AMERICAN UNIVERSITY OF BEIRUT

ROMAN AMPHORAE IN THE NEAR EAST: A STUDY OF THE DISTRIBUTION OF SPANISH, NORTH AFRICAN, AND LOCAL TYPES

by
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A thesis
submitted in partial fulfillment of the requirements
for the degree of Master of Arts
to the Department of History and Archaeology
of the Faculty of Arts and Sciences
at the American University of Beirut

Beirut, Lebanon
December 2015

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ACKNOWLEDGEMENTS

I would like to thank the many archaeologists, professors, and specialists that were kind enough to discuss their work and share information with me. This thesis would not have been possible without collaboration with the many scholars that have worked in the Near East. I would like to thank my advisor, Dr. Paul Newson, for all his guidance throughout the process. All his corrections and feedback provided clarity and organization to what was once just a collection of thoughts.

I would also like to thank the committee, Dr. Helga Seeden and Dr. Hermann Genz, for their prompt and thoughtful advice. Finally, I would like to thank the library staff for the provision of countless articles and works that would never have been available to me without their help.

AN ABSTRACT OF THE THESIS OF

Naseem Naji Raad for Master of Arts
Major: Archaeology

Title: Roman Amphorae in the Near East: A Study of the Distribution of Spanish, North African, and Local Types

Roman amphorae, transport vessels used to distribute food products across the Mediterranean, have long been examined as representations of Roman trade networks. Olive oil, wine, and fish sauce were produced and packaged in North Africa and Spain and subsequently shipped to a number of destinations. These distribution networks were quite extensive, connecting Spain and North Africa to Italy, Britain, northern Gaul, and the Near East.

This work examines the distribution of Spanish and North African amphorae in the Near East in comparison with the Beirut type as well as other Near Eastern types, roughly in the period between 50 BCE and 350 CE. The goal is to see if Spanish vessels, North African types, and the Beirut amphorae diffuse inland or if the distribution is limited to the coast. The author goes on to propose an explanation for the amphora assemblage and characterize the nature of the distributions based on the variety of types observed and the material transported.

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CHAPTER I

INTRODUCTION

The Romans utilized storage jars, known as amphorae, to transport a variety of food products throughout the Mediterranean. Through the quantification of amphora finds from a variety of sites, archaeologists have established that large quantities of Spanish and North African products were exported to a number of Roman provinces as well as to Rome itself. This study examines the distribution of Spanish and North African amphorae in the Roman Near East, specifically in modern-day Cyprus, Syria, Lebanon, Palestine, and Israel. The distribution of these types is subsequently compared to that of the Beirut type – an amphora identified as a product of kilns in Beirut – along with several other locally produced amphorae. The goal of this work is to identify any variation in the amphora assemblage between coastal sites and inland sites in the Near East roughly from 50 BCE to 350 CE. In this chapter, I outline the geographical background of the Near East and discuss important systems that governed production and consumption as well as dictated distribution. In later sections, I propose an explanation for the distribution of foreign and local types based on geographical context, maritime networks, and the political and economic organization of the region. It will be shown that the Roman Near East is characterized by a split between coastal and inland sites in the distribution of food products packaged in amphorae, both local and foreign.

A. Terminology

In this work, the term "trade" will be used exclusively to describe a contemporaneous exchange of goods or products for other goods or products, or monetary compensation determined to be of equal value by both parties (supplier and consumer). This definition excludes the *annona* – state-directed provisions of grain and olive oil supplied by the provinces – since the system was overseen by the imperial government. Payment for food products and amphorae was set at a fixed rate according to government regulation, and the distribution network was directed by imperial orders. Thus, the term "trade" does not accurately describe such a system. The term "distribution" will be used to describe strictly the transportation of one good or product from one location to another. This definition encompasses both privately conducted transactions as well as distributions directed by the imperial state. Thus, the term will be favored over "trade" in cases where the product was transported as a part of the *annona*, or the nature of the transaction is unclear.

B. Climate and Geography

The climate of the coastal region of the Near East is characterized by long, hot summers and short, rainy winters. Annual precipitation near the shores of the Mediterranean in the Near East is around 850 mm, and the average annual temperature ranges between 19.5 C and 21.5 C (Ministry of Agriculture 2002: 18, 20). Near the Bekaa Valley in central Lebanon, the mean annual precipitation is a bit lower than the coast at around 630 mm (Ministry of Agriculture 2002: 18). In Israel, a similar pattern is observed: coastal regions receive a mean annual precipitation between 500 and 700 mm, while areas farther inland in the southeast receive a lower level of precipitation

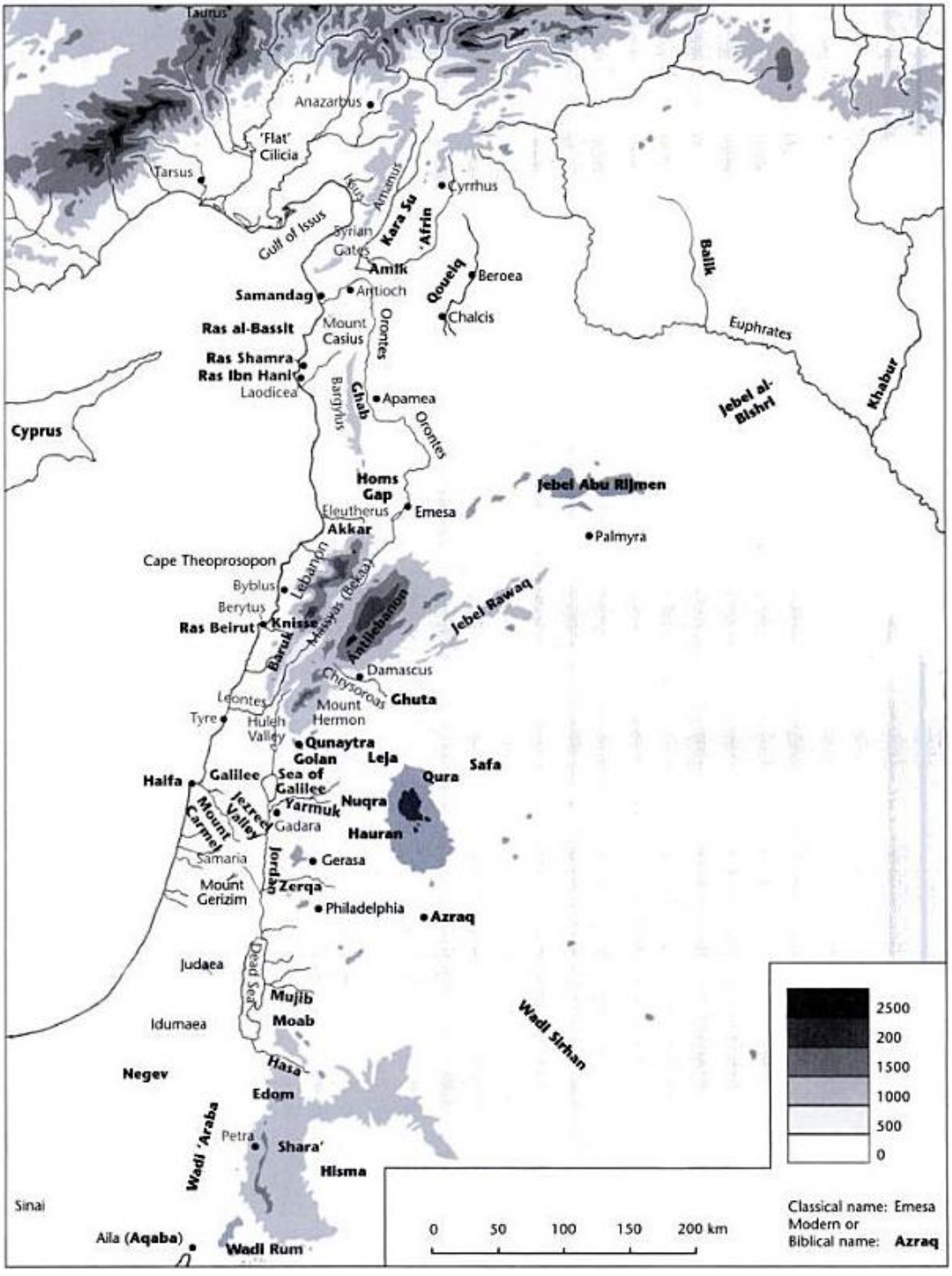

Figure 1: Geographical map of the Near East (after Butcher 2003: 6)

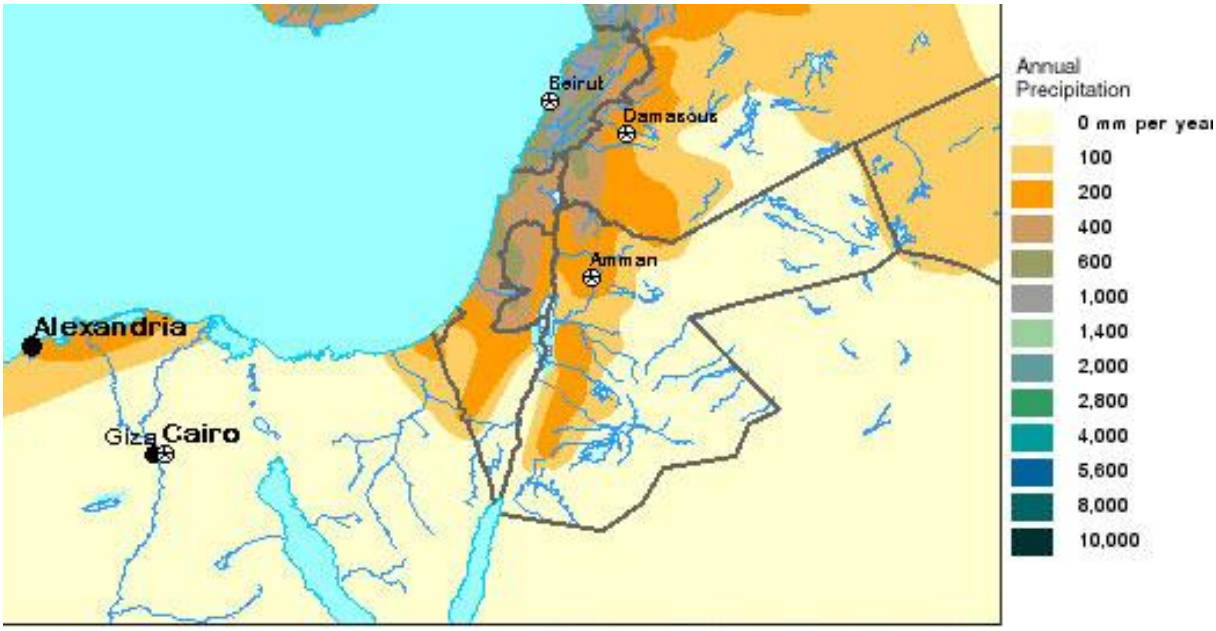

Figure 2: Annual Precipitation Levels in the Near East (after Smith 2000)

(Halfon *et al.* 2009). Ultimately, as seen in Figure 2, the coastal areas of the Near East receive the most precipitation.

Farther inland, specifically east of the mountain chain comprised of the Amanus, the Jebel Akra, the Jebel Ansariyeh, and the high Lebanon range, the environment is more variable (Butcher 2003: 13). The Jordan Valley and Golan Heights, located next to the Sea of Galilee, and the western side of the West Bank receive a fair amount of rainfall (Halfon *et al.* 2009). Central Syria, on the other hand, proves to be more arid, characterized by dry steppe and semi-desert (Butcher 2003: 13). However, northern Syria, specifically the Limestone Massif, receives a substantial amount of rain and can draw water from the Qoueiq River (Butcher 2003: 13). Though the terrain is rocky in the Limestone Massif, the land is cultivable. Essentially, the climate of the Near East varies as one moves from the coast to the inland, and from the south (northern Jordan/southern Syria) to the north (the Euphrates).

Most importantly, olive trees and grape vines flourish in the warm, mild, humid environment of the Near Eastern coast, the Bekaa Valley of Lebanon, and the area surrounding the Galilee Sea (Greene 1986: 11). Even the inland of northern Syria is capable of growing olive trees in the Limestone Massif (Foss 1995). This is clear from the extensive evidence of olive oil and wine production over the past thousands of years as well as modern agricultural activity (Vossen 2007). On the other hand, certain other Roman provinces did not grow olives (such as Britain and northern Gaul), and required imports from Baetica and North Africa to satiate the settled citizens and soldiers. As will be shown later, these points prove to be pivotal in explaining the pattern of amphora distribution in the area.

The keys to the agricultural success of the abovementioned areas in the Near East were the availability of water and the proper climate. However, the rivers utilized for irrigation were not as useful in navigation. Though smaller rivers would have provided the local population with a source of water to grow crops, a majority of these rivers are not navigable (Issawi 1982: 52). Furthermore, as seen in Figure 1, the coastal rivers do not breach the mountainous area between the coast and inland Syria (Butcher 2003: 133-134). As a result, most navigation of any Roman merchant ship in the area of study would have been limited to parts of the Orontes or the Euphrates.

Ultimately, river networks in the Near East are not as extensive as those in central Europe and Britain. Even the Tigris and Euphrates were not necessarily dependable waterways for merchants; Pliny, in his description of the Euphrates, specifies long stretches of the river as being not navigable and regularly flooding the surrounding area (5.20). Thus, expeditions into the mainland (central Syria) would have

been costly and unreliable, especially in comparison to the mainland of Spain, central Europe, and Britain (Carreras Monfort 1998: 170).

A number of amphorae were produced at kiln sites along the Baetis River, known today as the Guadalquivir River in central Spain (Hughes 2010: 22). Olive oil producers recognized the need for tillable land as well as reliable transportation; the Guadalquivir Valley provided both. Though other rivers in central Spain were not as navigable, the Guadalquivir Valley was sufficient in providing the proper environment both for production as well as distribution, connecting the inland of Spain to the Mediterranean. Rivers in Britain seem to have been regularly sailed, evidenced by the Blackfriars I shipwreck uncovered in the River Thames and the New Guy's House boat found in Southwark in south London (Marsden 1994: 33, 97). This permitted large-scale distribution of Baetican and North African olive oil throughout Britain, as seen in the high quantities of Dressel 20 and African amphorae at a number of military and civilian settlements situated next to rivers (Peacock and Williams 1983). The prevalence of river travel also seems to have been critical in the distribution of wine and oil in Gaul (see Figure 3). A large quantity of amphorae has been uncovered at sites along rivers in Gaul as well as from the rivers themselves (Tchernia 1983).

As will be seen in the data presented in this thesis, the difference in geographical context between the Roman Near East and other Roman provinces proves to be crucial in the interpretation of amphorae distribution. Specifically, maritime transportation was not as prevalent on the mainland of the Near East. The lack of dependable waterways in the Near East is ultimately reflected in the distribution of amphorae in the region.

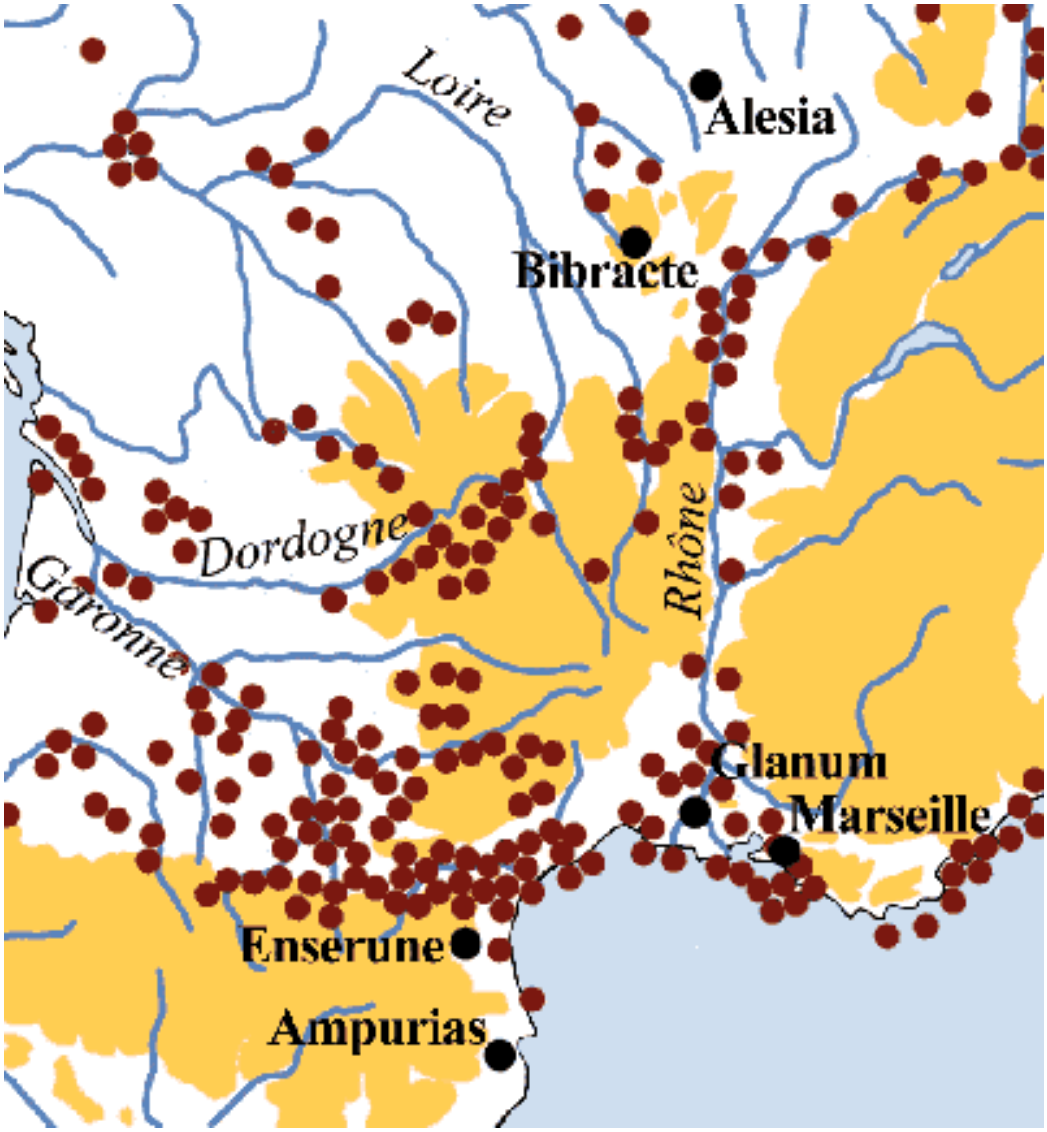

Figure 3: Distribution of Dressel 1 amphorae in Gaul in the late Republic (after Cunliffe 1988)

C. Maritime Transportation

After the Punic Wars, Rome had quelled Carthage, the primary naval threat in the Mediterranean at the time. From then on, the military generally expanded or established territories through land warfare in Spain, Greece, the Balkan region, Asia Minor, and the Near East (Funari 1994: 90-91, Woolf 2012: 74). Thus, after dominance

of the sea, Rome redirected its focus from the construction of warships to merchant ships built for the sole purpose of transportation (Greene 1986: 17). As shipbuilding techniques improved, boats of immense size and cargo capacity were being sailed in the Mediterranean over long distances (Greene 1986: 24). Though some vessels were capable of transporting more than 1000 tons of cargo, the majority of merchant ships were smaller, capable of transporting about 100 to 150 tons (Greene 1986: 24-25). Essentially, maritime commerce developed both in scale and scope; ships were capable of carrying huge cargoes, and distribution networks became much more extensive. As a result, the distribution of products throughout the Mediterranean grew immensely, especially with the transition from a republic to an empire (Parker 1992).

