# CERAMIC WORKSHOPS IN HELLENISTIC AND ROMAN ANATOLIA: PRODUCTION CHARACTERISTICS AND REGIONAL COMPARISONS

A Master's Thesis

by

HEVES SÖKELİ

Department of Archaeology
İhsan Doğramacı Bilkent University
Ankara

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by

HEVES SÖKELİ

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of
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in

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İHSAN DOĞRAMACI BILKENT UNIVERSITY
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May, 2013

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in the Department of Archaeology.

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| Dr. Jacques Morin | Prof. Dr. Dominique Kassab Tezgör |
| Supervisor | Co- Supervisor |

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in the Department of Archaeology.

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Dr. Charles Gates
Examining Committee Member

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in the Department of Archaeology.

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Assist. Prof. Dr. Özlem Vapur
Examining Committee Member

Approval of the Graduate School of Economics and Social Sciences

---
Prof. Dr. Erdal Erel
Director

# ABSTRACT


CERAMIC WORKSHOPS IN HELLENISTIC AND ROMAN ANATOLIA: PRODUCTION CHARACTERISTICS AND REGIONAL COMPARISONS

Sökeli, Heves

M.A., Department of Archaeology

Supervisor: Dr. Jacques Morin

Co-Supervisor: Prof. Dr. Dominique Kassab Tezgör

May,2013

This thesis aims to study local ceramic productions in Anatolia during the Hellenistic and the Roman periods. It analyzes the ceramic productions of Phocaea, Magnesia ad Maeandrum and Cnidus in the western coast, Sagalassos in the inner Anatolia, and Sinope in the southern Black sea region. The aim of the thesis is to examine whether it is possible to group shape production geographically in Anatolia and to detect whether local centers influenced each other or if external influence can be recognized, for example from Athens. The thesis shows there are regional similarities between the workshops of different regions in Anatolia during the

Hellenistic period and there was an interaction of some popular shapes and decorations between the productions of the workshops of Athens and Anatolia. In the Roman period, there are regional differences in the production of the same shapes and Athens loss its influence on the shapes of Anatolia.

**Keywords:** Anatolia, Workshops, Local Production, Ceramics, Common Wares, Fine Wares, Cooking Wares, Regional Comparisons, Phocaea, Magnesia ad Maeandrum, Cnidus, Sagalassos, Sinope.

# ÖZET

## HELENİSTİK VE ROMA DÖNEMLERİNDE ANADOLU'DAKİ SERAMİK ATÖLYELERİ: ÜRETİM ÖZGÜLLÜKLERİ VE BÖLGESEL KARŞILAŞTIRMALAR

Sökeli, Heves

Yüksek Lisans, Arkeoloji Bölümü

Tez Yöneticisi: Dr. Jacques Morin

Ortak Tez Yöneticisi: Prof. Dr. Dominique Kassab Tezgör

Mayıs, 2013

Bu tez Helenistik ve Roma dönemlerinde Anadolu da yerel üretimleri incelemeyi amaçlamaktadır. Çalışma, Batı Anadolu'da Phocaea, Magnesia ad Maeandrum, Cnidus, İç Anadolu'da Sagalassos, ve Doğu Karadeniz'de Sinope atölyelerinin seramik üretimlerini incelemektedir. Tezin amacı, Anadolu üretimleri arasında benzer üretilmiş tiplerin coğrafi bir gruplama yapılarak bir bölgeden diğerine ya da diğer merkezlerden özellikle Atina atölyelerinden etkilenip etkilenmediğini ortaya koymaktır. Tez, Helenistik dönemde Anadolu atölyelerinde aynı formların bölgeler arası üretimlerinde benzerlikler görüldüğünü ortaya koyarken, dönemin Atina etkili bazı popüler form ve dekorasyonlarının Anadolu

üretimleri üzerindeki etkisini de tespit etmiştir. Roma döneminde ise, aynı formların bölgeler arası üretimlerinde ticarete dayandırılabilecek farklılıklar görüldüğünü ortaya koyarken, Anadolu seramik üretiminde Atina atölyelerinin etkisini yitirdiğini tespit etmiştir.

**Anahtar Kelimeler:** Anadolu, Atölyeler, Yerel Üretim, Seramik, Genel Seramikler, Kaliteli Seramikler, Pişirme Kapları, Bölgesel Karşılaştırma, Phocaea, Magnesia ad Maeandrum, Cnidus, Sagalassos, Sinope.

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Everybody can guess that writing a thesis is really a stressful process. At this long period, I am so deeply indebted for a lifetime to my best friend Sevilay Hacıbekiroğulları for her support and also to Adem Acar for his help in the thesis, and support and trust.

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# CHAPTER 1

# INTRODUCTION

In research about Anatolia during the Hellenistic and Roman periods, most attention is paid to the architecture and the sculpture of the ancient sites. As a result, there is a lack of study about the ceramic production, in spite of the fact that there are important centers with a widespread ceramic production. Directors of excavations have difficulties to find specialists to study the ceramics discovered in the excavations in Anatolia. This is a paradox, since the ceramics help to give a date to an archaeological context. This situation has raised my interest in the study of ceramics. Therefore, I chose to study the production of some important workshops which were excavated and published. In this thesis, my aim is to examine whether it is possible to group shape production geographically in Anatolia and to detect whether local centers influenced each other or if external influence can be recognized, for example from Athens.

Cnidus for the Hellenistic period, Phocaea for both the Hellenistic and Roman periods, and Magnesia Ad Maeandrum[1] for the Roman period were very important production centers located on the western coast. I will compare their productions with those of two sites outside the immediate vicinity of the west coast: Sagalassos in Pisidia, an entire ceramic producing neighbourhood in inner Anatolia during the Roman period, and Sinope in Paphlagonia, located on the southern Black sea, an active production center during the Hellenistic and Roman periods.

I am aware that there are publications about the ceramics of other cities in Anatolia, such as Miletus, Troia and Metropolis, but I have to limit myself, taking into account the space restriction of a Master of Arts thesis. Also I prefer to work on the material from a workshop. There are workshops of Pergamon which was an influential production center, but the workshops found in Kestel are now flooded under a man-made reservoir and unfortunately, there is no publication.

I have considered this thesis as an exercise in order to get familiar with the vase descriptions and with the system of establishing a typology. I hope that this first work will pave the way for a doctorate thesis.

I am working on second hand material: it has been already studied by the excavators who have published it. However, I have not simply done a compilation of their work, since I didn't use systematically the same typology, but I have made my own system. In the catalog, I will study the ceramics in a specific order according to the clay body. In the publications of Sagalassos and Magnesia, the authors take into consideration the use of the ceramics to group them. They classify the vessels as service plates, cooking vessels, drinking vessels, etc. Since I classify my material

[1]I most of the time call it Magnesia.

according to the clay, my work reflects differences from the publications. For example, the food preparation vessels of Magnesia will be studied in my catalog in the group of common wares. Also, some vessels published as common wares in the publications of Sagalassos will be divided in my thesis into common and cooking wares and studied separately. Moreover, the same shape can have different uses according to the clay. For example, the oinochoai of Cnidus will be described in the group of fine wares, but the oinochoai of Magnesia in the group of common wares.

In order to be consistent in the whole thesis I am using only my own vocabulary and I have given the same name for the same shape even if in the various publications it has been given different names by the authors. I mainly will use the publications of the Athenian Agora as a guide for terminology. This will allow me to make clearer comparisons between the shapes of different workshops.

Since I did not have the chance to work directly on the material, I have only been able to scan the photos and the drawings from the publications; this is why I could not use better quality illustrations.

My thesis consists of 4 chapters: Introduction, Catalog of the production of the workshops, Synthesis, and Conclusion. The catalog is the main part of my thesis since I have studied the vessel forms in detail in order to make the hypothesis of the synthesis.

In the catalog, I have chosen to present the workshops in geographical order. I will study Phocaea, Magnesia and Cnidus for the western coast from north to south, then Sagalassos in Pisidia, and Sinope in Paphlagonia.

I will cover the material in the following fashion for each production center: a brief introduction, a description of the clay and the slip, a catalogue of shapes. I will

study the vessel forms of the workshops according to the typology which I have organized. The production is divided into three ware groups: the common wares, the fine wares and the cooking wares. Then, I will divide each of these categories into two forms: open vessels and closed vessels. For each shape, I will give the description according to information available in the publications in the following order: rim profile, rim diameter, body form, base, underside of the base, handle, height of vessel, slip, decoration and date.

As I have said I consider this thesis as an exercise to describe the shapes and to establish a vocabulary. For me, more difficult was the description of the rims. I have looked at the publications of the Athenian Agora to see how the rim profiles were described and which vocabulary was used. I will use these publications as a guide for my descriptions (fig. 150)[2].

In some cases I will not present all the information because I did not have direct access the material, but only to the written publications. If the publications do not include any information, for example, about the rim diameter or the height of the vessels, it is not possible for me to mention them. However, sometimes the presence of a scale on an illustration allows one to approximate such measures.

Furthermore, when there is no drawing in the publications, it is very hard to understand the profile, especially the underside of the base. If there is only a photograph and there is no information in the publication, the description in the catalog can have some missing parts. Moreover, in the synthesis it is hard to compare a profile and a photograph. On the other hand, I will mention in square brackets "[…]" only the shapes which do not have any illustration.

[2]See below fig. 150, p. 127 for some examples of the vocabulary that I use in the thesis to describe the rims.

Usually, in the studies about ceramics there is no information about the height for all the types. Only if it is a closed vessel, such as a jug/ jar/ chytra, it is usual to mention the height. Personally, I prefer to give the height for all types if it is possible because with the diameter of the rim, it will help the reader to visualize the whole size of a vessel.

Sometimes no complete form of a vessel has been found. In the catalog, for the ceramics with missing parts, I will look at parallels to complete their description. I initially prefer to look at the types from the Athenian Agora because the ceramics of the Agora come from precisely dated contexts. Unless it is not possible to make a complete description with the help of the types from the Agora, I will look at the parallels from the other sites of Anatolia or Greece. The parallels I will give have a similar date as those objects which I study.

I will conclude the study of each workshop with considerations about the characteristics of the production.

In chapter 3, I will present a synthesis concerning the shapes produced in more than one centre. Firstly for the Hellenistic period, I will compare the production of Phocaea and Cnidus on the western coast. Secondly, for the Roman period I will compare Phocaea and Magnesia on the western coast. Then, I will compare these two productions to the interior production of Sagalassos and lastly, to the northern production of Sinope.

In that chapter, with the aim to complete the geographical distribution of the shapes, I will enlarge the parallel research to other sites of Anatolia and to Greece, including Crete. However, parallels could be found for example in Stobi and in Italy, but I have to limit my research because of the space constraints of a Master's thesis.

According to the same principle as in the catalog, the parallels which I will give have a similar date as those objects which I study.

The workshops that I will study, especially the ones near the sea, Cnidus and Sinope, also produced amphorae. However, to study the production of transport amphorae could be a topic by itself for a thesis, and among them, especially the stamped ones; because of space constraints, I will, therefore, ignore them. For the same reasons, the production of terra sigillata in Phocaea will not be covered in the thesis. I will study the locally produced imitated African Red Slip wares and terra sigillata production of Magnesia.

Finally, in the conclusion I will consider the material of the Hellenistic and Roman periods separately. I will try to answer the question: is it possible to recognize geographical patterns of shape production and identify the paths of influence?

# CHAPTER 2

# CATALOG
# EXAMINING THE PRODUCTION OF THE WORKSHOPS

In this chapter I will examine five local production centers from Anatolia. I will make a ceramic catalog of the workshops of Phocaea, Magnesia Ad Maeandrum, Cnidus, Sagalassos and Sinope.

## 2.1. The Ceramic Production of Phocaea

The ancient city of Phocaea is situated in western Asia Minor, in the region of Ionia. The ruins of Phocaea can be found in present- day Foça, close to İzmir (fig. 1).

The first excavations at Phocaea were done in 1913 by F. Sartiaux. Later, from 1952 to 1955, E. Akurgal excavated the temple of Athena. After him, in 1989 Ö. Özyiğit became the head of the excavation which he still leads today.

At Phocaea, the remains of both public and domestic buildings have been exposed to destruction many times during its history because of successive building activity. Therefore, most of the ceramic workshops were destroyed together with the ancient buildings.

Phocaea was one of the most important ceramic production centers from the Orientalizing to the Late Roman period (Özyiğit, 2004: 443-444). As a result of the excavations since 1989, the remains of dumps from the workshops have been recognized in mainly four areas[3]:

- İsmet Paşa and Atatürk Districts: many ceramic dumps were excavated belonging to different workshops. In the İsmet Paşa district, an early Hellenistic ceramic dump was excavated from the Maltepe Tumulus (Özyiğit, 1996: 8), a Hellenistic one near the Archaic Megaron Building (Özyiğit, 1999: 51), a Roman one at the Çifte Kayalar hill (Özyiğit, 1991: 137). In the Atatürk district, four Roman ceramic dumps have been excavated which are dated from the 1st to the 3rd century AD (Özyiğit, 2003: 345); one of them originates from a late Roman terra sigillata workshop (Özyiğit, 2006: 81), and another one is dated to the 3rd century AD (Özyiğit, 2006: 81).
- The Persian Tomb Monument: a late Hellenistic workshop dated between 350 and 300 BC from coins was excavated near the monument (Özyiğit, 2003: 339-340).
- The Athena Temple: a late Roman *terra sigillata* workshop was excavated near the temple (Özyiğit, 2007: 348).
- The Theater: a late Roman ceramic dump was recovered near the cavea of the theater (Özyiğit, 1993: 3-5).

The ceramic production of Phocaea is not published yet, so that only general information is available in "Kazı Sonuçları Toplantısı" about the workshops of the

[3]No site plans are available in the publications.

İsmet Paşa district. Ö. Özyiğit identifies all the ceramics from these workshops as common wares[4]. The clay and slip analyses of the ceramics are not done yet. Moreover, the ceramics of Phocaea most of the time are not dated precisely. As a result, I will use the dates provided in the publications.

### 2.1.1. The Vessel Forms From the Maltepe Tumulus

Ö. Özyiğit dates the ceramics of the Maltepe Tumulus between the 4th and the 2nd century BC according to the unguentaria (Özyiğit, 1996: 8).

#### 2.1.1.1. The Fine Wares

***Open Vessels***

*Plates*

There are three types of plate according to the rim profiles. The rim of the first type is downturned (fig. 2). The rim of the second type is rounded (fig. 3). The rim of the third type is horizontally projecting (fig. 4). The diameter varies from 16 to 24 cm in all types (Özyiğit, 1996: 17, drawing 7; 18, drawing 8). All types of plates have a slightly convex profile; the complete examples from the Megaron Building have a high ring base with a flat underside (fig. 11). No complete example is preserved, so that their height remains unknown.

[4]See the articles published in the *Kazı Sonuçları Toplantısı* from 1991 to 2005.

*Cups with concave rim*

The rim is outturned and horizontal (fig. 5). Its diameter varies from 7 to 13 cm (Özyiğit, 1996: 18, drawing 9). Over the carination the upper part of the profile is concave, and its lower part is slightly convex. The vessels have a high ring base with a convex underside. The cups have no handles. The height of the complete examples varies from 3 to 6 cm (Özyiğit, 1996: 18, drawing 9).

*Small cups with inturned rim*

The rim is formed by the extremity of the wall; it is an inturned rim (fig. 6). Its diameter varies from 7 to 14 cm (Özyiğit, 1996:19, drawing 10). The profile is convex and rests on a high ring base. The surface under the base is slightly convex. The height of the complete examples ranges from 3 to 5.5 cm (Özyiğit, 1996:19, drawing 10).

### 2.1.1.2. The Cooking Wares

***Open Vessels***

*Lopades*

The rim is everted and projecting (fig. 7). Its diameter varies from 20 to 25 cm (Özyiğit, 1996: 17, drawing 6). The vessels probably have a lid. The upper part of the body splays out slightly. Under the carination, the lower body narrows down to the base. No bases are associated with this form, but the Athenian examples dated mostly

from 150 to 130 BC, have a flat base (Rotroff, 2006: 183)[5]. The surface under the base is convex (fig. 8). The height of the Athenian parallels ranges between 5 and 10 cm (Rotroff, 2006: fig. 85: 669-670,733).

### 2.1.2. The Vessel Forms From the Archaic Megaron Building Area

The ceramics found close to the Archaic Megaron Building are dated to the second half of the 4th century BC (Özyiğit, 1999: 51). With the agreement of D. Kassab Tezgör, I decided to include these ceramics into the Hellenistic period because the ceramics are dated to the late 4th century BC.

#### 2.1.2.1. The Common Wares

***Open Vessels***

*Lekanai*

The lekanai have an everted and projecting rim (fig. 9). Its diameter is 26.5 cm (Özyiğit, 1999: 64, drawing 19). The body tapers in under the rim then bulges out before narrowing toward a high ring base. The underside of the base is convex. The vessels have two horizontal handles attached to the upper part of the body. The height of a complete example is 10 cm (Özyiğit, 1999: 64, drawing 19).

[5]In S. Rotroff's terminology, these vessels are called, "Lopas , Form 5: Straight-Sided, No Handles".

### 2.1.2.2. The Fine Wares

***Open Vessels***

*Skyphoi*

The rim is outturned (fig. 10). Its diameter varies from 11 to 14 cm (Özyiğit, 1999: 56, drawing 4). The profile is convex. The base is a low ring base with a concave underside (fig. 10). The skyphoi have two handles that are attached from the rim to the body (fig. 10). The height of the one complete example is 7 cm (Özyiğit, 1999: 56, drawing 4).

*Plates*

The rim is downturned (fig. 11). Its diameter varies from 20 to 22 cm (Özyiğit, 1999: 57, drawing 6). The wall of the body is straight. The plates have a high ring base. The surface underneath the base is flat (fig. 11). The height of a complete example is 3.5 cm (Özyiğit, 1999: 57, drawing 6).

*Cups with outturned rim*

The cups have a rolled and outturned rim (fig. 12). The diameter of the rim ranges from 8 to 20 cm (Özyiğit, 1999: 57, drawing 5). Over the carination the upper part of the body is concave. The lower part of the body is slightly convex and narrows down to the base. The vessels have a high ring base. The underside of the base is slightly convex. These cups do not have any handle. The height of a complete example is 2.5 cm (Özyiğit, 1999: 57, drawing 5).

*Small cups with inturned rim*

The rim is formed by the extremity of the wall, it is an inturned rim (fig. 13) Its diameter varies between 10 and 20 cm (Özyiğit, 1999: 57, drawing 6; 64, drawing 20). The profile is convex and rests on a raised base. The underside of the base is convex (fig. 13). One example has a guilloche decoration on the outer surface (fig. 14). The height of a complete example is 5 cm (Özyiğit, 1999: 64, drawing 20).

***Closed Vessels***

*Oinochoe*

One oinochoe is known from this location; its rim is not preserved. The vessel has a high neck (fig. 15). The profile is globular. The base is raised and the middle part of its underside is concave. The height without the rim is 12 cm (Özyiğit, 1999: 56, drawing 4). The oinochoe has West Slope decoration on its shoulder.

**2.1.2.3. The Cooking Wares**

***Open Vessels***

*Shallow basins*

The rim is slightly everted and projecting (fig. 16). Its diameter varies from 32 to 43 cm (Özyiğit, 1999: 63, drawing 17). The straight wall splays out. The vessels have a flat base with a flat underside. The height of a complete example is 10 cm

(Özyiğit, 1999: 63, drawing 17). The top of the rim is decorated with a single wavy line.

*Pans*

The rim is rolled and outturned (fig. 17). Its diameter ranges from 27 to 43 cm (Özyiğit, 1999: 62, drawing 15). The wall is more or less concave. The vessels have a flat base with a flat underside. Some examples have two horizontal handles attached under the rim. Their height varies from 2.5 to 4 cm (Özyiğit, 1999: 62, drawing 15).

***Closed Vessels***

*Deep chytrai*

The vessels have a rolled and outturned rim (fig. 18) whose diameter ranges from 9 to 23 cm (Özyiğit, 1999: 59, drawing 10). The profile and the base are not preserved, but according to the parallels from Athens dated to the 3rd, 2nd and 1st centuries BC, it is either a flat base with a flat underside or it is a flat base with a concave underside (fig. 19) (Rotroff, 2006: 176)[6]. No complete example is preserved, but the height of the Athenian parallels ranges from 17.5 to 19.8 cm (Rotroff, 2006: 175). Some of the deep chytrai have two tripartite handles attached from the rim to the upper part of the body (fig. 18).

[6]In S. Rotroff's terminology, these vessels are called, "Chytra, Form 9: Wide-Rimmed".

### 2.1.3. The Vessel Forms From the Çifte Kayalar Hill[7]

#### 2.1.3.1. The Common Wares

The ceramic dump of the Çifte Kayalar hill dates between the 1st and the 3rd century AD (Özyiğit, 1991: 137-138 and Özyiğit, 1992: 104). Every sherd has been dated by Ö. Özyiğit according to the context of the excavations in the workshops.

