxury items, produced by workshops monopolised by the elite, are deposited in these graves and so are permanently removed from the community and given to members of the elite (Voutsaki 60, 1995).

Capitalist model
This model allows for free enterprise in the Mycenaean economy and interprets the role of the palace more as an individual or set of individuals (an elite) who is/are involved privately in trade and production rather than that of an administrative body. Any monopoly or privileged position enjoyed by the palace is indirect and brought about by the size of capital involved rather than by a position gained by state-control. The redistributive character of the palace in this model takes on the aspect of an almost feudal like taxation system with taxes being paid in natura. A recent explanation of this model, applied to a similar social organisation in Ugarit, sees the palaces as being ‘immersed in multiple exchange relations’ with the economy being described as ‘the emergent effect of a network of contingent trade, reciprocity and redistribution (known as debt patronage in Middle Eastern contexts) were all applied in the Ugaritic economy’ (McGeough 2007, 338).The peripheries and cores in this model are linked together in a ‘network model’ with the palaces acting as nodal points in this economical network (McGeough 2007, 338).

An example of this type of involvement by a palatial elite in trade from modern history is that of the Portuguese Crown in the trade of Guinea. In 1496 A.D. Guinea was leased for five years to a private individual, Fernão Gomes, who payed an annual rent to the crown and was obliged to explore 100 leagues of coast per year. When the lease expired the monopoly on trade in Guinea reverted back to the Crown, who licensed private individuals and firms to manage this trade. Monopoly on some
commodities, such as pepper, were permanently retained by the Portuguese monarch whilst royal monopolies on others, like ivory, were later lifted with the expiration of the Gomes lease (Parry 1963, 173-174).

Based on the available archaeological evidence it is impossible to decide decisively in either models favour. The extreme of either economical model underestimates certain economical aspects of the role played by the palace. An extreme Marxist approach ignores the possibility of a certain amount of elasticity in the Mycenaean economy and can lead to a static interpretation of the relationship between communities while a capitalist approach allows the centralised and redistributive role of a palace to be underestimated, which is warned against by de Fidio (2001, 24). Also the capitalist approach lends itself to over-emphasising the independence of smaller settlements. A mixture of both models might well be closer to the truth, with the network model allowing the reconstruction of a more dynamic, less one-sided relationship between settlements without underestimating the role of the palace in the community.

2.2.4 Recognising workshops

Workshop recognition is extremely difficult in archaeology because most production processes do not leave distinctive marks behind in the archaeological record. Though this aspect of workshop recognition has not been studied extensively some indicators for identifying an area as a workshop have been observed. First a distinction is made between recognising permanent and domestic workshops:

‘Permanent workshops are spaces, not necessarily specifically designed for, but certainly devoted to, all, or most of the year, workshop activities; spaces where a number of specialists are employed, i.e. individuals depending more or less completely on their craft for their livelihood.’

These workshops fall into two categories; permanent palatial workshops (which are directly subordinate to the palatial centres) and non-palatial permanent workshops (which do not depend on the palace for administration or raw material). Relationships between palaces and workshops can be ascertained by their physical location in relation to each other and/or if the workshop contains anything explicitly linking it to the palace such as seals or administrative documents. Even though a workshop is located at some distance from the palace it may still be dependent on the palace if it depends on the palace for raw materials or administration (Tournavitou 447, 1986)

‘Domestic workshops are spaces within private domestic buildings, used as workplaces by the inhabitants of these buildings, either at certain fixed times of the year, or whenever the need arose, to fulfil household requirements, as opposed to the far greater turnover expected from a permanent workshop. Another probable point of contrast between the two, is that the individuals working in this setting did not necessarily depend, at least wholly, on this one craft for their livelihood.’ (Tournavitou 447, 1986).


To further facilitate the identification of the type of workshop being excavated industrial activities are divided into two groups: A and B. Group A workshops are where crafts are practised that do not require built-in facilities. Some examples include bone, ivory and wood working, spinning and weaving. In short only the presence of tools is required to designate a space as a workshop.
Group B workshops are where crafts are practiced that do require built-in facilities as opposed to the mere presence of tools. Examples of built-in facilities are pits, kilns or channels and examples of crafts that require these facilities are pottery or finance making and metallurgy (Tournavitou 448, 1986).

2.2.5 Role of tools in domestic contexts and the archaeological record

Metal tools were replacing stone tools towards the end of the Bronze Age, the most common tools being knife blades. It is possible that the persistent use of stone tools was because stone possessed qualities that bronze did not and that were necessary for certain tasks or working of various materials. According to van Horn the bulk of the bronze tools found in the Argolid in LH III are usually used for working wood and the increase in the amount of bronze tools in the Late Bronze Age might point to the importance of wood work in the Mycenaean economy (van Horn 1976, 351).

Studying traditional production methods can help suggest the amount of tools necessary for producing quite complicated objects such as pottery or even sea worthy boats. Tournavitou notes that in a traditionally operating Egyptian alabaster workshop the only tools used were a hammer and chisel, some drill bits, a file and a wet cloth. Built-in features were a shallow pit for the production area and an oven which the family also used for domestic purposes. Hardly any waste was produced during production and there was a remarkably small amount of misfired pots. An Irish curragh builder that employed traditional methods dating back at least to the 8th century A.D. used a similarly small variety of tools; several hand drills and wood chisels, a hammer and knife and some wooden battens for measuring. The materials used and the end product consisted of a materials, like leather and wood, that are not indefinitely durable and decay quite quickly (Tournavitou 464, 1986, Severin 24, 2000).

Taking the limited varieties and small amount of tools needed for even quite large scale industrial activity into account it is not surprising that so few tools have been found in Mycenaean domestic contexts. The value of (metal) tools in the Late Bronze Age would also probably have led to tools being preserved in the family and removed from workshops when the inhabitants vacated the building. The use of built-in features for industrial activity and domestic use (such as the family bread oven for the firing of alabaster pots) also blurs the presence of workshops in a domestic setting.

These problems combined make the identification of Group A or B workshops difficult without the presence of (raw) materials, (half) finished products and clear architectural pointers of industrial activity (such as industrial potters ovens or a smithy’s hearth). Examples of confirmed workshops all have one common characteristic; the large amounts of (half-worked) material, built-in architectural features clearly used for production and, in some cases, the presence of tools. Without these clear pointers of a production process the presence of a workshop, domestic or otherwise, is only ever suspected. Large amounts of storage space in private houses could be a secondary indication of production or at least participation in trade.
3. Settlement descriptions and decentralised areas of production

Central Greece

Attica

Aghios Kosmas

The settlement is located on a cape opposite the old airport of Athens and has a commanding view of the Saronic Gulf. In the LH II period the remains indicate that a Late Helladic village was built on the site of a Middle Helladic settlement that had been abandoned. Due to the rising waterline half of the Mycenaean settlement is now submerged but some LH III C remains were excavated as well as some fragments of the LH III B period.

Date

Settlement Character
Though the majority of the Mycenaean houses were destroyed by the LH III C settlement that was built over the LH III B village it is thought that the layout of the settlement was much the same, with narrow pebbled roads winding through the settlement and a possible ‘mansion’ that occupied the head of the cape that has since been submerged (Mylonas 1959, 164).

Finds
Piles of murex shells, broken open to remove the cyst that contains the dye, were found throughout the LH III B and C periods of the settlement and bones of sheep, pigs, goats, cows and bulls were found. It is not certain that all the animal remains belong to the LH III C settlement, it is possible that some belonged to the preceding Mycenaean village (Mylonas 1959, 57, 148).