Ships provided a method of distribution that was fast, efficient, and cheap (Greene 1986: 40-43). This efficiency must not be underestimated; archaeologists have calculated that maritime travel was at least 20 times less expensive than moving cargoes by land in the Roman Empire (Greene 1986: 40). In Spain and North Africa, almost all kiln sites are situated next to rivers to be able to transport amphorae to the next destination (see Figures 4 and 5). Distribution networks of packaged amphorae throughout the Mediterranean were similarly limited to maritime travel (Hopkins 1983, Parker 1992). Furthermore, ancient historians attested to the importance of ships in commerce in both fluvial networks as well as the Mediterranean as a whole, and spoke of transportation by land as slow and difficult (Greene 1986: 29-30).

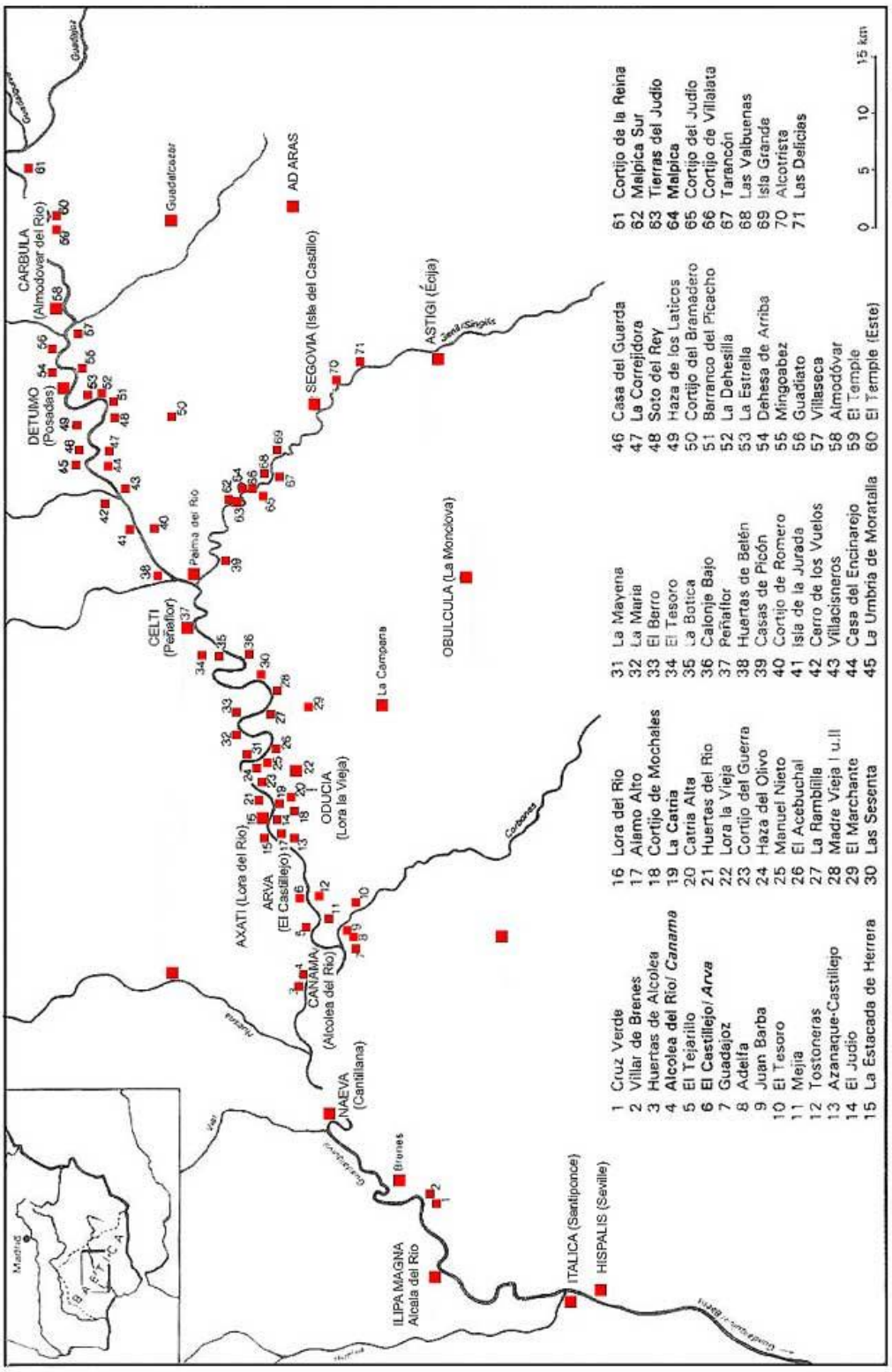

Figure 4: The distribution of kiln sites in the Lower Guadalquivir Valley (after University of Southampton 2014)

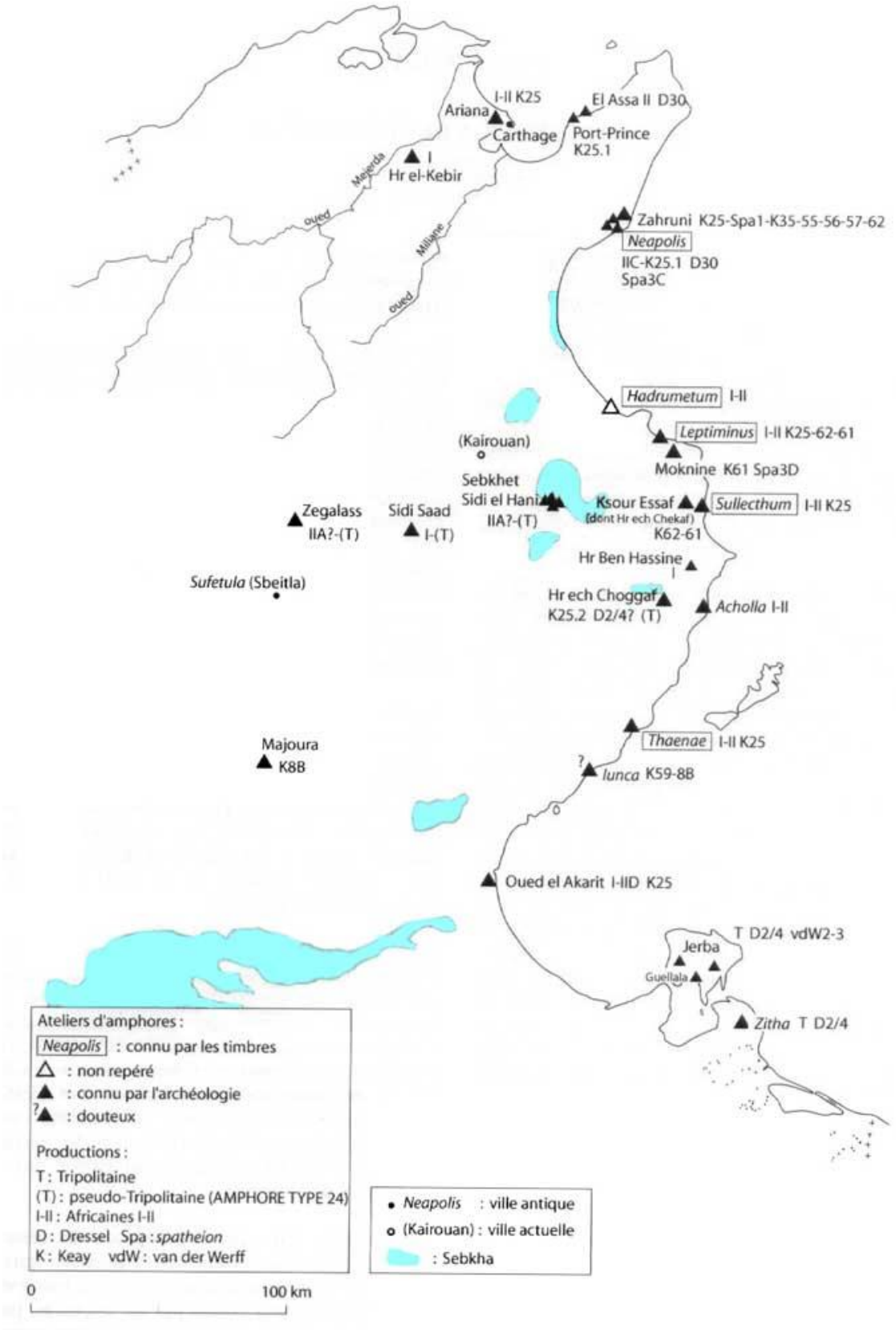

Figure 5: Distribution of kiln sites in North Africa (after University of Southampton 2014)

D. Olive Oil and the *Annona*

After the defeat of Carthage, Rome was able to annex Spain and North Africa and transform the regions into agricultural powerhouses in the Mediterranean. Rome absorbed their thriving olive oil, wine, and fish sauce industries and fueled their growth through investment and extensive structural organization of production and distribution (Funari 1994: 90, Hobson 2013, Mattingly 1988). Specifically, lands that were not retained by the central government and leased out for revenue were bestowed upon or sold to citizens willing to settle the area to farm (Hobson 2013: 56). The state then acquired Spanish and North African food products through either taxation, collection of rent, or the purchase of products from private landowners.

These products were subsequently distributed to Rome as a part of the *annona*, a government-organized distribution program that provided free or subsidized grain and olive oil to Roman citizens (Pons Pujol 2008: 145). It seems to have been created officially in the time of Augustus, specifically targeting the city of Rome (Pons Pujol 2008: 145). However, the term *annona* eventually came to describe not only the distribution to the city of Rome, but also seems to account for the provision of Roman citizens and soldiers throughout much of the Empire. In Britain, as has been observed in Rome, a number of uncovered amphorae are stamped with information concerning the production site, the distributor, and specify a government official involved in the trade (Hughes 2010). These inscriptions complement archaeological evidence to tie the amphorae directly with the *annona* of the Empire (Reynolds 2008: 80). This is also observed in the Near East in the *Corpus Juris Civilis* describing the provision of the Roman army by local sources as part of the *annona* (11.55.1). Thus, the system grew to encompass more than the provision of grain and oil solely to Rome. However, it must

be clarified that though the process of transporting Spanish olive oil to Rome differed from the provision of the military in the Near East by local sources, both were characterized as a part of the *annona*.

The provision of the military in the provinces has been dubbed the '*annona militaris*' by Jose Remesal Rodriguez, a characterization that has been continued by some archaeologists over the past few decades (Carreras Monfort 1998: 161). Though there is clearly correlation between military sites and government-provided olive oil, there is little evidence supporting the existence of a system completely independent of the *annona* (Hughes 2010, Pons Pujol 2008: 145). Rather, it appears that the *annona militaris* was simply a branch of the *annona* in charge of supplying the army (Pons Pujol 2008: 145), with no definitive differentiation between distribution networks for military and civilian sites. For example, in Britain, it seems that civilian settlements and military sites received their supply of olive oil from the same distribution network (Hughes 2010, Peacock and Williams 1983: 9).

What I wish to make clear in this section is the fact that the *annona* encompasses a wide range of distribution networks dictated by different principles. However, these networks are all similar in that the products came from taxation or some other government-controlled process. In the cases of Spain and North Africa, olive oil was exported to the provinces and to the city of Rome by the government, and distributed to Roman soldiers and citizens. In the Near East, it appears that a different system was in place. As will be shown, the inland sites of the Near East sufficed in providing the local government with olive oil as a part of the *annona*. Thus, there did not exist this mass exploitation and exportation of olive oil as occurred in Spain and North Africa. Rather, the *annona* in the case of the Near East referred to products

provided to the local government and the army. In terms of the coastal sites of the Roman Near East, it will be argued that the amphora assemblage reflects a different system of importation and exportation. Specifically, the wide variety of products and amphora types observed, as well as the low quantity of western imports, suggests the distribution of food products to have been mostly privately conducted by merchants or the local government.

CHAPTER II

AMPHORAE

A. Introduction

While ceramics can help with dating in general, trace the movement of luxury goods, and reflect cultural customs and art styles, amphorae are representative of the transportation and trade of commercial products in the Roman Empire on a massive scale (Peacock and Williams 1986: 1). This has been established by the sheer quantity that has been found in the Mediterranean and the surrounding lands. In addition, archaeologists have been able to specify the main products that were transported as olive oil, wine, and a sauce made of fermented fish. Olive oil and wine were not only staple foods in the Roman diet and consumed on a large scale, but they were also provided to soldiers as food rations at military sites throughout the Empire. Furthermore, the consumption of olive oil is relatively independent of income level; it was incorporated into the diets of both the rich elite as well as rural peasants (Mattingly 1988: 33-34). Amphorae thus do not just represent the movement of ceramic vessels throughout the Mediterranean or are limited to a certain class of people, but in fact reliably reflect consumption patterns of specific products in the Roman Empire.

The organized study of amphorae began with the examination of amphorae from the Castro Pretorio at Rome by Heinrich Dressel in the late 19th century (University of Southampton 2014). Forty five shapes were detailed in Dressel's outline, which ultimately formed the basis for amphora studies ever since (University of Southampton 2014). This table actually led to the development of types and classes of

amphorae, characterized by their integration into Dressel's outline. For example, the large Baetican olive oil amphora produced in the Guadalquivir Valley is commonly recognized as the Dressel 20 form (Hughes 2010). Thus, Dressel's early examination is still prevalent in amphora studies today.

With increased interest in the subject, an appreciation for the significance of these vessels grew. Zevi and Tchernia developed the field from the simple classification of the vessels into an association of amphorae with the Roman economy and distribution networks (University of Southampton 2014). Carandini introduced the problem of specifying production dates for specific types (University of Southampton 2014). At this time, scholars began to recognize the potential of amphora studies, committing time and effort to establish typologies throughout the Mediterranean.

In the 1970's and 1980's, the field of amphora studies expanded greatly, with a number of conferences and works discussing production sites, sourcing vessels, specifying contents, and establishing date ranges for certain types (University of Southampton 2014). One such book is Peacock and Williams' *Amphorae and the Roman Economy* (1986), which gathered a large amount of data and proposed typologies for all known amphorae utilized in the Roman period. However, this did not result in the formal standardization of amphora studies among scholars. Specifically, one type can sometimes be recognized by multiple names. The Dressel 20 form, for instance, is also recognized as Beltran V, Ostia I, Callender 2, Peacock and Williams Class 25 and simply as a 'globular amphora' (Hughes 2010: 17).

An amphora itself is characterized by a narrow neck and a smaller opening at the head in order to retain the goods effectively during transportation. Sizes vary across

production centers, ranging from small table amphorae to larger forms. Though the term “amphora” is actually a measurement utilized by the Romans equaling about 26 L (Tyers 1996), producers did not conform to this specific capacity often. African forms could reach capacities above 40 L and the Dressel 20 form from Baetica could actually hold more than 70L in a single vessel (Hobson 2013, Hughes 2010: 18). Olive oil amphorae were generally larger than those that carried *garum* and wine. This is likely due to the more commercial nature of oil; wine and *garum* were more expensive and probably less accessible.

D. P. S. Peacock and D. F. Williams outline amphora studies according to four key points: provenance, dating, contents, and quantification of data (1986: 9-19). In order to properly interpret an amphora assemblage, one must be able to source the product as well as the vessel itself, identify the destination, specify when the exchange took place, and consider what exactly was being transported. Sourcing the amphorae is undertaken through an association of a certain form with a specific kiln. For example, a number of Tunisian pottery workshops have been identified in North Africa (Hobson 2013). Amphorae from these sites can subsequently be compared to assemblages around the Mediterranean to identify exports from the original source. In addition to this initial classification, archaeometric analyses have also allowed the sourcing of a vessel based on its chemical composition (Peacock and Williams 1986, Reynolds *et al.* 2010). The clay from a region serves as a sort of footprint, providing archaeologists with a tool to differentiate amphorae that are similar in appearance.

The date of production of an amphora is crucial in analyzing trends in production and distribution of a specific type over time. Over the past century, archaeologists have catalogued a variety of forms around the Mediterranean and

associated certain types with fairly specific date ranges; thus, the sourcing and dating of a vessel has become easier with the use of comparative material. In certain cases, *tituli picti*, stamps found on amphorae, identify the consuls of the time along with possibly the name of a colony, production center, or individual involved with production, inspection, or distribution (Peacock and Williams 1986: 16). However, stamps are extremely rare and cannot be depended on as the sole dating tool. When these labels are not present, the material must be taken in context with other archaeological evidence to be dated and compared to previously developed typologies.

In determining the contents of a vessel, *tituli picti* prove to be useful yet again since the contents of the amphora will sometimes be specified in the stamp. As these stamps are not often present, we must turn to archaeometry to try to find remnants of the original product in the lining of the amphora (Peacock and Williams 1986: 17-18). In certain cases, traces of wine, olive oil, or *garum* have been identified. However, chemical analyses of amphorae are not always conducted. In these cases, archaeologists rely on existing typologies. Well known types have been extensively analyzed and the contents determined; thus, when an amphora is uncovered, the identification of it as of a certain type also reveals the product transported. However, the process of specifying an amphora as of a certain type is a complex process, often resulting in confusion both in sourcing and dating an amphora as well as detailing its contents (Berdowski 2006: 242, Reynolds 2000a: 1045). Specifically, the contents of certain vessels are yet unknown, and some types possibly transported several products (Roman Amphorae: a Digital Resource: 2005). Furthermore, the recycling of ceramics has been observed throughout the Mediterranean and is suggested to have played a role in shipments with a wide range of amphora types (Peña 2007: 72-73, 78-79). Africana 1 amphorae, for

example, are believed to have been recycled to transport fish sauce rather than the original olive oil they held (Peña 2007: 72-73).

After a consideration of these factors, the quantification of the data can ultimately result in estimates of imports and exports by region and can even contribute to theories regarding the money supply of the Empire (Hopkins 1980). The material evidence is complemented by ancient texts such as *Edictum Diocletiani et collegarum de pretiis rerum venalium*, an edict by Diocletian setting maximum prices for a number of products and detailing penalties for not following these specifications (Peña 2007: 27). Prices for unfilled amphorae are given along with prices for wines, allowing estimations to be given of empty and filled vessels (Peña 2007: 27-29). Expanding the evidence in the Near East to discuss the money supply as a whole is outside the scope of this thesis; however, the regularization of prices of both filled and empty vessels implies the importance of the amphora itself. Furthermore, the differentiation between filled and unfilled amphorae by Diocletian indicates that the production of amphorae and the processing of olives, grapes, and fish were not necessarily related. Regardless, the system was clearly organized and regulated.

B. Methodology

In this thesis, I examine quantities of specific types of amphorae to assess the strength of trade relations of the Near East with certain regions of the Mediterranean. To do so, I have chosen a variety of sites in Cyprus, Israel, Lebanon, Palestine, and Syria that are relatively uniform in proximity to one another. These sites are subsequently characterized as either coastal or inland sites based on distance from the Mediterranean. I have differentiated between coastal and inland sites based on the

presence of a harbor or lack thereof; when this evidence is not available, inland sites have been identified as such by being more than 30 kilometers away from the shore. In this, I admit that I am allowing a certain degree of statistical bias since I am choosing the sites rather than working with a random sample. However, by examining sites that are distributed evenly in the area, I hope to trace an accurate pattern of amphora distribution and the products they carried as well as the industries that governed their transportation.

The sites discussed in this thesis are located mainly along the coast, in central Syria, and along the Euphrates. To complement these sites, I examined a number of field reports of archaeological work and surveys conducted in Jordan and included some information of the findings. However, the results were overwhelmingly negative, with no Beirut or Spanish types observed, and a minimal quantity of African material. This information is discussed briefly in later chapters. I have chosen not to discuss the surveys and reports in depth since my research resulted in homogeneously negative results.

