HARBOR SETTLEMENT PATTERNS OF THE SECOND MILLENNIUM BC IN CILICIA AND THE AMUQ

A Master's Thesis

by

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To my family

HARBOR SETTLEMENT PATTERNS OF THE SECOND MILLENNIUM BC IN CILICIA AND THE AMUQ

The Graduate School of Economics and Social Sciences
of
İhsan Doğramacı Bilkent University

by

SEVİLAY ZEYNEP ORUÇ

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

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ABSTRACT

HARBOR SETTLEMENT PATTERNS OF THE SECOND MILLENNIUM BC IN CILICIA AND THE AMUQ

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This thesis is a study on harbor settlement patterns in the northeastern Mediterranean of the second millennium BC based on geo-archaeological evidence. The purpose of the thesis is to assess a hypothesis that estuaries (river mouths/ outlets) acted as harbors for settlements in Cilicia and the Amuq. In order to pursue the hypothesis further, river transport and inland river harbors are proposed. The thesis will attempt to answer questions such as how harbor settlements can be inferred from archaeological and geomorphological evidence and how archaeology identifies river harbor settlements.

Keywords: Harbor settlement patterns, estuary, river transport, MBA and LBA Anatolia, Cilicia, the Amuq Plain.

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Bu tez jeo-arkeolojik kanıtlara dayanarak kuzeydoğu Akdeniz'de M.Ö. İkinci bin liman yerleşim dokuları üzerine bir çalışmadır. Bu tezin amacı haliçlerin (nehir ağızları/çıkışları) limanlar olarak görev yapmış olduğu hipotezini Kilikya ve Amik Ovası'ndaki yerleşimler için değerlendirmektir. Bu hipotezi takip etmek için, nehir taşımacılığı ve iç/karasal nehir limanları önerilir. Bu tez liman yerleşimleri arkeolojik ve jeomorfolojik kanıtlardan nasıl anlaşılabilinir ve arkeoloji nehir limanı yerleşimlerini nasıl tanımlar gibi soruları cevaplandırmaya çalışacaktır.

Anahtar kelimeler: Liman yerleşim dokuları, nehir ağzı, nehir taşımacılığı, OTÇ ve GTÇ Anadolu, Kilikya, Amik Ovası.

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TABLE OF CONTENTS

LIST OF MAPS

LIST OF FIGURES

ABBREVIATIONS

BP: Before Present

EBA: Early Bronze Age

MBA: Middle Bronze Age

LBA: Late Bronze Age

EIA: Early Iron Age

MIA: Middle Iron Age

LIA: Late Iron Age

CHAPTER 1

INTRODUCTION

Landscapes have been modified by people to meet their essential needs such as shelter, subsistence and transport. The harbor settlement, which is one of the forms of land use, was established on the basis of indispensable needs such as available water, and subsistence, such as an agrarian area or source of raw materials. The land should also be sheltered. At the same time it should be accessible like every settlement but include a harbor on an approachable coastline (Vann, 1997: 308).

Waterfronts are chosen according to some favorable conditions specific for a harbor location: to be sheltered against strong winds, waves and bad weather conditions, to provide access both to inland and overseas routes, and to offer suitable physical conditions for lifting boats and docking facilities.

Harbor sites supply economic and social needs through their maritime activities. Harbors offer safe anchorages for vessels to transport people and goods, storage facilities for goods and other maritime activities like ship-building, fishing and commercial transport on boats (Frost, 1995: 2; Raban, 1995: 139). Harbors make it possible to reach islands, which are inaccessible without seafaring. Heavy goods are shipped more easily by boat, which can hold a larger volume and weight in one

vessel than could be transported by animal (Monroe, 2007: 14). The movement of goods by boat is also faster than overland transport in suitable weather conditions (Panagiotopoulos, 2011: 37-38). Harbors boost the economy of the settlement and its region. They can enhance and enrich culture and knowledge via the movement of ideas by boat.

Bronze Age maritime exchange in the eastern Mediterranean required an exploration of coastal land to set up harbors and their installations, since the exchange was organized from harbors. Shipwrecks (Uluburun and Cap Gelidonya) and textual documents (from Hittite and Ugarit) shows that the coast line of Cilicia and the Amuq was used as a route and that harbor settlements were present, whether these coastal sites participated in trade actively, or served as transporting points.