Peloponnese

The Argolid

Asine

Asine lies 8 km south-east of Návplio, on a promontory jutting out into the Hermionic Gulf. Minor destruction is evident at Asine towards the end of the LH III A1 period but the settlement survived into the LH IIIA2/LH III B period. An acropolis was built on the northern promontory with a lower town located on the north-western part of the promontory. Middle and Late Helladic finds were also made outside the fortification walls, on the Barbouna hill (Fields 2004, 48, Frizell 86, 1986).

Date
Middle Helladic-Hellenistic

Settlement character
Located on a promontory, Asine controls a good harbour in the form of a broad sandy beach situated at the foot of the promontory. A fortified citadel and lower town form the core of the settlement with Middle Helladic graves and Late Helladic structures built also on the Barbouna hill lying outside the fortifications (Fields 2004, 48).
Finds

Area I of the Lévandis House was fully excavated and revealed a complex of rooms labelled C-F, the floor levels of which contained LH II B - LH III A:1 pottery. The structure was probably built in LH II B, according to pottery finds made under the stairs in the eastern corner of Room C which show that there was an upper storey. Stratum 2 was the floor level for the LH II B-LH III A:1 period in this room where 67% of the pottery sherds found in this stratum were undecorated. Decorated pottery clearly belonging to LH III A was a piriform jar with an askos, two alabastra and five closed vessels dated to LH II B-LH II A:1. Cups and goblets dating from both periods were also found in this stratum. Not many closed shapes were identified in Room C but rims from 5 big jugs or jars were found along with 15 handles and 3 bases belonging to the same while 5 rims and 1 base were found from smaller vessels. More cups and goblets were found that were undecorated along with 1 conical bowl with a lip pressed rim to form a spout. Traces of fire inside the bowl and on the rim indicate that this was used as a lamp. A pithos and cooking pots and tripods were also found (Frizell 1980, 11-12, 23-33).

Room D is connected to Room C and contains a drain and a bothros in wall 72.47 which indicates that liquids were being stored in this area. Pottery distribution in Room D is similar to that of Room C except that there is a slightly larger number of pithoi fragments in this room. All of the decorated pottery in Room D are closed shapes, the majority being Jugs/jars, 3 piriform jars and 6 alabastroi. Cups, craters and bowls were found. Closed undecorated shapes made up the majority of pottery forms in this room, with 33 rim fragments of jugs or jars found in this area, 45 fragments of handles and 40 bases (all flat except for one torus base and 1 hollowed base). Cups, a dipper, a bowl and a krater were also found here along with 1 pithos rim and 14 cooking pot rims. (Frizell 1980, 34-50).

Area II is not fully excavated and a modern structure subsequently built prevents further excavation. There were no individual rooms identified in this area though several stone fills have been found. It was not clear whether these fills were intentional or are remains of fallen walls. Some fragmentary walls were found along with a drain that ran East – West across the area. The fills were mixed with pottery. LH II B pottery was found in this area but the majority belongs to LH III A:1 with some fragments from LH III A: 2 and LH III B. Some broken querns were found in Stone fill 73.53 while a steatite whorl in fill 73.56 can probably be dated to LH III A. Broken querns were found in fill 73.89.

The drain in Area II had mostly LH III A pottery in it with some early LH II B sherds. Construction 73.88 (a large stone slab, of which the function is unclear, is framed by line of smaller stones) is located at the southern wall of drain 73.82. Mainly bowls and goblets were found here.

In all, a larger percentage of pithoi fragments was found in this Area than Area I. Most of the pottery found in Area II were bowls and cups/goblets. A shallow bowl, goblet rim and a goblet/bowl were found in the drain. An alabastron, cup, goblet, squat angular jar, mug, cup and two goblets/bowls were found in the area south of the drain (Frizell 1980, 70-106).

Miscellaneous finds from the LH III A and B settlement consisted of three steatite spindle-whorls, a bronze pin and two possible loom weights.
Berbati

Date
(Neolithic?) EH – LH III B

Berbati lies to the south-east of Mycenae in a valley on a limestone plateau which dominates the Berbati valley. The route that leads from Mycenae to the Kontoporeia pass runs through this valley and Berbati controlled and probably serviced this section of the overland route to the isthmus of Corinth (Hope Simpson 1981, 19).

Settlement Character
The site is not completely excavated or published but it is thought to have been a fairly small settlement despite its dominating position over the valley.

Finds
One of the few known buildings excavated in Berbati is the Potters Workshop (LH III A:2/B) which was an industrial ‘complex’; the courtyard where the potters kiln was found dominated the layout of the building rather than having been built to the front of the structure which is generally the case. As the building was located on a crossroads two streets passed the building, one to the south and one to the west. A shrine in one room and cooking vessels found near the hearth in one room suggest that the building had a domestic function as well (Shear 1968, 267-270).

The Potters Workshop was enlarged in LH III A 2 to handle increased demand and, according to Earle (2008, 124), signs of independence, such as inhumations in the Berbati tholos, ceased. This is interpreted by some as the beginning of at least partial domination of the workshop by the palatial centre of Mycenae (Earle 2008, 124).

Lerna

Lerna is a mound settlement, situated on the coast of the Gulf of Argos, almost opposite Tiryns, roughly 20 km south of Mycenae.

Date
Neolithic – LH III B Protogeometric - Hellenistic period

Settlement Character
The settlement was an important Early Helladic centre but was a small village, much reduced in status, in its final inhabited phase in LH III B. Most of the Mycenaean remains of the site have been destroyed and only individual rooms belonging to that period have been excavated so there is no clear understanding of the settlement layout. All the excavated architectural features of the LH III A and B levels of the site contained tools.

Finds
Room 1 (LH IIIB), which might have been a basement storage room for a larger house, is rectangular and measures 3 by 6 m, with the walls made from mudbrick. One lead clamp was found attached to a pottery sherd and one Minoan loom weight was found in the room. A terracotta spindle whorl and a probable sickle ‘element’ were found in the deposits just above the floor layer of the room along with a bone awl with the point chipped off and some animal bones and a murex shell. The bones were of pig, goat and cow (Wienecke 1998, 128, 142, 145).
An area west of room 1 measuring 2.5x4.0 m is surrounded by badly preserved Mycenaean walls; one bronze strip, one spindle whorl and 2 murex shells were found here in a deposit dated to LH III B. (Wiencke 1998, 179).

Area 5 (LH III B) is interpreted as having possibly been a courtyard with small rooms built along one side which could have belonged to the same building; there was a tomb here and the number of figurines found in area 5 has been interpreted as offerings to the dead. In addition to figurines a lot of pottery has been found, a metal clamp still attached to one sherd. A spindle whorl, two stone blades (possibly sickle elements) and bones of various domesticated animals have also been found here. Below this floor was another floor (dated to LH III B:1). A paper thin lead sheet, two spindle whorls, one spool, one obsidian arrow head and two murex shells were found in the fill between these two floors (Wiencke 1998, 158 - 163).

Fill deposit 7 was probably the floor of a very badly preserved house. Next to a fair amount of pottery and figurines a loom weight and two spindle whorls (one spindle whorl and one dark purple steatite whorl )were found in addition to one obsidian arrowhead and two blades (one obsidian the other chert). Thirteen murex shells were also found in the LH III B deposit (Wiencke 1998, 175).

One arrow head, two blades of obsidian and one of chert were found as surface finds in area D and have been assigned to the LH III B occupation phase of the settlement (Wiencke 1998, 183).

**Mycenae**

Mycenae is located 25 km inland from the Gulf of Argos, 14 km north-west of Tiryns and 48 km south of Corinth. The acropolis, situated on a hill with steep to precipitous sides, is approached from the south-west and dominates the routes leading north to Corinthia and the northern part of the Argive plain.

**Date**
Neolithic to Hellenistic period

**Settlement character**
A large settlement was located outside the city walls on the slopes of the hill itself which spread out onto the plain below with cemeteries interspersed between the residential areas. This is the largest citadel and probably the largest residential area in the Argive plain and apparently controlled the Argive plain and influenced the rest of mainland Greece directly as far as Thessaly and indirectly as far as Greek Macedonia.