***Closed Vessels***

*Jugs*

The rim is everted and projecting (fig. 20). The vessels have a vertical neck. The profile is almost cylindrical, tapering slightly toward a flat base. A curved handle is attached from the neck to the shoulder. The jugs are dated to the first half of the 2nd century AD (Özyiğit, 1992: 114, photograph 7).

*Tankards*

There are two types of tankard. The first type is the earliest. The rim is everted and high (fig. 21). The profile is convex and carinated. The vessels have a slightly raised base. The underside of the base is concave or flat. A curved handle is attached from the lower part of the rim to the carination. It is dated to the second half of the 1st century AD (Özyiğit, 1992: 115, photograph 9a).

[7]Few measurements are given in the original publication and the illustrations are limited to photographs, so that I cannot give detailed description of all the shapes.

The rim of the second type is everted and high (fig. 22). The profile is convex and the lower part of the body appears to be ribbed. The base is a high ring base. A curved handle is attached from the lower part of the rim to the body. It is dated to the 3rd century AD (Özyiğit, 1992: 115, photograph 9b).

### 2.1.3.2. The Fine Wares

#### *Closed Vessels*

*Oinochoai*

There are two types of oinochoe. The first type is the earliest. The vessels have a trefoil rim and a short neck (fig. 23). The profile is squat. The lower part narrows down to a low ring base. They have a vertical handle attached from the rim to the body. They are dated to the second half of the 1st century AD (Özyiğit, 1992: 115, photograph 8).

The second type has a trefoil rim with a splaying neck (fig. 24). The profile is ovoid. The base is a low ring base. A vertical handle is attached from the rim to the body. They are dated to the 3rd century AD (Özyiğit, 1992: 118, photograph 14).

### 2.1.3.3. The Cooking Wares

***Open Vessels***

*Shallow basins*

The rim is horizontal and projecting (fig. 25); its diameter ranges from 28 to 41 cm (Özyiğit, 1991: 146, drawing 10). The profile of the wall is rounded. One example has an outturned rim with a ridge in its middle, and a slightly convex profile that narrows down to the base (fig. 26); this example is 5.5. cm high and its rim measures 25 cm in diameter (Özyiğit, 1991: 146, drawing 11). The base is flat, but some examples has a slightly low raised base. The underside of the base is slightly concave. The height of the complete examples ranges from 6 to 8 cm (Özyiğit, 1991: 146, drawing 10). Most are dated to the second half of the 1st century AD (Özyiğit, 1991: 146, drawing 10), but one is dated to the beginning of the 2nd century AD (Özyiğit, 1991: 146, drawing 11).

*Pans*

The wall forms a convex rim (fig. 27); its diameter varies from 28 to 30 cm (Özyiğit, 1991: 145, drawing 9). The profile is concave. The base is flat. The underside of the base is flat or concave. The vessels have a horizontal handle attached obliquely to the rim. Their height is between 4 and 5 cm (Özyiğit, 1991: 145, drawing 9). They are dated from the 1st to the 2nd century AD (Özyiğit, 1991: 145, drawing 9).

***Closed Vessels***

*Shallow chytrai*

The shallow chytrai have an everted and projecting rim (fig. 28). The upper profile is concave, under the carination the lower profile is convex and narrows down to a flat base. Two loop handles are attached from the rim to the upper part of the body. They are dated to the beginning of the 3rd century AD (Özyiğit, 1992: 118, photograph 13).

### 2.1.4. Characteristics of the Production at Phocaea

There are two main characteristics for the production of Phocaea. Initially, during the Hellenistic period Phocaea produced oinochoe with West Slope decoration (fig. 15). This is important to show the regional influences between western Anatolia and Athens because the decoration was created in Athens and used as popular decoration of the period in other production centers as well[8].

Secondly, Phocaea is one of the most important ceramic production center in Anatolia. Its long lasting production extends from the Orientalizing to the Late Roman period. It is important to compare the ceramics which were produced both in the Hellenistic (found near the Megaron building) and Roman (found in the ceramic dump of the Çifte Kayalar) periods because there is an uninterrupted production of shapes between these periods that helps to see the changes very clearly. The types which were produced both in the Hellenistic and the Roman periods, and reflect the continuity between them are: the oinochoai, shallow basins and pans.

[8]See below, Chapter 4: Conclusion 4.1. The Hellenistic Period, pp 93-96.

To see the changes between the same shapes of the Hellenistic and the Roman periods, it will be beneficial to make comparisons:

*Oinochoai*

The production of oinochoai differs between the two periods. No example of a rim is preserved from the Hellenistic examples (fig. 15), but there are many trefoil rims dating to the Roman period (fig. 23-24). The neck of the Hellenistic vessels is high and cylindrical, the profile is convex on a low ring base (fig. 15). When it comes to the Roman period, the neck of the ceramics is short and splaying. Furthermore, the body reflects two different types. The earliest have a convex profile narrowing down to the base (fig. 23) and the latest are ovoid (fig. 24). The base of the oinochoai is similar in both periods, it is a raised base. No information exists about the handle of the Hellenistic period, but the handle of the Roman examples was attached from the rim to the body. For the oinochoai, it is not wrong to say that there is a change in the form between the two periods, and also between the earliest and latest shapes of the Roman period.

*Shallow basins*

During the Hellenistic period, the rim is slightly everted and projecting (fig. 16). The wall is straight and the base flat. When it comes to the Roman period, the rim is horizontal and projecting (fig. 25). The profile of the wall is rounded, and the base is flat. Only one example has an outturned rim with a ridge in the middle, and a slightly convex profile that narrows down to the base and ends with a flat base (fig. 26). So, it can be said that the profile of the shallow basins is different between the

Hellenistic and Roman periods. However, since only one example of the Roman period is similar with the Hellenistic examples, it is premature to comment because new excavations or surveys can give a clearer idea about the different body form of the vessels of the Roman period.

*Pans*

The differences in the production of the pans can easily be seen on the rim, body forms and the handle types of the Hellenistic and Roman examples. In the Hellenistic period, they have a rolled and outturned rim (fig. 17). But in the Roman examples the wall forms the rim which is convex (fig. 27). The wall of the pans is more or less concave in the Hellenistic period, but it is concave or slightly convex in the Roman examples. The Hellenistic pans have two horizontal handles attached under the rim, but the Roman ones have a horizontal handle attached obliquely to the rim. In addition the Hellenistic pans are shallow and wide, but the Roman are deeper and small. The only similarity between the two periods is the form of the base which is flat. One Roman example has a concave underside while the others have a flat one.

The uninterrupted production of Phocaea reflects that there was a change in the form of the same shapes between the two periods. Generally, the similarity between the types is the form of the base.

## 2.2. The Ceramic Production of Magnesia Ad Maeandrum

The ancient city of Magnesia Ad Maeandrum is situated in western Asia Minor, in the region of Ionia. The ruins of Magnesia can be found in Ortaklar, close to Aydın (fig. 1).

The city was located by W.M. Leake in the 19th century. From 1842 to1843, Texier did the first research, and from 1891 to 1893, C. Humann made the first comprehensive excavations in the city. Later, in 1984 the Aydın Museum resumed the excavations, and in 1986 O. Bingöl became the head of the excavations that he still directs today.

The excavations in Magnesia emphasize mainly architectural structures and restoration and are concentrated especially in the Large Bath, the Theatre, the Gymnasium, the Market Building, the Artemis Temple, the Artemis Altar, the Propylon, the Latrine, the Artemis Sacred Area Stoas, the Agora Stoas, the Ceremony Road, the Niche Place, the Stadium and the Hypocaust Building[9] .

Unfortunately, the ceramics of Magnesia were not investigated by any other excavators of the city before O. Bingöl, and its ceramic production was not known until the Hypocaust Building was excavated[10].

With the encouragement of O. Bingöl, Ö. Vapur studied the ceramics of the Hypocaust Building. The excavations in the building were done between 2000 and 2002, and in 2004. The A, C, D rooms, a fresco room, and the room with the Hypocaust system were excavated. The building was destroyed either when the Goths attacked the Ionian cities in AD 262 or by an earthquake at about the same time[11] (Vapur, 2009: 176). The building was used as a ceramics dump during the Late Roman period, since its ceramics are dated between the 1st and the 3rd century AD (Bingöl, 2003: 98).

[9]See the articles published in the *Kazı Sonuçları Toplantısı* from 1986.
[10]No site plans are available in the publications.
[11]The destruction of the earthquake can easily be seen at the Stadium.

### 2.2.1. The Clay of the Fine and Common Wares

The clay is 7.5YR 5/6 dark brown and 5YR 5/6 yellowish red, the most common being 7.5YR 5/6 (Vapur, 2009: 18). It has many mica inclusions. Fine wares, containers, preparing and serving vessels, lids, and lamps were made with this type of clay (Vapur, 2009: 18).

The same type of clay can also be identified on the ceramics of some cities in the Büyük Menderes region, but the clay of other cities to the west and south of Magnesia have more lime and a lighter color, while on the eastern side clays have a darker red color (Vapur, 2009: 18).

### 2.2.2. The Clay of the Cooking Wares

The clay is red, it is 2.5YR 4/8 and 5YR 4/6 red. It has more inclusions, such as mica, sand, and quartz (Vapur, 2009: 18).

### 2.2.3. The Slip

The slip of the wares is 2.5YR 4/8 and 2.5YR 4/6 red (Vapur, 2009: 19). The common wares: cups with everted rim, strainers, cups with concave rim, deep basins, jugs, tankards; the fine wares: plates, cups with thick rim, miniature jugs; and the cooking wares: pans, slipped red, brown, brick, or/ and orange.

### 2.2.4. The Vessel Forms

The ceramics of the Hypocaust Building are dated to the Roman period, between the 1$^{st}$ and 3$^{rd}$ century AD. Every sherd has been dated by Ö. Vapur in her PhD thesis according to the context of the excavations in the building and the parallel

productions such as the ones of Ephesus, Miletus, Didyma, Troia and Pergamon in Asia Minor, and the Athenian Agora, Knossos and Corinth in Greece.

#### 2.2.4.1. The Common Wares

***Open Vessels***

*Lekanai*

The rim is thickened outwardly and has a triangular section (fig. 29). Its diameter ranges from 29 to 48 cm (Vapur, 2009: 71). The vessels have a convex profile and a high ring base (fig. 29). The surface on the underside of the base is convex. The lekanai do not have any handle. The height of the complete examples is 23 cm (Vapur, 2009: 210). The vessels do not have any slip. There are traces of wheeling on the outside surface and some examples have ridges on the body. They are dated to the 3rd century AD (Vapur, 2009: 72).

*Cups with everted rim*

The rim of the cups is everted and projecting (fig. 30); its diameter ranges between 13 and 27 cm (Vapur, 2009: 43). The profile has a convex form. The lower profile narrows toward the base, none of which are preserved. Some examples have two vertical handles attached from the rim to the edge of the shoulder (fig. 30). Since no complete example is preserved the height remains unknown. A thin slip covers the outside surface of the cups. There are decorations of grooves on the rim. These cups are dated from the 1st to the 3rd century AD (Vapur, 2009: 43).

*Cups with downturned rim*

The cups have a rim thickened outwardly and it has a triangular section (fig. 31) whose diameter varies from 16 to 20 cm (Vapur, 2009: 40). The cups have a convex profile which narrows toward the base. The vessels have a high ring base with a convex underside. The height of the complete examples ranges from 6.3 to 10.4 cm (Vapur, 2009: 184-186). The cups do not have a slip. There are traces of wheeling on the body and some examples have ridges on the body. Also, there are decorations of grooves under the rim. They are dated to the 2nd century AD (Vapur, 2009: 41).

*Strainers*

Strainers have a horizontal and projecting rim (fig. 32). Its diameter ranges from 32 to 38 cm (Vapur, 2009: 214-215). On the rim they have a decoration of three grooves and two holes for a rope. The profile is concave and the base is flat. The underside of the base is slightly concave. There are 18-20 holes on the base with a diameter that varies from 0.8 to 1.2 cm (Vapur, 2009: 76). The height of the complete vessels ranges from 6.5 to 8.1 cm (Vapur, 2009: 214-215). The vessels have a slip of a red, brown or brick color. There are traces of wheeling on the outside surface of the body and some examples have ridges on the body The strainers are dated from the 2nd to the 3rd century AD (Vapur, 2009: 78).

*Trays*

The upper extremity of the wall forms the rim (fig. 33). Its diameter ranges from 52 to 70 cm (Vapur, 2009: 78). The wall is straight and widens down to the

base around which is a thick ridge. The vessels have a flat base with a flat underside. The height of the complete examples ranges between 6 and 6.8 cm (Vapur, 2009: 125). The trays do not have a slip. They are dated from the 1st to the 3rd century AD (Vapur, 2009: 79).

*Cups with concave rim*[12]

The cups have an outturned and horizontal rim (fig. 34) whose diameter ranges from 16 to 24 cm (Vapur, 2009: 42). Over the carination the upper part of the profile is concave. The lower part of the body narrows down to a high ring base. The underside of the base is rounded. The cups do not have any handle. The height of the complete examples ranges from 7.8 to 8.1 cm (Vapur, 2009: 186-187). Some examples have a slip of a red or brick color on either the inside, or the outside surface, some are slipped only on the upper part of the body both inside and outside. There are ridges on the body. They are dated between the 2nd and the 3rd century AD (Vapur, 2009: 42).

*Shallow basins*[13]

The rim is horizontal and projecting (fig. 35); its diameter varies from 33 to 48 cm (Vapur, 2009: 64). The profile is either straight or slightly concave and the base is flat. The underside of the base can be flat, or concave. The basins do not have any handle. The height of the complete examples ranges from 7 to 13.6 cm (Vapur, 2009:

[12]Usually the cups were produced in fine ware, but at Magnesia the clay shows they were produced as common ware.
[13]Normally the shallow and deep basins are in the group of cooking wares, but in the production of Magnesia they are used for food preparation, not for cooking.

202-203). The vessels do not have a slip. Some examples show traces of wheeling on the body. They are dated to the 2nd century AD (Vapur, 2009: 65).

*Deep basins*

The rim is everted (fig. 36). Its diameter varies from 22 to 75 cm (Vapur, 2009: 68). The profile is straight, or slightly concave. The base is flat (fig. 36). The underside of the base can be flat, or slightly convex. The height of the complete examples ranges from 15.6 to 18.8 cm (Vapur, 2009: 204-205). The vessels have red, orange, or dark-light brown slip on the outer surface (Vapur, 2009: 68). The potters marks can be seen on the underside of the base (fig. 36). There are ridges on the body. They are dated from the 2nd to the 3rd century AD (Vapur, 2009: 71).

***Closed Vessels***

*Jugs*

There are three types of jug. The first type has an outturned and rolled rim (fig. 37). Its diameter ranges between 6 and 10 cm (Vapur, 2009: 55). The jugs have a straight neck above a wide shoulder. The body is pear shaped. The base is a high ring with a convex underside. The jugs have one curved handle attached from the rim to the shoulder. There is a groove decoration on the handle. The height of the complete vessels ranges from 18 to 28.2 cm (Vapur, 2009: 194-195). The slip is brown and red. There are ridges on the body. This type of jug is dated to the 2nd century AD (Vapur, 2009: 56).

The rim of the second type is thickened outwardly and has a triangular section (fig. 38). Its diameter is 4 or 5 cm (Vapur, 2009: 58). The vessels have a flaring neck. The shoulder is wide and the body is globular. The jugs have a high ring base with a rounded underside. These vessels have a curved handle attached from the upper part of the neck to the shoulder. There are groove decorations on the handle. The height of the complete examples ranges from 17.8 to 18.8 cm (Vapur, 2009: 196). The slip can be red or orange-brown. There are ridges on the body. This type is dated to the 2nd century AD (Vapur, 2009: 59).

The rim of the third type is thick and underlined by a ridge (fig. 39). Its diameter is 6 cm (Vapur, 2009: 194). The neck profile is straight and widens slightly under the rim. The vessels have a wide shoulder and an angular transition to the body of which the wall is straight. They have a low ring base. The underside of the base is flat. A curved handle is attached from the neck to the shoulder. There are groove decorations on the handle. Only two vessels of this type have been found. The complete one is 21 cm high (Vapur, 2009: 194). The vessels are slipped with red color. This type is dated between the 1st and the 2nd century AD (Vapur, 2009: 54-55).

*Tankards*

The tankards have a high and straight neck which flares slightly at the top and forms the rim (fig. 40). Its diameter ranges from 5.7 to 11 cm (Vapur, 2009: 45-50). The vessels have a convex profile which narrows down to the base. They have a slightly raised base (fig. 41), of which the underside can be flat or slightly concave. A ring handle is attached from the lower part of the neck to the upper part of the

body. A complete vessel is 12.9 cm high (fig. 41) (Vapur, 2009: 189). The slip is brown and red. There are decorations of grooves at the top of the rim and also ridges on the body. They are dated between the 1st and the 2nd century AD (Vapur, 2009: 45-50).

*Water jars*

The rim is everted (fig. 42); its diameter varies from 12.6 to 13 cm (Vapur, 2009: 85). The profile is convex. The base is a high ring base (fig 43). The underside of the base is convex. The vessels have a horizontal basket handle. No complete example is preserved, but according to the best preserved one, the water jars are taller than 24.9 cm (Vapur, 2009: 85). The jars are not slipped. Groove decorations appear under the rim and there are ridges on the body. They are dated to the 3rd century AD (Vapur, 2009: 86).

*Containers*

The rim is downturned (fig. 44-45) with the diameter ranging from 22.8 to 69.4 cm (Vapur, 2009: 125-126). No complete example is preserved and for this reason the base is not known. No parallel of the containers can be determined from the Athenian Agora or any other centers of Greece. Parallels of the containers of Magnesia are known from Miletus (Berndt, 2003: 296, pl. 66/P 001) and Ephesus (Meriç, 2002: 114, pl. 63/K 733), but their base is not preserved. One example has a red slip on the rim and inside the vessel (fig. 45). The containers are dated between the 1st and the 3rd century AD (Vapur, 2009: 125-126).

*Oinochoai*[14]

There are three types of oinochoe. The first type has a trefoil rim (fig. 46), 5.8 cm in height (Vapur, 2009: 200). The profile is globular. The base of this type is not preserved, but according to Ö. Vapur it is similar to the base of the second type: a high ring base with a convex underside (fig. 47). The vertical handle is attached from the rim to the body[15]. No complete example is preserved. The oinochoai do not have a slip. All examples have grooves at the attachment level of the rim and the body. This type is dated to the 3rd century AD (Vapur, 2009: 61).

Only one example has been found of the second type. It has a trefoil rim (fig. 47). The vessel has a spherical profile and a high ring base. The underside of the base is convex. A vertical handle is attached from the rim to the body. It is 28.4 cm high (Vapur, 2009: 196). The oinochoai do not have a slip. There are decorations of grooves on the neck and ridges on the body. It is dated to the 2nd century AD (Vapur, 2009: 57).

The third type has a trefoil rim (fig. 48); its height varies from 8 to 9 cm (Vapur, 2009: 246). The profile is spherical. The base of this type is not preserved, but according to Ö. Vapur it is similar to the base of the second type: a high ring base with a convex underside (fig. 47). A vertical handle is attached from the rim to the body. No complete example is found, but the vessels can be taller than 21 cm according to the best preserved one (fig. 48) (Vapur, 2009: 246). The vessels do not have a slip. On the rim and the neck, groove decorations can be observed (fig. 48).

[14]Usually, oinochoai are in the group of fine wares, but in the production of Magnesia they were produced as common wares according to the clay.

[15]The handles of the three types of oinochoe are not seen on the plate, but described in the publication (Vapur, 2009: 57,61,124).

Also, there are ridges on the body. This type is dated between the 2nd and the 3rd century AD (Vapur, 2009: 124).

### 2.2.4.2. The Fine Wares

The plates and the cups with the thick rim of Magnesia are the local imitations of African Red Slip Wares and Eastern Sigillata B forms known in Anatolia from imports. Their main properties are a very thin wall and a red slip both on the outer and inner surface. The difference between the imports and the imitations is that the latter are not of the same quality, they are of lesser quality. The shapes are limited to the plates and the cups with thick rim.

***Open Vessels***

*Plates*

There are two types of plate. The first type is the imitation of the African Red Slip Wares. In J. Hayes's terminology they are known as "Form 181" (Hayes, 1972: 200-201, fig. 35/ 2,12). These plates have an inturned rim formed by the extremity of the wall (fig. 49). Its diameter ranges from 24 to 30 cm (Vapur, 2009: 29). The plates have a low and convex profile, and a flat base with a slightly concave underside. The height of the complete examples is 4.5 cm (Vapur, 2009: 177). This type is dated from the 2nd to the 3rd century AD (Vapur, 2009: 30).

The second type is the imitation of Eastern Sigillata B Wares. In J. Hayes terminology they are known as "Form 60" (Hayes, 1985: 64, pl. XIV/7,8). They have a thick and vertical, or slightly inverted rim; it forms a ridge at the lower extremity

(fig. 50). Its diameter ranges from 21 to 37 cm (Vapur, 2009: 30). The profile is concave, and the base is flat with a concave underside (fig. 50). The height of the complete examples ranges from 4 to 6.5 cm (Vapur, 2009: 177-178). This type is dated between the 2nd and the 3rd century AD (Vapur, 2009: 30-31).