The evidence utilized in this study was compiled through an examination of archaeological reports of fieldwork undertaken in the Near East, consideration of analyses conducted by ceramic specialists, and consultation with project directors and amphora experts. In order to discern patterns in the distribution, later chapters detail trade routes, production centers, and frequencies of specific types in the Near East through maps, charts, and, comparisons of the examined type's frequency to the total amphora assemblage. I have also taken account of the correlation between certain types at sites in the Near East to differentiate between selective trade (the presence of only Spanish, African, or Beirut amphorae at a site) and open commerce with a variety of

sources (the presence of amphorae from two or three of the listed regions). The presence of amphorae from a wide range of sources is indicative of an open market, suggesting private mercantile activities.

Some difficulties were faced in gathering evidence since excavation at some sites was undertaken over 50 years ago, before archaeologists had outlined extensive typologies of Spanish, African, and Near Eastern amphorae. As a result, there is sometimes no mention of particular types or the sourcing of a vessel to an ambiguous area, such as "the eastern Mediterranean". In other cases, little quantitative information about the ceramic assemblage is given, which obfuscates what percentage the Spanish, African, or Beirut amphora sherds made up of the total assemblage. This was particularly difficult in the cases of Antioch, Palmyra, and Dura-Europos. In these cases, I examined photo evidence to try to identify any Beirut, Spanish, or North African types.

In addition to the abovementioned issues, the Near East is not as well explored as Roman provinces in the western Mediterranean and, of course, Italy itself. There is much fieldwork yet to be conducted, especially at certain key cities that were probably intermediaries in the distribution of olive oil, wine, and fish sauce such as Antioch and Palmyra. Furthermore, the state of research in Lebanon and Syria, though it has improved greatly in the recent past, lags behind work being conducted in the southern Near East. Specifically, regarding the Roman period, fieldwork is conducted more regularly and the number of published articles and reports is higher in the southern Near East. Thus, the data presented in this thesis does not necessarily reflect a difference in the true quantity of archaeological material between Lebanon and the southern Near East, but could be attributed to the difference in the level of fieldwork

and publication conducted in each region. Regardless, recent archaeological work has greatly improved our understanding of the area and made possible an outline of a variety of sites in the Near East.

C. Types of Amphorae

Amphorae are classified by a variety of characteristics including size, shape, and composition. However, the subtle details behind amphorae typologies are outside the scope of this work. I strive only to highlight the types that will be observed here. I have focused on the Spanish Dressel 20 and the Beirut type, along with an account of a range of North African forms with a prioritization of the product transported and the date of the vessel.

Dressel 20, produced along the banks of the Guadalquivir River in Baetica, is one of the most common types of amphorae observed throughout the Mediterranean (Peacock and Williams 1986: 136). It is a globular amphora with thick handles, often stamped on the handles with information concerning the estate owner as well as the place of production (Peacock and Williams 1986: 136). Dressel 20 most commonly transported olive oil and has often been characterized as the main amphora utilized for distribution of the *annona (*Peacock and Williams 1986: 136). However, as mentioned earlier, the distribution system of the *annona* was quite intricate and complex. Thus, the understanding of the networks in place cannot be simplified to the presence or lack thereof of Dressel 20 amphorae.

In the Roman colony of Berytus, it appears that several types were produced, all resembling the "carrot" shape with a narrow body, large handles, and a pointed base (Reynolds *et al.* 2010: 77-80). It has been established that one type, known as the

Beirut type, is observed in large quantities in Lebanon and sporadically at a variety of sites in the Near East. The class has been identified as a product of Berytus quite recently, suggesting the need for a reexamination of previous works to identify which vessels originally described as being produced in the Near East are actually attributable to production centers in Berytus. The type was exported to a variety of locations all over the Mediterranean; in this work, however, I will be focusing on those found in the Near East.

African amphorae are distinct in the pinched spike at the base of the vessel and the straight, vertical walls (Peacock and Williams 1986: 155). The handles are also generally larger and less rounded than those of Dressel 20 amphorae and many other forms found in the Near East. North African vessels are some of the most commonly found amphorae in the Mediterranean. However, African forms are observed in much higher quantities in the western Mediterranean than in the eastern provinces (though this could be, in part, due to the state of research in the eastern Mediterranean in comparison to the western provinces and Italy). Regardless, in the Near East, a wide variety of African forms are present that transported mostly fish sauce and olive oil. Thus, I will be providing an account of a range of types with a focus on the products transported and the dating of the vessels.

CHAPTER III

SPANISH TYPES

A. Introduction

With the defeat of Carthage, Rome was able to expand into the west and colonize the Iberian Peninsula and the surrounding lands (Crow 2005: 28). However, the subjugation of the native people was a process that took around two centuries. Romans faced frequent attacks from the Celtiberians and the Lusitanians in the 2nd century BCE and established a significant military presence in the area over the course of two hundred years (Livy 32.28.11, Funari 1994: 89-91, Woolf 2012: 66). It was not until the coming of Augustus that Spain was stabilized through alliances with the native elite (Funari 1994: 90, Crow 2005: 28-29), a process common in Roman colonization and conquest. Economic exploitation of the area ensued through confiscation of the silver mines established by Hannibal (Woolf 2012: 196). The Romans also developed the fertile areas of Baetica, Lusitania, and Tarraconensis and established agricultural fields to grow olives and grapes (Funari 1994: 88). The olive oil industry subsequently grew immensely into an international trade network that seems to have been heavily influenced by the state. The economic development of Spain is corroborated by ancient historians (Funari 1994: 95) and observed in the archaeological record.

Figure 6: Dressel 20 Amphora (after University of Southampton 2014)

Several types of amphorae were produced in Spain throughout the period of Republic and Empire used to transport wine, oil, and *garum*. Dressel 20 was produced in the Roman province of Baetica, specifically within the modern-day region of Andalusia (Peacock and Williams 1986: 136). The type has been discovered at a number of Spanish sites through surveying and archaeological work around the Guadalquivir Valley, 56 of which are associated with amphorae kilns (Etienne and Mayet 2004: 43-49). Dressel 20 amphorae, typically could hold between 61 L and 70 L, but their capacity actually ranged from 40 L to 80 L (Hughes 2010: 18). As seen in Figure 6, the wide, rounded form allowed a larger volume to be held in each vessel compared to other types.

There exist a number of other Spanish forms found in the Near East that originated in Baetica as well as the other provinces of Tarraconensis in the east and Lusitania in the west (Reynolds 2000a, University of Southampton 2014). This variety in type and frequency provides crucial insights concerning the nature of the oil, wine, and fish sauce trade. Specifically, the existence of a wide selection of types indicates the presence of relatively independently functioning production sites. Rather than function in accordance with each other and the central government by producing a standardized form, kilns produced a variety of types across the provinces in Roman Spain. This is not to suggest private production, but it indicates a degree of independence for each producer. As noted by Paul Reynolds, this plethora of forms is overwhelming in archaeological analysis. It can lead to confusion and difficulty in the sourcing of amphorae with similar compositions and/or features (Reynolds 2000a: 1045). However, this is expected since a relatively small area was a major distributor of olive oil in antiquity and produced a large quantity of amphorae in a relatively short amount of time.

B. Distribution

Dressel 20 is one of the most widely distributed forms of Roman amphorae in the Mediterranean. The form is most frequently seen from the mid 1st century CE until the late 3rd century CE (University of Southampton 2014). As seen in Figure 7, the form has been uncovered all over Spain, Italy, and France, and has often been associated with state-controlled exchanges at military posts as well as civilian settlements (Hughes 2010: 148, Reynolds 2010). The amphorae typically would have been transported to Rome before being redistributed to the peripheries by the central government as a part of the *annona*. However, not all exchanges necessarily involved a

redistribution of goods by the center. Both private and imperial estates existed alongside Astigi (modern-day Écija in Spain), the main recorded redistribution center (Hughes 2010: 64). Astigi supplied the surrounding regions through smaller ships traveling by river as well as larger ships sailing open water to reach Rome (Hughes 2010: 64). Though it is likely that Rome was the central site of redistribution to the peripheries of the Empire (Hughes 2010: 126-127), some ships might have risked voyages on the open water in the western Mediterranean directly from Andalusia. Furthermore, not all Dressel 20 amphorae were necessarily transporting olive oil associated with the *annona*.

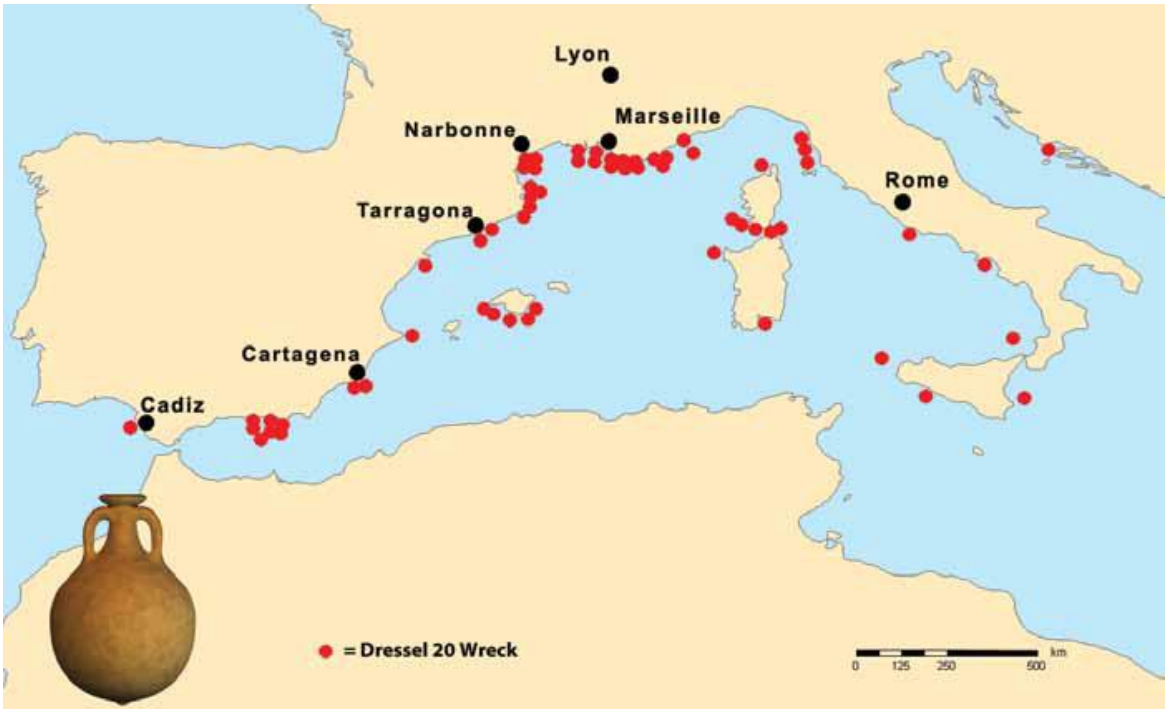

Figure 7: Shipwrecks transporting cargoes of Dressel 20 amphorae in the western Mediterranean (after Decker *et al.* 2014: 8)

Regardless, the scale of these exchanges is staggering. The magnitude of the distribution is most clearly displayed at Monte Testaccio in Rome where a mountain of Dressel 20 sherds from Baetica have been uncovered that represent up to 40 million amphorae carrying roughly 2 billion liters of olive oil (Keay 1988: 103). Having been initially transported in Dressel 20 vessels, the oil was likely put into different smaller containers and the amphorae discarded. Thus, it appears that Rome itself was also a major consumer of Baetican olive oil in addition to provinces in the west.

A number of destinations for the *annona* existed in the western Mediterranean in modern-day France, Germany, England, Spain, and Italy. As seen in Figure 7, the shipwrecks are concentrated around the coast of France at the mouth of the Rhône River and near the modern city of Narbonne. Merchants would sail into central France by river networks to distribute oil throughout central Europe as seen in the tens of thousands of amphorae uncovered in the rivers of France (Hopkins 1983: xxii-xxiii). Olive oil was also in great demand in England by both citizens and soldiers, transported from Baetica in Dressel 20 containers (Carr 2002: 115, Peacock and Williams 1983).

C. Coastal Sites/Cyprus

In the Near East, Dressel 20 appears in most of the coastal cities, though it is quite rare at most sites (see Table 1). In Cyprus, a complete Dressel 20 vessel has been uncovered in Nea Paphos, as well as some fragmentary evidence from Nea Paphos and Amathous dated to the Augustan period (Bagińska and Meyza 2013: 142, Kaldeli 2013). Several other Spanish types have been found in Cyprus along with imitations of Baetican amphorae, including a Dressel 20 imitation dating to the 5th century CE (Bagińska and Meyza 2013: 142, Kaldeli 2013). The presence of Spanish amphorae in

Cyprus is no surprise since the island likely served as a stop for merchants arriving from the western Mediterranean (see Figure 8).

Site	Country	Dressel 20	Other Spanish Types	Details	Frequency (0-1% of assemblage = low, 1-5% of assemblage = moderate)
Beth Sh'an	Israel	Present	Present		Low
Ashkelon	Israel	Present	Present		Low
Masada	Israel	?	Present	Spanish type debated if Dressel 38 or 12, but transported garum certainly (or some fish product) thanks to tituli picti.	Low
Beirut	Lebanon	Present	Present	Dressel 20 rare.	Low
Baalbek	Lebanon	Not present	Not present		-
Jiyeh	Lebanon	?	?	No types were documented in reports.	-
Antioch	Syria	Present	?	Stamped Dressel 20 found here. Evidence lacking.	Low
Zeugma	Syria	Present	Present	Possibly several sherds of Keay 23 fish sauce amphorae.	Moderate
Homs	Syria	Not present	Not present		-
Dura Europos	Syria	Not present	Not present		-
Apamea	Syria	Not present	Not present		-
Chalcis (Qinnasrin)	Syria	Not present	Not present		-
Palmyra	Syria	Not present	Not present		-
Kifrin	Syria	?	?	Stamped Baetican form found here, likely a Dressel 20.	Low
Caesarea	Palestine	Present	Present		Moderate
Nea Paphos	Cyprus	Present	Present		Low
Amathous	Cyprus	?	Present	Fewer Spanish types.	Low

Table 1: Dressel 20 and other Spanish types in the Near East

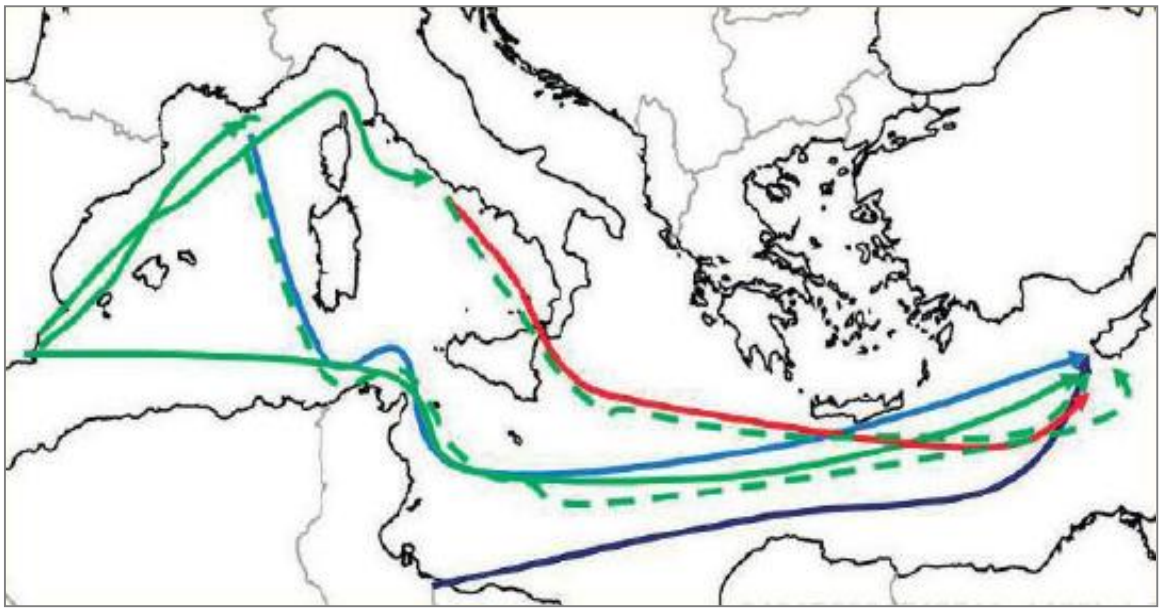

Figure 8: Possible distribution networks connecting Cyprus to the western Mediterranean (after Kaldeli 2013: 123)

The southern Mediterranean coast of the Roman Near East has turned up Dressel 20 amphorae at a number of different locations. Situated immediately on the coast, the harbor of Caesarea imported a variety of Spanish amphorae, including Dressel 20 (Patrich 2011: 122, Reynolds 2000a: 1037). The vessels uncovered have been dated to the 1st to 3rd centuries CE (Patrich 2011: 122) and seem to be more common in Caesarea than at other sites in the Near East (Patrich 2011: 122, Reynolds 2000a: 1037).

Around 100 km south of Caesarea lies Ashkelon, another Roman site on the Mediterranean coast. Two Dressel 20 sherds were found at Ashkelon (Johnson 2008: 147) among a diverse assemblage somewhat similar to that of Cyprus. Spanish forms are also present from Lusitania (in addition to other Baetican forms) transporting fish sauce possibly as early as the late 1st century BCE, however, these imports make up a minor portion of the entire assemblage (Johnson 2008: 196).

Farther to the north in modern-day Lebanon, excavations have shown that Dressel 20 is rarer than on the southern coast of the Levant. Though Beirut was an important Latin colony in the Roman Empire and despite the consistency of Spanish imports from the 1st century CE to the early 4th century, it appears that Dressel 20 is essentially absent at the site (Reynolds 2000a: 1037, Reynolds 2010, Sartre 2005: 263). Early Roman Beirut seemed to be importing fish sauce from Spain in large quantities but avoiding the olive oil (Reynolds 2003: 126). This is observed in a cistern fill examined by Reynolds where at least six fish sauce amphorae and two wine amphorae have been established as products of the Guadalquivir region (Reynolds 2000a: 1037). In the transition from the 1st century CE to the 2nd century CE, there appears to be a change in the Spanish forms uncovered with an increase in olive oil amphorae

(Reynolds 1999: 43-44), but again, a lack of Dressel 20 (Reynolds 2000a: 1037-1038). There is also a decrease in Campanian forms after the late Augustan period which coincides with an increase in a variety of Spanish types and a resurgence of North African amphorae (Reynolds 2000a: 1037-1038). Other amphorae types from Baetica have been uncovered in the ancient city such as several examples of Dressel 7/11 and a Beltran 2 amphora handle, both dated to the early 2nd century CE (Reynolds 2000a: 1037).

The excavations at the site of Antioch in northwestern Syria also uncovered Dressel 20 amphorae (Bezeczky 2012: 4, Hughes 2010: 126). One stamped sherd was recovered at Antioch bearing the mark "GMMF", commonly found as far east as Pannonia (Hughes 2010: 126). However, since no Dressel 20 amphorae have been uncovered in the surrounding region, it is difficult to make any claims concerning distributions to sites on the Euphrates through Antioch. Similar to other sites in this corner of the Mediterranean, Antioch has a minor quantity of Dressel 20, especially compared to the western Mediterranean (Decker *et al.* 2014: 6). This is curious since Antioch was an important center in the Roman Near East and eventually developed its own coin mint (McAlee 2007), signifying a successful economy. Unfortunately, the main excavations of Antioch were early in the 20th century and ceramic analysis is fairly lacking (Reynolds 2010: 71, 146, Sartre 2005: 262). Specifically, common ware was usually not collected systematically, and typologies were not as developed as they are today. The site requires further work to establish a reliable typology and detail frequencies of specific types.