Eight houses have been excavated outside the citadel walls with tools being found in six of them. These houses have yielded very rich finds in the way of ivory, bronze, pottery and clay tablets. The more affluent of these houses, located near the Lion Gate, are multi-roomed, have a complex layout and probably had more than one story. Simpler houses are located further down the hillside but also produce a lot of fine pottery and bronze artefacts. Chimneypots were found in both groups of houses and all houses excavated in the settlement had lime or clay floors and walls decorated with fine painted plaster or were plastered with plain clay.
Finds
A fragment of a bronze needle with the eye still preserved was found in the drain deposit north of room 7 in Panagia House I (LH III B) and two other fragments of a bronze needle were found here as well as a bronze arrowhead that was found below the earliest floor of room 5; the main room of the house. What is interpreted as a storage room opens onto the courtyard located directly south of the three rooms and corridor that make up the rest of the house. An open drain runs off the property. There is no indication that there was an upper story but the possibility cannot be ruled out (Hiesel 1990, 122, Mylonas Shear 1987, 121-122).

Artefacts found in rooms 12, 13, 15, 16, 17 and 18 in Panagia House II (LH III B:2) indicate that these rooms were storage areas, no clear entrances were found in the walls which suggests that these areas were probably entered from above. Pieces of a burnt lime floor in room 16 evidently fell from the room above. A pithos was also found in room 16 along with a fragment of an unidentified bronze tool and a bronze arrowhead found beneath the floor of the storage room. Room 15 produced a hydria filled with lentils, some gold leaf and three seal impressions in clay vases. The fill between the earlier floor of room 15 and the new floor above contained two fragments of bronze needles. A complete stone seal was found in the northern end of the corridor near the storage rooms. The floor deposits from rooms 9 and 23 produced a bronze chisel and a whetstone respectively. The main living area of the house was room 9 where not only a lot of pottery used for cooking was found next to the hearth but also pieces of molten lead and the bottom half of an ivory figurine embedded in the floor near the doorway leading to room 8. Rooms 8 and 9 were evidently the living areas of the house and the storage rooms were arranged in a block north of the these rooms with probably another storey above the storage rooms (Mylonas Shear 1987, 116, 121-122).

The three clay sealings found in room 15 were not in the floor deposit of this room but probably fell in from the room above, two of these sealings found were made by the same seal stone(Mylonas Shear 1987, 125).

Panagia House III (LH III B:2) is the smallest of the houses that form the Panagia group though it to has a lot of bronze artefacts when compared to houses in other settlements. An axhead was found in a floor context in room 30 and room 23 produced a possible floor deposit that contained a bronze needle and a long, rectangular piece of bronze that belonged to an unidentified tool while a possible bronze awl was found in area 26, directly south of House III. Because of the lack of domestic pottery in Panagia House III a second storey is suggested for the missing domestic areas that would have been characterised by this pottery and the presence of a hearth (Mylonas Shear 1987, 120, 122 & Hiesel 1990, 79).
A separate group of houses known as the Ivory Houses are located just outside the Lion Gate and have provided extremely rich finds. Their nature is not completely certain but the presence of Linear B tablets detailing the provisioning of workers are seen by some to indicate that this group of buildings is linked to the Mycenaean palace (Shelmerdine 1997, 389).

The West House (LH III B) is interpreted as functioning as a pottery storage facility. One hundred closed vessels were found in Room 1, the majority of which was stirrup jars. The collection of more than 20 terracotta vessels found in room 4 is interpreted as a reflection of the domestic use of the room. A jar containing vetch was also found in room 4 and a pithos that probably held oil was found in room 3 along with amphorae filled with a supply of clay. The function of the rooms are debated, one interpretation being that the living quarters were located in the eastern half of the building with the kitchen in room 4 (this because of the extensive drainage system running through the megaron near room 4). According to this interpretation the rest of the western half of the house was used as storage and workrooms. An alternative explanation, suggested by Hiesel, is that the whole ground floor was used as a workspace, the drainage system being used in whatever production process was taking place, and that the living quarters were located on the second storey (Hiesel 1990, 129 and Tournavitou 1995, 15).

Another building that lacks the usual signs of domestic use is the House of Shields (LH III B:2) which is located on the same ‘street’ as the House of the Oil Merchant. It is a two roomed structure that also had an upper storey. One clay tablet was found in the western room on the ground floor along with thousands of pieces of worked ivory including the shield-shaped discs that give the structure its name. Pieces of wood to which the ivory was attached and wooden blocks used as surfaces to place the ivory on while it was being worked were also found in this room. Some wood and ivory pieces were found in the northern room though this was probably not the main workspace and the ivory and wood found in both rooms had fallen from an upper storey. Other objects found in this room are vessels made from stone (usually serpentine but also alabaster, breccias and limestone) and beads and ornaments made of faience numbering about 850. Two bronze knife blades and 23 obsidian blades were found in the western room in the floor deposit and two saw blades, 1 obsidian blade and 9 bronze rivets were found in the northern room in the floor deposit. The house has a floor made from rough clay with a fine white clay coating (Tournavitou 1995, 210, 242 - 246).

Of the houses in this group the House of the Oil Merchant (LH III B) is the biggest and has the most storage capacity; the eastern rooms of the house can be interpreted as basements used for storing oil; 11 pithoi were found in room 1 with ladles and stirrup jars and a clay tablet referring to oil was found in room 4. Wool was probably stored in the house according to the 29 clay tablets found in room 2 and which had probably fallen from the room above with along with the painted plaster found in this room. Room 4 contained a winged axe mould of stone and stirrup jars found with dippers and other open vessels. Fragments of bronze tools were found in room 5 that had apparently fallen from the room above at the time of the buildings destruction. The western half of the building has a higher floor level and was used as the residential area according to pottery finds that fell from the floors above into the basement. There were also rooms above the basements in the eastern half of the house that are interpreted as having been storage rooms for clay tablets and workrooms. The rooms in the basement
level of the house had a clay floor and the walls were covered with plain plaster while the walls of the rooms above were decorated with painted plaster (Tournavitou 1995, 246).

The House of the Sphinxes (LH III B:2) was built south of the House of the Oil Merchant and also had extensive basements used for storage. Room 1 was used as storage for open shaped unpainted vessels, predominantly kylixes, and the 165 vessels found in this room were grouped according to type. The large amount of ivory (4600 pieces), the handles for stone jars and obsidian blade probably belonged to the room above and fell into the basement storage room when the building was destroyed. A sealstone that matched seal impressions found in this section of the basement was also found in room 1. Room 2 yielded 2256 pieces of ivory, 11 pieces of obsidian, 1 bronze sheet, 1 unidentified bronze tool (also from the room above the basement) and 95 pieces of pumice which belong to the floor deposit of this area. Six vases were found in room 4 which is interpreted as a storage room for some type of liquid though part of a cylindrical bronze tool was found in the floor deposit of this room. An obsidian tool and 187 pieces ivory also found in this room are again thought to have fallen in to the basement from the room above as are the bronze spearhead and lump of bronze that fell into room 6. Room 8 contained a large number of small vetch seeds which again came from the storey above and domestic vessels used for eating and drinking belong to the floor deposit of this room while the three grinders-pounders and the mortar and pestle found in room 10 are also seen as belonging to a room located above this section of the basement. The floors and walls of the basement rooms were not plastered but the walls of the rooms above were decorated with painted plaster (Tournavitou 1995, 46, 232 - 249).

Prosymna

Date
Prosymna is 4.8 km south-east of Mycenae and 9.7 km north of Argos, built on a hill on the north-eastern side of the Argos plain.