*Cups with rounded rim*

The cups are the local imitations of Eastern Sigillata B Wares. In J. Hayes terminology they are known as Form 80 (Hayes, 1985: 69-70, pl. XV/15). The rim is outturned and rolled or outturned and horizontal (fig. 51); its diameter ranges between 12 and 34 cm (Vapur, 2009: 178-179). The vessels have a convex profile and a low ring base. The underside of the base is slightly concave. The cups do not have any handle. The height of the complete examples ranges between 3 and 8.3 cm (Vapur, 2009: 178-179). There are groove decorations at the top of the rim and on the base. They are dated to the 2nd century AD (Vapur, 2009: 33).

***Closed Vessels***

*Miniature jugs*

The rim is slightly everted (fig. 52). Its diameter varies from 3 to 4 cm (Vapur, 2009: 180-182). The vessels have a short and narrow neck with a flaring profile (fig. 52). The base can be a low, or a high ring base with a convex, or slightly convex underside (fig. 53); or it can be a raised base with a flat or slightly concave underside (fig. 54). A curved handle is attached from the neck to the body (fig. 52). No complete example was found, but the best preserved jug is taller than 7 cm (fig. 52)

(Vapur, 2009: 180). There are ridges on the body. They are dated from the 1st to the 3rd century AD (Vapur, 2009: 35).

### 2.2.4.3. The Cooking Wares

#### *Open Vessels*

*Pans*

Three types of pan were produced. The first type has an everted and projecting rim (fig. 55). The second type has a downturned rim (fig. 56). The third type has a rolled rim (fig. 57). In all types, the diameter of the rim ranges from 17 to 36 cm (Vapur, 2009: 93-101), the profile is straight and the base is flat with a flat or concave underside. The pans of the third type have a handle (fig. 57). The height of the complete examples in all types ranges from 4.1 to 8.1 cm (Vapur, 2009: 223-232). Some examples in all types are slipped with red color on the inside surface. There are groove decorations on the rim. The potters marks can be seen on the underside of the base on some examples. They are dated between the 1st and the 3rd century AD (Vapur, 2009: 96-102).

#### *Closed Vessels*

*Deep chytrai*

Three types of deep chytra were produced at Magnesia. The rim profile only differentiates between the two types. The first has a horizontal and projecting rim

(fig. 58). The second has an everted and projecting rim (fig. 59). Its diameter ranges from 18 to 22 cm (Vapur, 2009: 119). The upper part of the profile is concave and below the carination, the lower profile is convex. The base is flat with a convex underside. The two loop handles are attached below the rim to the carination. The height of the complete examples ranges from 8.4 to 10.6 cm (Vapur, 2009: 243-245). The vessels do not have a slip. There are ridges on the body of the second types. They are dated from the 2nd to the 3rd century AD (Vapur, 2009: 118-121).

There is a special type of deep chytra produced in Magnesia which is characteristic in the production. These chytrai have a flaring wall, slightly convex, of which the upper extremity forms the inturned rim (fig. 60). The rim diameter varies from 31.6 to 34.4 cm (Vapur, 2009: 122). The profile is convex. The base is flat with a flat underside. Four handles are attached from the rim to the body. Only one of these chytrai is completely preserved, which is 17.3 cm in height (Vapur, 2009: 246). The deep chytrai are dated between the 2nd and the 3rd century AD (Vapur, 2009: 122).

### 2.2.5. Characteristics of the Production at Magnesia Ad Maeandrum

The ceramics from the Hypocaust Building of Magnesia are very important to prove the local production because 95 % of these ceramics were produced locally (Vapur, 2009: 158). However, no workshop has been excavated yet. Because of the date of the ceramics from the building, it is clear there was local production from the 1st to the 3rd century AD.

One of the main characteristics in the production of Magnesia is the imitation of terra sigillata. The plates and cups with rounded rim are the imitations of

sigillatas. The shape and the slip properties of these vessels were imitated from the African red slip wares and/or Eastern sigillata B forms.

Another characteristic in the production of Magnesia is decoration. On the body of some vessels there are ridges. These ridges were probably done for decorative reasons. They were done to facilitate holding the vessels and at the same time to decorate them. This is something which is known from the 1st century AD, especially from amphorae known as Late Roman 1[16].

Furthermore, there are three types of vessels in the production of Magnesia which constitute the characteristic shapes of the production: the cups with everted rim (fig. 30), miniature jugs (fig. 52-54) and a special type of deep chytra (fig. 60).

Firstly, the cups have an everted and projecting rim, a carinated profile and two vertical handles. Their base is not preserved (fig. 30) and according to Ö. Vapur, these ceramics do not have any parallels (Vapur, 2009: 43).

Secondly, the miniature jugs have a slightly everted rim, a short and narrow neck with a flaring profile (fig. 52). The base can be a low or a high ring base with a convex, or slightly convex underside (fig. 53); or it can be a raised base with a flat or slightly concave underside (fig. 54). The handle is attached from the neck to the body. No complete example was found. The ridges can be observed on the body. These vessels are done probably as burial gifts (Vapur, 2009: 35).

Thirdly, a special form of deep chytra is identified at Magnesia. The chytrai have an inturned rim (fig. 60), a convex profile, and a flat base with a flat underside. Four handles are attached from the rim to the body. Only one of these chytrai is completely preserved.

[16] Personal communication with D. Kassab Tezgör.

These ceramics reflect the characteristics of the production and they were probably done for a special order[17].

### 2.3. The Ceramic Production of Cnidus

The ancient town of Cnidus[18] is situated in southwestern Asia Minor, on the Datça peninsula, in Caria (fig. 1).

The first excavations in the city of Cnidus[19] were done in 1856 and 1858 by Sir Charles Newton. Later, from 1967 to 1973, I.C. Love excavated it and at the same time, she surveyed in the workshops around the city near the necropolis (Love, 1968: 133). After her, R. Özgan began to excavate the location until 2007 (Özgan, 1990: 167-168).

The study of the workshops which was begun by Love was continued in the 1980s by N. Tuna, D. Kassab Tezgör, J.Y. Empereur and M. Picon. They conducted a survey in the areas of Datça and Tekir (fig. 61). Between 1988 and 1992, N. Tuna and J. Y. Empereur excavated the workshops of Reşadiye.

At Reşadiye, two workshops known as the workshops of Damokrates and Skirtos[20] were excavated, but other production centers have been identified as a result of the surveys in the region of Reşadiye at Kovanlıkönü and Alandömü / Hızırşah, Mesudiye, Uzunazmak, Körmen Limanı, Muhaltepe, Ölgün Boğazı, Gökçedere / Kabakkuyu, Mersincik, and Çamdibi. Only preliminary reports have been published, which mention the existence of the production of amphorae and ceramics with no further details. Therefore, I can only study here the workshops of

[17]Personal communication with Özlem Vapur.
[18]The name of this city is written in different ways: Knidos, Cnidos, or Cnidus. I prefer to use Cnidus which is more common.
[19]By Cnidus, I will always mention the reestablished city located at Tekir.
[20]The names of the workshops are given according to the first generation of their owners.

Damokrates and Skirtos. The production of the workshops in the area of Reşadiye is mostly amphorae, but the same workshops also produced ceramics for local consumption (Tuna, 2003: 47-48). The widespread production of amphorae at Cnidus is related with the importance of olive oil and wine trade in the Aegean Sea (Tuna, 1990: 347-353).

According to coins, stamped amphora handles and architectural structures, the workshops of Damokrates and Skirtos at Reşadiye produced amphorae and ceramics from the Archaic to the Byzantine period (Tuna and Empereur, 1995: 153), but the main production belongs to the Hellenistic period, between 305 to 88 BC (Tuna, 2003: 45).

At Tekir, surveys were done in the A1, A2, A3[21] workshops in İmamınburnu and A4 workshop in Yerikkuyu near the necropolis of Cnidus. The workshops of Cnidus have produced common and mainly fine wares. The production of the workshops at Tekir is dated to the 2nd and 1st century BC according to stamped amphorae handles and coins found within the workshops. Furthermore, the grey clay of the ceramics was not used earlier than that date elsewhere (Kassab Tezgör, 2003: 42). Moreover, a cistern excavated in the city of Cnidus was used as a dump. According to the shapes and the clay, it includes vessels produced in the workshops A1, A2, and A4 (Doksanaltı, 2003: 28, and Kassab Tezgör, 2003: 36). The findings of the cistern also confirm the dates of the production that was determined in the workshops of Tekir. They are very important to show the local consumption of the production. Since the cistern included the production of these workshops, I am going

[21]The number of fragments found in the workshop A3 is too small to warrant a study (Kassab Tezgör, 2003: 36).

to study the production of the workshops A1, A2, and A4 together with the findings of the cistern.

### 2.3.1. The Workshops of Damokrates and Skirtos in Reşadiye

#### 2.3.1.1. The Clay of the Fine and Common Wares[22] (Tuna, 2003: 49)

Different kinds of clay can be recognized:

- A clay rich in chalk and mica, 5Y 6/6 reddish- yellow in color.
- A clay 5YR 5/6 yellowish- red in color.
- A heterogenous clay reddish- yellow in color. Containers and mortars are the wares of this group.

#### 2.3.1.2. The Clay of the Cooking Wares (Tuna, 2003: 49)

We meet different types of clay:

- A grey clay full of mica.
- A red clay.
- A brown- grey clay. Only a few vessels are made with this clay.

#### 2.3.1.3. The Vessel Forms

The Hellenistic production of the workshops is dated between 305 and 88 BC (Tuna, 2003: 45). Every type of sherd is dated by N. Tuna from the context of the excavations, mainly by the stamped amphorae handles found within the workshops.

[22]I sometimes cannot mention the composition of the clay or the correspondence of the color with the Munsell color chart because there is no information about it in the publication.

#### 2.3.1.3.1. The Common Wares

***Open Vessels***

*Lekanai*

There are two types of lekane. The first type has an everted and projecting rim (fig. 62). Its diameter is 38 cm (Tuna, 2003: pl. XL 1). The profile is convex; it narrows from top to the bottom and ends in a ring base[23]. The vessels have two horizontal handles attached at the upper part of the body. The lekanai are big in size, with a height of 15 cm (Tuna, 2003: 50). According to N. Tuna, this type of lekane was produced before 146 BC (Tuna, 2003: 50).

The second type has a horizontal and projecting rim (fig. 63). Its diameter is 35 cm (Tuna, 2003: XL 2). The profile is conical and slightly convex. No base of this type is preserved, but according to its parallels from Athens dated between 275 and 50 BC, they may have a low ring or (rarely) disk base (fig. 64) (Rotroff, 2006: 111)[24]. The underside of the base is convex. Two horizontal handles are attached at the upper part of the body. In spite of the fact that no complete example is preserved, the height of a complete vessel can be 15 cm according to N. Tuna. The height of the Athenian parallels ranges from 13.4 to 31.6 cm (Rotroff, 2006: 111). This type of lekane is dated between 146 and 90 BC (Tuna, 2003: 50).

[23]The base is not seen on the plate, but it is described in the publication (Tuna, 2003: 50). There is no information about the inside surface of the base.
[24]In S. Rotroff's terminology, these vessels are called, "Lekane, Form 3: Deep".

*Krateres*

There are five types of krater. [The first type has an everted rim, a wide neck and is dated between 280 and 240 BC] (Tuna, 2003: 50).

The second type has an everted and projecting rim (fig. 65). Its diameter ranges between 30 and 55 cm (Tuna, 2003: 50). The profile is convex. No base is preserved, but according to its parallels from Athens dated between 260 and 86 BC, it may have a low ring or disk base (fig. 66) (Rotroff, 2006: 105). The underside of the base is flat. Two horizontal handles are attached at the upper part of the body. No complete example is preserved, but the height of the Athenian parallels ranges between 17.9 and 31+ cm (Rotroff, 2006: 105). The sherds of this type are dated to 200 BC (Tuna, 2003: 50).

[The third type has an everted rim with groove decorations] (Tuna, 2003: 50).

[The fourth type has a carinated profile. It is dated between 220 and 88 BC, and the ones with twisted handles are dated between 188 and 90 BC] (Tuna, 2003: 51).

**2.3.1.3.2. The Fine Wares**

***Open Vessels***

*Cups with thick rim*

The rim is horizontal and rounded (fig. 67). Its diameter ranges from 18 to 27 cm (Tuna, 2003: 51). The lower profile is slightly convex and narrows down to the base. The cups have a ring base with a convex underside. They do not have any

handle. The height of the complete examples ranges between 6 and 8 cm (Tuna, 2003: 51). They are dated between 280 and 88 BC (Tuna, 2003: 51).

*Plates* and *tankards* have also been found, but they are not published.

### *Closed Vessels*

#### *Jugs*

There are three types of jug. [The first type has a rim with grooves, a circular handle, and a circular body shape] (Tuna, 2003: 52).

[The second type has a horizontal rim] (Tuna, 2003: 52).

The third type has an outturned rim (fig. 68) whose diameter ranges from 12 to 16 cm (Tuna, 2003: 52). The vessels have a concave neck, and a piriform profile. The base of this type of jugs is not preserved, but according to its parallels from Athens dated between 270 and 160 BC, they may have a flat base, a disk or a ring foot with the underside slightly concave (fig. 69) (Rotroff, 2006: 77). The jugs have a curved handle with grooved decoration. The handles are attached from the rim to the shoulder and they rise above the rim. No complete vessel is preserved, but according to N. Tuna the height of this type of vessel can range between 26 and 30 cm (Tuna, 2003: 52) while the height of its Athenian parallels is between 18.8 and 27.2 cm (Rotroff, 2006: 77). The jugs are dated between 305 and 146 BC (Tuna, 2003: 52).

*Lekythoi*

[There are three types of lekythos according to the rim profile: bell rim, strainer rim and pouring rim. The lekythoi are dated between 280 and 108 BC] (Tuna, 2003: 51).

*Olpai*

[The examples of olpai have a straight rim with grooves. The rim diameter of the vessels is 10 cm. They have an ovoid body. The height of the complete examples is 24 cm. They are dated between 240 and 188 BC] (Tuna, 2003: 52).

*Hydriai*

[The examples of hydriai have an everted rim with a straight neck. Some of them have grooves on the neck. They are dated between 280 and 188 BC] (Tuna, 2003: 52).

Lebetes, stamnoi, pelikai have also been found, but they are not published.

**2.3.1.3.3. The Cooking Wares**

***Open Vessels***

*Lopades*

The rim is everted and projecting (fig. 70). Its diameter is not given in the publication, but the rim diameter of the Athenian parallels, dated mostly from 150 to

130 BC, ranges between 25 and 42.5 cm (fig. 8) (Rotroff, 2006: 183)[25]. The vessels probably had a lid. The upper part of their profile is slightly oblique and the walls are straight. Under the carination, the lower body narrows down to the base. No complete example is preserved, but according to the Athenian examples the vessels probably have a flat and rounded base with a convex underside (Rotroff, 2006: 183), and they measure between 5 and 10 cm high (Rotroff, 2006: fig. 85: 669-670,733). These vessels are dated between 220 and 146 BC (Tuna, 2003: 54).

***Closed Vessels***

*Deep chytrai*

There are two types of deep chytra. [The first type has an everted rim and a sharp body profile, a conical base, and handles. It is dated between 305 and 220 BC] (Tuna, 2003: 53).

The second type has an everted and projecting rim, with a rounded extremity (fig. 71). The rim has a shape convenient to receive a lid. Its diameter is not given in the publication, but those of Athenian parallels dated to the 3rd, 2nd and 1st century BC, range from 27.6 to 29.5 cm (Rotroff, 2006: 175)[26]. Only the rim is preserved, but according to the parallels the deep chytrai may have a convex profile, a flat base with a concave underside, or it can be flat and rounded with a convex underside (fig. 19). Two horizontal handles are attached at the upper part of the body, the whole vessel being between 17.5 and 19.8 cm high (Rotroff, 2006: 175). The deep chytrai are dated from 280 to 90 BC (Tuna, 2003: 53).

[25]In S. Rotroff's terminology, these vessels are called, "Lopas , Form 5: Straight-Sided, No Handles".
[26]In S. Rotroff's terminology, these vessels are called, "Chytra , Form 9: Wide-Rimmed".

### 2.3.2. The Workshops of A1, A2, and A4, and the Findings of the Cistern in Tekir

#### 2.3.2.1. The Clay and the Slip

The clay of the three workshops presents the same properties. In spite of the fact that the findings of the cistern are the production of the workshops of A1, A2 and A4, D. Kassab Tezgör and E. Doksanaltı use different wording in their description. According to D. Kassab Tezgör's description, the color can range from pinkish beige (5YR 7/6) to pinkish brown (7.5YR 7/6 - 6/4), with a fairly regular texture, containing only some white inclusions and mica. The slip is black, or takes different shades of brown: brown-orange, reddish brown (2.5YR 4/4), and it can turn from one color to another on the same vessel. For open vessels, the slip covers the whole interior and a more or less important surface on the outside. Often the slip flows to the bottom. For the closed vessels, the slip covers part of or the whole external surface. Most of the time, the wheeling lines are visible both on the interior and exterior surface of the vessels (Kassab Tezgör, 2003: 36).

For E. Doksantaltı, the color of the clay of the cistern findings is orange, light brown or grey. The inner and the outer edge of the rims have a slip. Sometimes the color of this slip is black, but mostly it is metallic grey. The most common ones have a red to brown or red to grey mottled color. The less common ones have a two colored slip[27] (Doksanaltı, 2003: 28).

[27]There is no information about the correspondence of the colors with the Munsell color chart in the publication.

### 2.3.2.2. The Vessel Forms

The production of the workshops at Tekir is dated to the Hellenistic period, between the 2nd and 1st century BC according to the coins and stamped amphorae handles collected in the surveys of the workshops (Kassab Tezgör, 2003: 42), and the excavations of the cistern (Doksanaltı, 2003: 31).

#### 2.3.2.2.1. The Fine Wares

***Open Vessels***

*Skyphoi*

The rim is slightly outturned and concave (fig. 72). Its diameter is 12 cm according to the preserved fragments (Kassab Tezgör, 2003: 40). The body has a carinated profile. The base is not preserved, but according to Athenian parallels dated to the last three quarters of the 1st century BC, these vessels may have a ring base, the underside of which is flat (fig. 73) (Robinson, 1959: 13, pl. 63, F 26)[28]. Some examples have two vertical handles attached from the rim to the body at the carination (fig. 72). No complete example is preserved, but the height of a complete example from Athens is 7 cm (Robinson, 1959: pl. 63, F 26). The slip covers the inside and the outside surface, its color turns from brown to dark red (Kassab Tezgör, 2003: 40).

[28]In H. Robinson's terminology, these vessels are called, "cup, two handles".

*Kyathoi*

The rim is thickened inwardly and has a triangular section (fig. 74), its diameter ranging between 7 and 9 cm (Kassab Tezgör, 2003: 40). The profile is convex and it ends with a low ring base (fig. 75). The handle is circular and attached from the inner side of the rim to its outer side (fig. 75). The height of the complete examples ranges from 3.5 to 4 cm (Doksanaltı, 2003: 32-33). The upper parts are completely covered with a slip of a brick color both outside and inside. Apart from the slip, the outside wall does not have any decoration (Kassab Tezgör, 2003: 40).

*Cups with concave rim*

The rim is outturned and horizontal (fig. 76). Its diameter ranges from 10 to 28 cm (Kassab Tezgör, 2003: 39). Over the carination the upper part of the profile is concave and its lower part is slightly convex. No fragment with a complete profile was found in A1 and A2, but several ring bases with a sharply convex underside have been preserved in the A4 workshop (fig. 77). The rim of these cups is different from the examples of A1 and A2; it is formed by the end of the wall. The cups do not have any handle. No complete example is preserved from A1 and A2, but the height of a complete example from A4 is 8 cm (Tuna, 1988: 155). Several fragments have a guilloche circle on the bottom inside and it seems that this type is most often decorated in that way (Kassab Tezgör, 2003: 39).

*Cups with thick rim*

The rim is rounded outwardly (fig. 78-80). Its diameter ranges between 18 and 26 cm (Kassab Tezgör, 2003: 37). The profile is convex and ends with a ring base.

The underside of the base is convex. The base sometimes is decorated with a concentric groove on the outside surface. The cups do not have a handle. The complete examples are between 6 and 9 cm high (Kassab Tezgör, 2003: 37). The slip is black or in various shades of red. On the inside surface of the body a different color of slip is observed which can be metallic grey or brick red (Kassab Tezgör, 2003: 38). The slip is irregularly distributed on the outside surface which results in a flowing of the color down to the base (fig. 80).

*Cups with convex rim and horizontal handles*

The end of the body forms the rim which is slightly thickened (fig. 81-82). The upper body is slightly convex and turned inward with a diameter ranging between 22 and 28 cm (Kassab Tezgör, 2003: 39). Under the carination the lower body narrows to the base. No complete example is preserved, but according to parallels from Athens dated to the first half of the 1st century BC, they may have a low ring base (fig. 83) (Robinson, 1959: 28, pl. 5, G 51)[29]. Two horizontal handles are attached at the upper part of the body, above the carination. No complete example is preserved, but the height of the parallels is 7.5 cm (Robinson, 1959: pl. 5, G 51). The entire inside surface of the cups is covered with a black or red slip, and the outside surface has an irregular color (Kassab Tezgör, 2003: 39).