D. Inland Sites

Located about 170 km northeast of Antioch, Zeugma lies on the Euphrates at a strategic point on one of the only crossings of the upper Euphrates and along the trade route connecting the Mediterranean to Mesopotamia (Reynolds 2013: 100-101). The city of Zeugma was sacked by the Sassanians in 253 CE, which fortunately was observed in the archaeological record. As a result, pottery uncovered during the excavation could be dated quite accurately (Reynolds 2013). Dressel 20 is seen at the site fairly consistently, though it makes up a relatively minor portion of the total ceramic assemblage (Reynolds 2013). On the other hand, the Baetican imports of fish sauce seen commonly in Beirut are nearly absent at Zeugma (Reynolds 2013: 96). It seems that Zeugma was receiving Spanish olive oil and Italian wine from Campania but no fish sauce or wine from Spain (Reynolds 2013: 96-97). Zeugma, as a Roman military site, was likely supplied with exported food products as a part of the '*annona militaris*', which would explain the Dressel 20 sherds (Reynolds 2008, 2010: 28). This will be discussed later in relation to military sites in other colonies around the Mediterranean.

Moving east along the Euphrates, there are a number of forts at strategic locations that have been surveyed by a group from Finland led by Minna Silver. The program targeted the Euphrates valley surrounded by Jebel Bishri in central Syria (Lätikkä *et al.* 2008: 465). She was kind enough to share with me some details about her survey, namely, that there were no foreign imports encountered in their work. Several amphorae sherds were uncovered but they seem to be of locally produced amphorae from Tabus and/or Qseybe. Excavations in the future could reveal a different

pattern of ceramic material, but to my knowledge, no western Mediterranean imports have been found in the region.

The evidence from Dura-Europos corroborates the survey of Silver. Some complete pieces of African Red Slip (ARS) pottery were uncovered at the site, but it seems that most of the amphorae were produced in Syria according to the composition of the vessels and the fact that they resemble the style of north Syrian pieces (Reynolds 2010: 70). Thus far, Dressel 20 is completely absent as are all other Spanish types. It appears that several sherds are actually of Kapitan 2 amphorae, believed to have been produced in the Aegean area (Heath 2011: 65). A complete vessel thought to be an Aegean import was also found in Dura-Europos (Pollard 2000: 187). An identical vessel was found at Ain Sinu, a Roman fort on the Euphrates (Pollard 2000: 187) in addition to several sherds from central Jordan (Pollard 2000: 187-188). Thus, though Aegean material was being imported in small quantities, no Spanish amphorae have been uncovered at sites on the Euphrates other than Zeugma; however, as is common in eastern Syria, more work is needed to clarify the situation (Reynolds 2010: 265).

On the eastern bank of the Euphrates in modern-day Iraq, Kifrin also served as a military fort for the Roman army (Pollard 2000: 269-270). Similar to Dura Europos, the site was an interesting mix of native civilians and Roman soldiers that lived together. There existed religious buildings and altars, private homes, and *thermae* buildings (Killick and Black 1985: 221). Furthermore, the site is divided into a military area and a larger civilian settlement, as was Dura-Europos (Pollard 2000: 272). I mention this because the ceramic assemblages of Near Eastern sites such as Kifrin and Dura-Europos are often difficult to interpret since it is sometimes unclear which group utilized a certain form (Roman military or native population). For the purposes of my

study, it is sufficient to note that a number of amphorae handles stamped with Greek writing were uncovered at the site, as well as one amphorae handle stamped with Latin that has been described as being of Baetican origin from the 2nd century CE (Pollard 2000: 270). Though a single amphorae handle is not indicative of any large-scale movement of goods, it is interesting that a Baetican form made it to the eastern bank of the Euphrates.

In Palmyra, there has been very little published about the ceramic assemblage. I contacted Michal Gawlikowski to ask about the amphora assemblage in the Roman Empire he encountered during his work in the area. Despite the characterization of Palmyra as a center of trade in the Near East, Gawlikowski observed very few Roman amphorae before the Byzantine period. Michal Majcherek, the pottery specialist analyzing the assemblage, observed no Spanish types in the uncovered material. Similarly, Umm el-Tlel, a Roman military site between Palmyra and the Euphrates in central Syria, has no evidence of any amphorae whatsoever (Majcherek and Taha 2004: 232). There are several sherds from the 6th century CE but absolutely no foreign or local types from my period of focus (Majcherek and Taha 2004: 232-233). It is notable that such little evidence has been uncovered at the area since Umm el-Tlel was located on a trade route from Palmyra to the Euphrates (Majcherek and Taha 2004: 230). Having examined the assemblages along the Roman eastern "frontier", I examine central Syria to observe sites farther south.

Located slightly southwest of Aleppo, the site of Chalchis (Qinnasrin) was a Roman military site with a long period of occupation (Whitcomb 2000: 49). The city was on a trade route through central Syria, about 100 km from the Mediterranean coast between Aleppo and Homs (Whitcomb 2000: 49-50). There is more of a focus on

Byzantine and Islamic material but it has been observed that during the Roman periods, the site is lacking in Spanish imports (Rousset 2010). Marie-Odile Rousset, one of the main experts examining the pottery from Chalchis, concluded that there are certain Rhodian imports but no amphorae from the western Mediterranean. After speaking with her, I have learned that the majority of amphorae from the site are local, many of which were made in imitation of Italian and Greek forms. She also confirmed the absence of Spanish forms, with no Dressel 20 being uncovered. It must be noted, however, that no extensive explorations of Roman layers were undertaken; I was advised that the aforementioned analysis is a result of surveying, not excavating. More extensive exploration and excavation of the area is necessary to identify amphorae found in good contexts. The survey of the region of Homs, located on the southern part of the Orontes in central Syria, has also turned up very little evidence of Spanish amphorae based on the analyses of the pottery conducted by Paul Reynolds (Reynolds 2014: 57).

In contrast to most sites in northern and central Syria, the southern part of the Near East has fairly consistent evidence of Spanish amphorae. Masada, located in modern-day Israel near the Dead Sea, has provided a wide range of fish sauce amphorae sourced to southern Spain as well as Italian wine amphorae (Sartre 2005: 265). It appears that many of these fish sauce amphorae were either of type Dressel 12 or Dressel 38 (Cotton *et al.* 1996: 226). Fish product from southern Spain was also being transported to Jerusalem at this time (Magness 2011: 39).

Interestingly, one of these Baetican amphorae found at Masada was inscribed with Greek and Latin writing that specified the recipient of the amphora as Herod the Great (Berdowski 2006: 245). Though the petrological analysis of the vessel points to the Dressel 12 type, the features and appearance of the amphora are closer to that of

Dressel 38 (Berdowski 2006: 242, Cotton *et al.* 1996: 226). Dressel 12 has been dated to the period between the 1st century BCE to the 2nd century CE, while Dressel 38 seems to have been first distributed in the later 1st century CE (University of Southampton 2014). Thus, there has been a problem in the dating of the jar since it is believed to have been distributed during the Herodian Dynasty (Berdowski 2006: 239), yet could be of a type that has been dated to a later time. However, given that there is overlap in each date range, that both types were produced in southern Spain, and that both types transported fish sauce, it is likely that this is simply a case of the same type (Dressel 38) being produced in a different region (according to petrological analysis). More work is needed to clarify specific dates, but it is clear that there was some level of fish sauce distribution to Masada possibly as early as the late 1st century BCE.

It appears this industry extended into Beth She'an, about 80 km east of Caesarea. Several stamped Spanish amphorae handles of unspecified types have been found at this inland site (Tsori 1977). In addition, Dressel 20 has been observed here, probably redistributed by Caesarea (Reynolds 2010: 28). Fish sauce is also attested at Petra, though it seems likely it was produced along the Gulf of Aqaba or the Persian Gulf (Studer 1994). It is unclear whether this reflects the independent development of another fish sauce market in the southern part of the Near East, but it definitely shows the local populace's taste for a Roman product. At Aila on the coast of the Red Sea in Jordan, western Mediterranean wine amphorae have also been uncovered in surveys, but thus far, no Dressel 20 (Sartre 2005: 265).

E. Conclusion

It seems to be consistent at all sites in the Near East, both coastal and inland, that Spanish imports make up a minor portion of the total assemblage or are not present

at all. Even in the case of Beirut, the supply of fish sauce, wine, and oil from Spain was minor compared to the quantities of local food products with Dressel 20 being nearly absent from the site entirely. However, Dressel 20 amphorae were found at coastal regions in the southern Levant as well as at sites farther inland that likely received a majority of their imports from the coastal cities. The northern sites have a small quantity of Dressel 20 amphorae at Antioch and Zeugma but none thus far along the Euphrates or in central Syria at Palmyra and Umm el-Tlel. The evidence indicates a limited but consistent Spanish oil distribution to Cyprus and the southern coast of the Near East. Beirut was importing Spanish oil rarely in Dressel 20 amphorae and not until the later 1st century CE (Reynolds 2000a: 1036). However, it must be recalled that this pattern could, in part, be attributed to the state of research in the region; further work in Lebanon may uncover an assemblage similar to the southern coast.

Fish sauce amphorae were a regular import on the central and southern coast of the Levant. King Herod's taste for fish sauce seems to have been shared by other citizens as it became more available for import. In contrast, it is not as common in the northern sites; several sherds were uncovered at Zeugma, but as one moves farther east, the types disappear. Exploration of the central sites of Jordan and Syria would help determine how deep the fish sauce network penetrated into the Near East, but it is likely that a closer source would serve as the provider for this area instead of Spain. This appears to be true for later periods as seen in the Sinopian provision of fish sauce starting in the 5th century CE (Reynolds 2013: 102), but the earlier periods are lacking in evidence. Furthermore, while the Romans had a taste for *garum*, this preference was not necessarily shared by the population living in the inland of the Near East.

CHAPTER IV

AFRICAN TYPES

A. Introduction

The Punic state in North Africa began with the colonization of the area by the Phoenicians in the 8th century BCE (Raven 1993: 8). The city of Carthage, a center of trade in North Africa, flourished in the Mediterranean as the city expanded its distribution network and established colonies on Sicily and the coast of Spain (Raven 1993: 11-12). Ultimately, Carthage grew to rival Rome, leading to the Punic Wars, the defeat of Carthage, and the eventual colonization of North Africa by Rome sometime between the 1st century BCE and 1st century CE. Gracchus, Caesar, and Augustus allotted land to citizens arriving from Rome, marking the effective settlement of Carthage by the Roman Empire and the beginning of an economic powerhouse in the Mediterranean (Wightman 1980: 30). After several centuries of economic success, the Vandals invaded North Africa by crossing the Strait of Gibraltar in the 5th century CE to end Roman rule (Raven 1993: 194-195). Prior to the Roman conquest, the Carthaginian state had expanded its industries of olive oil and fish sauce to make North Africa a major player in international commerce in antiquity, as seen in Figure 9 (Peña 2007: 79-80, Raven 1993: 25-26). The Romans continued these businesses and began to redirect production and distribution to suit their own interests.

North Africa's evolution in antiquity is subsequently apparent in the archaeological assemblage throughout Carthaginian rule and Roman colonization. I mention these phases in the history of Roman North Africa because the allotment of

land by Gracchus and later by Caesar/Augustus marks a transformation in the political organization of the region. Economically, the Roman occupation resulted in the transition to large-scale production with the intention of export as a part of the *annona* (Livy 31.50.1). This concept is corroborated by the extensive archaeological evidence of African amphorae transporting oil (Hitchner and Mattingly 1995, Mattingly 1988),

Figure 9: Distribution of shipwrecks carrying African amphorae between the 1st and 4th centuries CE (after Hobson 2013: 198)

wine, and fish sauce (Hobson 2013: 184). As seen in Figure 9, the overwhelming majority of uncovered shipwrecks with evidence of African material are in the western Mediterranean. There existed a network between Spain, Rome, and North Africa with a number of intermediaries. Unfortunately, there has not been extensive underwater exploration conducted in the eastern Mediterranean; thus, we must rely upon material found on the mainland. This chapter outlines several types of African amphorae

observed in the Roman Near East to shed light on the importation of North African oil, wine, and fish sauce from the 1st century BCE through the early 4th century CE. Rather than trace a single type (as in the case of Dressel 20), I will be examining a variety of North African amphorae at each site to compare pre-Roman forms with types that developed after Roman colonization.

Figure 10 depicts the evolution of African amphorae from the 1st century BCE throughout the Late Roman Empire. Several forms developed in the Roman period from previous vessels associated either with "traditional" Punic types or Graeco-Roman types. The Van der Werff types are examples of types produced in the Punic tradition. They were likely products of Carthage, distributed in the 2nd and 1st centuries BCE (Hobson 2013: 160). These forms predate Tripolitanian II amphorae which are associated with longer more cylindrical bodies and handles on the sides (Hobson 2013: 160-161). As seen in Figure 10, these 'Punic' types have handles closer to the body of the vessel and are generally wider than the later 'Graeco-Roman' types. With the arrival of the Romans, the common African 1, 2, and 3 forms that are seen all over the Mediterranean came into production (Hobson 2013: 151-153). These forms are characterized by longer, thinner, cylindrical bodies with smaller mouths and handles at the neck of the vessel, similar to Roman and Spanish forms. As a whole, North African amphorae in the Roman period, are unified by the pinched handle at the base and relatively straight, vertical walls (Peacock and Williams 1986: 155).

I mention the evolution of forms because the presence of "purely" Punic forms in the Near East would suggest trade prior to Roman conquest. On the other hand, a change in types observed in the 1st century BCE would indicate new production and exchange systems arising with the arrival of the Romans. As will be seen in the

assemblage of African amphorae in the Near East, a variety of forms are present; it appears as though trade between North Africa and the Near East remained consistent between 50 BCE and 350 CE with a small gap in importation from the Augustan period until the late 2nd century CE.

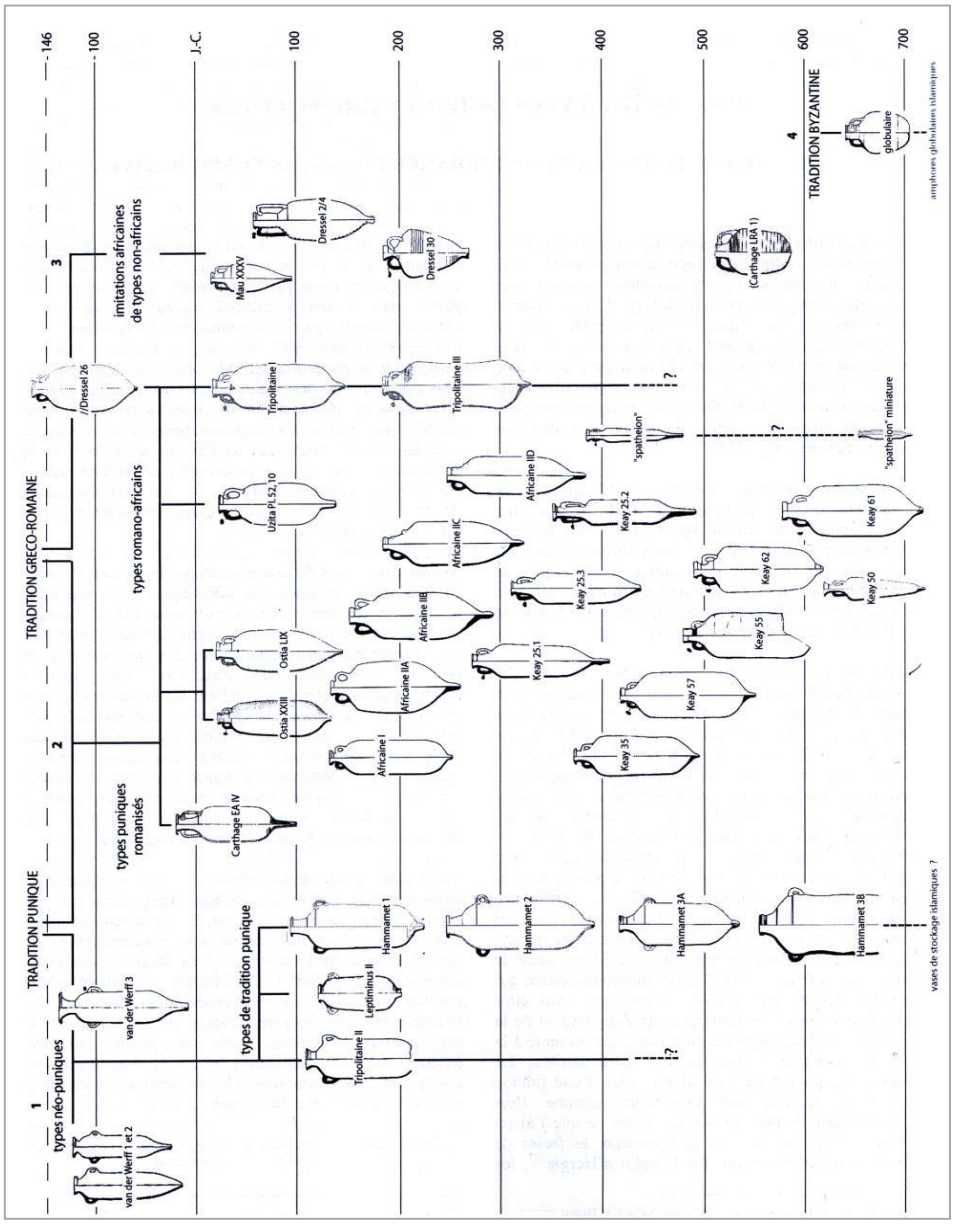

Figure 10: Development of African amphorae (after Hobson 2013: 173)

B. Coastal Sites/Cyprus

The Cypriot site of Panayia Ematousa, located in southwest Cyprus (Winther Jacobsen 2005), is home to several types from Roman North Africa. Thus far, a Benghazi Early Roman 11b sherd was found dating to no later than the 1st century CE (Winther Jacobsen 2005: 322). Benghazi Early Roman 11a amphorae have also been uncovered, most likely transporting olive oil dated to 100 CE at the latest (Winther Jacobsen 2005: 324). This form was likely produced in Tripolitania (Patrich 2011: 122). Tripolitania III, another carrier of olive oil, was also discovered here, and is similarly dated to the early empire (Winther Jacobsen 2005: 324). These types were preceded by other Tripolitanian types from the 1st century BCE as well as forms also seen at Carthage (Winther Jacobsen 2005: 322-323). Nea Paphos and Amathous also received shipments from Tripolitania, though the goods being transported are not specified (Kaldeli 2013: 126) and the amphorae are generally dated to between the late 4th and mid 5th centuries CE (Bagińska and Meyza 2013: 149-150). Overall, African imports make up about 13% of the total assemblage in Panayia Ematousa in the early Roman period and a very minor portion in the late Roman period (Winther Jacobsen 2005: 305). In Nea Paphos and Amathous, African amphorae are observed less frequently, making up around 5% of the total assemblage (Kaldeli 2013: 128, 126).