Neolithic, EH II to LH III C, Geometric to Hellenistic

Settlement Character
Though no palace has been found the 1927-1928 campaigns brought a large Late Helladic settlement to light that was protected by cyclopean walls. Many of the remains of the Mycenaean settlement have been obliterated by subsequent occupation levels. The excavated LH III B houses are built close together and usually contain 2-3 rooms according to the excavators reconstruction but a recent study interprets two of the three original houses as one structure (Blegen 1937, 15-20, Hiesel 1990, 102).
No tools were found in either of the three buildings excavated but a two roomed structure has been interpreted as the basement of a larger house.

**Finds**
The Kephalari House (LH III B) is located on a hillside outside the walls of Prosymna and is the only LH III B structure with a clear description; no floor levels remain and four stone blocks are seen as possible foundations for the northern side of the house though two rooms were excavated that are interpreted as cellars for storage.

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**The Corinthia**

**Korakou**

The settlement of Korakou is situated on a mound in close proximity to the sea on the lower Corinthian plateau, roughly three kilometres west of New Corinth and one kilometre east of the harbour Lechaeum. Its position allowed the town to dominate a nearby beach which was well suited for use as a natural harbour (Blegen 1921, 1).

**Date**
EH LH III C, Archaic to Classical period

**Settlement Character**
Korakou was a fairly large, fortified town of some importance in the region during the LH III A and B periods, probably owing its importance to the possession of a harbour. So far, no building has been excavated that could be seen as the seat of any centralised authority and layout of the Mycenaean settlement is chaotic and crowded. Of the six complete houses three belong to the LH III B settlement and tools were found in two of these (Blegen 1921, 79).

**Finds**
House H (LH III B-C) was built in LH III B and inhabited until early LH III C. The house consisted of two rooms in the earlier period; a megaron and a smaller room to the west with a hearth in the megaron. Two bronze chisels were found in this building; one found just below the floor in the western most room and given a LH III B date and the other, dated to LH III C, found amongst the fallen stones of the wall separating the western room from the megaron. This indicates that the house retained its function throughout both occupation phases (Rutter 1974, 522).

According to the reconstruction House L (LH III B1-LH III C) had three rooms; a vestibule, megaron and smaller room directly north of the megaron. Two pieces of obsidian and a steatite spindle whorl were found on the floor of the main room of this house and belong to the last occupation of the building. In the LH III B layer beneath the floor of the house another two fragments of obsidian and two steatite spindle whorls were found with fragments of a large pithos which were scattered around the hearth. Pieces of a second pithos
were found in the northernmost room. One large vase found in the LH III B occupation phase of the house is a local handmade product (Blegen 1921, 80 & Rutter 1974, 109, 111 - 114).

Zygouries

Roughly halfway between Corinth and Mycenae lies the valley of Cleonae through which the old route between the two cities ran. Zygouries is a Late Bronze Age settlement located on a hill in the valley 3 km south of Cleonae and 2 km away from the ancient road, with fertile ground to the north.

Date
EH I to LH III B:1, Geometric period

Settlement Character
The residential area of the site was not limited to the natural elevation in the Late Helladic III period but also spread out onto the plain towards the stream to the north and was fairly well organised. No building that could be interpreted as an administrative centre has been found in the settlement though the excavator thought that a structure, built on a terrace cut into the eastern side of the mound, could have fulfilled this function, though this is not certain (Blegen 1928, 2).

Finds
The only published Late Helladic house (House B) is a large two storied house dubbed the Potters Workshop after a large amount of clay vessels were found in the extensive basement which formed the ground floor of the building. The floors of the basement were made from hard earth and clay while the walls were covered with rough plaster. The walls of the rooms above, however, were decorated with fine painted plaster (Blegen 1928, 33).

Over 1000 terracotta vessels were found in the basement of House B (LH III B:1) of which 500 were undecorated deep bowls probably used for cooking. The bowls were found stacked one inside the other near 75 saucers and 20 small jars. In addition 3 big and 10 small stirrup jars, water jars, basins, ladles and cups were found in this room and craters and large numbers of other big jars were found in the other rooms at basement level. A large open drain and a small drainage pipe ran through a room in the basement and out of the premises to the east. Six figurines, a seal stone and bronze knife with an ivory handle were found in a stone lined pit that was probably part of the drainage system of the house (Blegen 1928, 33-36).

Messenia

Malthi-Dorion

Malthi-Dorion is situated on a ridge that is the northernmost end of the Ramovouni mountain range. The remains of this settlement lie directly to the west of the village of Vasiliko. The plateau on which the settlement is built has a commanding view of the Messenian plain and more importantly the road
that runs through the plain and connects the mountainous half of Messenia with the coastal plain, and subsequently with Pylos. Any settlement founded on this ridge would have had control over what was transported along the road into upper Messenia and what was transported along the land and sea routes that run the length of the western coast (Valmin 1938, 9 - 11).

Date

Settlement character
The exact chronology of the settlement is unclear but the remains of the LH III settlement allow a fairly large, fortified community to be reconstructed with the possible presence of a palatial building. Tools were found in the only structure that has a secure LH III A date, though a fair amount of tools were also found in the houses of uncertain date (Hiesel 1990, 92).

Finds
House B 52-57 (LH III A) is built on the south-western slope of the acropolis and consists of five rooms arranged around a central courtyard. One saddle-quern, 4 large grinders and 4 spindle-whorls were found in room B 56. In room B 55 one stone awl, one flake of round sandstone and one piece of ‘ore’ was found along with one stone axe. Room 54 contained one obsidian knife, two spindle-whorls and two grinders. In rooms 57 and 52 half a saddle-quern, one spindle-whorl and one deer horn were found (Valmin 1938, 181-182).

Nichoria

Date

Nichoria lies roughly two kilometres inland from the north-western coastline of the Messenian Gulf on a 500 m long ridge that gives the site its name and is thought to have been the regions capitol during the LH III B period. The settlement is strategically located with a commanding view of the main east-west land route and the junction of this route with the road that runs along the west side of the gulf (McDonald 1972, 221).

Settlement Character
This is a fairly well organised settlement of moderate size. Buildings belonging to the LH III B period are built along a road and what is understood to be the administrative centre of the site stayed in the same area of the site throughout its occupation. Areas II and III (in the northern part of the site) are regarded generally as residential areas of the LH III A and B periods and Area IV seems to have been the sector where the administrative centre was located. No tools were recovered from the nine (semi-) complete houses excavated on the Nichoria ridge and dated to LH III A and B. Probable storage rooms were found in three of these and one excavated building is a smithy.
Finds

Unit IV-6 has a storeroom that was probably a basement accessed from above. One pithos was found in it. Some bronze fragments were found in the north eastern room of which several could have been rivets (McDonald 1975, 96).

Due to the small size of Unit IV-7 (1.1 x 1.9 m), sturdiness of the walls and the absence of entrances it is interpreted as a basement storage area of a larger building and was entered from the rooms above. The stone ledge around the walls of the unit are interpreted as storage shelves. Another structure excavated nearby, Unit IV-8, is also interpreted as a storage cellar because of its small size (1.5 x 2.5 m) and lack of an entrance. Unit IV-7 is dated to LH III A:2/B and Unit IV-8 was in use during LH III B and are located in what seems to be a ‘residential zone’ in Area IV (McDonald 1975, 93-94).

A Mycenaean street with buildings on either side dating to LH III A and B was excavated in Area III; Unit III-4 was a LH III B structure built directly next to the street. A floor deposit on the north-eastern side of the building (the side butting directly onto the street) showed signs of burning and contained 70 pieces of bronze. Of these 70 pieces one was a complete needle, several others were parts of artefacts and some were droplets. Seventeen pieces of slag were also found. Postholes found on the north-eastern side of the Unit III-4 indicate that the bronze workshop was situated in a timber-framed building (Rapp & Aschenbrenner 1978, 120).