*Stands with convex rim*

The rim has a triangular section, and is outturned (fig. 84). The vessels have a convex upper part with a diameter between 20 and 22 cm (Kassab Tezgör, 2003: 40).

[29]In H. Robinson's terminology, these vessels are called, "bowl, two handles".

Under the carination the lower body narrows. The lower body profile clearly indicates that there was no bottom. The stand was used to support of some sort in the workshop. The preserved fragments are sufficient to show the absence of handles on the stand. The height of the complete examples varies from 10 to 13 cm (Kassab Tezgor, 2003: 40).

*Pi-Handled cups*[30]

The cups are characterized by a vertical, slightly oblique rim with straight walls (fig. 85-88). Their diameter varies between 16 and 26 cm (Kassab Tezgör, 2003: 38). Below the carination, the lower part of the body narrows down to the ring base with a rounded underside (fig. 86). The A4 workshop produced the pi-handled cups with a specific feature (fig. 87): these cups have slightly convex rim, and a ridge at the level of the carination. The cups have two horizontal handles which look like the letter "Π" (fig. 85), attached at the upper part of the body. The height of the complete examples ranges from 8 to 10 cm (Doksanaltı, 2003: 31).

*Small cups*

The vessels appears in two common types. The first type has an inturned rim formed by the end of the wall (fig. 89). The profile is convex and ends in a low ring base with a rounded underside. The diameter of the rim ranges from 6 to 10 cm (Kassab Tezgör, 2003: 40).

[30]For the information about the name of the cups, see below, p. 52.

The second type has a slightly thickened rim; it is formed by the end of the wall. The diameter of the second type is similar to that of the first one. However, the body is sharp, carinated and ends in a raised base with a flat underside (fig. 90).

None of the cups have a handle. They are 2.8 cm high (Kassab Tezgör, 2003: pl.XXXIII 6-7). The glaze is black on the inside and outside surface, sometimes it flowed down to the base. A guilloche usually decorated the bottom inside (Kassab Tezgör, 2003: 41).

*Megarian bowls*

These are moulded vessels. The rim is formed by the end of the wall, sometimes slightly thickened (fig. 91). Its diameter ranges from 12 to 15 cm (Doksanaltı, 2003: 32). The profile is convex, and it has several series of "registers", separated by grooves and ridges organized in different manners. The low base is a narrow ring surrounding a central disk decoration (fig. 92). The height of the complete examples ranges from 9 to 14.1 cm (Doksanaltı, 2003: 32). The decorations can be composed of plants or animals or representation of divine beings or humans (fig. 93). Several moulds have been found in the workshops of A1 and A2 (fig. 94). The bowls are fully covered on the outside and inside with brown or black, and sometimes red slip.

*Bowls with guilloche*

These bowls are the other type of moulded vessels. The rim is formed by the end of the wall; it is horizontally projecting although some examples have an everted and projecting rim (fig. 95). Its diameter is 14 cm (Doksanaltı, 2003: 32). The bowls

have a flaring upper wall, convex lower wall and a low ring base. The underside of the base is flat or has a slightly raised disk circled by a groove. The height of the complete examples varies from 6.5 to 7.4 cm (Doksanaltı, 2003: 32). The bodies are divided in "registers" separated by grooves and ridges and are decorated by guilloche or grooved decorations (fig. 96).

*West Slope decorated vases*

The workshops A1 and A2, have also produced wares with West Slope decoration, which is a creation of Athens. West Slope decoration is a characteristic which isolates a group of various types of fine wares. This is why I have taken that particularity as a main feature to study them together in a single group[31]. The local production in the workshops of Tekir is confirmed by the presence of overfired sherds. One of the types is a bowl. The rim is formed by the end of the wall; it is slightly concave (fig. 97). The rim diameter is 15 cm (Kassab Tezgör, 2003: pl.XXXV 3). Under the carination, the body narrows to a high ring base with a rounded underside. Under the carination there are groove decorations. The lower part close to the base also shows a guilloche register. The west slope decoration of the bowl consists mainly of elongated leaves painted in white or more often, in a cream color (sometimes taking an orange shade).

[31]For this group more than the type, the West Slope decoration presents an important characteristic.

***Closed Vessels***

*Olpai*

The neck with the rim flares outwardly; the rim is curved and rounded at its end (fig. 98). Its diameter does not exceed 5 cm and that of the base varies between 4.5 and 3.5 cm (Kassab Tezgör, 2003: 36). The shoulders are narrow and sometimes a deep and wide groove separates the body from the base. The profile is slightly convex. The wall is thin. The vessels have a raised base with a concave underside. A loop handle is attached to the rim and to the lower part of the shoulder. Some small examples restored from preserved fragments are estimated to be about 13 cm tall (Kassab Tezgör, 2003: 36). The olpai have a brown, orange-red, or black slip. The slip covers both surface of the vessel (Kassab Tezgör, 2003: 37).

*Vases with filter*

The neck of the vessel with the rim, which is incurved, has the form of a funnel (fig. 99). The best preserved example's exterior has a diameter of 7.4 cm at the widest part of the neck, while the width of the filter inside is 4.2 cm (Kassab Tezgör, 2003: 37). The body has a convex profile and regular thin wall. No complete vessel is preserved and no parallel of the vases with filter have been found in the Athenian Agora or any other centers of Greece. Parallels of the vases with filter of Cnidus are known from Pergamon (Meyer-Schlichtmann, 1988: pl. 4, 392 and pl. 25), but their base are not preserved. A loop handle is attached from the base of the neck (but above the filter) to the belly of the vessel (fig. 99). The slip is generally reddish

brown, but it can be sometimes black. It is visible on the interior walls of the funnel, including the surface of the filter.

#### 2.3.2.2.2. The Cooking Wares

***Closed Vessels***

*Deep chytrai*

The rim is everted, its upper surface is concave (fig. 100). Its diameter ranges from 17 to 19 cm (Tuna, 1988: 155). Only the upper part of these vessels is preserved, it shows a convex profile. Like the finds in Athens dated to the 3rd, 2nd and 1st century BC, the base could be rounded or concave (fig. 19) (Rotroff, 2006: 176). These vessels do not have any handle on the preserved sherds, but according to the Athenian examples, they have a horizontal one. No complete example is preserved, but the height of the Athenian parallels ranges from 17.5 to 19.8 cm (Rotroff, 2006: 175).

### 2.3.3. Characteristics of the Production of Cnidus

The parallel types which were produced both at Reşadiye and Tekir are the cups with thick rim (A1 and A2), olpai (A1 and A2) and deep chytrai (A4). The other types lekanai, krateres, jugs, lekythoi, hydriai, and lopades are produced in the workshops of Reşadiye.

The types in A1 are numerous enough, and the shapes are complete enough to make their description. The shapes of fine wares are similar in A1 to the shapes of

A2, such as the skyphoi, kyathoi, cups with thick rim, cups with convex rim and horizontal handles, stands with convex rim, small cups, megarian bowls, bowls with guilloche, West Slope decorated vases, olpai, and vases with filter. Most of the shapes found in A1 and A2 are nearly absent in A4 (Kassab Tezgör, 2003: 36). The workshop A4 only produced cups with concave rim, pi-handled cups and deep chytrai which are similar to the production of A1-A2.

During the Hellenistic period, the production of Cnidus was very popular with its pi-handled cups (fig. 85-88). These cups are the more common type and can be considered as the classic form of Cnidus. It has been locally imitated in the Athenian Agora (Rotroff, 1997: 119, fig. 23, 395-404). S.I. Rotroff names these cups as "Two-Handled Cups" or "Knidian Cups", which shows that they are characteristic of that city (Rotroff, 1997: 119, fig. 23: 395-404). E. Doksanaltı named them as "Pi-Handled bowls" because of their handle shape and mentioned that these cups are also known as "Kos/Knidos bowls" (Doksanaltı, 2003: 27). They are also named as "Cups with horizontal handle" by D. Kassab Tezgör (Kassab Tezgör, 2003: 38).

In addition, the A4 workshop produced the pi-handled cups with a specific feature (fig. 87): the ridge at the level of the carination together with a slightly convex rim. This feature is absent in the workshops of A1 and A2 (fig. 88) and is a specific of the workshop A4.

### 2.4. The Ceramic Production of Sagalassos

The ancient town of Sagalassos is situated in southwestern Asia Minor, in the region of Pisidia, in the western Taurus mountain range (fig. 1). The ruins of Sagalassos are located 7 km north of Ağlasun in Burdur province. Sagalassos was

one of the most important cities during the Roman Imperial Period because it was located along one of the major roads from Pamphylia to the north (Waelkens, 1993: 39).

Sagalassos was discovered by chance in 1706, by Paul Lucas. The first full scale survey was organized by K. Lanckoronski in 1884. The first photographs of the site were taken by Gertrude Bell in 1907. During the first two decades of the 20th century, the churches of the city were studied by H. Rott. In the 1950s, Bernardi Ferrero organized a detailed study of the Roman theatre. In 1972 and 1974, R. Fleischer surveyed the site, and studied its Hellenistic heroon. In 1985, S. Mitchell did some work on the Tiberian gateway of the lower agora and on the late Hellenistic nymphaeum. Between 1986-1989 under the direction of M. Waelkens, a survey was resumed in Sagalassos. Since 1989, Sagalassos officially became a Belgian excavation under the head of M. Waelkens and the excavations are still carried out in collaboration with the Burdur Museum (Waelkens, 1993: 40).

In summer of 1987, M. Waelkens and his team discovered a potters' quarter. With this discovery a new production centre of ancient ceramics was identified (Viaene et al., 1993: 221). Over an area of several hectares, dumps of misfired or rejected products, fragments of moulds, stamps, parts of kiln walls and floors were detected at the surface, providing evidence for local production (Poblome, 1995: 177). Excavations were undertaken in the quarter in 1989 at the so-called site D, and in 1990 and 1991 at the so-called site F, on the eastern slope of Sagalassos. During the summer of 1997, the Augustan and the Late Roman workshops were identified and since then the potters' quarter of the Roman town has been excavated[32].

[32]No site plans available in the publications.

### 2.4.1. The Clay and the Slip

The clay of the local ceramics of Sagalassos shows a homogeneous nature. Samples were collected at four locations believed to be where the clay used by the potters originated: in the city itself with samples identified as “Soil samples”, to the south of Sagalassos with samples called “Borehole samples- B2.15”, and to the northwest and southeast of the modern village of Çanaklı, with samples are known as “Çanaklı valley samples” (Ottenburgs et al., 1993: 163). The analyses indicate that the clay beds of Çanaklı provided most of the raw materials for the Sagalassos potters (Ottenburgs et al., 1993: 164-165, and Ottenburgs et al., 1993: 209).

The clay of the northwest of Çanaklı is detrital and contains high chlorite-smectite and chlorite, but low illite and kaolinite; its plasticity is high (Degeest et al., 1997: 528). The surface color of the samples is characterized by their high carbonate content. The quantity of red coloring haematite is limited, and this results in a lower hue and a higher coefficient of lightness (Ottenburgs et al., 1993: 212).

Five locally produced fabrics are recognized according to the clay raw materials and the slip properties.

- Fabric 1: The Plain Ware: The color of the core is usually 2.5R 5/6 red. In some cases such as larger vessels, the color may be 5YR 6/6 reddish yellow. Sometimes, some large dull white and fairly angular limestone inclusions are found, but these are probably non-intentional (Degeest, 2000: 79). The clay of the plain northwest of Çanaklı is suitable for the wares of fabric 1(Degeest et al., 1997: 523). The red slip ware is slipped on interior and exterior, but the other vessels in the other ware groups show a slip layer on the exterior (Degeest et al., 1997: 522).

- Fabric 2: The Buff Wares of Sagalassos: The primary color of the fabric is 5YR 6/6 reddish yellow. Inclusions are of dark or even very dark grey filler (Degeest et al., 1997: 523). The origin of the raw material of the clay matches with borehole samples B2.15 (Degeest et al., 1997: 529).
- Fabric 3: The Building Ceramics of Sagalassos[33]
- Fabric 4: The Cooking and Amphora Ware[34]: The color of the core varies between 2.5R 4/8 red and 5YR 5/6 yellowish red and surfaces are between 2.5YR 5/8 red and 5YR 6/6 reddish yellow. The inclusions are dull white and dark red, rarely shiny yellow and shiny black (Degeest et al., 1997: 526). The implication is also that it cannot have been the same clay as in the plain northwest of Çanaklı (Degeest, 2000: 85).
- Fabric 5: The Container Ware: The core is normally 2.5YR 5/6 red, and the surface is 2.5YR 5/4 reddish brown. Different kinds of inclusions have been identified: dark reddish brown ones, white angular ones, dark grey to brown ones, and shiny mica fragments. The origin of the raw materials is problematic (Degeest et al., 1997: 527).

For a complete ceramic study it is not enough to study the composition of the clay, it is also important to study its firing method. This behavior was determined by differential thermal analyses (DTA), by dilatometry, and by firing test objects at Sagalassos (Ottenburgs et al., 1993: 211-212). According to the fired clay pieces, it can be established that the firing temperature of wares at Sagalassos was at least 850°C and less than 950°C (Degeest et al., 1997: 528).

[33]The architectural terracottas lay beyond the scope of this thesis so I do not mention them.
[34]Amphorae are also beyond the scope of the thesis. The properties of their slips are the same as those of cooking ware, however, and so are relevant.

Before describing the wares of Sagalassos, I find it important to emphasize that the ceramics that I will study are not only the ceramics from the potters' quarter, but also those coming from five more excavated areas: site L, the north of the library (excavated in 1993 and 1994); site EoN, on the east of the nymphaeum (excavated in 1991 and 1992); the deposits in the library (the deposits of 1992); the deposits in the nymphaeum (excavated in 1991 and 1992); the deposits in the corner of the late wall and the Doric temple (the deposits of 1992)[35]. Therefore, my study about Sagalassos wares consists of a general review of the finds of these excavation sites and the potters' quarter.

### 2.4.2. The Vessel Forms

#### 2.4.2.1. The Common Wares

The common wares belong to the group of fabric 1 according to their clay raw materials and slip properties. Only containers are in the group of fabric 5.

***Closed Vessels***

*Jars*

The neck forms an inturned rim (fig. 101). The diameter of the rim ranges from 10 to 11.4 cm (Degeest, 2000: 118). The vessels have an incurving and low neck. The profile is convex and ends with a flat base with a flat underside. Two horizontal loop handles are attached to the lower part of the shoulder, just above the widest part

[35] No site plans are available in the publications.

of the body. According to the completely preserved examples the height is 23.4 cm (Degeest, 2000: 118). The jars are slipped in a brown, a dark brown or a red color (Degeest, 2000: 118). They are dated from the second half of the 1st century to the late 5th - mid 6th century AD (Degeest, 2000: 254).

*Small jars*

The rim is everted and vertical (fig. 102). The diameter ranges from 4 to 11 cm (Degeest, 2000: 126). The profile is convex and completed by a low ring base with a flat underside. A single vertical handle twisted and round in section, is attached from the top of the rim to the belly. The height of the complete examples ranges from 11.8 to 18.6 cm (Degeest, 2000: 126). The exterior, including the rim is slipped in an orange or brownish orange color, but the color range extends to dark reddish brown in a few cases (Degeest, 2000: 126). The small jars are dated between the second half of the 1st century to the end of the 5th / mid 7th century AD (Degeest, 2000: 254).

*Miniature jars*

The rim has a high and triangular section (fig. 103). Its diameter is 2.4 cm (Degeest, 2000: 131). The neck is concave. The profile is convex. The jars have a high ring base with a slightly concave underside. Two vertical loop handles are attached below the rim and to the shoulder. The height of the complete examples ranges from 4.6 to 5.3 cm (Degeest, 2000: 131). The jars are slipped in a reddish brown color (Degeest, 2000: 131). They are dated between the first half of the 2nd century to the first half of the 4th century AD (Degeest, 2000: 255).

*Containers*

The rim is thickened outwardly and has a triangular section (fig. 104); its diameter varies from 26 to 36 cm (Degeest et al., 1993: 143-144). The upper part of the profile is conical. The upper carination is marked by two horizontal low ridges. The body has straight sides; in its lower parts there is a carination. The lower body narrows towards the base, and ends by a raised base. The underside of the base is flat. The height of a complete example is 70 cm (Degeest et al., 1993: 143). Some examples have decoration on the rim or the body (fig. 106). The containers are dated from the end of the 5th century to the middle of the 7th century AD (Degeest, 2000: 257).

*Miniature jugs*[36]

The neck forms an inturned rim (fig. 105). The diameter of the rim ranges from 3.4 to 5 cm (Degeest, 2000: 129). The neck is narrow and concave. The profile is pear shaped. The low raised base has a flat underside. One vertical loop handle is attached to the rim and to the belly. The height of a complete example is 10.6 cm (Degeest, 2000: 129). The shoulder shows a series of horizontal grooves. The exterior is slipped in an orange red color but it is nearly completely abraded (Degeest, 2000: 130). The jugs are dated between the first half of the 2nd century AD to the mid 6th century (Degeest, 2000: 255).

[36]In R. Degeest's terminology, these vessels are called, "Small vessels with a wide rim". Usually, miniatures are in the group of fine wares, but in the production of Sagalassos they were produced as common wares according to the clay.

### 2.4.2.2. The Fine Wares / Red Slip Wares

The fine wares belong to fabric 1 according to their clay raw materials and slip properties. The vessels are very high in quality, they are thin-walled and completely covered with the slip.

The handles attached to the red slip wares produced at Sagalassos are different from the common handle types. The decorated handles can be classified into two main categories: stem handles (fig. 106), that were used singly, and ledge handles (fig. 107), that were used in pairs opposite one another. They are moulded separately and then attached to the ceramics. The latter category can be subdivided into four main groups: small, squarish ledge handles; small, rectangular ledge handles; long, rectangular ledge handles; long, rounded ledge handles (Poblome, 1999: 179-180).

The red slip wares are dated from the 1$^{st}$ century AD to the first half of the 4$^{th}$ century AD.

***Open Vessels***

*Plates*

Four types of plate are identified. The plates of the first type have a large downturned rim which is thickened towards the exterior (fig. 108). Its diameter ranges from 20 to 41 cm (Poblome, 1999: 130). The plates are shallow and after a strong convexity the body become flat and supported by a large ring base. The underside of the base is flat. Ledge handles with stamped decoration are sometimes attached to the outer rim (fig. 109). The height of a complete example is 2.8 cm

(Poblome, 1999: 130). These plates date from 1st to the 3rd century AD (Poblome, 1999: 308).

The plates of the second type have a thick, horizontal and projecting rim (fig. 110) whose diameter ranges from 19 to 45 cm (Poblome, 1999: 160). The plates are shallow and the wall strongly curves towards a horizontal position; it has a convex profile supported by a large ring base. The underside of the base is flat. The height of the complete examples ranges from 1.4 to 2.8 cm (Poblome, 1999: 161). The plates in this type are dated from the 1st to the 3rd centuries AD (Poblome, 1999: 310).

The plates of the third type have an outturned and rounded rim (fig. 111). Its diameter ranges from 20 to 42 cm (Poblome, 1999: 128). The profile is slightly convex and ends with a ring base. The underside of the base is flat. The height of the complete examples ranges between 2.5 and 5 cm (Poblome, 1999: 128). They are dated to the first half of the 4th century AD (Poblome, 1999: 308).

The plates of the fourth type have an outturned triangular rim (fig. 112) with a diameter ranges from 11 to 38 cm (Poblome, 1999: 158). The wall, strongly curves towards a horizontal position, and it has a convex profile. The base is a low ring base with always a flat underside. The height of the complete examples ranges from 1 to 2.7 cm (Poblome, 1999: 158). They are dated between the second half of the 1st century AD to the first half of the 4th century AD (Poblome, 1999: 309).

*Dishes*

Four types of dish were identified. The first type has a vertical rim with a groove emphasizing the transition between wall and rim (fig. 113). The rim diameter ranges from 21 to 34 cm (Poblome, 1999: 133). The profile is concave or slightly

concave. The ring base has a flat underside. The height of the complete examples ranges from 2.5 to 4.7 cm (Poblome, 1999: 133). The vessels are dated from the 3rd century AD to the first half of the 4th century AD, but they were most common during the 3rd century AD (Poblome, 1999: 309).

The end of the body forms the rim of the second type which is plain, rounded or slightly thickened (fig. 114). Its diameter ranges from 16 to 44.6 cm (Poblome, 1999: 108). The body splays out with straight or slightly concave walls. The slightly raised base has a flat underside. The height of the complete examples changes from 3.2 to 6.1 cm (Poblome, 1999: 108). This type is dated between the second half of the 1st century and the 3rd century AD (Poblome, 1999: 308).

The end of the body forms the rim of the third type which is thinned and slightly inturned (fig. 115). Its diameter ranges from 10 to 34 cm (Poblome, 1999: 110). The profile is straight and sharply carinated in the lower part. The base is a low to high ring base with a flat underside. The height of the complete examples ranges from 2.7 to 3.3 cm (Poblome, 1999: 110). These dishes date from the 1st to the first half of the 2nd century AD (Poblome, 1999: 308).