Ashkelon is home to a wider variety of types, many of which transported fish sauce from the African coast. This includes the Van der Werff 1 form, likely produced at Carthage sometime between the 2nd century BCE and 1st century CE (Johnson 2008: 141, University of Southampton 2014) as well as a Carthage Early Roman Amphora 4 possibly from the late 1st century BCE (Johnson 2008: 143). The early import of North African olive oil is also seen in the presence of a Benghazi Early

Roman Amphora 11A dated to the 1st century CE (Johnson 2008: 145, Patrich 2011: 122). Trade with North Africa seems to have remained continuous at Ashkelon with the uncovering of several examples of Dressel 30 amphorae from the 3rd century CE (Johnson 2008: 161-162, University of Southampton 2014), Africana 2D Grande from the 3rd to 4th centuries CE (Johnson 2008: 164-165), and an unspecified Africana 2 Grande from the late 2nd to late 4th centuries CE (Johnson 2008: 166). An Africana 1 "Piccolo" vessel was found at Ashkelon containing either fish sauce or olive oil; this form is typically rare in Palestine and Israel (Johnson 2008: 163).

Caesarea has a similar selection of types, most of which carried olive oil. As seen in Ashkelon, the import of North African olive oil seems to remain continuous in Caesarea until at least the late empire. Uncovered forms at Caesarea include the Benghazi Early Roman 11A from the 1st century CE, Tripolitania III amphorae from the later 3rd to the 4th centuries CE, and the Africana Grande 2B from the 3rd and 4th centuries CE (Patrich 2011: 122). However, the import of African olive oil did not result in African Red Slip pottery (ARS) reaching the Palestinian shores. ARS was not imported to Palestine in general until the 4th century CE (Patrich 2011: 123). The locally produced Eastern Sigillata A (ESA) was the more popular tableware before the arrival of ARS (Patrich 2011: 123). Generally, smaller tableware is easy to transport and could be included in a merchant ship's cargo as an addition to the main cargo of amphorae; however, this practice was not conducted by merchants arriving at Caesarea. It is odd that olive oil, a commodity that was readily available in the Near East, was being transported across the Mediterranean while a unique fine ware produced only in Africa was not commonly included in this exchange. This could be attributed to the preference of the local population for North African olive oil, but could also reflect the

low transportation costs involved in bringing olive oil through maritime transportation. Specifically, the consistent distribution of North African products to the southern coast of the Near East signifies that merchants found this distribution network beneficial and lucrative. This will be discussed later. Regardless, the amphora assemblage of Caesarea is fairly similar to the southern coast of the Levant and Cyprus. However, as we move north along the coast, it seems as if a different pattern emerges.

Beirut's assemblage of North African amphorae is made up of mostly Tunisian amphorae transporting olive oil or possibly fish sauce dating, at the earliest, to the 3rd century BCE onwards (Reynolds 2000a:1040; 2003: 121). This would imply that early jars were true Punic imports before the Punic Wars, but the dating of the material is still tentative (Reynolds 2000a: 1040). These imports subsequently halt in the Augustan period and are replaced by Italian and Spanish imports until the late 2nd century CE (Perring *et al.* 2003: 208, Reynolds 2000a: 1041-1042). In the Severan Period, imports resumed transporting either fish sauce or olive oil from the central Tunisian coast (Reynolds 2003: 128). These imports are complemented by an African "Piccolo" from the 2nd century CE, occasional Tripolitanian forms, and ARS pottery from the 3rd century CE (Reynolds 1999: 44; 2000a: 1038; 2013: 99).

Overall, North African imports make up 3.24% of the amphorae uncovered in several representative excavations in Beirut (Reynolds 2000a: 1056). These imports also seem to have made it to the nearby region. Proximal sites such as Jiyeh, possibly a part of the territory of the Roman territory of Berytus (Reynolds 2008: 76), has evidence of North African amphorae most likely dating to the 1st century BCE (Domżalski *et al.* 2004: 437). Beirut probably redistributed North African amphorae to

the nearby regions and was the main port for merchants delivering fish sauce and oil from Tunisia and Tripolitania.

Unfortunately, the documentation of the excavations at Antioch do not discuss foreign imports in detail and do not mention African forms specifically. After personal examination of the Princeton photo archives of the excavations in Antioch, I did not recognize any African types in the assemblage. I must stress, though, that my analysis of Antioch did not include sherds, but rather, only complete vessels. Any sherds that were uncovered over the course of the excavation were not documented; thus, it cannot be definitively claimed that no African imports were present at the city.

C. Inland Sites

Zeugma, in contrast to its fairly frequent supply of Spanish oil, did not receive African material regularly. Tunisian amphorae are absent (Reynolds 2013: 99) with only one possible sherd that was not definitively classified (Reynolds 2013: 121). Three sherds of Mauretanian Keay 1A amphorae were found here probably transporting wine (Reynolds 2013: 99, University of Southampton 2014). However, African ceramic material is rare at the site also in the case of ARS pottery (Reynolds 2013: 99). This is a consistent pattern in the northern Euphrates; it seems as though ESA was more popular in the area with ARS appearing in the later Roman Empire and Byzantine period in minor quantities (Newson 2014: 14-16). African amphorae are also extremely rare in northern Syria (Vokaer 2013: 570). This pattern remains consistent as we move east along the Euphrates.

Umm el-Tlel, as stated in chapter 3, does not have any evidence of amphorae in my period of study (Majcherek 2004: 232-233). It is interesting that there is such a

dearth of amphorae but coins and pots have been found at the site (Majcherek 2004: 233). This could be evidence of the original larger markets being broken down into smaller distribution networks to transport oil. Considering the only amphorae sherds found are dated to the 6th century CE, the utilization of different containers in the Early and Middle Roman Periods is also a possibility (Majcherek 2004: 233). Chalchis is similar to Umm el-Tlel and the Roman sites on the Euphrates from Zeugma to Kifrin in its selection of African material. There are no African amphorae present (Rousset 2010) and no ARS vessels (Rousset 2010: 143). Thus, except for a minor quantity of sherds at Zeugma and some minor evidence of ARS in the later Roman periods from the Land of Carcemish Project at the northern Euphrates, African material is absent in northern Syria (Newson 2014).

Dura-Europos differs not in its selection of amphorae, but in its tableware. After examining the drawings and photos of amphorae and various jars of the Dura-Europos final reports, I was not able to pick out any African material (Cox 1949, Toll 1943). On the other hand, ten complete vessels of ARS are recorded (Heath 2011: 65), so the import of African fine ware was probably fairly regular, but started at a later time than at Beirut. However, collection of material does not seem to have been undertaken systematically so it is unknown how significant this quantity of ARS is in comparison to the total assemblage (Heath 2011: 65). Furthermore, the documentation of the excavations at Dura Europos is lacking in detailed analysis of the amphora assemblage.

Central Syria seems to be similar to the sites on the Euphrates and the northern area of the Near East. The Homs Regional Survey pottery, specifically that of the southern territory, was analyzed by Paul Reynolds recently. Thus far, no African forms have been discovered and contact with coastal Syria seems to have been minimal based

on the exchange of amphorae (Reynolds 2014: 53). About 130 km east, Grzegorz Majcherek has uncovered several sherds of African 1 amphorae at Palmyra. However, he has advised me that compared to the local material this is quite minimal.

Several North African amphorae have been recorded in the Jerusalem area, possibly transporting fish sauce in the 1st century BCE (Magness 2011: 39). The diffusion of African forms inland is likely due to the elite's taste for African and Spanish fish sauce. In the 1st century CE this indulgence grew to become a small market despite the Jewish prohibition of fish blood consumption (Magness 2011: 39). Compared to coastal sites, though, the quantity of fish sauce amphora sherds is minimal.

African amphorae also extend into modern-day Jordan. However, the evidence is not substantial. Only one rim of either Africana I or Africana II has been attested at Wadi Faynan in southern Jordan, complemented by a small quantity of ARS sherds from the 3rd to early 5th centuries CE (Barker *et al.* 1999: 285). Sherds of ARS have been uncovered at Aila from a similar date, but again rarely more than a handful (Parker and Smith 2014: 313). An example of the Ancient Tripolitanian Amphora dated to the middle of the 2nd century BCE to the end of the 1st century BCE has also been seen at Petra (Pascual Berlanga and Ribera i Lacomba 2002). However, as seen in the archaeological evidence, there are few examples of North African vessels in comparison to local material.

D. Conclusion

The pattern emerges of the coastal sites and Cyprus as an integrated part of Mediterranean exchanges of North African material and a separation of central Syria

from this market. Excavations on the coast at Caesarea, Beirut, Ashkelon, and the Cypriot sites have uncovered a variety of types transporting fish sauce and oil in two main phases – one ending in the Augustan period and the other after the late 2nd century CE. The Augustan period saw a gap in the import of African amphorae; this is significant in comparison to Spanish imports since Baetican forms are most common in the 1st century CE.

The decline in the quantity of North African amphorae in the Near East in the 1st and 2nd centuries CE is curious since the Augustan period brought about an increase in the production of olive oil and fish sauce in Roman North Africa. This is likely due to the fact that the Roman state initially prioritized the provision of North African products to Italy over other regions after the restructuring of olive oil and fish sauce industries in North Africa. This is observed in the large quantity of African amphorae transporting olive oil found in Italy in the late 1st century CE coinciding with a decrease in Italian exports (Hopkins 1983: xxiv). Such patterns reflect a high degree of state supervision and control in the distribution of North African products. As discussed in Chapter 1, the nature of these distributions is quite complex. Nevertheless, it appears that the central government had a hand in production and distribution to the city of Rome, as well as provinces in the western Mediterranean. This is not to suggest the process to be uniform or standardized. There must have been differences between what has been dubbed the '*annona militaris*' in the western provinces and the *annona* that provided the city of Rome with subsidized olive oil. However, both processes were largely dictated by the central government. Regardless, by the 3rd century CE, North Africa had become the primary exporter of government-subsidized olive oil for Italy and the western provinces (Hobson 2013: 78, Visona 1988: 385).

Most importantly concerning this thesis, the increase in the importation of North African products observed in Italy, Britain, and various Roman colonies in the western Mediterranean was not observed in the Near East. North African amphorae never made up a significant portion of the amphora assemblage in the Near East and are observed almost exclusively at coastal sites. Rather, the evidence outlined in this chapter seems to indicate a smaller, economically private connection between North Africa and the Near East. There was no mass importation of products to supply the local population. Instead, people on the Near Eastern coast and in Cyprus seem to have developed a taste for fish sauce and North African olive oil and imported the products relatively consistently before Roman rule of North Africa and after its colonization.

CHAPTER V

NEAR EASTERN TYPES

A. Introduction

The study of Near Eastern amphorae is a relatively new, but quickly growing field. Scholars have spent decades tracing the distribution and frequencies of forms produced in Europe and North Africa such as the Dressel and Africana types. This evidence has been utilized to theorize about the Roman economy as a whole, detailing trade patterns, production and distribution hierarchies, and the role of the state in economic exchanges. This focus is now being applied to the Near East to observe networks in the eastern Mediterranean and beyond.

With the arrival of the Romans, a variety of new forms were developed and produced in large quantities in the Near East beginning in the 1st century BCE: a number of sites in Judea began to manufacture distinct amphorae to transport wine; Beirut developed a new type along with a form marketed exclusively outside the Near East (Reynolds 2003); northern Syria expanded its production centers and distribution along the Euphrates. It is the goal of this chapter to outline the assemblages of amphorae at certain coastal sites and inland sites to observe patterns in the distribution of oil, wine, and other foodstuffs in the region. I will be focusing on the Beirut type in my analysis of coastal distributions and determine if the type is seen farther inland in comparison to other locally produced amphorae. I have chosen the Beirut type as the primary examined type because it was produced starting in the late 1st century BCE,

and seems to be correlated quite directly with the Roman settlement of the region. Furthermore, production centers are along the coast of the Levant. Thus, the Beirut type can be compared to the African and Spanish forms discussed in previous chapters to observe penetration inland of a local type, or lack thereof.

The earliest form of the Beirut amphora type has been dated to the 1st century BCE (Reynolds 2000b: 387). The form – Beirut Type 1 – has a projecting rim and fairly large handles. This differs from the Phoenician and Persian-Hellenistic forms which are rounded, almost egg-shaped jars with little to no neck and handles near the mouth of the vessel (Reynolds 2000b: 387). Beirut Type 2 is similar to the first form with a more defined rim and was produced in the Augustan period, suddenly ending by the late 1st century CE (Reynolds 2000b: 387-388). These types were made to transport wine and were sometimes stamped 'COL BER' (*Colonia Berytus*) to specify them as products of the Roman colony (Perring *et al.* 2003: 208). Later variations of the Beirut type, specifically the Beirut 3 in the 2nd century CE and Beirut 4 in the early 3rd century CE, were larger in size and more straight-sided as opposed to the earlier, rounder forms (Reynolds 2000b: 388, 390). Figures 11 and 12 depict this evolution in types.

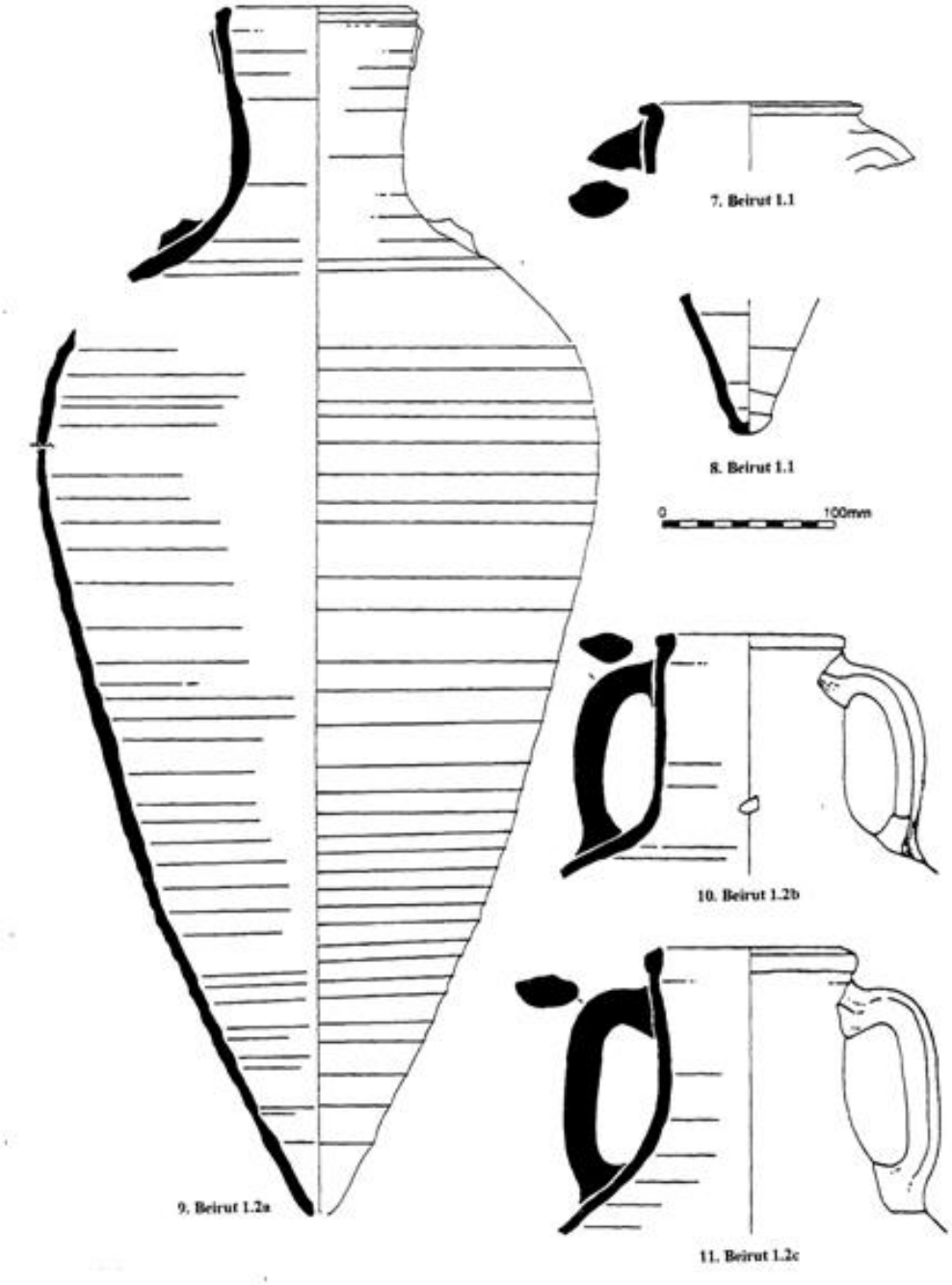

Figure 11: The Beirut Type 1 amphora, initially produced in the late 1st century BCE into the 1st century CE (after Reynolds 2000b: 389)

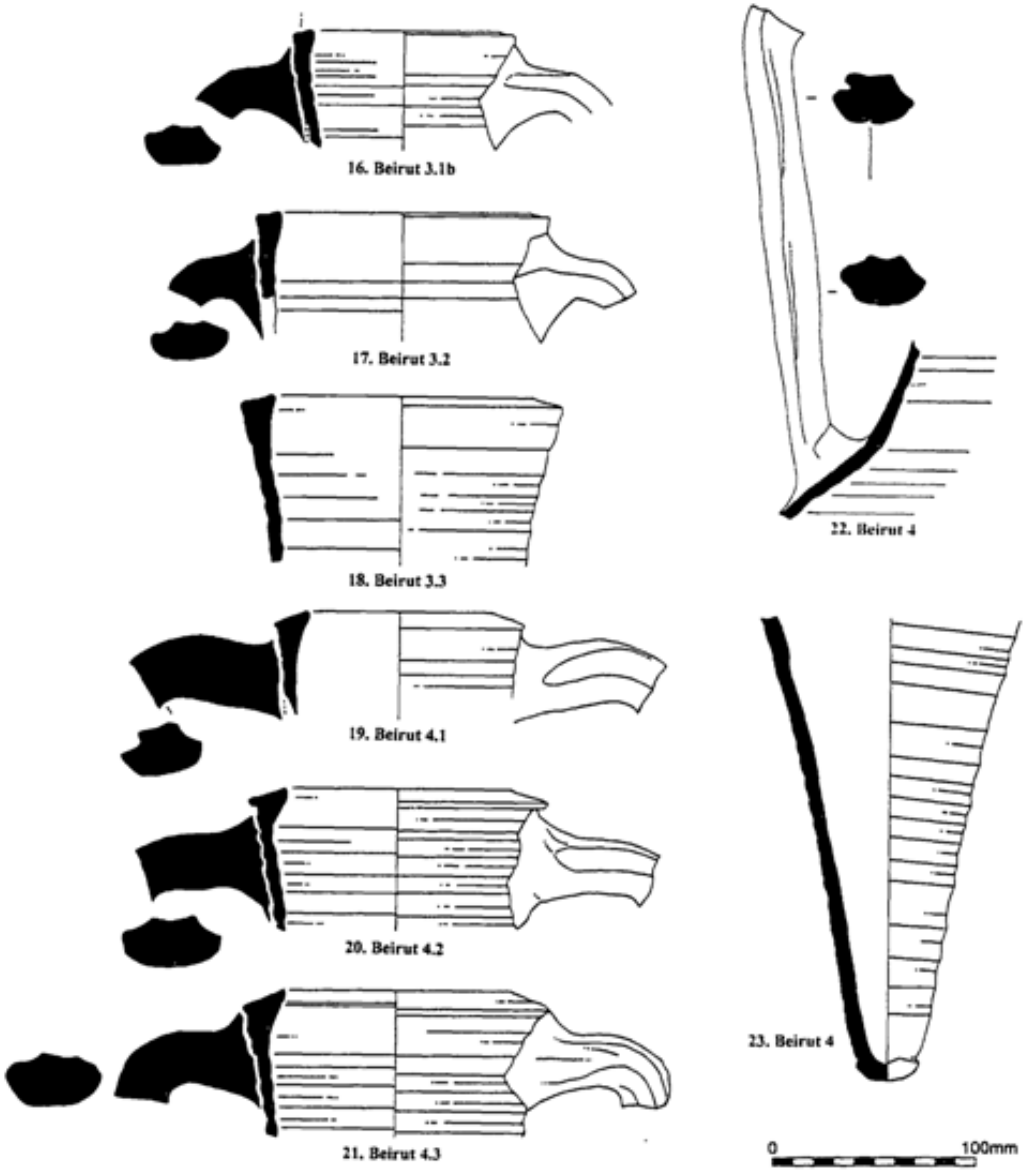

Figure 12: Beirut Types 3 and 4, 2nd to early 3rd centuries CE (after Reynolds 2000b: 392)

The evidence of all local types is quite overwhelming since Syria, Lebanon, Israel and Palestine all have kiln sites and workshops indicative of amphorae production. The esoteric details and subtleties of distinguishing between and dating

regional forms are further complicated by the lack of complete publications of full assemblages in the area. I have pieced together a number of reports combined with personal communication with excavation directors and pottery specialists and complemented this evidence with overall discussions of typologies observed in the Near East, especially by Reynolds (2005) and Vokaer (2013). The assemblage of locally produced amphorae observed in the Near East is summarized in Table 3 and outlined in detail in the next sections of this chapter.