The majority of the 153 spindle whorls recovered during the excavation were found in domestic contexts. Many of these could be assigned to specific periods in the Palatial period, 19 of which could be dated to LH III B contexts. In addition 11 loom weights were found of which 10 had secure domestic contexts and could be dated to LH III A (Rapp & Aschenbrenner 1978, 675).

Thessaly

Dimini

Dimini is located 7 km north of Volos on the western edge of the plain of Volos. Though the site is 3 km away from the Pegasitic Gulf today it was probably as much as 2 km closer to the sea in the Late Bronze Age. The Mycenaean settlement does not occupy the small hill which was the site of the Neolithic settlement but was situated on the plain to the east of the mound, on the side closest to the ancient coastline.

Date
Neolithic to LH III C
Settlement Character
The Late Bronze Age settlement was well organised with houses built along streets that corresponded to a central plan. It is possible that all the houses had similar or identical facades indicating that the layout of the site was well centralised. Two megara to the west, close to the mound, are seen as the social centre of the town while the only structure identified as a workshop is a potters kiln located on the eastern edge of the settlement (Andreou 2001, 543).

Finds
Five Mycenaean houses were excavated on either side of a street oriented north-south. All the buildings located on this street have a habitation period that can be divided into two phases; the first dates to LIII A:2 and the second to LH III B:2/LH III C. According to the excavator all the houses were used for domestic purposes but each unit had some rooms which were used for storage and as ‘specialised working areas’ (Adrini-Sismani 2008, 467).
4.1 Distribution of Tools

4.1.1 Intra-site Distribution of Tools

In total 284 tools were found in domestic contexts in eight of the eleven sites discussed in this thesis. No tools were found at Aghios Kosmas and, since Berbati and Dimini have not yet been fully published, it is not known if any have been found at these two sites either.

Mycenae
Of the 284 tools found in domestic contexts 61% were found in Mycenae (see figure 11) and of these 83% were made of stone and 17 % of bronze. Most of the stone tools (see appendix 1) were obsidian knife blades found in the House of Shields and pumice stones (used to polish ivory) in the House of the Sphinxes, also an axe mould was found in the House of the Oil Merchant indicating that metalworking was taking place somewhere on site. Other stone tools found in the House of Sphinxes were a mortar and pestle and grinders, all of which were probably used in food preparation. Also, a large amount of obsidian was found in this house, probably for the manufacture of new blades. No stone tools were found in the Panagia Houses.

More bronze tools were found in Mycenae than at any other settlement included in this thesis. The most common bronze ‘tool’ in Mycenae was the needle, found exclusively in the Panagia Houses, predominantly in House I but also in Houses II and III. Since the amount of needles found is small it is not likely that they featured in any textile working production process but were for personal use instead.

House I of the Panagia group seems to have had a more domestic character as evidenced by the amount of needles and domestic pottery found in this building. Houses II and III yielded not only the most bronze tools but also showed more diversity in tool types. House II showed signs of lead being worked, and this coupled with the presence of a chisel, an unidentified tool and the large amount of storage space could be indicative of industrial activity in this space. A drain running through the megaron of House I could have been used to channel kitchen or other waste generated by a production process away from the building. In the latter case the drain would be a built-in feature that would characterise the possible industrial activity as a Group B craft (Tournavitou 1988, 464).

As no production process is clearly evidenced by the presence of raw materials, (half) finished products or other indications of manufacturing goods in the Panagia Houses it is difficult to interpret them as workshops. The amount of tools found in these buildings do not suggest that household production of any scale was the main occupation of the inhabitants. An architectural feature that does characterise the Panagia Houses, and in particular House II, is the large amount space devoted to storage. Stockpiling goods seems to have played an important role in these households, which in turn could mean that trade played a role in the lives of the inhabitants of this group of houses.
Taking the large amounts of raw materials, half-finished and finished products and tools into account, it is clear that the Ivory Houses are workshops. Large amounts of storage space and storage containers support this interpretation. Possible living quarters and domestic pottery found in the House of the Oil Merchant and the House of the Sphinxes suggest that these houses were inhabited. A lack of domestic pottery and no visible living quarters in the House of the Shields suggests that this was a permanent workshop, dedicated to production and that the buildings primary function was not a domestic one. It is not clear what the function of the West House was but the large amounts of pottery found indicate that this building was used for storing pottery, and the presence of kitchen ware and vetch suggest a domestic function as well. More clay tablets were found in this group than the Panagia Houses, giving it a more pronounced administrative character.

When comparing the two groups of houses the Panagia group seems to have a more domestic character with possible signs of industrial activity on a small scale (given the amount of tools found). Looking at the space devoted to storage it is possible that trade, or at least stockpiling wares, was an important part of the lives of the inhabitants of these households, especially for Houses II and III. No clay tablets have been found in this group of buildings but several seals might be interpreted as a connection to the Mycenaean palace. The Ivory Houses are clearly involved with the specialised production of luxury items which would explain the lack of variety in tool types as well as the (comparatively) small amount of tools in those houses. The presence of clay tablets and seals and the luxurious nature of the goods produced in these workshops could mean the involvement of the palace in the production process.

Korakou

Korakou is the settlement with the second highest amount of tools, representing 18 % of the 284 tools. Stone tools make up 51 % of all the tools found in Korakou with 35 % of the tools being made of terracotta and 14 % of bronze. Two of the three LH III B houses contained tools of some sort in a domestic context.

Approximately 18 terracotta and 2 stone spindle whorls were found to belong to the LH III B settlement as well as obsidian chips and knife blades, which indicate that the households manufactured their own stone blades and textiles. As no areas have been recognisably used as storage space in Korakou it can be assumed that stockpiling (large) amounts of wares was not of importance to the households of this settlement.

The small amount of stone spindle whorls (2) and obsidian pieces (2) found in House L indicate that these tools were for private domestic use and were not used in any industrial activity. House H is the only domestic context in Korakou in which a tool was preserved. Since a chisel was found in each of two successive occupation levels in the same room in the house it is assumed that the retained its function throughout the LH III B/C periods. Other than the presence of a tool no other clear indication of manufacturing activity is evident in House H.

Malthi-Dorian

Malthi-Dorian has the largest amount of stone food processing artefacts of all the settlements discussed in this thesis even though the settlement itself only accounts for 7 % of the total amount of tools. Stone tools make up 65 % of the tools found in Malthi-Dorian with the remaining 35 % being terracotta. It is interesting to note that just one household produced 6 grinders and 2 saddle querns. The small amount of terracotta spindle whorls indicate that spinning was not done on a large enough scale to have been of economical importance for the household.
A stone awl, three spindle whorls and an obsidian knife blade were found in the same house. The stone awl was found in the same room as a flake of sandstone which could be an indicator that the inhabitants were producing their own tools. No secondary indicators of economic activity such as storage space or built-in features were found in this building and, if it weren’t for the large amounts of food preparation tools present in the house, this household could be interpreted as being no more than self-sufficient. It appears that food preparation played an important part in this household though this is no indication of household production on any scale and it would be unclear what the product was.

**Lerna**

Not many tools were found at Lerna and the small number of tools that were found were distributed fairly evenly over the site and account for 5% of the tools discussed here. Terracotta loom weights (2), spindle whorls (5) and a spool make up 53% of the tools found at Lerna. Stone tools were also found in small numbers; 1 sickle, 2 stone blades and a spindle whorl make up 40% of the finds. The remaining 5% is represented by a bone awl found in Room 1 together with the sickle.

A moderate amount of bones of domesticated animals were also found in LH III B domestic contexts at the site. As some murex shells were found in all the excavated areas included in this paper it is possible to suggest that most households in the community were involved in purple dye production on a small scale. Of the five excavated areas that yielded possible signs of production only Room 1 had a possible storage function.