On the other hand, there are some unanswered questions on harbor settlements of Cilicia and the Amuq. What was the nature of harbors in terms of the physical setting? What were their functions? And, where were the sites located? Archaeological surveys and excavations, although limited in number, give encouraging results that there are a good number of potential harbor settlements along the rivers in Cilicia and the Amuq. But, long term geomorphologic changes (silting and shifting in river course) restrict scientific studies. In this context, the locations of pre-classical harbors have not been determined exactly. However, when we take these items into consideration it is obvious that harbor settlements were established and used in these regions. I believe, therefore, this is an important issue to determine the settlement patterns of the 2nd millennium BC harbors in Cilicia and the Amuq with archaeological evidence in order to construct a picture from harbors of MBA (ca. 2000-1500 BC) and LBA (ca. 1500-1200 BC) in these regions.

1.1 Geographical Scope of the Thesis

This thesis concerns of two regions, Cilicia and the Amuq plains (Map 1). Cilicia is divided into two sections that are Cilicia Tracheia and Cilicia Pedias based on physical features. Cilicia Tracheia or Rough Cilicia refers to a hilly landscape composing the western part of Cilicia, which extends from Alanya, the eastern sector of the district of Antalya, to part of the province of Mersin (Vann, 1997: 307; Yakar, 2000: 344). The highland is dominated by Hellenistic and Roman settlements (Seton-Williams, 1954: 121; Vann, 1997: 307-308). Pre-classical archaeological sites in the region were determined in the Göksu (Calycadnus) river valley, which includes lowlands as opposed to the general topography of Rough Cilicia, and the only part of Rough Cilicia that will be considered here together with Smooth Cilicia. Relevant sites are Kilise Tepe on the east bank of the Göksu river and Çingen Tepe, to the west of the river. The eastern part of the region is named Cilicia Pedias or Smooth Cilicia (Vann, 1997: 307). It is accepted that this flatter region extends from Soli, located near Mersin, to Issus, in Hatay, according to Strabo (Russell, 1954: 378; Yakar, 2000: 344). The smooth region comprises plains and wet lands (Seton-Williams, 1954: 121). The west and central or middle Taurus mountain range encloses the region's western side, the Anti-Taurus encircles its northeast part and the Amanus (Nur) mountains, on the east of the Gulf of Iskenderun, enclose its east side (Seton-Williams, 1954: 123; Atalay, 1997: 205; Yakar, 2000: 14, 344). Apart from three natural passages, the Göksu valley, Cilician Gates (the passage of the Gülek) and the Belen (Belian) pass, the landscape of the region is impassable.

The region of the Amuq, which is also a plain, is surrounded by the Kurt mountains to the northeast, the Amanus mountains on the northwest, Jebel al-Aqra[1] (Keldağ mountains) and Jebel Zahwiye on the southwest and the Aleppo (Halep) plateau on the southeast (Yakar, 2000: 345; Casana and Wilkinson, 2005: 28). The Amuq Valley connects with overland routes north (Islahiye), east (Afrin) and south (Asi). To the west, the Asi (Orontes) delta plain connects the Amuq with the sea and its maritime routes. In this thesis, the delta plain will be particularly considered.

1.2 Methodology

As mentioned above, there are some unanswered questions on harbor settlements of these regions. Whereas there are a good number of potential harbor settlements along the rivers, long term geomorphological changes restrict scientific studies. For these reasons, the topic of my thesis requires combining previous interdisciplinary studies with long term perspectives. Some widespread features of harbor settlements in the Levant can be compared to settlement patterns of the 2nd millennium BC harbors in these regions.

Studies on the location of the harbors in the Levant, Cyprus and Crete propose a widespread pattern for harbors and their settlements during the second millennium BC on the Levantine coastline. Hence, I applied to the Cilician and the Amuqian plains the characteristic feature as a hypothesis which is called "the Levantine model"; estuaries (river mouths/outlets) acted as harbors and the navigable rivers linked the harbors with their inland settlements (Raban 1985: 14; 1991: 134).

[1] The mountain is referred to the sacred mountain of the Hittites, Hazzi or Huzzi (Pamir, 2005: 68) and sailors could see its peak from as far as Cyprus (Woolley, (1938a: 2) as cited in Pamir (2005: 68).