The immense task of outlining the typology of all Near Eastern types is not presumed to be achieved in this work. As will be shown, there are a number of small, regional markets with local types and a complete account of these forms is outside the scope of this work. Rather, several important coastal types are outlined in Table 2 to help differentiate between local amphorae and close-regional imports at each site. In discussing inland types in the Levant, central Syria, or northern Syria, the description is limited to a specification of possible sources and general distribution patterns of the type.

B. Coastal Sites/Cyprus

The assemblage of amphorae at Panayia Ematousa is primarily composed of locally produced types and forms imported from the eastern Mediterranean (Winther Jacobsen 2005: 305-306). However, the early and middle Roman periods saw a huge drop in eastern imports and a rise in western Mediterranean types (Winther Jacobsen 2005: 305-306). One of the few eastern imports during this time was a Beirut type 3 dated to the 2nd century CE (Winther Jacobsen 2005: 314). The Beirut sherds were uncovered at a time immediately prior to the abandonment of the site in the 2nd century

Type	Source	Contents	Date
LRA 1	Cyprus and Cilicia, possible Seleucia	Wine or oil	ca. 250 C.E. - 650 C.E.
LRA 4 (Gaza Jars/Almagro 54)	Southern Palestine	Wine, possibly olive-oil and sesame-oil	2nd -3rd C.E., 4th C.E.
LRA 5/6 (Palestinian Bag-Shaped Amphora)	LRA 5: Northern Palestine. LRA 6: Beth She'an (and nearby region).	Primarily wine	LRA 5: 1st C.E. - 750 C.E. LRA 6: 3rd to 8th C.E.
AM72	Beirut and North lebanon	Wine or fish sauce	Late 1st C.E. - 3rd C.E.
"Carrot" Bodied Amphora	Beirut, possibly Gaza	Dates	1st - 2nd C.E.
Rass el Basit Amphora	Rass el Basit	Wine	Imperial Period - 4th C.E.

Table 2: Several regional amphora types produced at coastal sites in the Near East

Sites	Country	Beirut	Other (regional)	Details
Beth She'an	Israel	?	Present	
Masada	Israel	?	Present	
Beirut	Lebanon	Present	Present	
Chhim	Lebanon	Present	Present	Production center of Beirut type.
Khalde	Lebanon	Present	Present	Production center of Beirut type.
Baalbek	Lebanon	?	Present	Produced imitations of Beirut type and local types. Change in form in early 3rd century C.E.
Jiyeh	Lebanon	Present	Present	Production center of Beirut type.
Antioch	Syria	?	Present	
Zeugma	Syria	Not present	Present	North Syrian vessels very rare in 3rd century C.E.
Homs	Syria	Not present	Present	North Lebanese products present.
Dura Europos	Syria	Not present	Present	
Chalcis	Syria	?	Present	Forms similar to those found at Beirut, Palmyra, Zeugma, Amrit, Rass el Basit
Kifrin	Syria	Not present	Present	
Palmyra	Syria	Present	Present	
Ashkelon	Palestine	Present	Present	Production center of Gaza Type.
Caesarea	Palestine	Present	Present	Lebanese type Jalame found here. Imported coastal products more than inland products.
Nea Paphos	Cyprus	Present	Present	
Amathous	Cyprus	Present	Present	
Panayia Ematousa	Cyprus	Present	Present	

Table 3: Distribution of Beirut Type and regional products in the Near East

(Winther Jacobsen 2005: 310-314). After reoccupation in the 5th century, it appears that the town was importing a majority of its wine and oil from either Near Eastern coastal sites or Greece.

At Nea Paphos, a wide range of eastern imports were found from the middle and late Roman periods (Bagińska and Meyza 2013: 140-143). A Beirut amphora was identified from the 2nd century CE (likely transporting wine) as well as its later variants (Bagińska and Meyza 2013: 140). Vessels produced in the Amrit region were also uncovered dating similarly to the 2nd century CE (Bagińska and Meyza 2013: 140-141). The "Gaza" amphora, also known as LRA 4, was identified in a 2nd century CE context, but has also been found in phases from the 2nd to 5th centuries CE (Bagińska and Meyza 2013: 143-145). Excavations at Amathous have also resulted in similar types in addition to Dressel 2-4 imitations produced in Cyprus (Kaldeli 2013: 126). The continuous presence of eastern amphorae at Nea Paphos and Amathous indicates a consistent supply of eastern products to Cyprus throughout the Roman Empire. Panayia Ematousa has a gap in this provision but this is due to the abandonment of the site sometime in the late 2nd century CE.

The analysis of local amphorae in Cyprus is difficult since there exists very little evidence of kilns on the island. Some work has been done to identify local production centers but only from the later periods (Demesticha 2003). This complicates sourcing local amphorae since there is no comparative material. It is believed that Cyprus was a major producer of the Late Roman Amphora 1 (LRA 1) along with Cilicia (Reynolds 2005: 566) but this is associated with the 4th century CE onwards. In terms of regional trade in the period between the 1st and 4th centuries CE, it appears that a significant portion of Beirut exports were distributed to Cyprus (Johnson 2008:

152). A number of examples of the Beirut type have been uncovered all over the island (Reynolds 1999: 63).

The southern coast of the Near East also seemed to be involved in trade with Beirut, but probably to a lesser extent. Beirut 3 amphorae were uncovered at Ashkelon dating to the 2nd century CE (Johnson 2008: 152). It is unusual for the type to be found this far away from Beirut, though it has been documented in Egypt and several sites in the western Mediterranean (Johnson 2008: 152). Ashkelon has a wide range of imports (as discussed in earlier chapters) but it seems the quantity of African and Spanish vessels is minor in comparison to the local assemblage. However, imports from distant sources actually seem to be more common than amphorae from Beirut. Ashkelon also received shipments of the Kapitan II amphora, believed to have been produced in the Aegean between the 2nd and 4th centuries CE, again more common than the Beirut type (Johnson 2008: 145).

At Caesarea, Gaza Jars (LRA 4) are more abundant than products of Beth She'an; this provides insight to the preference of maritime trade over inland trade since the Gaza Jars would have been transported by sea (Patrich 2011: 126). Furthermore, the Gaza Jars filled with Palestinian wine were not found inland in Jordan; thus, these amphorae reflect a market targeting the coast of the southern Near East (Blakely 1988: 43). Wine and olive oil also transported by sea was distributed here from the Antioch area in the late Roman Empire probably in LRA 1 dating to the 4th to 7th centuries CE (Patrich 2011: 122). The Beirut type is also present at Caesarea in the late 4th century CE but thus far is quite rare (Reynolds 2000b: 391). Other forms produced on the Levantine coast were imported by Caesarea including the Jalame Amphora Form 1 produced in the south of Lebanon (Patrich 2011: 126).

Caesarea was heavily involved in local trade with most material coming from coastal sites and the nearby region. In terms of local production, no kiln has yet been excavated; thus, identifying local types is a process of examination of material and "general considerations" (Patrich 2011: 125). One such form is the local LRA 5/6 likely produced in the surrounding area of Caesarea (Patrich 2011: 126, Peacock and Williams 1986: 215). LRA 5 resembles the traditional regional style: a rounded amphora with a small neck and handles near the mouth of the vessel. These bag-shaped amphorae, first appearing in the 1st century CE, are a popular find in Caesarea. They are common on the northern coast of Israel and Palestine and found less frequently farther inland in the Near East (Gendelman 2012: 35). These vessels contained either wine or water, but most definitely not olive oil and spanned from the Augustan period to the Arab occupation (Blakely 1988: 39).

Excavations in Beirut and its surrounding area have recently resulted in valuable information about local production of amphorae in the Roman Empire. Prior to Roman colonization, Jiyeh produced a "Sidonian form" in large quantities from 250 to 150/125 BCE that is found commonly in Beirut (Reynolds *et al.* 2010: 75, 101). Tyrian and Sidonian amphorae produced in Tyre and Sidon are also regular finds in Beirut beginning in the Hellenistic period (Reynolds 2013: 54). The Tyrian forms extend into the 3rd century CE but the Sidonian forms disappear at the end of the Hellenistic period (Reynolds 2000a: 1056, Reynolds 2000b: 390). These types are quite similar in form to the earlier version of the Beirut type prior to the development of the later types characterized by the "carrot" shape. In the Roman period, Jiyeh was a production site of Beirut 2 amphorae transporting olive oil from the 1st century CE onwards (Reynolds *et al.* 2010: 75, Domżalski *et al.* 2004: 435) as well as Koan

imitations from 100 CE to 230 CE (Reynolds 2003: 122). However, analysis of kiln sites in Beirut has revealed an emphasis on immediate local production (at Beirut itself).

The Beirut Type is the most commonly found and produced amphora at Beirut, making up 82.5% of the total local amphorae (Reynolds *et al.* 2010: 73, Reynolds 1999: 40, 50). The other main local type is the AM 72 amphora, possibly containing wine but possibly also fish sauce (Reynolds 1999: 40, University of Southampton 2014). The "carrot" style amphora, produced by Beirut to distribute figs throughout the Mediterranean is actually quite rare at Beirut sites, indicating either production primarily with the intention of export or that Berytus was not a major producer of this type (Reynolds 2003: 122, 125). This evidence was compiled by a study of several kiln sites at Beirut in comparison to non-kiln sites. The Beirut type was present in mass quantities in both contexts along with the AM 72 form. The AM 72 form, according to archaeometric analyses, was also produced in north Lebanon (Reynolds *et al.* 2010: 79).

In terms of regional imports present at Beirut, amphorae from Amrit in Syria are quite regular from the 2nd to 4th centuries CE (Reynolds 2003: 122). Also, the bag-shaped amphorae of Caesarea and its surrounding region were shipped here from the late 1st century CE to the early 4th century CE (Gendelman 2012: 35) and seem to make up a large portion of imports at Beirut (Reynolds 1999: 54; 2000a: 1056). Rass el Bassit amphorae were also distributed to Beirut between the 2nd and 4th centuries CE in the globular form as well as table amphorae (Reynolds 2003: 126, 2005: 567), though they are quite rare (Mills and Reynolds 2014: 133).

North Lebanon, specifically Baalbek, is known to have produced a black-fired amphora with grooved handles and ring foot bases (Reynolds 2013: 57). These amphorae are a fairly regular find at Beirut, produced farther inland in the Bekaa Valley of Lebanon. The theory of amphora manufacture and olive oil production in northern Lebanon and certain areas in southern Lebanon with subsequent distribution is complemented by evidence of olive processing and olive oil storage all over the country. Sites such as Deir el Kalaa and Batroun in northern Lebanon are home to a number of oil presses and, in the case of Chhim in southern Lebanon, *pithoi* to store olive oil (Reynolds 2003: 122, Wicenciak 2010: 886). North Lebanon's exchange network seems to be mostly local with some inland interactions with Homs and the nearby region. However, the Beirut type has not been uncovered at Baalbek (Hamel 2014).

C. Inland Sites

The amphora assemblage at Zeugma, as in most Near Eastern sites, is comprised mostly of local amphorae (Reynolds 2013: 95-96). These types might have been produced in the Balih Valley to the east, which interestingly was under Parthian control during this time (Reynolds 2013: 95). The other possibility is that they were produced at Zeugma itself (Reynolds 2013: 96). Eventually, Zeugma even stopped importing amphorae from the local region as it had become more self-sufficient in its supply of wine and oil (Reynolds 2013: 104).

Amphorae from all coastal sites in the Near East are extremely rare at Zeugma (Reynolds 2013: 99). There has only been one handle fragment of a Gazan amphora and a wall of a LRA 5/6 amphora uncovered as evidence of the import of coastal Near

Eastern material (Reynolds 2013: 99). The Beirut type does not seem to have traveled this far north in the Roman Near East. Furthermore, the Rass el Bassit material and the forms of Amrit are not seen at Zeugma (Reynolds 2013: 99). Contrastingly, the Kapitan II form possibly produced in the Aegean region has been uncovered here as a fairly regular import (Reynolds 2013: 104).

The Finnish survey of the Euphrates Valley near Jebel Bishri did not result in many amphorae being found. According to Minna Silver, there were several sherds of LRA likely produced near other military sites such as Tabus or Qseybe in the local area, though exact types were not specified. Moving east, Dura-Europos, as mentioned in previous chapters, also has evidence of the Kapitan II amphora (Heath 2011: 65). This supposed Aegean form seems to have penetrated through Zeugma along the Euphrates to Rome's eastern frontier. The local form (produced either at Zeugma or the Balih Valley) discussed in the previous paragraph was also found here, dating from the 1st century BCE to the 1st century CE (Reynolds 2013: 107). It was distributed throughout central Syria and near the Euphrates (Reynolds 2013: 107).

It does not appear that any Beirut types reached the Euphrates this far to the east, though further work is needed to clarify Dura-Europos' ceramic assemblage. This lack of information is further obfuscated since Roman forts were often adjacent to settlements inhabited by local people. It is thus difficult to differentiate between pottery utilized by the army and that used by citizens of the city (Pollard 2000: 188, 190). Regardless, imported amphorae are commonly found at Dura Europos based on the published assemblage (Pollard 2000: 187). Farther east, at Kifrin, an amphora type referred to as from the Middle Euphrates and made in the Parthian tradition is

documented as a part of the assemblage (Pollard 2000: 190). It is possible that this is the type described at Zeugma.

Though Zeugma in the northern Euphrates area and the easternmost forts do not seem to have received Beirut amphorae, the form was found at Palmyra. According to Grzegorz Majcherek, several sherds of the Beirut type were uncovered at the site, though it is not a regular find. Several examples of LRA 1 (see Figure 13) and LRA 3 used to transport wine are also present at Palmyra, likely distributed from Cilicia or Cyprus through Antioch (Wickham 2005: 92). Again, the evidence at Antioch is lacking in tracing the route for vessels to be transported through northern Syria.

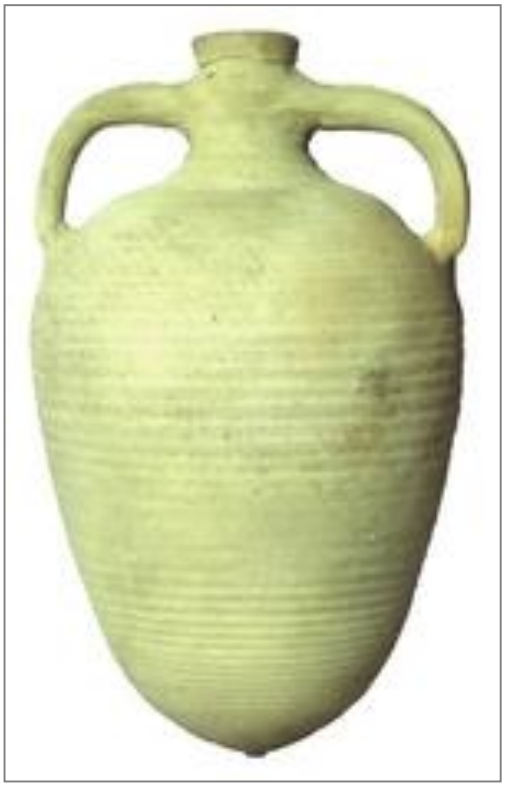

Figure 13: Early form of LRA 1 (after University of Southampton 2014)

Chalchis' assemblage is made up of local types as well as close regional imports. The collection is composed of imports from Amrit (Rousset 2010: 132), imitations of foreign types produced at Chalchis, and vessels produced somewhere in central/northern Syria also found at Zeugma, Palmyra, northern Syria, Beirut, and Apamea generally between the 2nd century CE and the 4th century CE (Rousset 2010). A product of Rass el Bassit from 100-150 CE was uncovered in the survey of Chalchis but is a rare find (Rousset 2010: 134). Thus, though there seems to have been some exchange with a coastal site, the local material heavily outnumbers and outweighs imports, both regional and foreign. The assemblage has been dated to be mainly between the 1st and 3rd centuries CE (Rousset 2010: 143).

The amphora assemblage of Homs is also limited to locally produced types and several regional imports. One of the few regional exchanges observed at Homs has been observed in the presence of the black-fired amphorae of Baalbek (Reynolds 2014: 57). Storage jars produced in the Bekaa Valley are also present at Homs (Reynolds 2014: 57). However, any sign of coastal interactions is absent. Beyond the imports from Baalbek and the Bekaa Valley, the only identified import is the Kapitan II possibly from the Aegean area (Reynolds 2014: 58). It is curious that coastal sites in the Near East did not target Homs in the distribution of wine and oil in amphorae but were distributing their products to the rest of the Mediterranean. Not even Amrit or Rass el Bassit products were found in the survey of the area (Reynolds 2014: 57).

D. Conclusion

There is a definite discrepancy in the ceramic assemblage of the Roman Near East between coastal sites and inland sites. The harbors of Caesarea, Beirut, and

Cypriot sites all have a diverse selection of amphorae from Cilicia and the coastal sites of the Near East. LRA produced in Palestine have been found in large quantities in Beirut and Cyprus (Bagińska and Meyza 2013, Reynolds 2000a: 1056, Winther Jacobsen 2005), Beirut amphorae are present in Israel and Palestine at Ashkelon, Caesarea, and Horbat Biz'a (Gendelman 2012: 35, Johnson 2008: 152), and Cypriot amphorae are present at both. Antioch was also distributing its local product to the southern coast of the Levant (Patrich 2011: 122). Thus, there seems to have been not only distributions from specific sites, but also contemporaneous exchanges of goods between each city. A variety of products was being traded among the cities; in fact, it appears that Beirut actually targeted Cyprus quite specifically in its distribution (Johnson 2008: 152). These interactions seem to be limited to the coast based on the distribution of amphorae.

It is curious that the Beirut type was transported long distances across the Mediterranean while inland sites less than 100 km away did not receive these exports. Specifically, the Beirut type has been noted as far as Egypt, Sabratha in modern-day Libya, Carthage, and Britain (Reynolds 1999: 63). However, it is absent at Homs and Chalchis in central Syria, Zeugma in northern Syria, and Kifrin to the east. Rather, local types are much more frequent than regional imports at these sites. A similar pattern is seen at Caesarea and Ashkelon where products of distant sources are more prevalent than the Beth Shean products and other regional types produced a short distance inland.