Overall, the community at Lerna seems to have had an agricultural, self-sufficient character that was involved in the production of basic necessities such as agricultural produce and textiles with no noticeable emphasis on stockpiling produce. Some livestock was kept and (some) households engaged in purple dye production.

**Nichoria**

No metal tools were found in the Mycenaean households of Nichoria despite the presence of a bronze workshop at this site. Nichoria also only accounts for 7% of the total amount of tools. All the tools found in this settlement are terracotta spindle whorls and loom weights. It is supposed by the excavator, due to the amount of spindle whorls and loom weights found, that the Nichorian community specialised in textile production.

In addition to the textile industry the settlement also possesses a smithy, (recognised by the large amounts of bronze scrap and slag found on the premises) located near what appears to be the administrative centre of the settlement. The space in the bronze workshop appears to have been used exclusively for production.

Household production featured dominantly in the lives of the inhabitants of Nichoria. Most, of not all, households engaged in textile production. Evidence for stockpiling the produce is also found in the houses themselves; of the nine excavated houses belonging to the LH III A/B periods three had rooms which were interpreted as having been used for storage. The presence of a bronze workshop shows that the community was developed enough to support specialisation.

It is uncertain to what extent the community of Nichoria was dependent on the palace at Pylos. Clay tablets at Pylos mention receiving wool from outlying settlements and sending quantities of bronze to be worked in outlying settlements (Davis et al 1998, 81-97). To what extent the production at Nichoria was dependent on, and dominated by Pylos depends on the importance attached to the Linear B records. If seen as complete records of the economy then they show that the workshop at Nichoria could have been dependent on the palace for its raw material and administrative needs. A passive
dependence on the palace for administration could be posited for the household producers of wool; the palace records how much wool is needed to be produced by these outlying production centres. If the Linear B tablets are not representative of the economy as a whole then there is no clear evidence that the production in Nichoria was supervised by the palace. What might be interpreted as control is the proximity of the smithy to the probable administrative centre, other than this there is no archaeological evidence that links Pylos to Nichoria.

**Asine**

Tools found at Asine represent only 2% of the total amount of tools included in this thesis. Bronze tools account for 20% and stone tools for 80% of the tools found in the Lévandis House. Most of the artefacts stored in the house were clay vessels used for food consumption. Since only four steatite spindle whorls were found it is thought that any production would be for private use.

The large amount of cooking vessels and goblets found at Asine points to the consumption of food on a large scale. Querns found in Area II also point to the processing of food at the site. The presence of the drain and bothros in Room D suggests that liquids were probably stored and handled in this area.

No direct evidence of production was found at Asine. Large amounts of pottery such as cups, bowls and pithoi show that the Lévandis House seems to have had a redistributive function for (prepared) food.

**Zygouries**

Even though no kiln was found at Zygouries, House B is usually interpreted as having been a potters workshop due to the large amount of clay vessels found in the basement. Most of the pottery types found are used in food consumption or preparation. A drain in the basement indicates that liquid(s) were disposed of in this area. If these liquids were part of a production process it is not clear and no other sign of manufacturing activity has been found. The whole of the ground floor was devoted to the storage of pottery, with the above floors having been the living quarters.

Due to the large amount of storage space and the quantities of food related pottery types it has been suggested that Zygouries could be a small administrative centre charged with the supervision of the settlement. Fine painted plaster from the living quarters do show that the inhabitants were wealthy. No clay tablets were found at the site though a seal was found in the drain trap. Other than that its inhabitants were wealthy and that the building had a redistributive function for food it is not certain what the function of the Potters Workshop was.

**Aghios Kosmas**

Aghios Kosmas is almost completely underwater and a LH III C settlement has been built over the LH III B village which makes excavation even more difficult. For this reason no tools have been found in a LH III B domestic context in Aghios Kosmas. However, throughout what can still be seen of the LH III B settlement, piles of murex shells with their cyst removed show that most households were engaged in the production of purple dye.

As at Nichoria evidence for production at a household level is clear. What is not clear is the involvement, if any, of a palatial elite; no archaeological evidence suggests a connection between Aghios Kosmas and a palatial centre though the production of such a luxury product argues for at least some involvement by a palatial elite. Purple dyed cloth was seen as a luxury with access limited to certain individuals in early societies (Ruscillo 2005, 99-100) so it seems unlikely that the production of purple dye was undertaken by private individuals at Aghios Kosmas.
Berbati
Berbati also has produced no tools, but a kiln in the courtyard of a centrally located building marks it as a potters workshop. Accessibility was maximised by positioning the workshop on a crossroads to ensure a good connection to the infrastructure, ensuring the workshop not only access to the region but also to markets further away. Clay analysis shows that pottery from the Berbati area have been found at Amarna (Earle 2008, 124).

No direct signs of palatial domination are apparent at Berbati. However, during the LH III A 2 period inhumations in the Berbati tholos stopped. This can be seen as an indirect sign that the elite at Berbati had lost its independence (possibly to the palace at nearby Mycenae) and that production at Berbati came (partially) under the control of Mycenae. Once again the interpretation of the role played by the Mycenaean palaces, if any, depends on the importance attached to the Linear B records and the degree to which they are perceived to be complete (Earle 2008, 124-126).

Prosymna & Dimini
Very little of the Late Helladic settlement remains at Prosymna; the best preserved structure from this period is the Kephalari House. No tools or other primary indications of manufacturing activity were found. It is thought that the only two remaining rooms of the house were storage cellars, which suggest stockpiling goods played a role in the lives of the inhabitants.

Dimini has not been fully published in English so details of the finds are not known. According to the excavator each house had store rooms and ‘specialised working areas’. A potters workshop was found at the eastern edge of the settlement.

4.1.2 Inter-Site Distribution of Tools

Mycenae
Of all the tools discussed in this paper only 19 % are made of bronze (see figure 12) with the great majority of these being found at Mycenae itself. Most of these metal tools were found in the Panagia houses though a fairly large amount of bronze tools was also found in the House of the Sphinxes. Bronze tools are rarely found in domestic contexts outside Mycenae, the only exception discussed in this paper being the chisels found in Korakou, in House H.

A picture of a wealthy Mycenae is also illustrated further by luxury products produced by the workshops located in the Ivory Houses. The density of workshops found at Mycenae is also unique so far. What may be causing an imbalance in the archaeological record is the fact that the Panagia and Ivory Houses were destroyed suddenly and not abandoned voluntarily. This led to the preservation of the tools and products in these workshops. No other preserved Late Helladic workshops have been excavated yet on the Greek mainland so the perceived monopoly of Mycenae on luxury products and bronze tools may very well be a distorted archaeological image.
Berbati, Nichoria and Aghios Kosmas

Berbati, Nichoria and Aghios Kosmas provide the clearest evidence for household production in sites of secondary and tertiary importance. The surroundings and natural resources of these sites appear to have dictated the manufacturing activity pursued by the inhabitants of the site. A centrally positioned potters workshop in Berbati made abundant use of the river clay ready to hand in the Berbati valley and was specialised enough to have a kiln set aside specifically for firing the pottery. Aghios Kosmas shows that the process of gathering murex shells and extracting the cyst filled with the dye was carried out at a domestic level with the greater part of the households in the settlement participating in at least this part of the production process throughout the LH III period.

A dense concentration of loom weights and spindle whorls in Nichoria shows that most of the inhabitants were involved in the textile industry, which fits in with literary evidence provided by the Linear B tablets that Messenia had large flocks of sheep kept for their wool. There was also a demand in Nichoria and the surrounding region for metal objects, as shown by the presence of a bronze workshop in Nichoria. That these industries (the bronze workshop in particular) were decentralised, independently operating concerns is not certain and has been questioned. Some Linear B tablets mention sending metal work to various smithies located in the outer lying provinces and it has been debated whether these were independently operating tradesmen fulfilling a feudal obligation or a palatial dependent (Earle 2008, 124).