The majority of harbor settlements, some of which were inland, were located at or near rivers and on a river bank. The river mouths or estuaries, which were exploited, (Raban, 1985: 14; Taffet, 2001: 128) are the key to this harbor settlement pattern. Its harbors connected the open sea and the interior, where mountain ranges acted as barriers restricting overland routes.

In addition, river transport and inland river harbors are suggested for Cilicia and the Amuq in this thesis to pursue the hypothesis. In order to assess the aim of the study some research questions are chosen as a guide: (1) Where were the sites located in the ancient landscape? (2) How can harbor settlements be inferred from archaeological contexts? (3) How can archaeology identify river harbor settlements in these regions?

The following chapter aims to describe the approximate landscape of the 2nd millennium BC, since a range of geomorphological changes has transformed these regions up to the present. Rivers had not in their present courses; lowlands were not filled by rivers. The second part of the chapter presents three interdisciplinary studies or geomorphological applications that were conducted around the mounds of Tarsus-Gözlükule Höyük and Kinet Höyük in Cilicia and Sabuniye in the Asi delta plain, the Amuq. The third chapter attempts to introduce harbor settlement patterns by discussing the Levantine harbor settlements with particular specific archaeological evidence or components. The fourth chapter discusses the importance of rivers and river transport, since people utilized rivers and coast thanks to suitable vessels; river and their outlets offered inland and river-sea transport as easier, safe and more economical than inland routes by caravans. Chapter five introduces harbor settlements in Cilicia and the Amuq with two Levantine contemporaries. I strive to

show connections between rivers and harbor settlements with archaeological evidence, since ceramics can pinpoint harbor locations by cross cultural contact and river transport by their inland mobility. The sixth and final chapter considers the Hittite impacts on the settlement patterns of harbors in Cilicia and Amuq after the Hittite annexation in the mid-14th century BC.

CHAPTER 2

LANDSCAPES OF CILICIA AND THE AMUQ

Determinations of landscape changes, especially in littoral areas, are significant to define the 2nd millennium BC Amuqian and Cilician harbors and their settlements, since deltaic deposits, silting because of alluviation and shifting in river courses buried harbors under the plains (Blue, 1997: 39; Taffet, 2001: 131). In order to assess the approximate landscape for the setting of the Bronze Age harbor sites, geomorphological changes are summarized in this chapter. Then, geomorphological applications will be presented, since archaeology can determine scientifically the locations and dates of harbors with the assistance of geomorphological data.

2.1 Geomorphology of the Region of Cilicia

2.1.1 The Göksu Valley

The Göksu river valley that consists of the littoral site of Silifke, the Mut region and the Çoğla canyon is a natural route which connects the Anatolian plateau to the Mediterranean coast (Newhard et al., 2008: 88). The Göksu river with waves and wind built the most prominent delta plain of Anatolia toward the sea at the west

side of the Cilician plain, southeast of Silifke (Erol, 2003: 63; Koç, 2007: 22). The river which is fed by Geyik Mountain flows through the Mut region into the sea from the plain of Silifke through Cape Incekum (Russell, 1954: 378; Koç, 2007: 22).

In the upper Pliocene, the Göksu began to erode laterally the region of Mut and formed the Mut basin by opening the Göksu valley (Çiçek, 2001: 11-13). Five thousand years ago, the river began to form a delta plain at the approach to the sea: this is the plain of Silifke (Russell, 1954: 378; Keçer and Duman, 2007: 18; Koç, 2007: 22). Firstly, the delta advanced toward the east and then was directed to the south (Atalay, 1997: 209). About two thousand years ago, the first stage of the plain was completed and the river flowed into the sea from around the present town of Bahçeköy (Figure 1) (Bener, 1967: 99; Koç, 2007: 82). The river then flowed northeast of the present course, and the east part of the plain was formed (Koç, 2007: 68, 84).