The fourth type has a rim which is rounded and thickened inside and out (fig. 116). Its diameter ranges from 20 to 40 cm (Poblome, 1999: 139). The wall is rather thicker than the third type and strongly curving towards a horizontal position; it has a convex profile. The ring base has a concave underside. The height of the complete examples ranges from 2.5 to 5.2 cm (Poblome, 1999: 139). It was popular in the 3rd century AD, but was produced until the middle of the 4th century AD (Poblome, 1999: 309).

*Cups with slightly thickened rim*[37]

There are two types of cup with slightly thickened rim. The end of the body forms the rim of the first type. It is slightly thickened (fig 117). The rim diameter ranges from 8 to 20 cm (Poblome, 1999: 33). The cups have straight body walls with a sharp and angled carination above a low ring base (fig. 117). The underside of the base is flat. The cups do not have any handle. The height of the complete examples ranges between 5 and 5.5 cm (Poblome, 1999: 34). Stamped motifs placed in a herring-bone pattern are the normal form of decoration (fig. 117). This type was popular during the second half of the 1st century AD, but was produced until the middle of the 4th century AD (Poblome, 1999: 304).

The end of the body forms the rim of the second type of cups which is a straight everted wall ending in a slightly thickened rim (fig. 118). The rim diameter ranges from 9.5 to 21 cm (Poblome, 1999: 50). The carination is sometimes softer and rounded or even not existing, and completed by a high ring base with a flat underside (fig. 118). The cups do not have any handle. The height of the complete examples ranges from 3.7 to 6.1 cm (Poblome, 1999: 50). They are dated to the first half of the 4th century AD (Poblome, 1999: 305).

*Cups with offset rim*[38]

The cups have a concavely everted and projecting rim (fig. 119). Its diameter ranges from 12 to 22 cm (Poblome, 1999: 35). The transition from rim to body shows a distinctive "s" shape. The body has a rounded or hemispherical profile. No

[37]In J. Poblome's terminology, these vessels are called, "Cups with plain, rounded, slightly thickened, slightly thinned or horizontally flaring rim".
[38]In J. Poblome's terminology, these vessels are called, "Cups with distinctive S-shape".

complete example is preserved, so their height and base shape are unknown. The cups do not have any handle. No decorated examples were found. The vessels were produced from the 1st to the 2nd century AD (Poblome, 1999: 304).

*Cups with triangular rim*[39]

The rim is thickened outwardly and has a triangular section (fig. 120); its diameter ranges from 11 to 24 cm (Poblome, 1999: 81). The cups have straight or very slightly convex outspread walls, carinated in their lower body above a low ring base. The underside of the base is flat. The height of the complete examples ranges from 3.8 to 6.9 cm (Poblome, 1999: 81). There are leaf decorations on the body of the vessels (fig. 120) (Poblome, 1999: 81). The vessels are dated between the first half of the 1st century to the first half of the 4th century AD, but they were popular during the 3rd century AD (Poblome, 1999: 306).

*Cups with projecting rim*[40]

Two types of cup with a projecting rim have been identified. The first type has an outturned rim (fig. 121). Its diameter ranges from 8 to 20 cm (Poblome, 1999: 63). The cups have a thin and an outspread wall carinated in the lower body, and ends with a low raised base. The underside of the base is flat. Only two examples are preserved and one of them has a handle attached with barbotine to the rim. The height of the complete examples ranges from 8 to 20 cm (Poblome, 1999: 63). One example is decorated with a double row of sloppily executed double stamped ovals,

[39]In J. Poblome's terminology, these vessels are called, "Bowls with straight or very slightly convex outspread walls".
[40]In J. Poblome's terminology, these vessels are called, "Small bowls".

but generally these cups are not decorated (fig. 121). This type is dated between the second half of the 1st century and the 3rd century AD (Poblome, 1999: 306).

The second type has a horizontal and projecting rim (fig. 122). Its diameter ranges from 8 to 19 cm (Poblome, 1999: 66). It has an outspread wall carinated in the lower body. The vessels have a low ring base with a flat underside. Some examples have a horizontal handle attached under the rim in barbotine technique (fig. 122). Ledge handles also occur (fig. 107). The height of the complete examples ranges from 1.9 to 3.4 cm (Poblome, 1999: 67). This undecorated type is dated between the first half of the 1st century to the second half of the 2nd century AD, but was most popular from the second half of the 1st century AD to the first half of the 2nd century AD (Poblome, 1999: 306).

*Cups with horizontal flaring rim*[41]

The rim is everted and horizontal (fig. 123). Its diameter ranges from 11 to 26 cm (Poblome, 1999: 99). The wall is vertical. The high ring base has a flat underside. The cups do not have any handle. The height of the complete examples ranges from 4.7 to 5.4 cm (Poblome, 1999: 100). The vessels are dated from the 1st to the first half of the 4th century AD, but they were popular during the first half of the 4th century AD (Poblome, 1999: 307).

*Cups with rolled rim*[42]

The end of the body forms the rim which is slightly thickened to the interior (fig. 124). The rim diameter ranges from 8.5 to 30 cm (Poblome, 1999: 72). The

[41]In J. Poblome's terminology, these vessels are called, "Bowls with straight or slightly convex wall".
[42]In J. Poblome's terminology, these vessels are called, "Bowls with outspread and convex walls".

profile is convex. The low ring base has a slightly convex or concave underside. The height of the complete examples ranges from 3 to 5 cm (Poblome, 1999: 72). These cups were already being produced from 25 BC to 25 AD and immediately became a popular form of Sagalassos red slip ware; they remained popular until the 3rd century AD (Poblome, 1999: 306).

*Bowls with downturned rim*[43]

The rim is thickened outwardly and has a triangular section. Its diameter ranges from 8 to 36 cm (fig. 125) (Poblome, 1999: 170). Under the rim the upper part of the wall is straight. The lower profile is convex and narrows down to the base. The high ring base has a slightly convex underside. The vessels do not have any handle. The height of the complete examples ranges from 9.3 to 15.6 cm (Poblome, 1999: 170). No decorated examples were found. These bowls were popular in the 3rd century AD, but they were already being produced from 25 BC to 25 AD and immediately became a popular form of Sagalassos red slip ware (Poblome, 1999: 310).

*Bowls with a rolled rim*[44]

The rim is rolled and outturned (fig. 126) with a diameter ranging from 14 to 34 cm (Poblome, 1999: 172). The profile is convex and completed by a high ring base. The underside of the base is convex. The vessels do not have any handle. The bowls are dated to the first half of the 4th century AD, but they still occurred in the 6th century AD (Poblome, 1999: 310).

[43]In J. Poblome's terminology, these vessels are called, "Containers with convex walls".
[44]In J. Poblome's terminology, these vessels are called, "Containers with convex walls".

*Bowls with high and everted rim*[45]

Two types of bowl with a high and everted rim have been identified. The rim of the first type (fig. 127) ranges from 9 to 15 cm in diameter (Poblome, 1999: 40). The profile is convex. The flat base has a flat underside. The vessels do not have any handle. The height of the complete examples is between 9 and 15 cm (Poblome, 1999: 40). There is a wide variety in the decoration patterns, such as rope-like impressions, oval stamps, zig-zag pattern, flower-like impressions, circular impressions combined with vertical lines (fig. 127). These bowls are dated to the first half of the 4th century AD (Poblome, 1999: 305).

The rim of the second type[46] (fig. 128) ranges from 5 to 19 cm in diameter (Poblome, 1999: 44, 46). The profile is convex. The low ring base has a flat underside. The vessels do not have any handle. The height of the complete examples ranges from 4.7 to 5.9 cm (Poblome, 1999: 44, 46). Some examples have decoration of (double) stamped ovals, tail, vertical or curved lines. They are dated between the first half of the 1st century AD and the first half of the 4th century AD (Poblome, 1999: 305).

***Closed Vessels***

*Deep bowls*

The rim has two types: the first type is outturned and there is a convex ridge in its middle: the second type is strongly articulated in an oblique upward position (fig.

[45]In J. Poblome's terminology, these vessels are called, "Cups with a convex walled body".
[46]In J. Poblome's terminology, these vessels are called, "Small cups with distinctive S-shaped profile".

129). Its diameter ranges from 10 to 26 cm (Poblome, 1999: 104). The profile is convex, carinated in the lower part. The base is missing. Human figures are applied in relief over the body. Grooves appear under the rim and on the carination (fig. 129). These bowls were produced between the second half of the 1st century AD to the first half of the 4th century AD (Poblome, 1999: 307).

### 2.4.2.3. The Cooking Wares

The cooking wares are in the group of fabric 4 according to their slip properties and clay raw materials. In the publications of Sagalassos they were studied together with the common wares, but according to the typology that I applied in the thesis I will study them separately.

#### *Open Vessels*

*Dishes*

The end of the body forms a slightly inturned rim (fig. 130). Its diameter ranges from 20 to 54 cm (Degeest, 2000: 150). The profile is oblique and completed by a flat base with a flat underside. The height of the complete examples ranges from 3 to 5 cm (Degeest, 2000: 151). Some examples are slipped in a black or a red color (Degeest, 2000: 150-151). They are dated between the second half of the 1st century and the middle of the 6th century AD (Degeest, 2000: 256).

***Closed Vessels***

*Shallow chytrai*

There are three types of shallow chytra. The first type has a horizontal and projecting rim (fig. 131). The profile is convex, but slightly pointed in its lower part. They are dated between the second half of the 1st century and the middle of the 6th century AD (Degeest, 2000: 256)

The second type has an everted and projecting rim (fig. 132). The profile is convex. They are dated between the 2nd and the 7th century AD (Degeest, 2000: 256).

The third type has a thick rim and there is a groove on its top (fig. 133). The profile is carinated. After the carination the lower profile narrows down to the base. They are dated between the end of the 5th and the middle of the 6th century AD (Degeest, 2000: 256).

The diameter of the rim in all types ranges from 17.8 to 29 cm (Degeest, 2000: 154-156), and also the shallow chytrai have a flat base with a convex underside. Two vertical loop handles are attached under the rim to the body. The height of a complete example is 7 cm (fig. 131) (Degeest, 2000: 155).

*Deep chytrai*

The rim profile has two types: the first type has a vertical rim, and the second type has an everted and projecting rim (fig. 134). The diameter of the rim ranges between 9.5 and 19.5 cm (Degeest, 1995: 214, fig. 10, 216, fig. 23). The body is spherical. No complete example is preserved, but according to the parallels from

Corinth[47] (Hayes, 1973: 467, pl. 81/c.240) and Mediterranean lands (Hayes, 1997: 77/3) which are dated to the Roman times, the deep chytrai may have a spherical body which narrows down to the base and ends with a flat base with a convex inner surface (fig. 135). The vessels have two loop handles that are attached from the rim to the body. The height of the parallels is between 15.5 and 22.5 cm (Hayes, 1973: pl. 81 c.240). The ceramics cannot be dated because there is no clear-cut dating element (Degeest, 1995: 210).

*Jugs*[48]

Jugs have an everted and slightly thickened rim (fig. 136). Its diameter ranges from 9 to 17 cm (Degeest, 2000: 159). The profile is convex and slightly carinated on some of the examples. The lower body narrows down to the base. The jugs have a slightly raised base with a flat underside. A vertical round loop handle is attached on the shoulder to the body. The height of the complete examples ranges from 14 to 17.9 cm (Degeest, 2000: 160). They are dated to the second half of the 1st century AD (Degeest, 2000: 256).

*Medium sized jars*[49]

The rim is high and vertical (fig. 137). Its diameter ranges from 10 to 15 cm (Degeest, 2000: 159). The profile is convex. The base is not preserved but it seems to be flat. Two loop handles are attached to the upper body. No complete example is preserved, but a nearly complete one has been found with a minimum height of 26

[47] In J. Hayes terminology the vessels are called "cooking pots".
[48]Jugs are usually in the group of common wares, but in Sagalassos they are in the group of cooking wares according to their clay properties.
[49]Jars are usually in the group of common wares, but in Sagalassos they are in the group of cooking wares according to their clay properties.

cm (fig. 137) (Degeest, 2000: 159). Dark reddish brown or reddish brown slip can be observed on the exterior, the interior is unslipped (Degeest, 2000: 159). The decoration of a series of incised multiple arches or grooves on the body wall below the shoulder is preserved. The jars are dated between the end of the 5$^{th}$ and the middle of the 7$^{th}$ century AD (Degeest, 2000: 256).

### 2.4.3. Characteristics of the Production of Sagalassos

The local pottery production started during the Hellenistic period at Sagalassos, but mass production began with the Augustan period and continued into the 7$^{th}$ century AD (Poblome et al., 2003: 180). Sagalassos should be one of the more long lasting ceramic production center (Waelkens et al., 1999: 293).

The important factor about this industry is the mass production of red slip ware. The production is usually called Sagalassos red slip ware.

The ceramics in the group of red slip ware are characterized by a high quality. The wall of the vessels is very thin, and they are completely slipped in red. There are some specific attachments in the production of red slip wares, such as the handles (fig. 106-107) and the ceramics with applications (fig. 129). The handles are molded separately which are a unique feature in the production. The ceramics have applied decoration, most of the time human figures; similar features can be observed on the red slip production of Pergamon (Japp, 2011: 359).

This red slip ware was commercialized and took into account the taste of the client and competition from other producers during the Roman period (Poblome et al., 2003: 180). The Sagalassos red slip ware has been discovered, such as at Ankyra, Pergamon, Ephesus, Smyrna and Kaunos (Poblome et al., 2003: 181). Furthermore,

the Pisidian town could reach the sea through the Pamphylian harbors of Attaleia, Perge, and Side. By using the harbors, Sagalassos red slip ware reached Alexandria, Egypt (Poblome et al., 2003: 181).

Sagalassos red slip ware can be considered the most significant feature of the long production process at Sagalassos, for this tableware was intended for intensive trade within the eastern basin of the Mediterranean (Waelkens et al., 1999: 293).

### 2.5. The Ceramic Production of Sinope

The ancient city of Sinope, nowadays Sinop, is situated on a peninsula of the southern coast of the Black Sea. It is located in Paphlagonia (fig. 1).

Some workshops have been identified in the city and its surroundings. The main workshops are located in three areas: Zeytinlik and Nisiköy on the southern slope of the peninsula of Sinope and in Demirci 15 km south of the city (fig. 138-139).

The workshop of Nisiköy and the two workshops of Zeytinlik are located 3 km from the city centre. The kilns of Zeytinlik and Nisiköy were discovered in the 1990s when some amphora stamps were found around the area. From 1994 to 1998, with the collaboration of the Sinop Museum, the kilns were excavated by Y. Garlan and İ. Tatlican; they are dated to the 3$^{rd}$ century BC (Garlan and Tatlıcan, 1997: 338).

Very few structures of one kiln were preserved at Nisiköy and some stamps were found (Garlan and Tatlıcan 1998: 408). At Zeytinlik, the excavations were mainly done on the western side of the city wall. A kiln was revealed, which was mostly destroyed. Only the piriform heating room and the supporting columns of the kiln were preserved (Garlan and Tatlıcan, 1997: 339).

The workshop of Demirci was identified when a project to build a harbor in the bay of Demirci led the Ministry of Culture and Tourism encouraging salvage excavations there. The excavations were done between 1994 and 2000 by D. Kassab Tezgör, İ. Tatlıcan, and F. Dereli. The workshop is dated between the 2nd or 3rd century and the 6th or 7th century AD (Kassab Tezgör and Dereli, 2002: 237).

In the excavations at Demirci, 13 kilns were excavated in Zone A and Zone B. The heating and firing room of the kilns were preserved in different states of conservation (Kassab Tezgör, 2010: 11).

- Zone A: Kiln A. I, 1,2,3; Kiln A. II, 1-3; Kiln A. III, 1 and 2; Kiln A. IV.
- Zone B: Kiln B. I; Kiln B. II, 1 and 2; Kiln B. III, 1.

The dome of the kilns was made of an arch of tubuli which is a unique structure for kilns as far as we know today. Tubuli are known for domes of buildings in North Africa but not for kilns (Kassab Tezgör, 2010: 11; Kassab Tezgör and Tatlıcan, 1998: 433).

The production of the workshops in the peninsula and in Demirci consisted of amphorae, but the same workshops also produced ceramics. The widespread production of amphorae at Sinope was probably the result of the importance of Black Sea trade during the Roman period. The production of amphorae was mainly done for export since they have been found all around the Black Sea.

### 2.5.1. The Workshops of Nisiköy and Zeytinlik

#### 2.5.1.1. The Clay

The clay of the ceramics is the same as the clay of the amphorae; they both have a calcareous nature, mainly including black sand (pyroxene) used as a temper. This is the characteristic of the Sinopean production. The usual color of the clay is pink (Garlan and Tatlıcan, 1997: 338).

#### 2.5.1.2. The Vessel Forms

The production of the workshops of Nisiköy and Zeytinlik are dated to the 3rd century BC (Garlan and Tatlıcan, 1997: 338). .

##### 2.5.1.2.1. The Fine Wares

***Closed Vessels***

*Kantharoi*

The kantharoi have an outturned rim, a flaring upper part and a convex lower body (fig. 140). The diameter of the rim is 8 cm (Garlan and Tatlıcan, 1998: 415). They have a high ring base and two loop handles attached from the rim to the shoulder. The height of a complete example is 11 cm (Garlan and Tatlıcan, 1998: 415). Some sherds are decorated with ridges (fig. 141), and West Slope (fig. 142).

### 2.5.2. The Workshop of Demirci

#### 2.5.2.1. The Clay

In the early Roman period the composition of the clay is similar to that of the Hellenistic period, but its color changed because of the different firing temperature (Alary et al., 2009: 20-21). There are some red or orange and white clays. The red ones were being fired at a higher temperature than the Hellenistic wares, the white ones at even higher temperatures than the red. These differences correspond to different shapes and different dates as far as the amphorae are concerned. It looks darker for the ceramics. Furthermore, there is another type of non-calcareous clay which was used for cooking wares (Kassab Tezgör, 2010: 123).

#### 2.5.2.2. The Vessel Forms

The workshop of Demirci is dated between the 2nd / 3rd century and the 6th / 7th century AD (Kassab Tezgör, 2010: 7). The contexts do not permit a dating of the different shapes of the ceramics.

##### 2.5.2.2.1. The Common Wares

***Open Vessels***

*Mortaria*

The mortaria show a variety of forms, modules, and color. The rim is wide, and horizontal; the extremity is convex (fig. 143). Its diameter is usually about 30 cm, but

it can reach up to 45 or 50 cm (Alary et al., 2009: 22). The profile is slightly convex and narrows down to the base (fig. 144). The vessels have a flat base with a slightly concave underside. The height of a complete example is 9 cm (Alary et al., 2009: 26). The clay of the mortarium is usually well fired. There are some blackish bands on the inner surface at the bottom of some examples because of the sand used as a temper during the wheeling. They can be done for decoration purpose, or because of the function of the vase, this is not clear (Alary et al., 2009: 22).

### *Closed Vessels*

#### *Pithoi*[50]

The rim is thick and triangular in section (fig. 145-146). The body is pear shaped, and ends with a flat base. No information about the height of the pithoi appears in the publication, but the vessels are large in size.

#### *Table Amphora*

One complete vessel was found: a tableware amphora. It has a rolled rim and a thick neck (fig. 147). The shoulders are convex and the body narrows down to the base. The vessel has a flat base and two loop handles attached from the neck to the shoulders (Kassab Tezgör and Tatlıcan, 1997: 354).

[50] I call the vessels pithoi not container because of their big dimensions.

#### 2.5.2.2.2. The Cooking Wares

***Closed Vessels***

*Deep chytrai*

The rim is everted and projecting (fig. 148). Its diameter is 15 cm (Alary et al., 2009: 29). The vessels probably had a lid. The profile is convex (fig. 149). The flat base had a flat underside. Two loop handles are attached from the rim to the body. The height is 19 cm (Alary et al., 2009: 29)

### 2.5.3. The Characteristics of the Production of Sinope

The ceramic workshops in Sinope are very important to illuminate the Hellenistic and Roman period in the Black sea region where the investigations are very restricted. The workshops of Nisiköy and Zeytinlik prove that there was a production of ceramics during the Hellenistic period in the Black sea region besides the one of amphorae.

When it comes to the Roman period, research is wider than for the Hellenistic period. The advantage of the research of the workshops of Sinope is twofold. Firstly, the research complemented the information about the kilns of the Black Sea region in the Late Roman period. Secondly, it has extended the knowledge of the Sinopean production, mainly for the amphorae. It was the main activity of this center. But it has also informed us that there was an important production of tiles, and –at a lesser scale- of ceramics, and even of lamps (Kassab Tezgör, 2010: 11).

The workshops of Sinope produced amphorae for long distance export, or regional and local circulation. The production of ceramics was restricted and was probably made for local consumption, except the mortaria.

Since the Hellenistic period the mortaria have a standard shape, but they are characteristic of the production because they are the ceramics which were done not only for local consumption but also for export. The Sinopean mortaria were very popular during the Roman period (fig. 143-144) and were exported all around the Black Sea together with the amphorae [51].

[51]Personal communication with D. Kassab Tezgör.