CHAPTER VI

ANALYSIS

Ultimately, it is in the comparison of types that a clearer picture of the economic exchanges in the Near East emerges. There seems to be a divide between northern and southern sites as well as a split between coastal and inland sites based on the distribution of foreign and locally produced amphorae. This chapter summarizes the conclusions of the research performed in this study and characterizes the distributions of types in relation to one another. It is the goal of the author to outline existing theories concerning the assemblage of amphorae in the Near East and propose an explanation for the supply of amphorae in the area.

A. Discussion of Spanish Types

After a compilation of data from excavations and surveys in the Near East, the pattern of Spanish imports in the region becomes clearer. There appear to be two possible distribution networks: one through Antioch and the Euphrates and another through Cyprus and the southern Levant, though much work is needed to clarify the situation. As seen in Figure 14, Dressel 20 amphorae have been uncovered along the coast of the Mediterranean and in Cyprus at varying levels. The form is most common at Cyprus, Caesarea, and the southern coast of the Levant and does not extend substantially into the inland sites. As mentioned earlier, it is probable that the inland sites of the southern Near East received their supply of Baetican oil from Caesarea and possibly Ashkelon (Reynolds 2010: 28). However, this route did not extend into

modern-day Jordan or central Syria. Merchants arriving from the west would initially stop in Cyprus, which served as a re-distribution center for the Levantine coast. This pattern is similarly seen in the relationship between Rome and other major trading cities in North Africa, Spain, and central Europe. Products from the periphery were transported to the capital and subsequently provided to citizens of the state or soldiers on the Empire's frontier as a part of the *annona*. In the Near East, certain cities probably served a similar function for merchants arriving from western sources (Caesarea, Cyprus, Antioch).

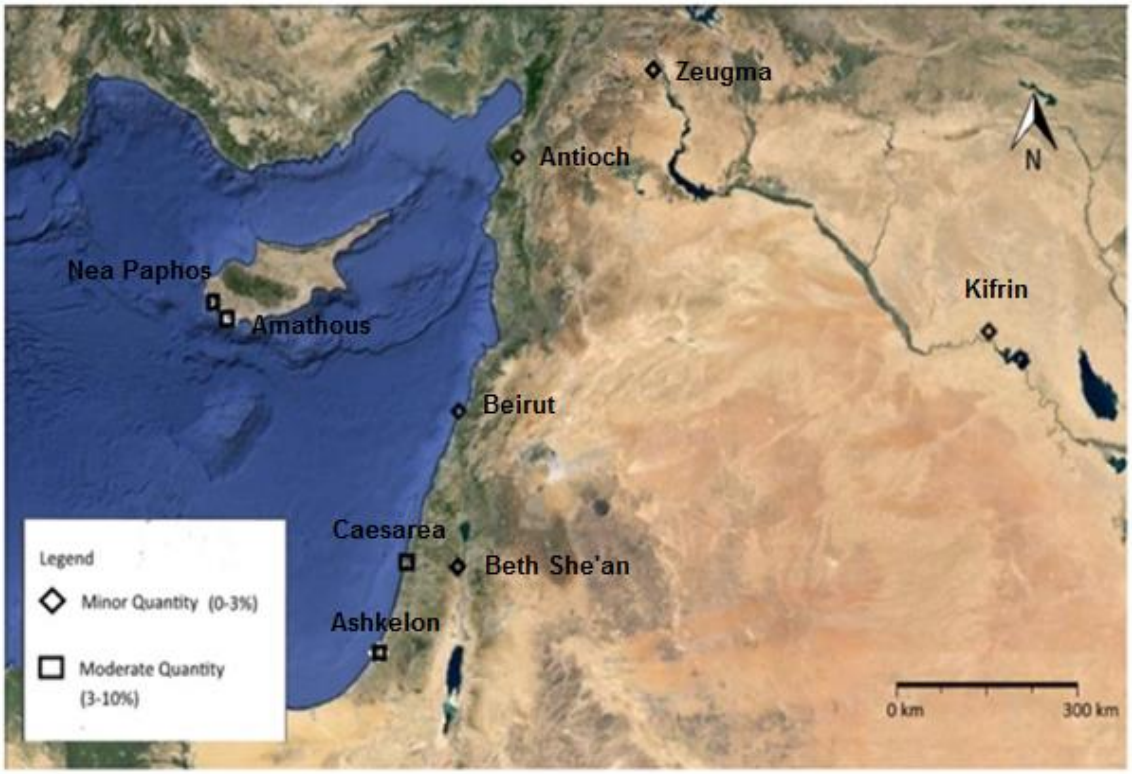

Figure 14: Dressel 20 distribution in the Near East as a percentage of the total imported assemblage

Merchant ships arriving at Antioch brought cargo that would have been redistributed inland; however, as shown, Dressel 20 amphorae have only been observed

in Zeugma and possibly in Kifrin. Paul Reynolds has suggested an affiliation of Baetican oil transported in Dressel 20 containers to have been tied to the *annona* for soldiers stationed along the Euphrates (2013). A number of military sites along the Rhine and at the *limites* in Britain and Mauritania corroborate this theory since Dressel 20 made up a majority of the amphora assemblage (Funari 1994: 95). However, this pattern is not as clearly observed in the Near East. Surveys conducted farther east along the Euphrates did not result in any Spanish forms uncovered. It is possible that goods were distributed along the Euphrates to Roman military sites as provisions for the soldiers, but we lack definitive data in the central Euphrates to confirm this theory. Thus far, Dressel 20 has been uncovered at possibly the initial stopping point for western Mediterranean merchants (Antioch), a military site readily accessible to Antioch (by means of the Orontes), and one of the farthest recipients of Roman goods in the Near East (Kifrin). Regardless, the route through the Euphrates seems more likely than through central Syria; Dressel 20 amphorae as well as any other Spanish forms are completely absent at Homs, Chalchis, and Apamea.

In the south, Cyprus and the coastal sites were importing a number of different Spanish types transporting oil and fish sauce. There seems to have been some minor diffusion inland of Dressel 20, but not in any significant quantity. The only penetration of Spanish forms inland is observed at the southern sites of Masada and Jerusalem. King Herod as well as wealthier citizens seem to have developed a taste for *garum*, necessitating a route to reach inland sites. However, as in the case of Dressel 20 vessels, these imports are minor in comparison to local amphora types.

Based on the research presented in this study, it seems that the diffusion inland of Dressel 20 amphorae is not characterized by a progressive decrease as sites get

farther and farther from the Mediterranean. Rather, the distribution is actually strictly limited to the coast and the Euphrates. It appears that merchants transporting Spanish products did not make significant efforts to reach inland sites. It is possible that the products were repackaged into smaller containers such as bags or skins, but as they are not observable in the archaeological record, it is difficult to examine this possibility. However, even with the repackaging of products into smaller containers, there should still be a more substantial quantity of discarded amphorae as observed in Britain, Italy, and central Gaul if Spanish imports were high (Keay 1988, Peacock and Williams 1983, Cunliffe 1988).

B. Discussion of African Types

As seen in Figure 15, the distribution of African types also seems to be limited to the coast. There is some diffusion inland of African forms in Jordan and central Syria but, similar to Spanish types, not in any substantial quantity. However, it must be recalled that there has been more fieldwork conducted in the southern part of the Near East and there is more published material examining southern sites. Thus, the map depicted in Figures 15 does not necessarily reflect a focus by western merchants on the southern coast of the Near East (as in the cases of Figure 14). Regardless, a majority of the archaeological evidence is observed on the southern coast. Ships would have been able to hug the coast from North Africa to Cyprus to unload their cargoes for redistribution or arrive at coastal sites in the southern Near East to provide fish sauce and olive oil to Caesarea, Ashkelon, and Berytus directly. In either case, the supply of African material was primarily provided through maritime trade with minimal inland distribution.

Figure 15: Distribution of African amphorae (all types) as a percentage of the total assemblage

The imported North African amphorae predate those of Spanish origin at certain sites. Most of these early vessels are most likely from the late 1st century BCE, but some pieces are possibly from the Hellenistic Period. It is therefore tempting to suggest a pre-Roman trade network between Punic Carthage and the Phoenician "motherland", indicating economic activity independent of Roman rule. The earlier vessels have been dated to before the Punic Wars, suggesting the vessels to have been produced outside Roman influence. However, it has been argued that the private nature of the exchanges could render such a claim irrelevant (Reynolds 2000a: 1040-1041). The growth of the fish sauce and olive oil industries under Roman rule and the expansion of the *annona* to include North African products occurred much later than the date in which the aforementioned vessels were produced and distributed. *Garum* was reaching Near Eastern shores outside Roman influence and independent of the

annona, and continued to do so after Roman incorporation of North Africa into the Empire. Consequently, the hypothesis of a privately conducted trade network reaching the Near East seems to be supported based on the date of the imported vessels.

C. Discussion of Local Types

The Beirut type was found mostly at Cyprus with several sites targeted specifically by Beirut in the distribution of wine amphorae (Reynolds 1999: 61). As seen in Figure 16, coastal sites in Israel and Palestine show some evidence of the importation of Beirut amphorae but not to the same degree as Cyprus. However, no vessels were uncovered inland except for several sherds at Palmyra. This lack of inland finds is further accentuated by the fact that Beirut amphorae were shipped as far as Egypt, Carthage, and Britain but not distributed to Baalbek, Homs, Zeugma, or Chalchis. Even based on archaeometric analyses, there seems to be little association of Beirut amphorae with inland sites in modern-day Lebanon (Reynolds *et al.* 2010: 73-74). Any economic interaction involving the amphorae was limited quite strictly to the coast.

However, olives and grapes could have been grown in the hinterland, processed into olive oil and wine, and subsequently transported to Beirut for packaging. This possibility is corroborated by the substantial evidence of oil and wine presses found all over the Near East at both inland and coastal sites (Waliszewski 2014). Furthermore, in all 1149 examples of oil and wine presses in Waliszewski's survey of the Near East, there has yet to be made a connection between oil/wine presses and amphora kiln sites (2014: 290). Thus, products were probably processed inland and

transported to Beirut for packaging and distribution or local consumption in two separate processes.

Figure 16: Distribution of Beirut Type in the Near East as a percentage of the total assemblage

One reason for this pattern could be the organization of production and processing centers in the area. Specifically, it has been suggested that the agricultural industries at Beirut differed from those in Baetica and Africa (Reynolds 1999: 50). Instead of a "villa system" in which private estates essentially had a quota to meet as provisions for the government, Berytus was characterized by more centrally controlled potteries producing under the label of the colony as a whole (Reynolds 1999: 50). This is reflected by the stamping of amphorae as a product of Berytus rather than listing private individuals involved in production, packaging, inspection, and distribution (Perring *et al*. 2003: 208). Thus, in such a system, surrounding sites with oil and wine

presses (as identified by Waliszewski) would produce olive oil and wine to be taken to Beirut and subsequently packaged and distributed under the name of Berytus. Furthermore, Spain and North Africa were expected to provide large areas with high quantities of olive oil for a long period of time. This does not seem to have been the case in Berytus; there was no massive exportation of *annona* products to other provinces. This meant that though taxation and rent would have been regularized by the state, this was not necessarily the case with the subsequent distribution of the colony's products. This concept will be explored later.

D. Winds and Waves

As has been shown, much of the evidence in the Near East was uncovered on the southern coast of the Levant. Though this is partly explained by the state of research in the Near East, there is no doubt that wind and wave patterns in the region played a part in maritime networks utilized by merchants in the Roman period. Ships went in the direction that the Mediterranean allowed, and trade routes were largely dictated by these restrictions. As seen in Figures 17 and 18, the wind and wave patterns along the coast of the Near East move generally from the northwest to the southeast. As one moves closer to Cyprus, the directions curve and appear to run from south to north on the Lebanese coast towards Syria and Turkey.

Based on these factors, it appears that merchants from the western Mediterranean were naturally guided towards the southern coast of the Near East. Merchants from North Africa and Spain both would have enjoyed favorable conditions reaching the southern shores of the Near East, and possibly continued north to move with the wind and the current. However, the return journey would not have been so

easy. While reaching the Near East would have been fairly quick, returning to the western Mediterranean meant going against the current and the wind, often resulting in longer journeys (Greene 1986: 28). Regardless, based on prevailing winds and the currents in the Mediterranean Sea, it seems that ships would have tended to reach the southern coast of the Near East as their first destination and subsequently moved north.

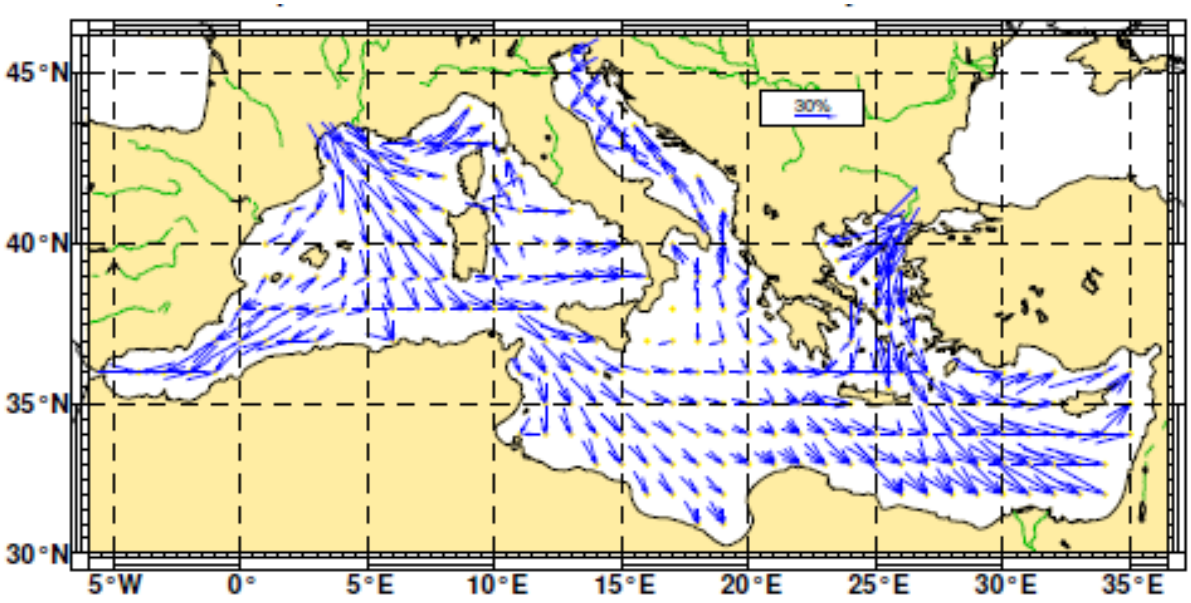

Figure 17: Wave direction in the Mediterranean (after Western European Armaments Organisation Research Cell 2004)

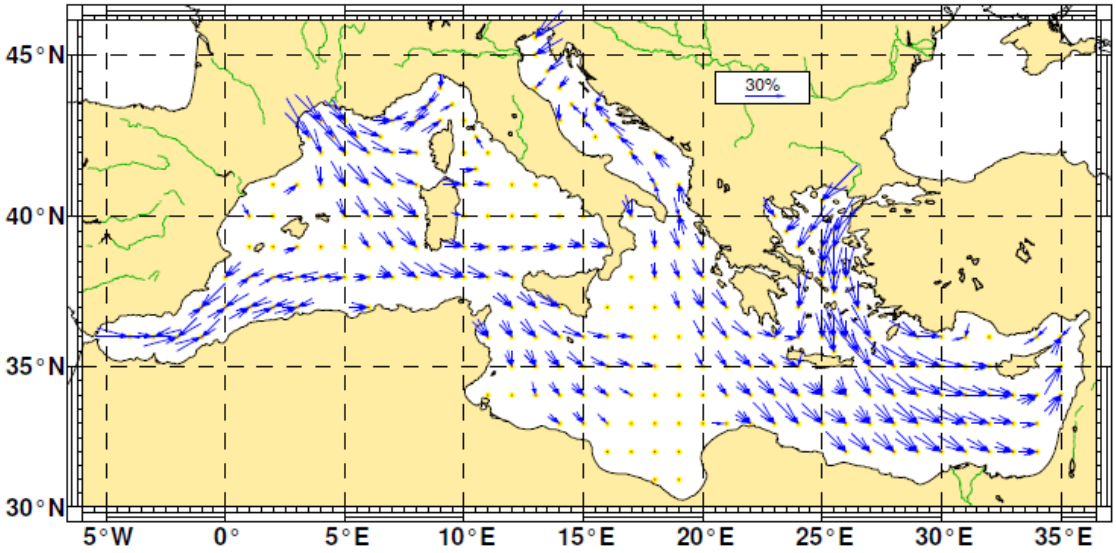

Figure 18: Wind direction in the Mediterranean (after Western European Armaments Organisation Research Cell 2004)

E. Correlation Between Types

Regarding Beirut, it has been theorized that African and Spanish material could have been transported in the same shipment (Reynolds 2003: 128, 2013: 98). This is observed in the western Mediterranean where a number of shipwrecks were found transporting a mixed cargo of Baetican, Lusitanian, and African amphorae (Parker 1992, Peña 2007: 72-82). The African amphorae themselves are often also quite varied and produced at a number of different kilns (Bonifay 2007: 254-255). As seen in Table 4, mixed cargoes possibly reached Cyprus, Beirut, and other coastal sites in the Near East. 73% of the examined sites with evidence of foreign importation either had evidence of both Spanish and African material, or lacked both (see Figure 19). The anomalies are several sites in Jordan where evidence was extremely scarce, Palmyra, and possibly Dura Europos and Kifrin.

Site	**African Types**	**Spanish Types**
Beth Sh'an	?	Present
Ashkelon	Present	Present
Masada/Jerusalem	Present	Present
Beirut	Present	Present
Baalbek	Not present	Not present
Jiyeh	?	?
Antioch	?	Present
Zeugma	Rare	Present
Homs	Not present	Not present
Dura Europos	ARS	Not present
Apamea	Not present	Not present
Chalcis (Qinnasrin)	Not present	Not present
Palmyra	Present	Not present
Kifrin	?	Present
Caesarea	Present	Present
Nea Paphos	Present	Present
Amathous	Present	Present
Petra	Present	Not present
Wadi Faynan	Present	Not present
Aila	ARS	?

Table 4: Correlation between African and Spanish imports. ARS represents a lack of African amphorae but the presence of African fine ware.