2.1.2 Çukurova[2]/Plain Cilicia

The geomorphologic evolution of the Cilician plain is closely associated with tectonic activities like the rising of mountains and a eustatic process like regression (Erinç, 1952-1953: 149-150; Erol, 2003: 63; Öner et al., 2005: 71, 73). The lowland is placed in the northeastern part of a structural depression or basin between the Taurus Mountain range on the north and Cyprus (Erol, 2003: 61; Öner et al., 2005: 71). During the Neotectonic period[3] the Taurus range rose as a result of tectonic transactions while the northeastern part of the depression subsided according to long

[2] Çukurova, the present name of the region of Cilicia, is a name derived from its morphology, "Trough Plain".
[3] The period that began about 15 million years ago corresponds with middle Miocene and Pliocene epochs (Erol, 2003: 61).

term sea level changes (Erinç, 1952-1953: 150; Erol, 2003: 63; Öner et al., 2005: 71). During this process, the base of the delta plain was formed (Erol, 2003: 63). In the late Pleistocene and early Holocene (ca.15.000-9000 BP), the depression or basin here began to fill with alluvial deposits from the Tarsus (Berdan), Seyhan and Ceyhan rivers (Erol, 2003: 60, 63; Öner et al., 2005: 69, 71).

The Tarsus delta plain (Figure 2), which constitutes the western part of the plain system, is formed by the deposition of sediments from the Tarsus river that feeds on the Bolkar Mountains (Öner et al., 2005: 71). The formation of the plain began during the pre-Holocene: alluvial fan deposits were formed on the slopes of the mountains and transported to the shore by high energy rivers (Öner et al., 2005: 77). During the early Holocene, the rising sea level enclosed the skirts of the alluvial fan and a slight coastal bank was produced far beyond the shoreline; this area consists of the watery lands (Öner et al., 2005: 77). By the mid-Holocene[4] (ca. 6000/5000 BP)[5], the end of the rising in sea level allowed the expansion of the alluvial plain toward the sea (Öner et al., 2005: 74, 77-78) when it had reached a level close to the present day. Lagoons, formed in depression areas behind the sand dunes, began to fill with sands and alluviums, and sand dunes shaped the coastal plain around the Karabucak (marshland areas) near Tarsus (Öner et al., 2005: 77). The formation of the Tarsus delta plain caused the progression of the land between the mountains and the coastal strip. Thus, although today Tarsus lies closer to the coast (Erol, 2003: 63), it was never a coastal site. In the late Holocene, the wetland

[4] The mid-Holocene period corresponds between ca. 6.5 and 3.0 ka BP (=thousands years before present) (Roberts et al., 2011: 5).

[5] Kayan stated (1993: 63) the sea-level closed to the present day in 5200 BP, however, there are different dates proposed by others for the change. The date is therefore given as 6000/5000 BP in this thesis.

maintained its feature until the reforestation in present days. The volume of flow of the Tarsus river was weakened by building the Berdan dam together with marine erosion has reduced or even stopped the natural evolution of the plain (Öner et al., 2005: 78).

The Tarsus plain joins the Seyhan delta plain which projects toward the sea by an outlet of the Seyhan river (Erol, 2003: 64). From time to time during the late Pleistocene and early Holocene, or even as late as the mid-Holocene, the Ceyhan river flowed together with the Seyhan river, and sometimes the two flowed separately (Map 3) (Erinç, 1952-1953: 154; Erol, 2003: 59). These two rivers built up the east part of the Cilician delta plain, to form the Yüreğir Plain around present-day Adana (Öner et al., 2005: 69; Erol, 2003: 64). An old river course of the Seyhan was situated ca. 10 km east of its present course in the Tuzla area between the Akyatan lagoon and the present Seyhan delta course (Gürbüz, 1999: 216, 220). Formerly, the Ceyhan and Seyhan rivers were running on the southeastern side of the Cilician plain and into the Akyatan lagoon (Erinç, 1952-1953: 154; Erol, 2003: 60). The old Ceyhan river reached the sea west of Karataş (Map 3 and Figure 3) (Erol, 2003: 66). Today, the Seyhan flows in a western course across the plain, whereas the Ceyhan river shifts east at Adana in the direction of Karataş. Late in the mid-Holocene, about 2500 years ago[6], after episodes of tectonic activity on the Çoruk-Çamlık fault, the course of the Ceyhan moved to the village of Bebeli, east of Karataş (Figure 3) (Erinç, 1952-1953: 154; Erol, 2003: 60, 64, 66). About two thousand years ago, the Hurmaboğazı-Ağyatan lagoons behind the sands began to