# CHAPTER 3

# SYNTHESIS
# COMPARISONS OF THE WORKSHOPS BY GEOGRAPHICAL AREA

In this chapter, I will take into consideration the shapes which are simultaneously produced in different workshops to show the similarities and the differences between them.

## 3.1 The Hellenistic Period

Some shapes: lekanai, skyphoi, cups with concave rim, small cups, lopades, and deep chytrai have been produced in both Cnidus (Reşadiye and/ or Tekir) and Phocaea and can be compared[52], and find parallels in other sites (table 1).

*Lekanai*

One type of lekanai was produced at Phocaea and two types were produced at Reşadiye. The lekanai of Phocaea (fig. 9) and the first type of Reşadiye (fig. 62) have

[52]The kantharoi from the Hellenistic production of Sinope do not have any parallel in the centers of the western coast. Therefore, I cannot study the Hellenistic comparison between the western coast and the Black Sea region.

an everted and projecting rim and a ring base, but the body profile of those from Phocaea tapers in under the rim then bulges out, and those of Reşadiye have a convex profile; it narrows from top to bottom.

The second type from Reşadiye (fig. 63) is completely different than the first type and than those of Phocaea. These lekanai have a horizontal and projecting rim, a conical and slightly convex profile, and a low ring base.

The similarity between the lekanai of Phocaea and the two types of Reşadiye, is the two horizontal handles attached in the upper part of the body which is in general a constant feature of the shape.

The parallels of the first type from Reşadiye and the lekanai of Phocaea were produced in the workshops of Marmaris Hisarönü-Çubucak (Doğer and Şenol, 2000: 297, çizim 10c-d), Ephesus (Gassner, 1997: 122, tafel 7) and Knossos (Eiring, 2001: 108 c). Parallel productions of the second type lekanai of Reşadiye are known from the Athenian Agora (Rotroff, 2006: 111, fig. 43, 255) and Knossos (Eiring, 2001: 108 b; Callaghan, 1992: 108, pl. 90, 19).

*Skyphoi*

The skyphoi produced at Phocaea (fig. 10) and Tekir (fig. 72) are completely different from each other. The skyphoi of Tekir have a rim which is slightly inturned and concave, and those of Phocaea have an outturned rim. The profile of those of Tekir is carinated while that of the Phocaea skyphoi has a convex form.

The parallels of the skyphoi of Phocaea are known in Daskyleion (Dereboylu, 2003: 59, pl. XLV) and in the Athenian Agora (Rotroff, 1997: 94, fig. 12, 148). The

parallels of those of Tekir are known in Pergamon (Radt and De Luca, 2003: 6, pl. VI, 2).

*Cups with concave rim*

The cups with concave rim produced in the workshops of Phocaea (fig. 5) and of Tekir (fig. 76-77) are identical. The vessels of the two production centers have a outturned and horizontal rim with concave walls. Over the carination the upper part of the profile is slightly concave while its lower part is slightly convex. The vessels have a high ring base with a convex underside.

The ones from workshop A4 are different: their rim is formed by the end of the wall (fig. 77).

The parallels of these cups are found in the workshops of Marmaris Hisarönü-Çubucak (Doğer and Şenol, 2000: 296, çizim 8 a), Ephesus ( Gassner, 1997: 43, tafel 5, 82-84), Pergamon (Schäfer, 1968: 35-36, pl. 3, C5-C10), Priene (Wiegand and Schrader, 1904: 424, fig. 541, 78) and Knossos (Eiring, 2001: 103 f-l; Callaghan, 1992: 117-118, pl. 98, 30-33).

*Small cups*

One type of small cups was produced at Phocaea (fig. 6-13), and two types at Tekir (fig. 89-90). The first type (fig. 89) has similar properties as the small cups of Phocaea (fig. 6-13). The rim is formed by the end of the wall, and it is slightly inturned. The body is convex and it ends with a low ring base.

The parallels of the cups of Phocaea and the first type of Cnidus were produced at Marmaris Hisarönü-Çubucak (Doğer and Şenol, 2000: 296, çizim 8b-c), Pergamon

(Schäfer, 1968: 37-38, pl. 4, C13-20), Ephesus (Gassner, 1997: 41-42, tafel 4, 71-75), Metropolis (Gürler, 2003: 9, pl. IX A1, A4), Knossos (Eiring, 2001: 99 a-w).

The second type from the production of Tekir has different properties (fig. 90). These cups have a rim which is also formed by the end of the wall, but the body is sharp, carinated, and ends with a raised base. No parallel of this type could be recognized.

*Lopades*

The lopades in the production of Phocaea (fig. 7) and Reşadiye (fig. 70) have similar properties. The rim is everted and projecting, and probably the vessels have a lid. The upper part of the profile is slightly oblique. Under the carination, the lower profile narrows to the base, which is probably rounded.

The parallels are known in the Athenian Agora (Rotroff, 2006: 183).

*Deep chytrai*

The deep chytrai were produced at Phocaea (fig. 18) and in the workshops of Cnidus, both in Reşadiye (fig. 71) and Tekir (fig. 100). They have completely different properties. The deep chytrai of Phocaea have a rolled and outturned rim, its upper surface is concave and they have a convex upper profile. The deep chytrai of Reşadiye appear in two types. The first type has an everted rim and a sharp body profile, a conical base, and handles[53]; however the second type has an everted and projecting rim, with a rounded extremity. The deep chytrai of Tekir have an everted rim; their upper surface is concave. Unfortunately no lower part and base of the deep

[53]The information about the first type is restricted with the publication because there is no illustration.

chytrai are preserved. The parallels from Athens can be representative of the usual body and base form. Therefore, the deep chytrai may have a convex body and a flat base with a concave or convex underside.

The handles of those from Cnidus, both Reşadiye and Tekir, are attached at the upper part of the body, but the deep chytrai of Phocaea have two tripartite handles attached from the rim to the upper part of the body.

The parallels of the deep chytrai of Cnidus are known in the Athenian Agora (Rotroff, 2006: 175-176, fig. 77: 610-613) and in Knossos (Eiring, 2001: 133 d). The parallels of those from Phocaea were produced at Knossos (Eiring, 2001: 133 a; Callaghan, 1992: 101, pl. 84: 49).

## 3.2. The Roman Period

### 3.2.1. Comparisons between the Production of the Workshops of Western Coast (Phocaea, Magnesia)

Some shapes: jugs, tankards, oinochoai, shallow basins and pans have been produced in both Magnesia and Phocaea and can be compared, and find parallels in other sites (table 2).

*Jugs*

One type of jug was produced at Phocaea (fig. 20), and three types at Magnesia (fig. 37-38-39). None of the types from Magnesia is comparable with those from Phocaea.

The jugs of Phocaea have an everted and projecting rim, and a vertical neck. The profile is almost cylindrical, tapering slightly toward a flat base. A curved handle is attached from the neck to the shoulder (fig. 20).

The first type of jugs from Magnesia has an outturned and horizontal rim, and a straight neck (fig. 37). The rim of the second type is thickened outwardly with a flaring neck (fig. 38). The third type has a thick rim underlined by a ridge and a straight, slightly outturned neck (fig. 39). The first type has a pear shaped body, the second type a globular body, and the third type an angular transition from shoulder to the slightly convex walled body.

The common features between the types of Magnesia are the base and curved handle. However, in the first and the second type the base is a high ring base, but the one of the third type is a low ring base. Also, the handles of the first type are attached from the rim to the upper part of the body, but in the second and the third types, they are attached from the upper part of the neck to the shoulder.

A parallel of the jugs of Phocaea is known in the Athenian Agora (Robinson, 1959: 92, pl. 21, M83). Concerning the parallels of the jugs of Magnesia, the ones of the first type can be found in Miletus (Pülz, 1985: 87, fig. 7/52), Didyma (Wintermeyer, 2004: 130, fig. 1253) and in the Athenian Agora (Robinson, 1959: 52, pl. 10/j 13); of the second type at Ephesus (Ladstätter, 2005: 321, pl. 181/K 551) and Tyre-İzmir (Gürler, 2000: 114, fig. 1/6); of the third at Pergamon (Meyer-Schlichtmann, 1988: 173, Kr. 5, pl. 4, 25, 34/387).

*Tankards*

Phocaea is one of the most important production centers of tankards on the western coast. Two types were produced there (fig. 21-22) and one type was produced at Magnesia (fig. 40-41).

The first (fig. 21) and the second type (fig. 22) of Phocaea have an everted and high rim, and those of Magnesia (fig. 40-41) have a high neck of which the extremity of the wall forms the rim. The body of the first type of Phocaea has a convex and carinated profile, and those of the second type have a convex body; its lower part appears to be ribbed. The tankards of Magnesia have a convex profile which narrows down to the base. The base of the first type of Phocaea is a raised base, but that of the second type is a high ring base and that of Magnesia is a slightly raised base. The two types of Phocaea have a curved handle which is attached from the lower part of the rim to the carination, and those of Magnesia have a ring handle attached from the lower part of the neck to the upper part of the body.

A parallel of the earliest tankards of Phocaea is known in the Athenian Agora (Robinson, 1959: 92, pl. 21, M80). The parallels of the second type of Phocaea and the tankards of Magnesia were produced at Miletus (Pülz, 1986: 14-15, fig. 4,13), Didyma (Wintermeyer, 2004: 92, fig. 312), Ephesus (Ladstätter, 2005: 313-314, pl. 178/K) and Corinth (Williams and Zervos, 1989: 9, pl. 1,8).

*Oinochoai*

The more striking difference between the oinochoai of Phocaea (fig. 23-24) and Magnesia (fig. 46-47-48) is the type of clay: the oinochoai were produced as a

fine ware at Phocaea, but the ones of Magnesia are in common ware. It shows that they were used for different purposes.

Two types of oinochoe were produced at Phocaea, and three at Magnesia. They have a trefoil rim which is the constant feature of the shape. The oinochoai in the first type of Phocaea have a short neck, squat profile; the lower part narrows down to a low ring base (fig. 23).

The second type at Phocaea (fig. 24) and the three types of Magnesia (fig. 46-48) have some similarities. The neck of the second type of Phocaea and the first type of Magnesia is a splaying neck. The neck of the second type of Magnesia is a short neck with concave wall, but in the third type it is a long neck with slightly concave wall. The second type of Phocaea and those of Magnesia have an ovoid body and a ring base. The oinochoai of the two types of Phocaea and three types of Magnesia have a vertical handle attached from the rim to the body.

No parallels of the first type of Phocaea oinochoai could be identified. The parallels of the second type of Phocaea and the third type of Magnesia are known in Miletus (Pülz 1985, 88, fig. 8/56), Didyma (Wintermeyer 1980, 139, pl. 59/99), Ephesus (Ladstätter 2008: 127, pl. 283/K 52; Ladstätter, 2005: 335, pl. 191/K 697; 342, pl. 195/K 766, pl. 196/K 768-K 769) and in the Athenian Agora (Robinson, 1959: 42, pl. 7/G 188, 93, pl. 23/[M 101]). The parallels of the first type of Magnesia are known in Didyma (Wintermeyer, 1980: 142, pl. 58/132) and in the Athenian Agora (Robinson, 1959: 65, pl. 13/[K 67]). The parallel of the second type of Magnesia was produced in the Athenian Agora (Robinson, 1959: 42, pl. 7/G 189, 55, pl. 10/J 41, 88, pl. 20/M 42).

*Shallow basins*

The difference between the basins of Phocaea (fig. 25-26) and Magnesia (fig. 35) is the type of clay: the basins were produced as a cooking ware in Phocaea, but those of Magnesia were used in food preparation.

The basins produced both at Phocaea (fig. 25) and Magnesia (fig. 35) have a horizontal and projecting rim. One example has an outturned rim with a ridge in its middle (fig. 26). The profile of the wall is rounded on those of Phocaea, but it is either straight or slightly concave on those of Magnesia, and the single example of Phocaea. Those of Phocaea have a slighlty low raised base or a flat base, but those of Magnesia have a flat base.

The parallels of these shallow basins are known in Miletus (Berndt, 2003: 309-310, pl. 76/Schü 097), Ephesus (Meriç, 2002: 113 K 719) and Knossos (Sackett, 1992: 245-246, pl. 188/S1, 18; Warren, 1987-1988: 97, fig. 33 G). No parallel of the single example of Phocaea could be identified.

*Pans*

One type of pan was produced at Phocaea (fig. 27) and three at Magnesia (fig. 55-56-57). The pans of Phocaea (fig. 27) and the third type of Magnesia (fig. 57) have similar properties. The rim is rolled; it is formed by the end of the wall, the profile is concave, and the vessels have a horizontal handle attached obliquely to the rim.

The first and the second type of Magnesia have different properties than those of Phocaea and the first type of Magnesia. The first and the second type of Magnesia have different rim profiles. The ones in the first type have an everted and projecting

rim (fig. 55), but those in the second type have a downturned rim (fig. 56). The wall in both the first and the second type is straight.

In all productions and types the base of the pans is flat.

The parallels of the third type of Magnesia and of the single type of Phocaea are known in Ephesus (Ladstätter, 2005: 329, pl. 187/K 637; Meriç, 2002: 106, pl. 55/K 657), Miletus (Pülz, 1987: 37, 43, fig. 19/58-59), Didyma (Wintermeyer, 2004: 94-95, P 2.8, fig. 700-707), Troia (Tekkök et al., 2001: 357, pl. 9/89-90) and Iasos (Gasperetti, 2003: 154, pl. XCVII/56). The parallels of the first and the second type of Magnesia are known in Didyma (Lüdorf, 2006: 43, P II/2, pl. 4/P 53-P55; 79-82, P II/1, pl. 3/P27-P48, pl. 4/P 49-P 52) and Iasos (Gasperetti, 2003: 154, pl. XCVII/54).

### 3.2.2. Comparisons between the Workshops of the Western Coast (Phocaea and Magnesia) and of Sagalassos in Inner Anatolia

The ceramics produced in Sagalassos that find comparisons in the production of Phocaea and Magnesia, and find parallels in other sites are: the jugs, containers, plates, miniature jugs, shallow chytrai and deep chytrai (table 2).

*Jugs*

The jugs produced in the potters' quarter of Sagalassos (fig. 136) have different properties than the ones of Magnesia (fig. 37-38-39) and Phocaea (fig. 20). The more striking difference is that the jugs of Sagalassos were produced as a cooking ware, but the jugs of Magnesia and Phocaea were produced as a common ware according to the clay. This difference indicates the vessels were produced for different purposes at the two locations.

Three types of jugs were produced at Magnesia, and one at Phocaea as I mentioned while I was comparing the production of the workshops of the western coast[54]. All shapes are different from the Sagalassos examples. The jugs of Sagalassos have an everted and slightly thickened rim. The body is convex and slightly carinated. The lower body narrows down to a flat base. One vertical round loop handle is attached on the shoulder to the body.

A parallel of the Sagalassos production is known in Knossos (Sackett, 1992: 225, pl. 214, T1,18) [55].

*Containers*

The containers produced at Sagalassos (fig. 104) and Magnesia (fig. 44) have different properties. Those of Sagalassos have a thick triangular rim, but those of Magnesia have a downturned rim. The upper profile of the Sagalassos containers has a conical shape which narrows down to a low and narrow disk base. These cannot be compared to those of Magnesia since their body and base have not been preserved.

No parallels of the containers of Sagalassos could be determined. The parallels of the containers of Magnesia are known in Miletus (Berndt, 2003: 296, pl. 66/P 001) and Ephesus (Meriç, 2002: 114, pl. 63/K 733).

*Plates*

Four types of plates were produced at Sagalassos (fig. 108-112) and two at Magnesia (fig. 49-50). They have different properties. The first difference is related

[54]For the comparisons of the jugs of Phocaea and Magnesia, see above pp. 82-83.
[55]For the parallels of the jugs of Phocaea and Magnesia, see above pp. 82-83.

to the fact that the plates of Sagalassos were covered with a red slip, but the plates of Magnesia were produced as an imitation of terra sigillata.

Concerning the shape of the production of Sagalassos, the rim profiles of the plates are different from the ones of Magnesia. The first type has a downturned rim (fig. 108). The second type has a horizontal and projecting rim (fig. 110). The third type has an outturned rounded rim (fig. 111) and the fourth type has an outturned and triangular rim (fig. 112). In the production of Magnesia, the first type has an inturned rim (fig. 49), and the second type has a thick and vertical, or slightly inverted rim (fig. 50). The body of those of Sagalassos and the first type of Magnesia have a convex profile, but the second type of Magnesia has a concave profile. The base of the Sagalassos plates is a ring base, however the ones of Magnesia have a flat base.

The parallels of the first type of Sagalassos are known from the Eastern Sigillata B Wares. In J. Hayes terminology they are known as “Form 4” (Hayes, 1985: 53-54, pl. XI/13). The parallels of the second, third and fourth type are known from the African Red Slip wares. In J. Hayes terminology the parallels of the second type are known as “Form 25.ı” (Hayes, 1972: 50), the third type are known as “Form 106” (Hayes, 1972: 168) and the fourth type are known as “Form 86” (Hayes, 1972: 134). Parallels of the imitated production of the first type of Magnesia are known in Ephesus (Ladstätter, 2005: 340, pl. 194, 219/K 743) and Corinth (Slane, 1990: 65, fig. 11/135). Parallels of the second type of Magnesia are known in Ephesus (Ladstätter, 2005: pl. 177/K 459, pl. 180/K 516; Ladstätter, 2008: 104, pl. 277/TS 42-TS 46: 123, pl. 282/K 3), in the Athenian Agora (Robinson, 1959: 41, pl. 67/G 176, pl. 70/L 1) and in Corinth (Slane, 1990: 61, fig. 11/129).

*Miniature jugs*

Miniature jugs were produced in Sagalassos (fig. 105) and Magnesia (fig. 52-53-54). They show different properties. The Sagalassos examples were produced as common wares according to their clay and the slip, the jugs of Magnesia, however as a fine ware.

The shapes of the jugs also have differences. The jugs of Sagalassos have a slightly convex rim (fig. 105). The neck is narrow and concave. The body is pear shaped, and it ends with a low raised base. One vertical loop handle is attached below the rim and to the belly. The jugs of Magnesia have a slightly everted rim (fig. 52). The neck is short and narrow. The body is convex, and it ends with a high or low ring base, or a raised base (fig. 53-54). A curved handle is attached from the neck to the body.

These miniatures of Magnesia have similar properties as the normal jug forms of the production of the workshop[56] (fig. 37-38).

The parallels of the Magnesia jugs are known from Ephesus (Meriç, 2002: 111, 116, pl. 68/K 776), and the Athenian Agora (Robinson, 1959: 44, pl. 7/G 214). No parallels of the miniatures of Sagalassos could be identified for the specific shape.

*Shallow chytrai*

Three types of shallow chytra were produced at Sagalassos (fig. 131-132-133), and one at Phocaea (fig. 28). All the shallow chytrai are different from each other. The first type of Sagalassos has a horizontal and projecting rim (fig. 131), the second type has an everted and projecting rim (fig. 132), the third type has a thick rim (fig.

[56]For the information about the jugs of Magnesia, see above pp. 26-27.

133). Those of Phocaea have an everted and projecting rim (fig. 28). The first and the second type have a convex profile, the third type has a carination. In all types of Sagalassos, the body narrows down to the base which is rounded. The single type of Phocaea has a concave upper profile and under the carination the lower profile is convex and narrows down to a flat base. They all have two vertical loop handles attached under the rim to the body.

The parallels of the single type of Phocaea were produced in the Athenian Agora (Robinson, 1959: 42, pl. 7/G 194, 56, pl. 11/J 57, 67, pl. 14/K 93, K 96), Knossos (Hayes, 1983: 105-106: 2, 122, 125, fig. 7/81-89) and Ephesus (Ladstätter, 2005: 331, pl. 188/K 661, 342, pl. 196/K 772-K 774; Gassner, 1997: 178, pl. 59/742). A parallel of the Sagalassos production is known in Knossos (Sackett, 1992: 226, pl. 171, 9).

*Deep chytrai*

Two types of deep chytrai were produced at Sagalassos and two types at Magnesia. The first type of Sagalassos has a vertical rim, and the second type has a slightly everted and projecting rim (fig. 134). The first type of Magnesia has a horizontal and projecting rim (fig. 58) and the second has an everted and projecting rim (59). The two types of Sagalassos have a spherical body, and the two types of Magnesia have a concave upper profile and below the carination, the lower profile is convex. The deep chytrai in the two types of Sagalassos and Magnesia have a flat base and two loop handles. The handles are attached from the rim to the body.

The parallel of the Sagalassos deep chytrai is known in Corinth (Hayes, 1973: 467, pl. 81/c.240). The parallels of the first type of Magnesia were produced at

Knossos (Hayes, 1983: 105-106: 1, 122, fig. 7/80), Didyma (Wintermeyer, 2004: 89, T 12, fig. 629), Troia (Tekkök-Biçken, 1996: 122, fig. 88/F 30) and Ephesus (Ladstätter, 2005: 342, pl. 196/K 770). The parallels of the second type of Magnesia were produced in the Athenian Agora (Robinson, 1959: 42, pl. 7/G 194, 56, pl. 11/J 57, 67, pl. 14/K 93, K 96), Knossos (Hayes, 1983: 105-106: 2, 122, 125, fig. 7/81-89) and Ephesus (Ladstätter, 2005: 331, pl. 188/K 661, 342, pl. 196/K 772-K 774; Gassner, 1997: 178, pl. 59/742).