No direct evidence connects the manufacturing activity at Berbati, Aghios Kosmas or Nichoria to any palatial centre. Most implications of palatial control are indirectly inferred from the archaeological or literary records. Social and economical values of some of the products (such as the purple dye produced at Aghios Kosmas) makes it unlikely that its production was not monopolised by a palatial centre (Ruscillo 2005, 99). If this was the case with Aghios Kosmas the distance from the administrative centre would be due to the production process demanding a location on the coast, near a plentiful source of Murex.

Palatial involvement in the manufacturing of pottery at Berbati is not certain, though the apparent loss of independence does give rise to that possibility. Given that the workshop was operating before the decline of an independent, local elite it seems possible that (some) craftsmen in LH III A 1 could operate independently of the administration of large palatial complexes. Literary records of collecting wool support the hypothesis that production at Nichoria was imposed (partially) by the palace at Pylos. However, since it is not known to what extent the amount collected by the palace matched the amount produced it cannot be said with certainty that all wool production at Nichoria was intended for Pylos.

Asine and Zygouries

In contrast to sites with clear evidence of manufacturing activity the sites of Asine and Zygouries produced only large quantities of pottery. Buildings found at both these sites contained far more pottery than is necessary for a normal household to function. Any industrial activity that may have taken place here left no visible trace and the function of the building in general and the use to which the large amount of pottery was put in particular is difficult to interpret.

Storage as a necessary by-product of production could be interpreted as an indirect or secondary indication of manufacturing activity. The presence of large amounts of storage in the Mycenaean workshops support the link between production and storage. The buildings at Zygouries and Asine do have enough storage capacity to suggest the presence of a workshop but no production area has been identified. Since the contents of the containers have perished it is impossible to ascertain what was being stored so potential raw materials may have disappeared from the archaeological record.
Widely differing interpretations of the function of the buildings have been put forth, for Zygouries in particular. Originally, the excavator thought that the building in Zygouries was a potters workshop because of the vast amounts of clay vessels found in its basement. Due to the absence of a kiln other functions for the building have been suggested. One theory attributes an administrative function to House B because of the large amounts of storage space and the pottery types associated with consumption.

It is difficult to assign anything but a redistributive function to the buildings at Asine or Zygouries, though an administrative function is difficult to prove faced with the absence of clay tablets. In the case of the House of Lévandis in particular it is difficult to interpret the building as a local administrative centre due to its proximity to the fortified citadel of Asine.

**Lerna, Korakou and Malthi-Dorion**

As seen above, sites that lack raw materials or finished products are difficult to connect to any type of industrial activity. It is particularly difficult to demonstrate the presence of manufacturing activities in buildings of a predominantly domestic nature. A metal chisel found in a house in Korakou shows that private households owned (metal) tools. It is, however, impossible to determine exactly what a tool has produced and how much could and had been produced by the tool. The chisel found at Korakou could have been for private use, though the presence of chisels on both floor levels in the same room denote a retained, specialised use for that space which could indicate some type of production. Stone flakes show that the household produced its own stone tools which could also be interpreted as a sign of more intensive domestic production. On what scale this production took place is not clear, though the lack of storage space may argue that it was on a small enough scale not to warrant the permanent devotion of space to storing whatever was produced.

Stone tools found in Lerna, such as a sickle, stone blades, loom weights and spindle whorls suggest an agricultural community. Murex shells found at the site could be evidence of purple dye production (though on a small scale). If purple dye was produced in this community then involvement by the administrative centres is likely.

Large amounts of stone tools like saddle querns and grinders, found in B52-57 in Malthi-Dorion, indicate that food processing played a central part in the life of the inhabitants of this building at least. No other indication for household production has been found, though (mostly) stone tools have been found in the surrounding houses of uncertain date.
5 Discussion

Types of workshops
Identifying workshops is problematical in the Greek Late Bronze Age because manufacturing activities leave little trace in the archaeological record. Deciphered Linear B tablets underline the role of the Mycenaean palatial complexes in the economy while possibly obscuring the role any other institution may have played. Spatial distribution of possible traces of domestic production will indicate the type and level of control of the administrative centres on the economy and, inversely, suggest the role played by household production.

Absence of domestic workshops would indicate a rigidly organised economy in which there would be no place for decentralised, household production and in which the palatial centres controlled the economy to such an extent that private individuals might not be able to engage in production or trade. Alternatively, the archaeological record could be distorted by the inherent difficulty of recognising traces of industrial activity, especially in domestic contexts, which makes it appear that the palatial elite had a monopoly on production.

That not all production took place at the Mycenaean palaces or within the citadels is shown by the presence of workshops found outside the walls of Mycenae and at Berbati and Nichoria. Whether these workshops were independent of palatial management is not clear; the presence of clay tablets in the Ivory Houses at Mycenae and references made in Linear B tablets found in Pylos to outlying production centres much like Nichoria suggest that they might have been semi-dependent on the administrative centres. Control of these production centres by a centralised powerbase cannot be definitively demonstrated by the archaeological record though, most information comes from the literary sources. More archaeological material is needed to come to a satisfactory answer.

Linear B tablets give enough information to make it seem possible that Nichoria was, at least to some degree, dependent on Pylos while the presence of clay tablets at the Ivory Houses in Mycenae put these workshops in the category of semi-independent workshops (Tournavitou 1988, 447). Lack of literary references make it difficult to demonstrate a connection between the potters workshop in Berbati and Mycenae; taking previous independent production into account it seems probable that Berbati remained independent in the Late Bronze Age (Earle 2008, 124).

Evidence of large scale household production of purple dye at Aghios Kosmas also demonstrates the presence of local production centres situated some distance away from an administrative centre which they might be dependent on. Given the social and economic value of purple dye and the seeming monopoly palace-complexes had on luxury goods it seems unlikely that a palatial elite would not have been involved in this production process (Ruscillo 2005, 99). Its distance from an administrative centre indicates that Aghios Kosmas was a semi-independent production centre.

Korakou, Lerna and Malthi-Dorion are all settlements with a very clear domestic character but an ambiguous industrial character; the houses all have loom weights and spindle whorls on a scale large enough for household demands. Of these settlements, only Korakou possesses an area devoted to manufacturing activity that bears the hallmarks of a permanent, non-palatial workshop. This interpretation is based primarily on the constant presence of chisels in room 2a, throughout the period the house was occupied.

That the scale of production was small, as no space was needed to store large amounts of excess produce, is indicated by the lack of storage rooms and also, ironically, by the lack of tools found in the house. If the scale of production was so small the inhabitants could not have depended solely on one
craft for their living and could therefore not have been specialised craftsmen. It is interesting that this is the only site to provide evidence for small scale, independent household production in addition to being the only site outside Mycenae to have produced a bronze tool proper.

The storage at Asine and Zygouries should have a similar (redistributive) function, though both sites will have to be studied more to be able to fully understand the role of the buildings at each site. Storage at Prosymna and Dimini are indirect indications that the inhabitants participated in trade or production. A lack of primary indicators of production, such as raw materials and half-finished objects at Prosymna makes it more difficult to interpret the role played by the two storage cellars at this site.

Evidence of domestic workshops

Most of the workshops included in this thesis have been identified as permanent workshops. It has been suggested that the palace-complexes of the Mycenaean period controlled the economy by monopolising production and stockpiling and redistributing the collected produce. Most of the clearly recognisable workshops identified in this thesis were semi-independent permanent workshops with living areas in the buildings. Production on a household level in a settlement was possible to link to an administrative centre because of the luxury product (purple dye) being produced. Evidence connecting these workshops to administrative centres is mostly provided by Linear B texts and this connection is not clearly supported by the archaeological record.