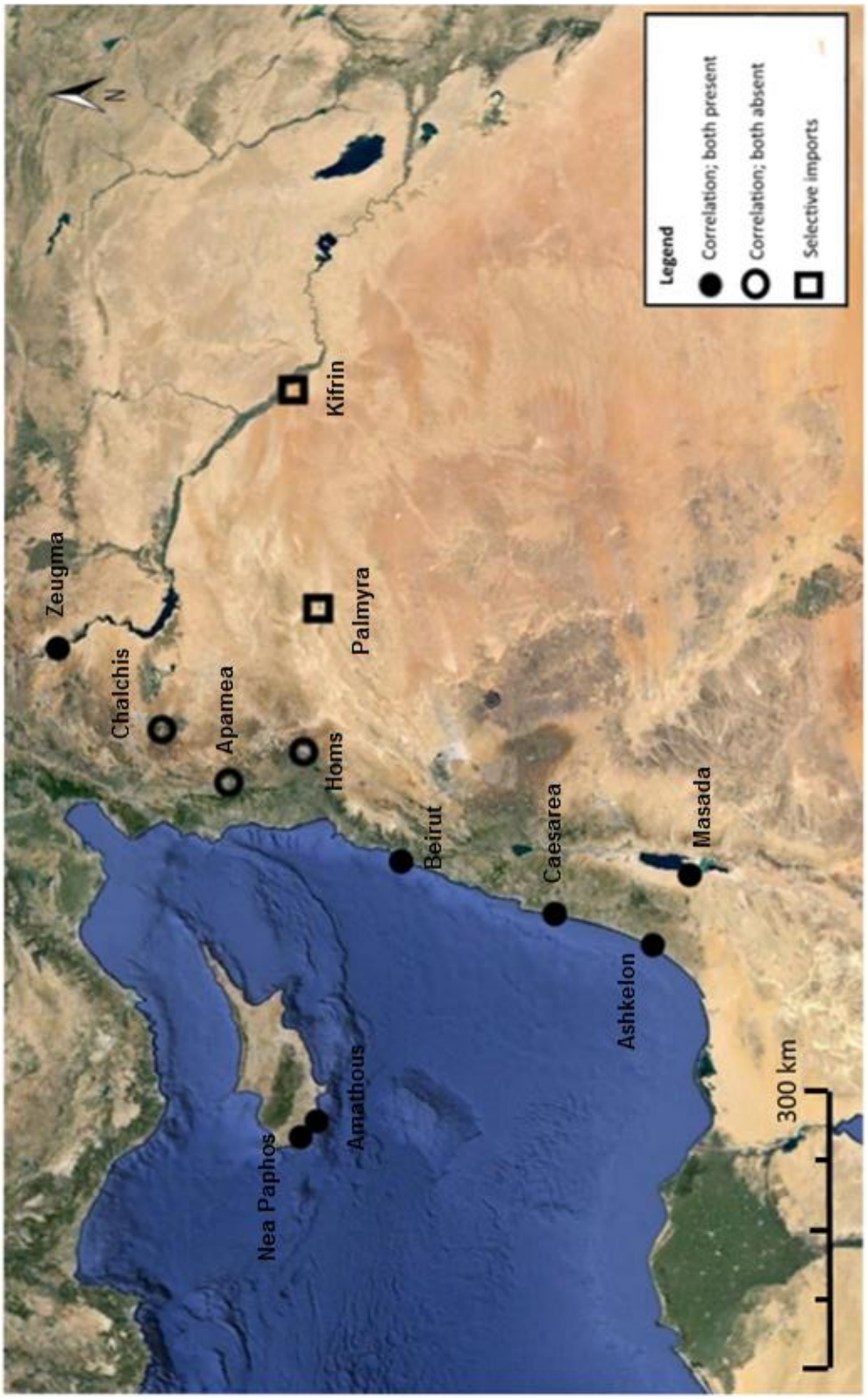

Figure 19: The correlation between Spanish and African amphorae in the Near East

The correlation in the presence of North African amphorae with the presence of Spanish amphorae reveals which sites were open to foreign commerce and which sites did not receive any western imports. Excluding several sites in which evidence is not substantial, the pattern remains consistent: coastal sites were trading with merchants distributing North African and Spanish products (to some extent, at least), while inland sites rarely had similar encounters. In these limited cases, the inland sites were near the Euphrates. Furthermore, the local Beirut type mostly seems to be present at sites receiving western imports. This high correlation between the Beirut type and Spanish/African types further confirms the nature of trade in the Near East, namely, that there was little selective commerce. Sites that received western imports and products from Beirut generally imported a variety of these types or none at all.

After considering the high level of correlation between Spanish, African, and Beirut amphorae, it appears that the distribution of imported oil, wine, and fish sauce in the Near East, both local and foreign, seems to be wholly dependent on water-based travel. As discussed in the introduction, this is quite typical of trade in antiquity. Thus, it is no surprise that the small number of western imports in the Near East is similarly limited mostly to sites accessible by ships. Even the locally produced Beirut type was limited to coastal sites, reflecting an economic market relatively exclusive from inland towns. On the other hand, inland markets in the Near East did not often extend beyond the immediate surrounding region. Distribution was limited to nucleated settlements in which to sell their surplus or pay rent or taxation and the immediate surrounding region, and importation of products from coastal sites and the western Mediterranean was extremely rare.

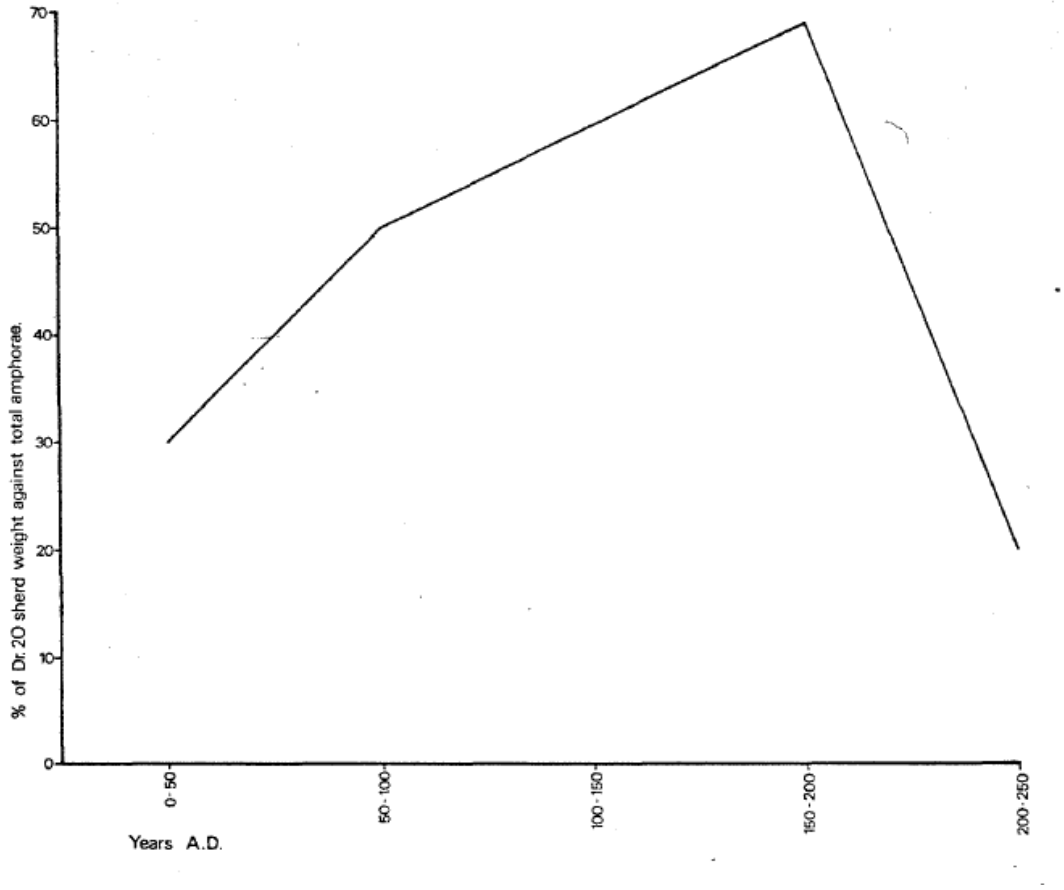

Figure 20: The percentage of Dressel 20 amphorae sherds in Roman Britain of total amphora sherd weight (after Peacock and Williams 1983)

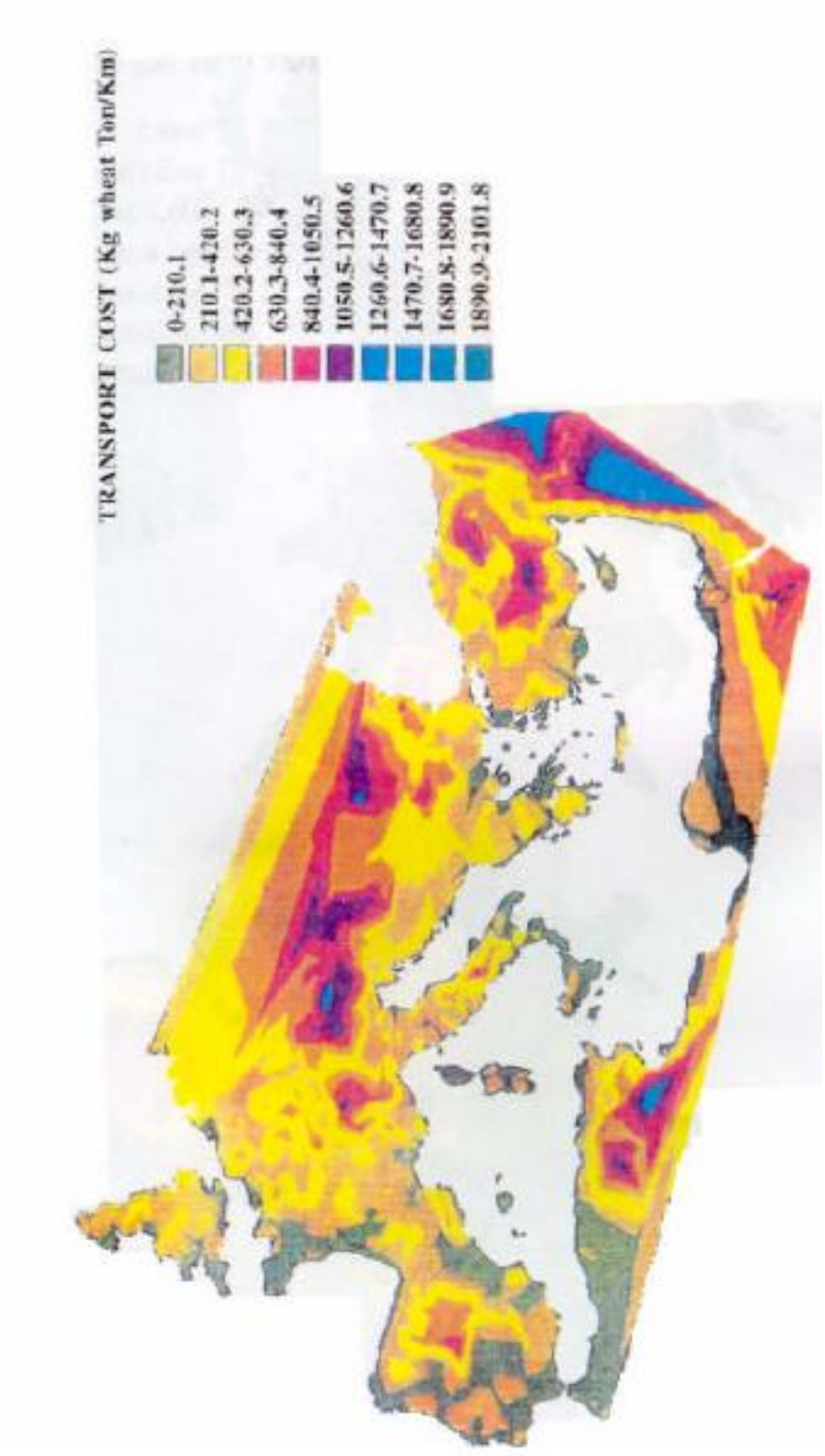

Figure 21: Cost estimates for transporting products from the Guadalquivir Valley (after Carreras Monfort 1998: 170)

F. Conclusion

Though Roman soldiers are known to have been stationed in the Near East (Hall 2004: 85-94, Sartre 2005: 60-61), military sites were not well provisioned with Baetican and North African olive oil and wine. The dearth of western imports at inland sites in the Near East is all the more apparent when one compares the minimal quantities uncovered in the area to certain sites in Roman Britain. As seen in Figure 20, over 70% of the amphora assemblage from sites in Britain is from Baetica (Peacock and Williams 1983). In the Near East, a small quantity of Baetican material made its way inland along the Euphrates, probably from Antioch to Zeugma and ultimately to military forts in Mesopotamia. However, as discussed earlier, the lack of dependable river systems would have prevented any reliable supply of Baetican and North African olive oil for the soldiers stationed in the Near East. Rather, based on the evidence presented in this thesis, it appears that the military was primarily supplied by local sources. Sites in the Near East had a long history of olive oil production (Vossen 2007: 1093); this production seems to have expanded with the arrival of the Romans as seen in the development of new types of amphorae and the increase of olive and wine presses and larger storage jars (Reynolds 1999: 50, Waliszewski 2014).

Ancient authors also attest the provision of Roman armies by local sources in the Near East. The *Historia Augusta* mentions the armies of Severus Alexander collecting taxes in the form of food supplies while on the march (45.2, 47). Peasants in the Near East were also known to have provided food products as a part of the *annona* to the local government in addition to rent (*Corpus Juris Civilis* 11.55.1). The details of such a system are difficult to understand from the archaeological record. However, it appears that unlike the *annona* provided by Spain and North Africa, of which a large

portion was exported to Rome and its colonies, products of the *annona* in the Near East were distributed mostly to the local region. Eventually, the Roman Near East grew into one of the main exporters of wine in the Empire in the 5th century (Kingsley 2003: 88, Reynolds 1999: 53), but the reasons for this late development are outside the scope of this work.

Furthermore, reaching the inland of the Near East would have been quite costly from Baetica and North Africa. Figure 21 depicts the discrepancy in transportation costs between regions accessible by maritime travel and those that required transportation by land. The analysis was conducted based on cost coefficients that estimated the difference in expenses between maritime and land transportation. As shown, the costs involved in reaching inland sites in the Near East would have been too high to justify the regular transport of material. Thus, it is likely that a number of amphorae arriving from the western Mediterranean to the inland of the Near East were related to the military, especially since the small quantity of Spanish imports inland were found at military sites. It seems unlikely that the local population would be importing olive oil when local sources were available at a much cheaper cost.

In areas where the government had not yet established a system to consistently provide soldiers with local oil and/or wine, supplies from the west were getting through (as seen at Zeugma and Kifrin). However, locally produced material became sufficient in supplying both the military as well as any settled population. This was observed in Zeugma, Homs, Chalchis, and essentially all examined inland sites, where immediately local material consistently dominates imports, both regional and foreign. This pattern is quite unlike Roman provinces where the olive tree did not typically flourish. In Roman Britain, for example, civilian settlements as well as military sites seem to have

imported a large amount of Spanish olive oil since it was not available locally (Peacock and Williams 1983: 9-10). In this way, the Near East differed from these provinces since it had a long history of olive cultivation and production of olive oil; the availability of local material resulted in the importation of a lower quantity of Spanish and North African olive oil in comparison to provinces in the west. This is also observed in the province of Tingitana in North Africa, where military provisions were supplied from local sources (Pons Pujol 2008: 149). Though the province was integrated into the *annona* distribution network, importation of foreign material was low since local production was strong (Pons Pujol 2008: 149).

Coastal sites in the Near East, on the other hand, imported food products packaged in a variety of Spanish and North African amphorae throughout Roman rule. Based on the evidence presented in this thesis, it appears that the mercantile activities on the coast can be characterized as trade for several reasons. Fish sauce, a product not known to be included in the *annona* of the Roman Empire, was delivered consistently to coastal sites, especially Beirut (Reynolds 2000a: 1043). These transactions had been occurring before the colonization of North Africa and continued throughout Roman occupation of Carthage. This is reflective of a free market and a profitable trade network since fish sauce was probably never included in the list of government-subsidized products. Populations on the coast probably developed a taste for North African and Spanish *garum*, and merchants from the western Mediterranean brought them fish sauce privately. This was likely a consequence of Roman settlement, which also brought about a number of developments in the Near East, such as increased pork consumption and the erection of a major law school (Hall 2004: 37, Perring *et al*. 2003:

208). The distribution of *garum* in the Near East corroborates this evidence of the integration of certain aspects of Roman culture into the Near East.

The sheer variety in types uncovered is also a sign of privately conducted trade. There was no overwhelmingly dominant type as observed in Britain, where Dressel 20 makes up a majority of the amphora assemblage at certain sites (Peacock and Williams 1983). Rather, the diverse assemblage in coastal Near Eastern sites indicates economic contact with a variety of western sites, and suggests the acquisition of products packaged in amphorae from a number of production centers. This is most clearly observed in Beirut, where the range of sources and types is quite extensive and largely unparalleled in the Roman Empire (Reynolds 2000a: 1043). Such variety suggests a divergence from state-controlled distributions of typical Dressel 20, Africana 1, and Africana 2 vessels, and the existence of a relatively free market. The pattern observed here is quite different from that seen in Britain, Gaul, and Monte Testaccio. Unfortunately, we lack shipwreck evidence in the Near East to corroborate the theory of private mercantile activities by connecting amphora assemblages uncovered on land with cargoes of merchant ships arriving from the west. Specifically, a merchant transporting a heterogeneous cargo of products packaged in a variety of amphora types would probably not have been contracted by the government. Even if a merchant was bound to the government, after the fulfillment of the contract, the merchant would be free to pick up and drop off material at each stop in pursuit of profit privately.

The case study of the Beirut type gives an example of one of the earlier local types to develop in the Near East at a coastal site, seemingly as a direct consequence of Roman colonization. Since Berytus – a favored Roman colony – was probably not taxed heavily, its fertile land along the coast would have been leased with a certain

percentage of wine taken as payment for rent (Reynolds 1999: 50). However, this theory is not necessarily reflective of other towns in the Near East. Other areas were likely taxed quite heavily (in Judaea, for example) and required to provide a significant percentage of their yield both for rent as well as payment to the Roman state (Sartre 2005: 103-104).

In either case, this form of taxation was different from the exported *annona* products provided by Spain and North Africa since payments of tax in the Near East would go to the local government and/or military (as opposed to long distance export). However, the province did not necessarily control all production and distribution in the area. Land was likely owned by the province and leased out to the population. In some provinces, an additional tax would be paid on top of the rent in cash or in kind (wine, oil, or any other product). However, ultimately, the rent, the tax, and the output retained by the renter would all be consumed or traded just the same. Essentially, both parties (the local government and the renter or owner of the land or facilities) strived to make a profit, whether in the name of Colonia Berytus or in one's own interest. Without the targeted distribution typical of *annona* networks in the western Mediterranean (mass exportation to Britain, Gaul, and Rome), the local government acted almost as a private merchant. They would have prioritized distribution to other coastal sites since transporting material inland would have been costly and slow.

The characterization of the distribution of the Beirut type as privately organized also seems to be supported by the fact that there appears to be no connection with military provisions. As mentioned earlier, Berytus targeted Cyprus, a site with no known military presence, in the distribution of the Beirut amphorae (Johnson 2008: 152). The reasons for this economic link are not entirely clear, but it is not surprising;

Cyprus provided a close, reliable consumer for products of Beirut, it would have served as a middleman for any redistribution to the western Mediterranean, and would have been a much easier destination to reach than the southern coast based on prevailing winds and currents (see Figures 17 and 18). Moreover, coastal sites in the Near East were consistently importing products packaged at a number of local sources. If the distribution of the Beirut type was indeed related to the government's provision of the military, there would not be this exchange observed. Types produced and distributed contemporaneously by several Near Eastern sites suggest, rather, that this system was characterized by free trade.

This study has traced the distribution of Dressel 20, North African, and the local Beirut amphorae to determine exchange networks in the Near East and how far they extended inland. Ultimately, there seems to be a clear divergence between coastal sites and inland sites based on the distribution of amphorae. Specifically, inland sites were characterized by a number of limited markets restricted to the immediate local area, while coastal sites imported a variety of products packaged in a wide range of amphora types from Spain and Africa. Based on the case study of the Beirut type as well as the variety of types observed all over the coast and in Cyprus, mercantile activities on the coast seem to have been privately driven. Whether undertaken by the colony of Berytus as a whole or individual merchants traveling from port to port, the primary goal was making a profit. This is a clear divergence from the system in Spain and North Africa where state-driven production and distribution focused on provision rather than profit (Carreras 1998: 163).

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