### 3.2.3. Comparisons between the Workshops of the Western Coast (Phoacea and Magnesia), Inner Anatolia (Sagalassos) and the Black Sea (Sinope)

The deep chytrai produced in Sinope can be compared with the production of Magnesia and Sagalassos. This is the only type which can be compared to the production of other sites (table 2).

*Deep chytrai*

The deep chytrai produced at Demirci (fig. 148-149), Magnesia (fig. 58-59), Sagalassos (fig. 134) have different properties. A single type of chytra is produced at Demirci, but two at Magnesia and Sagalassos.

The deep chytrai of Demirci have an everted and projecting rim, a convex body, and a flat base (fig. 148-149)[57].

The parallels of the Demirci production are known in the Athenian Agora (Robinson, 1959: 56, pl. 11, J 55) and Knossos (Forster, 2001: 159, e-g).

[57]For the comparisons and the parallels of the deep chytrai of Magnesia and Sagalassos see above, pp. 91-92.

# CHAPTER 4

# CONCLUSION

In this thesis, I have firstly focused on the productions of the workshops and collated a catalog of the ceramics. Secondly, I have compared the productions of the workshops which I have studied in detail and I have added parallels from other Anatolian cities, and from mainland Greece during the Hellenistic and Roman period. In the conclusion I would like to show the relations between the regions of ceramic production.

## 4.1. The Hellenistic Period

During the Hellenistic period, the workshops studied are located on the western coast: Phocaea and Cnidus, and the southern Black Sea region: Sinope (fig. 1).

To begin with, Phocaea and Cnidus produced several similar shapes; these are: lekanai, cups with concave rim, small cups, and lopades. These types produced in both centers have mainly similar properties in their morphology and they find parallels in the other western production centers of Anatolia and the centers of the Greek world. However, some shapes were produced with different properties. For

example, the second type of lekanai (fig. 63) from Cnidus, the skyphoi of Phocaea (fig. 10) and Cnidus (fig. 72) have differences, but they find parallels in the other western production centers of Anatolia, and also in the Athenian Agora and Knossos. No parallel of the second type of small cups (fig. 90) could be identified in the western workshops; however some similar shapes are known from Pergamon. Therefore, we can hypothesize that in the western centers many of the types were produced alike.

Secondly, some shapes can be considered as "universal", such as the Megarian bowls, because they were produced in almost all Hellenistic centers[58]. The West Slope decoration was also very popular[59]. It consists mainly of elongated leaves painted in white or more often, with a cream color. The workshops of the Athenian Agora are the creative center of the Megarian bowls (Thompson, 1934: 351-365; Rotroff, 1982: pl.1,3,9,17) and of the West Slope decoration (Rotroff, 1997: 85, 87, pl. 5-11).

The guilloche decoration is also observed in the productions of many workshops of the period, such as the Athenian Agora (Rotroff, 1982: 26, pl. 25, 130, pl. 30, 163), Priene (Wiegand and Schrader, 1904: 396, Abb. 526, 9), Metropolis (Gürler, 2003: 14, pl. XIII B5) and Labraunda (Hellström, 1965: 345, pl. 17).

In the workshops that I studied, Tekir in Cnidus produced Megarian bowls (fig. 92), bowls with guilloche (fig. 95) and West Slope decorated vases (fig. 97). The workshops of Nisiköy and Zeytinlik in Sinope made kantharoi (fig. 142), and the

[58]As examples of production centers of the Megarian bowls, we can name Delos (Laumonier, 1977: pl. 35, 46), Pergamon (Radt and De Luca, 2003: 6, pl. VI, 3-4 and VII, VIII; De Luca, 2011: 362-365), Ephesus (Mitsopoulos-Leon, 1991: 70-74, pl. 76-88), and Metropolis (Gürler, 2003: 14-15, pl. XIV-XVI, C10-D11).

[59]The parallel productions of West Slope decorated shapes: Pergamon (Behr, 1988: abb. 15-16; Schäfer, 1968: 45-63; Radt and De Luca, 2003: 6, pl. V 1-2), Ephesus (Mitsopoulos-Leon, 1991: 44-46, tafel 20-31) and Metropolis (Gürler, 2003: 10, pl. IX, A11-A15).

workshops of Phocaea made oinochoe (fig. 15) with West Slope decoration. The difference between the Megarian bowls and the bowls with guilloche is mainly the decoration, because their shape is almost similar.

As a result, we can observe the influence of Athens on the production of the workshops of Anatolia for the Megarian bowls, West Slope and guilloche decoration. Its influence spread not only to the production centers of the western coast, but also to Sinope in the southern Black Sea region.

Thirdly, on the one hand, some shapes and decorations are common everywhere in the Hellenistic period, but on the other hand some shapes are specific to a center, such as the pi-handled cups from Cnidus (fig. 85). These cups were the most popular production of the city. They show particularities from one workshop to another, since the pi-handled cups of A4 have a feature which does not exist in A1 and A2: the ridge around the carination (fig. 87). Furthermore, these cups were made in huge quantities and exported. They were also imitated in the Athenian Agora (Rotroff, 1997: 119, fig. 23: 395-404). Thus, we can support that there was influence of Anatolia on the productions of Athens, even if it is limited.

To conclude, first of all, the productions in the western coast show similar properties between them. Moreover, the types find parallels in the other western production centers in Anatolia and in the Greek world. Also, some universal shapes and decorations created in Athens influence the productions of Anatolia. Lastly, the production of pi-handled cups of Anatolia influenced the productions of Athens.

Therefore, we can make the hypothesis that there are regional similarities between the workshops of different regions in Anatolia during the Hellenistic period

and there was an interaction for some popular shapes and decorations between the productions of the workshops of Athens and Anatolia.

### 4.2. The Roman Period

On one hand, for each basic shape, we can often recognize more than one variant. On the other hand, among the jugs (fig. 20, fig. 37-39), tankards (fig. 21-22, fig. 40-41), oinochoai (fig. 23-24, fig. 46-48), shallow basins (fig. 25-26, fig. 35), pans (fig. 27, fig. 55-57), and shallow chytrai (fig. 28, fig. 58-59) from Phocaea and Magnesia, there are differences among the two productions. The types find parallels in other western production centers: Miletus, Didyma, Ephesus, Pergamon, Tyre, Iasos, Troia, the Athenian Agora, Knossos and Corinth.

When we compare the western production that I studied with the one of Sagalassos in inner Anatolia, the types of jugs (fig. 136), containers (fig. 104), plates (fig. 108-112), miniature jugs (fig. 105), shallow chytrai (131-133) and deep chytrai (fig. 134) have properties different than those from Phocaea and Magnesia, but they find parallels in the productions of other western centers, such as Pergamon and Ephesus, and in Knossos, Corinth.

The situation in the Black Sea region is slightly different. The type of chytrai (fig. 149) in the production of Sinope differs from the western and inner production centers that I studied, but find similarities in the production centers of the Athenian Agora and of Knossos.

Secondly, there is a continuity of the shapes from the Hellenistic to the Roman period. The production of the cups with concave rim of Phocaea (fig. 5) and Cnidus (fig. 76) will continue to be produced with the same profile during the Roman period

in Magnesia (fig. 34). However the clay is different; the cups were produced as a fine ware in the Hellenistic period, but as common ware in Roman times. So, the usage of these vessels changed from one period to another.

Thirdly, some shapes from the production of Magnesia: shallow and deep basins (fig. 35-36), cups with concave rim (fig. 34), oinochoai (fig. 46-48) and from the production of Sagalassos: miniature jugs (fig. 105), jugs (fig. 136), medium size jugs (fig. 137) were the widespread productions and are known from other production centers. But they were produced for different purposes in Magnesia and Sagalassos because they were done with different clay. For example, normally oinochoai were produced as fine ware but in the production of Magnesia they were produced as common ware. So, we can understand that the same shapes were produced in different workshops, but their use changed from one city to another.

Fourthly, the miniatures produced in the workshops of Magnesia (fig. 52-54) and Sagalassos (fig. 105) are different and no parallels of the ones from Sagalassos could be identified. The production of miniature wares exist in some other workshops, such as Ephesus (Meriç, 2002: 111, 116 pl. 68/K 776) or the Athenian Agora (Ladstatter, 2008: 123, pl. 282/K 4). It is probable that some workshops were specialized in the production of miniatures as votive objects: these jugs could be offered in the tomb or dedicated in a sanctuary or a private shrine.

Lastly, in the Roman period, the red slip ware was fashionable. There were terra sigillatas, high quality ceramics with specific shapes slipped in red. The production of the terra sigillata can be observed around the Mediterranean. They are locally imitated in many workshops, for example at Magnesia[60] (fig. 49-51). They

[60] The imitated sigillata of Magnesia, see above pp. 30-31.

are not the topic of the thesis[61], but among the workshops that I studied, Phocaea is one of the most important sigillata production centers.

Some centers produced their own red slip wares instead of imitating the sigillata. The cities were taking into account the taste of the clients and competed with other producers: this led to different production trends. For example, Sagalassos was the really important red slip production center among the workshops that I studied (fig. 106-129).

Red slip ware is characteristic of Sagalassos's production, together with the shapes and the technique which are associated to it. The vessels have a high quality with a thin wall; they are completely slipped. By not imitating the popular traditions such as sigillata, but by creating new shapes with red slip, Sagalassos could create a new trend in the ceramics which was exported not only in Anatolia, but also for example in Egypt. However, some influence may have been received from the production of sigillatas on the shapes of the plates of Sagalassos.

To conclude, first of all, it is observed that the same types produced in the workshops which I have studied on the western coast display different properties. When we compare their types with the inner and northern productions, we can also observe differences. However, the western, inner and northern productions find similarities or parallels from the production centers of western Anatolia and of the Greek world. I think we can hypothesize that in general during the Roman period the workshops in Anatolia and in Greece produced the same shapes, but sometimes with differences probably because of regional traditions or regional particularities. Moreover, the same shapes were produced in the different workshops but used for

[61]See above, Chapter 1: Introduction pp. 1-6.

different purposes. If the same shapes are produced in several workshops in large quantities, it means they are popular shapes in Anatolia. Even if they have differences, such as the clay or the profile, these shapes were used popularly for the preparation and serving of food.

Furthermore, Athens was no longer the center of influence as it was during the Hellenistic period, because there was no type created and influential like the Megarian bowls or West Slope decoration of the Hellenistic period. In the Roman period the types which were produced in Athens and Anatolia are the usual forms and can easily be found in all the workshops, such as plates, shallow basins or chytrai. Also, some shapes produced in the Hellenistic period continued to be made in the Roman period on the western coast. Their shapes are similar, but the different fabrics mean that the purpose of the production has changed.

From the Hellenistic to the Roman period, the workshops produced the same shapes, but there is a change in the form of the shapes. Also, in the Roman period there is a change in the form of the vessels between the early Roman and the late Roman times. To exemplify, the oinochoai of Phocaea have different profiles between the Hellenistic period (fig. 15), and the early (fig. 23) and late (fig. 24) Roman periods.

Lastly, fashions were changing. Megarian bowls were very popular in the Hellenistic period, but in the Roman period red slip wares were popular for example: terra sigillata or Sagalassos red slip wares. We can also see that during the Hellenistic period, the influence come from outside, namely from Athens, but in Roman period it looks like Anatolia received less or no external influence and the major sites in Anatolia are the creative centers of influence by themselves.

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# GLOSSARY OF SHAPES MENTIONED IN THE TEXT

*Basin:* A vessel shallow or deep usually for cooking or sometimes for serving food.

*Bowl:* A vessel used for serving food. It is deeper than the cups and usually it has no handle.

*Chytra:* A vessel has shallow and deep forms with two handles, and used for cooking.

*Container:* A large storage vessel, especially for wine.

*Cup:* A small vessel used for serving food.

*Dish:* This is a very small-to-medium (diameter), shallow bowl.

*Hydria:* A vessel used principally to store water. Two horizontal handles were for carrying the vessel when full and one vertical handle used when pouring.

*Jar:* It is a closed vessel used for storage, preservation, or transportation of goods. It was made with, or without, handles—typically two handles or none. In terms of size, jars may be very short, short, tall, or very tall.

*Jug:* It is a closed vessel designed for pouring liquids. It may have one handle or none. In terms of size, a jug may be very short, short, tall, or very tall.

*Kantharos:* A drinking-cup with two large vertical handles and a stemmed foot.

*Krater:* A large vessel with two handles, used to mix water and wine.

*Kyathos:* A cup used for serving wine.

*Lekane:* A vessel with two horizontal handles. The dish was used for serving food.

*Lekythos:* A vessel used to store oil and perfumes.

*Lopas:* A vessel with a lid for cooking.

*Mortarium:* This is a footed bowl with thickened rim profile.

*Olpe:* A vessel for pouring out liquids.

*Oinochoe:* A trefoil jug or pitcher for pouring liquids, principally wine.

*Pan:* A vessel with one or two handle and used for cooking.

*Plate:* A flat dish with a short foot used for serving food.

*Pithos:* A large storage vessel, especially for wine.

*Skyphos:* A deep cup or bowl with two handles near the rim.

*Table Amphora:* A vessel serving many purposes, particularly the keeping of wine.

*Tankard:* A large one-handled drinking vessel.

# FIGURES


Fig. 1: Map of the production centers in Anatolia and in Greece

# PHOCAEA

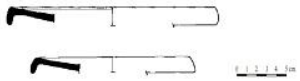

Fig. 2: Plates with downturned rim, Maltepe tumulus

Fig. 3: Plate with a rounded rim, Maltepe tumulus

Fig. 4: Plate with horizontally projecting rim, Maltepe tumulus

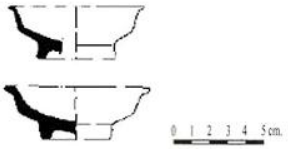

Fig. 5: Cups with concave rim, Maltepe tumulus

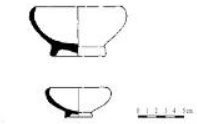

Fig. 6: Small cups with inturned rim, Maltepe tumulus

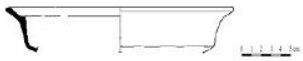

Fig. 7: Lopas, Maltepe tumulus

Fig. 8: Lopades, Athens

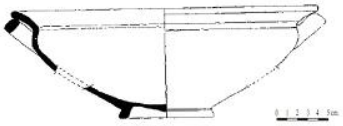

Fig. 9: Lekane, Megaron building

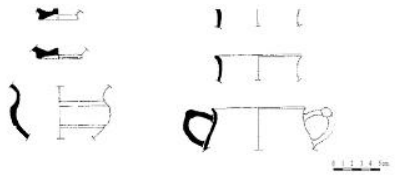

Fig. 10: Skyphoi, Megaron building

Fig. 11: Plate, Megaron building

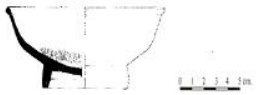

Fig. 12: Cup with an outturned rim, Megaron building

Fig. 13: Small cup with an inturned rim, Megaron building

Fig. 14: Small cup with an inturned rim, Megaron building

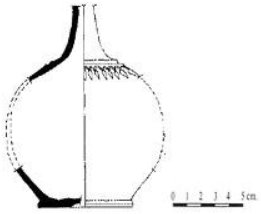

Fig. 15: Oinochoe, Megaron building

Fig. 16: Shallow basin, Megaron building

Fig. 17: Pans, Megaron building

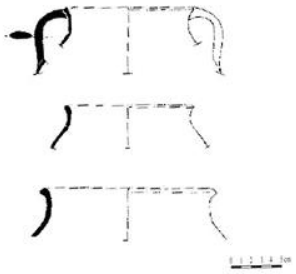

Fig. 18: Deep chytrai, Megaron building

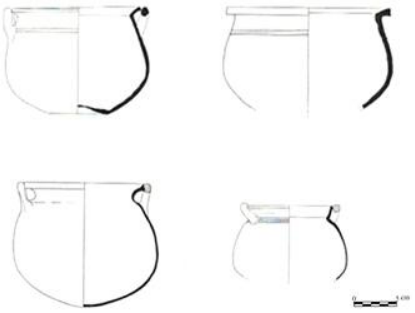

Fig. 19: Deep chytrai, Athens

Fig. 20: Jug, Çifte Kayalar (no scale)

Fig. 21: Tankard, Çifte Kayalar (no scale)

Fig. 22: Tankard, Çifte Kayalar (no scale)

Fig. 23: Oinochoe Çifte Kayalar (no scale)

Fig. 24: Oinochoe Çifte Kayalar (no scale)

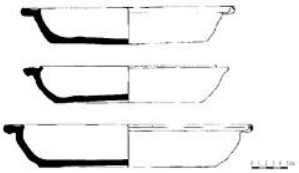

Fig. 25: Shallow basins, Çifte Kayalar

Fig. 26: Shallow basin, Çifte Kayalar

Fig. 27: Pans, Çifte Kayalar

Fig. 28: Shallow chytra, Çifte Kayalar (no scale)

# MAGNESIA AD MAEANDRUM

Fig. 29: Lekanai

Fig. 30: Cups with everted rim

Fig. 31: Cups with downturned rim

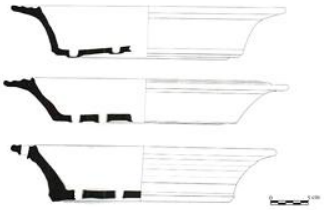

Fig. 32: Strainers

Fig. 33: Tray

Fig. 34: Cups with concave rim

Fig. 35: Shallow basins

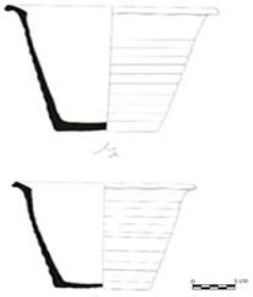

Fig. 36: Deep basins

Fig. 37: Jug

Fig. 38: Jug

Fig. 39: Jug

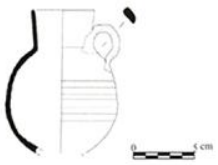

Fig. 40: Tankard

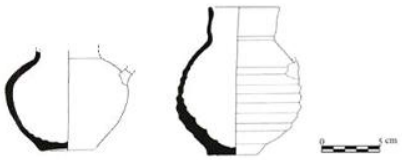

Fig. 41: Tankards, bases

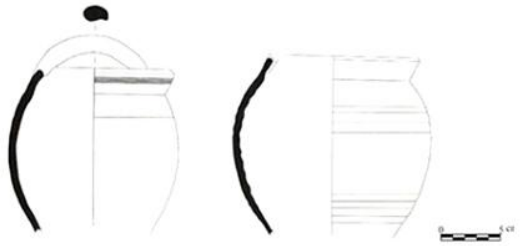

Fig. 42: Water jars

Fig. 43: Water jars, bases

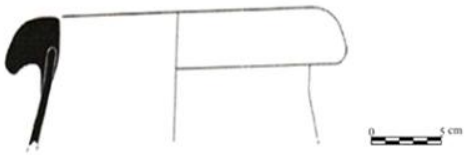

Fig. 44: Container

Fig. 45: Container

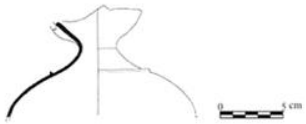

Fig. 46: Oinochoe

Fig. 47: Oinochoe

Fig. 48: Oinochoe

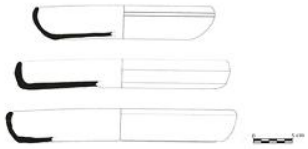

Fig. 49: Plates with incurved rim

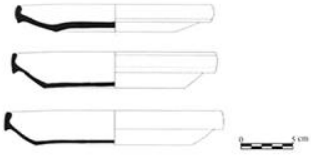

Fig. 50: Plates with vertical rim

Fig. 51: Cups with rounded rim

Fig. 52: Miniature jug

Fig. 53: Miniature jugs, bases with slightly convex underside

Fig. 54: Miniature jugs, bases with slightly concave underside

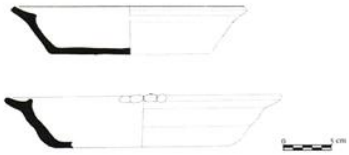

Fig. 55: Pans with everted and projecting rim

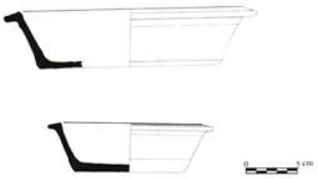

Fig. 56: Pans with downturned rim

Fig. 57: Pan with a rolled rim

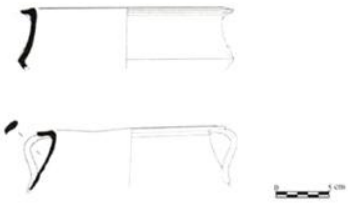

Fig. 58: Deep chytrai with horizontal and projecting rim

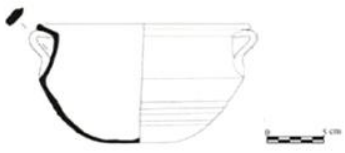

Fig. 59: Deep chytra with an everted and projecting rim

Fig. 60: Deep chytra

# CNIDUS


Fig. 61: Reşadiye and the workshops of Tekir

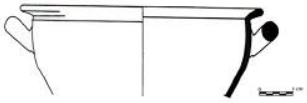

Fig. 62: Lekane, Reşadiye before 146 BC

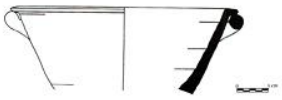

Fig. 63: Lekane, Reşadiye from146-90 BC

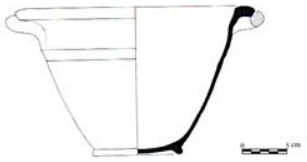

Fig. 64: Lekane, Athens

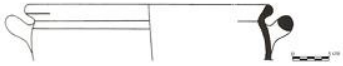

Fig. 65: Krater , Reşadiye

Fig. 66: Krater, Athens

Fig. 67: Cup with a thick rim, Reşadiye

Fig. 68: Jug, Reşadiye (no scale)