Only one possible permanent, domestic workshop, likely operating on a small scale, has been identified at Korakou while Berbati provides the best evidence for an independently operating domestic workshop. Since it is not known what the workshop at Korakou produced it is not possible to compare it to other workshops or Linear B texts and therefore this workshop is impossible to link to an administrative centre. Indirect indications of economic participation are the storage rooms attached to private houses at Prosymna, Dimini, Lerna and Mycenae.

Role of decentralised, domestic production

Decentralised production is evident in the archaeological record though it is not certain to what extent this was independent of the palace centres. What is evident is that natural resources were exploited by having workshops or production centres built as close to the raw material as possible; Aghios Kosmas was built on the coast to facilitate the gathering of Murex shells. Though there is a capacity for household production in Mycenaean domestic contexts independent domestic production appears to have been done on a small scale (like at Korakou). Household production on a larger scale, where the whole community was involved, such as Aghios Kosmas or Nichoria, seems to have been organised by an administrative centre. Compared to the amount of semi-independent workshops independent household production seems to play a small role in the Mycenaean economy.

6 Conclusion

Social and economic developments of the Middle Helladic period led to the urbanisation and nucleation of settlements in the beginning of the Late Helladic period and an increase in population and wealth. This in turn allowed certain segments of society to specialise in crafts production and a social elite emerged. Rich burials and monumental, fortified buildings made the presence of this elite highly visible in the archaeological record. A monopoly on luxury goods and their production cemented their position in society.
Several workshops and production centres have been found outside the administrative centres. Their position in relation to the palaces indicate that they were independent and that the main reason for the decentralised location of some of these workshops is the necessity to exploit certain natural resources. In some cases most households of a community were involved in exploiting a particular natural resource. No trace in the archaeological record connect these workshops or production centres to an administrative centre. The only link is the Linear B texts, which detail the collecting of goods from workshops and settlements in return for supporting the workers.

Two sites do give some indication of private production on a household level. The scale is quite small in the case of Korakou but for Berbati quite big. Based on the amount of tools found in the households it seems clear that most house were self sufficient. Secondary indicators, such as storage space showed that some independent households were capable of participating in economic transactions.

On the whole, the palace seems to play an important role in the economy of the time and appears to have quite a tight control on production despite the fact that many of the workshops are not located close to the palace. Care must be taken not to overestimate the importance of the administrative records of the palace because they do represent only those aspects that the palace was involved in.

7 Future Research

Not enough archaeological material is available to be able to test the completeness of the Linear B tablets found at Mycenae and Pylos. If more archaeological work were done it might be possible to reconstruct a settlement hierarchy to confirm that certain aspects of the clay tablets are visible in the archaeological record. Much information has been gathered in the last ten years at Mycenae: in 2003-2009 a systematic geophysical survey of the Lower Town was conducted which mapped a large Mycenaean town (30 ha.) with road networks.

A problem that is more difficult to fix is the understanding of the Linear B texts. These supply us with such a large amount of information it is easy to mistake them for complete records. If more of these tablets were to be found it might be able to put more of the existing tablets into a larger context.
Appendix 1: Inventory of Tools Found in LH III A/B Domestic Contexts

<table>
<thead>
<tr>
<th>Korakou</th>
<th>Bronze</th>
<th>Lead</th>
<th>Stone</th>
<th>Bone</th>
<th>Terracotta</th>
</tr>
</thead>
<tbody>
<tr>
<td>House H</td>
<td>1 chisel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House L</td>
<td></td>
<td></td>
<td>2 pieces of obsidian</td>
<td></td>
<td>2 steatite spindle whorls</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lerna</th>
<th>Bronze</th>
<th>Lead</th>
<th>Stone</th>
<th>Bone</th>
<th>Terracotta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room 1</td>
<td></td>
<td>1 sickle?</td>
<td>1 awl</td>
<td>1 loomweight</td>
<td></td>
</tr>
<tr>
<td>Area west of room 1</td>
<td>1 strip of bronze</td>
<td></td>
<td></td>
<td>1 spindle whorl</td>
<td></td>
</tr>
<tr>
<td>Area 5</td>
<td></td>
<td>1 lead sheet</td>
<td>2 blades (sickles?)</td>
<td>3 spindle whorls</td>
<td>1 spool</td>
</tr>
<tr>
<td>Fill 7</td>
<td>1 steatite spindle whorl</td>
<td>1 obsidian blade</td>
<td>1 chert blade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area D</td>
<td>2 obsidian blades</td>
<td>1 chert blade</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Malthi-Dorion</th>
<th>Bronze</th>
<th>Lead</th>
<th>Stone</th>
<th>Bone</th>
<th>Terracotta</th>
</tr>
</thead>
<tbody>
<tr>
<td>House B52-57</td>
<td>1 'ore'</td>
<td></td>
<td>2 saddle querns</td>
<td>6 large grinders</td>
<td>7 spindle whorls</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 awl</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 flake of sandstone</td>
<td>1 stone axe</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 obsidian knife</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nichoria</th>
<th>Bronze</th>
<th>Lead</th>
<th>Stone</th>
<th>Bone</th>
<th>Terracotta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit IV-6</td>
<td>Fragments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area III</td>
<td></td>
<td></td>
<td>19 spindle whorls</td>
<td></td>
<td>11 loomweights</td>
</tr>
</tbody>
</table>
### Mycenaeae

<table>
<thead>
<tr>
<th></th>
<th>Bronze</th>
<th>Lead</th>
<th>Stone</th>
<th>Bone</th>
<th>Terracotta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panagia House I</td>
<td>3 needles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 arrowhead</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panagia House II</td>
<td>1 unidentified tool</td>
<td>Pieces of moulten lead</td>
<td>1 whetstone</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 needles</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>1 chisel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 arrowhead</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panagia House III</td>
<td>1 needle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 awl?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 unidentified tool</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 axhead</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House of Shields</td>
<td>2 blades</td>
<td></td>
<td></td>
<td></td>
<td>24 obsidian blades</td>
</tr>
<tr>
<td></td>
<td>2 saw blades</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House of the Oil Merchant</td>
<td>Fragments of tools</td>
<td></td>
<td>1 ax mould</td>
<td></td>
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</tr>
<tr>
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</tr>
<tr>
<td>House of Sphinxes</td>
<td>1 bronze sheet</td>
<td>1 obsidian blade</td>
<td>11 peices of obsidian</td>
<td>95 pieces of pumice</td>
<td>3 grinders/pounders</td>
</tr>
<tr>
<td></td>
<td>1 unidentified tool</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>1 'cylindrical' tool</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 lump of bronze</td>
<td></td>
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</table>

### Asine

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<th>Lead</th>
<th>Stone</th>
<th>Bone</th>
<th>Terracotta</th>
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<tbody>
<tr>
<td>Lévandis House</td>
<td>1 pin</td>
<td>4 steatite whorls</td>
<td>Querns</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2 loom weights?</td>
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</table>
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http://www.fhw.gr/chronos/02/mainland/en/mg/technology/textiles/index.html

Figures

Figure 13: Site Location Map: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 14: Plan of Levandis House: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 15: Plan of Panagia Houses: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 16: Plan of Panagia West House: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 17: Plan of Ivory Houses: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 18: Plan of House H: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 19: Plan of House B: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 20: Plan of House B: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 21: Plan of Unit IV-7: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005

Figure 22: Plan of Unit IV-6: Darcque, P., L'Habitat Mycénien: forms et fonctions de l'espace bâti en Grèce continentale à la fin du IIe millénaire avant J.-C., École française d'Athènes, Athens, 2005