Fig. 69: Jugs, Athens

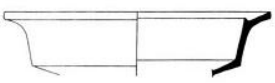

Fig. 70: Lopas, Reşadiye (no scale)

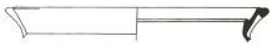

Fig. 71: Deep chytra, Reşadiye (no scale)

Fig. 72: Skyphos and handle of a skyphos, A1-A2

Fig. 73: Skyphos, Athens

Fig. 74: Kyathos, A1-A2

Fig. 75: Kyathos, Cistern (no scale)

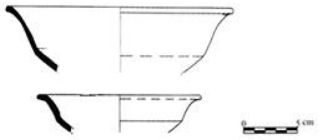

Fig. 76: Cups with concave rim, A1-A2

Fig. 77: Cup with a concave rim, A4

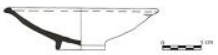

Fig. 78: Cup with a thick rim, A1-A2

Fig. 79: Cups with thick rim, A1-A2

Fig. 80: The flowing slip of a thick rim cup, A1-A2 (no scale)

Fig. 81: Cup with a convex rim and horizontal handles, A1-A2

Fig. 82: Cup with a convex rim and horizontal handles, A1-A2

Fig. 83: Cup with a convex rim and horizontal handles, Athens

Fig. 84: Stand with a convex rim, A1-A2

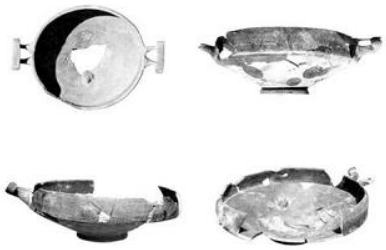

Fig. 85: Pi-Handled cups, Cistern (no scale)

Fig. 86: Pi-Handled cups, Cistern

Fig. 87: Pi-Handled cup, A4

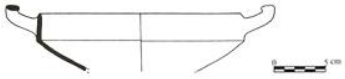

Fig. 88: Pi-Handled cup, A1-A2

Fig. 89: Small cup with inturned rim, A1-A2

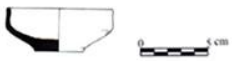

Fig. 90: Small cup, A1-A2

Fig. 91: Megarian relief bowl, A1-A2

Fig. 92: Megarian bowls, Cistern (no scale)

Fig. 93: Fragments of mould: Megarian bowl relief decoration, A1-A2 (no scale)

Fig. 94: Megarian bowl mould fragments, A1-A2 (no scale)

Fig. 95: Bowls with guilloche, Cistern

Fig. 96: Bowls with guilloche, A1-A2 (no scale)

Fig. 97: West slope decoration, A1-A2

Fig. 98: Olpai, A1-A2

Fig. 99: Vase with a filter , A2

Fig. 100: Deep chytra, A4

# SAGALASSOS

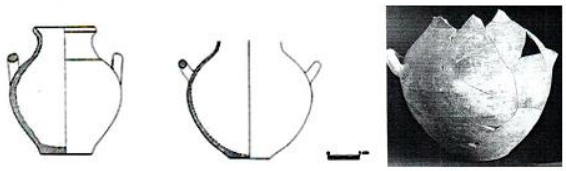

Fig. 101: Jars

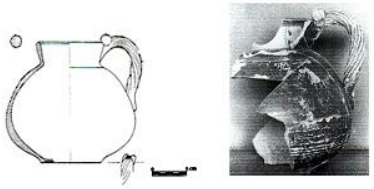

Fig. 102: Small jars

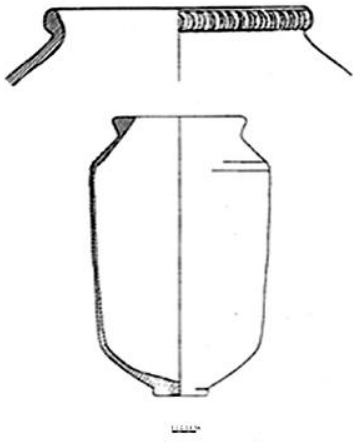

Fig. 104: Containers

Fig. 103: Miniature jar

Fig. 105: Miniature jug

Fig. 106: Stem handles (no scale)

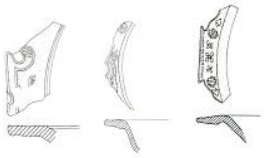

Fig. 107: Ledge handles (no scale)

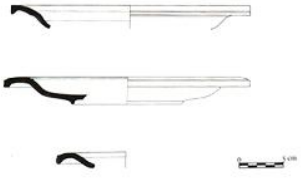

Fig. 108: Plates

Fig. 109: Decorated handle of the plates

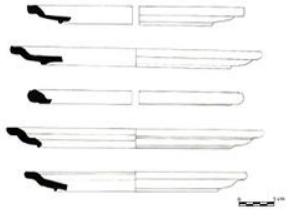

Fig. 110: Plates

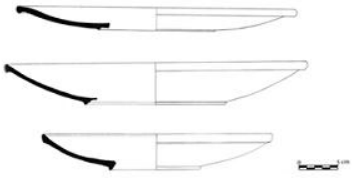

Fig. 111: Plates

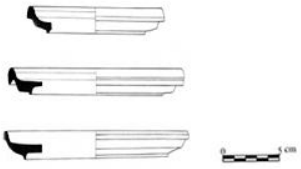

Fig. 112: Plates

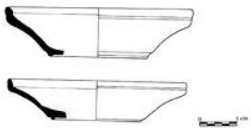

Fig. 113: Dishes

Fig. 114: Dishes

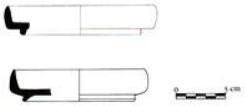

Fig. 115: Dishes

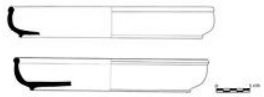

Fig. 116: Dishes

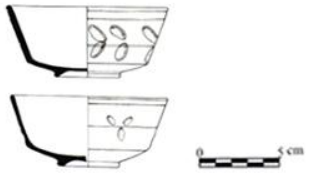

Fig. 117: Cups with slightly thickened rim

Fig. 118: Cups with slightly thickened rim

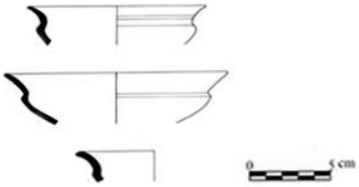

Fig. 119: Cups with offset rim

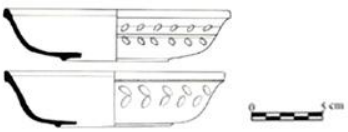

Fig. 120: Cups with triangular rim

Fig. 121: Cups with projecting rim

Fig. 122: Cups with projecting rim

Fig. 123: Cup with a horizontal flaring rim

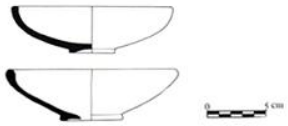

Fig. 124: Cups with rolled rim

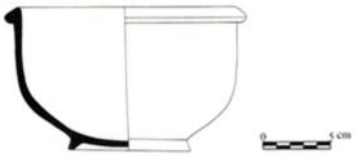

Fig. 125: Bowl with a downturned rim

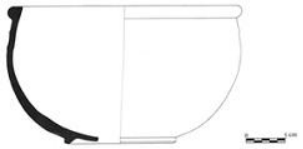

Fig. 126: Bowl with a rolled rim

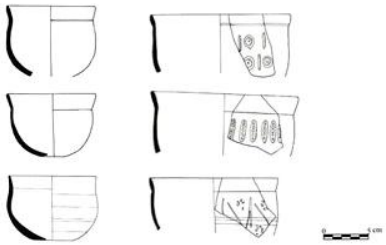

Fig. 127: Bowls with high and everted rim

Fig. 128: Bowls with high and everted rim

Fig. 129: Deep bowls

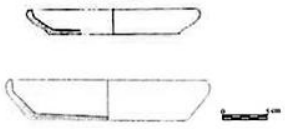

Fig. 130: Dishes

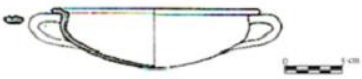

Fig. 131: Shallow chytra with a horizontal and projecting rim

Fig. 132: Shallow chytra with an everted and projecting rim

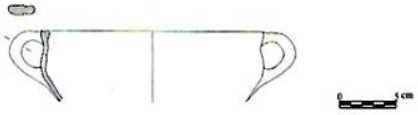

Fig. 133: Shallow chytra with a thick rim

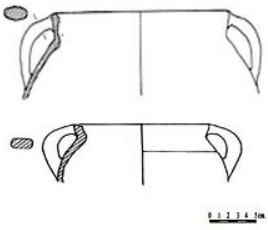

Fig. 134: Deep chytrai

Fig. 135: Deep chytrai, Corinth and Mediterranean Lands

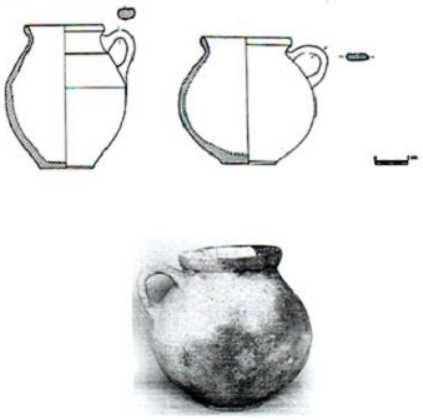

Fig. 136: Jugs

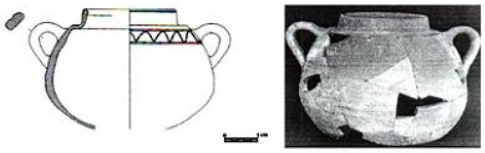

Fig. 137: Medium sized jars

# SINOPE

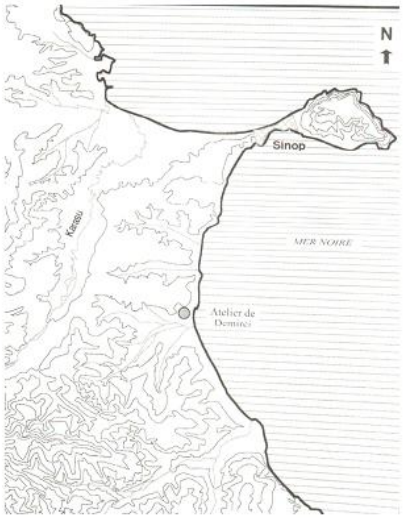


Fig. 138: Sinope and Demirci

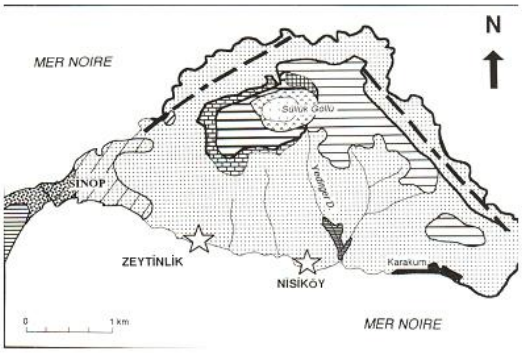


Fig. 139: Sinope, Nisiköy and Zeytinlik

Fig. 140: Kantharos

Fig. 141: Kantharos (no scale)

Fig. 142: West Slope Decoration on fragments of Kantharoi

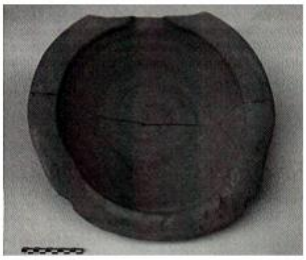

Fig. 143: Mortarium

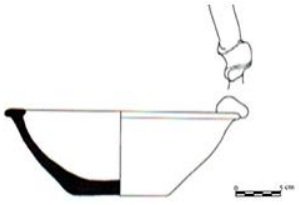

Fig. 144: Mortarium

Fig. 145: Pithos (no scale)

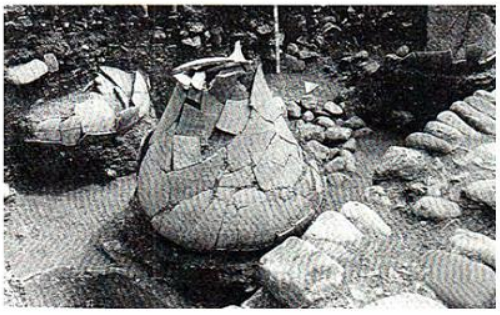

Fig. 146: Pithoi (no scale)

Fig. 147: Table Amphora (no scale)

Fig. 148: Deep chytra

Fig. 149: Deep chytra

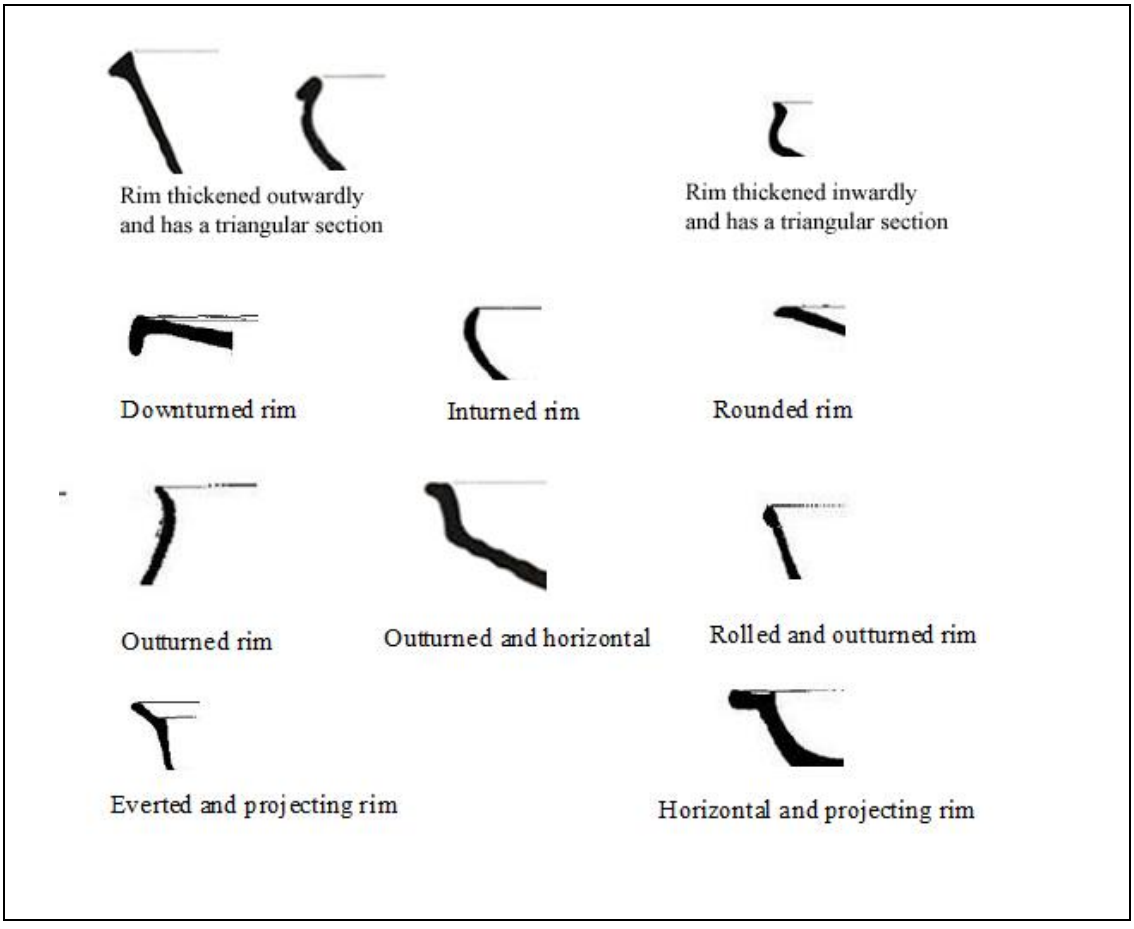


Fig. 150: Some examples of the rim profiles

# TABLES

| OTHER PRODUCTION CENTERS | PHOCAEA | CNİDUS |
|---|---|---|
| **DASKYLEİON** | SKYPHOS | |
| **EPHESUS** | LEKANE<br>CUP WITH A CONCAVE RIM<br>SMALL CUP | LEKANE (TYPE 1)<br>CUP WITH A CONCAVE RIM<br>SMALL CUP (TYPE 1) |
| **HİSARÖNÜ-ÇUBUCAK** | LEKANE<br>CUP WITH A CONCAVE RIM<br>SMALL CUP | LEKANE (TYPE 1)<br>CUP WITH A CONCAVE RIM<br>SMALL CUP (TYPE 1) |
| **PERGAMON** | CUP WITH A CONCAVE RIM<br>SMALL CUP | SKYPHOS<br>CUP WITH A CONCAVE RIM<br>SMALL CUP (TYPE 1) |
| **METROPOLİS** | SMALL CUP | SMALL CUP (TYPE 1) |
| **PRİENE** | CUP WITH A CONCAVE RIM | CUP WITH A CONCAVE RIM |
| **ATHENIAN AGORA** | SKYPHOS<br>LOPAS | LEKANE (TYPE 2)<br>SKYPHOS<br>LOPAS<br>DEEP CHYTRA |
| **KNOSSOS** | LEKANE<br>CUP WITH A CONCAVE RIM<br>SMALL CUP<br>**D**EEP CHYTRA | LEKANE (TYPE 1-2)<br>CUP WITH A CONCAVE RIM<br>SMALL CUP (TYPE 1)<br>DEEP CHYTRA |

Table 1: Similar shapes produced in Phocaea, Cnidus and other sites of Anatolia

| OTHER PRODUCTION CENTERS | PHOCAEA | MAGNESIA | SAGALASSOS | SİNOPE |
|---|---|---|---|---|
| **MILETOS** | TANKARD (TYPE 2)<br>OINOCHOE (TYPE 2)<br>SHALLOW BASIN<br>PAN | JUG (TYPE 1)<br>TANKARD<br>CONTAINER<br>OINOCHOE (TYPE 3)<br>SHALLOW BASIN<br>PAN (TYPE 3) | | |
| **DIDYMA** | TANKARD (TYPE 2)<br>OINOCHOE (TYPE 2)<br>PAN | JUG (TYPE 1)<br>TANKARD<br>OINOCHOE (TYPE 1,3)<br>PAN (TYPE 1-2-3)<br>DEEP CHYTRA (TYPE 1) | | |
| **EPHESUS** | TANKARD (TYPE 2)<br>OINOCHOE (TYPE 2)<br>SHALLOW BASIN<br>PAN<br>SHALLOW CHYTRA | JUG (TYPE 2)<br>TANKARD<br>CONTAINER<br>PLATE (TYPE 1-2)<br>OINOCHOE (TYPE 3)<br>MINIATURE JUG<br>SHALLOW BASIN<br>PAN (TYPE 3)<br>DEEP CHYTRA (TYPE 1-2) | | |
| **TYRE- İZMİR** | | JUG (TYPE 2) | | |
| **PERGAMON** | | JUG (TYPE 3) | PLATE (TYPE 1) | |
| **IASOS** | PAN | PAN (TYPE 1-2-3) | | |
| **TROIA** | PAN | PAN (TYPE 3)<br>DEEP CHYTRA (TYPE 1) | | |
| **ATHENIAN AGORA** | JUG<br>TANKARD (TYPE 1)<br>OINOCHOE (TYPE 2)<br>SHALLOW CHYTRA | JUG (TYPE 1)<br>PLATE (TYPE 2)<br>OINOCHOE (TYPE 1-2-3)<br>MINIATURE JUG<br>DEEP CHYTRA (TYPE 2) | | DEEP CHYTRA |
| **KNOSSOS** | SHALLOW BASIN<br>SHALLOW CHYTRA | SHALLOW BASIN<br>DEEP CHYTRA (TYPE 1-2) | JUG<br>SHALLOW CHYTRA | DEEP CHYTRA |
| **CORINTH** | TANKARD (TYPE 2) | TANKARD<br>PLATE (TYPE 1-2) | PLATE (TYPE 1)<br>DEEP CHYTRA | |

Table 2: Similar shapes produced in Phocaea, Magnesia, Sagalassos, Sinope and other sites of Anatolia and Greece