[6] The date of the separation must have occurred about 5th century BC according to Tchihatcheff, (1853 and 1869) as cited in Erinç (1952-1953: 154), at the time of the Ptolemies (Hellenistic, 3rd - 1st BC), the Sarus (Seyhan) separated from the Pyramus (Ceyhan) (Russell, 1954: 378).

develop by the river (Erol, 2003: 66-67). From the first millennium BC to the twentieth century AD, the Ceyhan river built the "Cilician late Holocene waterfront", extending about 30 km. east until the 1900s, when the flow power of the river, which allowed it to carry sediments for the delta formation, decreased (Erinç, 1952-1953: 155; Erol, 2003: 64, 67-71). Today the river streams into the sea from the outlet of Hurmaboğazı (Erinç, 1952-1953: 155; Erol, 2003: 66).

2.1.3 Dörtyol and Erzin Plains

The plains of Dörtyol and Erzin along the northeast side of the Gulf of Iskenderun cover an area of 260 km^2 (Figure 4) (Doyuran, 1982: 151). The Misis Mountains lie to the west of the Dörtyol plain and the Amanus Mountains surround the east of the Erzin plain (Ozaner, 1993: 338). The Erzin plain is separated from the Ceyhan by the Kısık gorge in the province of Osmaniye (Doyuran, 1982: 151). To its south, the Dörtyol plain extends as far as the area of the Payas river, where the plain is only 4 km wide (Doyuran, 1982: 151-152). Between the Miocene and the Pliocene periods[7], the Gulf of Iskenderun was formed by subsiding that resulted from faulting in the Amanos Mountains (Doyuran, 1982: 158; Ardos, 1985: 126). In the Quaternary period[8], alluvial cones carried from the Amanos Mountains by local rivers[9] accumulated along the faulting, filling the depression to form the Erzin and Dörtyol plains, in the narrow west skirt of the Amanos mountains (Ardos, 1985:126).

[7] Tem Dam, (1952) as cited in Doyuran, (1982) suggests the time span for the subsistence.
[8] The period which comprises of the Pleistocene and the Holocene corresponds with 2.6 Mya. Information is available on-line at http://en.wikipedia.org/wiki/Quaternary
[9] Mahirönü, Sukarışan, Erzin, Deli, Özerli, Rabat and Kuru rivers and the Payas river that is the southern boundary of the Erzin plain (Doyuran, 1982: 152).

Sand dunes are located along the coastline of the plain and marshy lands are situated behind the dunes.

The section of the Dörtyol delta plain around Payas has expanded by 1500 m. in about 2500 years, whereas the expansion is ca. 525 m. around Kinet Höyük as a result of the subsidence of the coast (Ozaner, 1995: 520-521). The variation in delta evolution is derived from frequent shifts in local river courses, and faulting in the northern part of the plain which creates the subsidence (Ozaner, 1995: 521). Thus the horizontal development of the delta is slow (Ozaner, 1995: 521).

2.2 Geomorphology of the Region of Amuq

The Asi (Asi) river, which is the main river of the plain, rises in the Lebanon and reaches the plain by flowing north (ca. 644 km) along the Dead Sea Rift Valley in Syria (Yakar, 2000: 346). When it reaches the Amuq valley, the river changes its direction toward the west (south of the Amuq Lake) to the sea, and flows into the sea from the town of Samandağ (southwest of Antioch) through the Ziriye gorge, between the Ziyaret and Semen mountains (Erol, 1963: 8; Öner, 2008: 2).

The Asi river formed a delta plain (40 km^2) between the west limit of the Amuq valley and the Ziriye gorge (Erol, 1963: 8; Pamir, 2005: 67-68). Before it reaches the Ziriye gorge, the Asi flows in a tectonic depression, defined by Erol as the lower Asi graben[10] (1963:8). At the beginning of the Quaternary period, the gorge was narrow and sloped due to faulting, so that the river and its tributaries began to flow in the gorge (Erol, 1963: 10, 56, 59). In the end of the early Holocene

[10] "*Untere Asi rinne"* (Erol, 1963: 65), dating to the end of the Miocene and deepened between the end of the Pliocene and the early Quaternary period by tectonic activities (Erol, 1963: 9-10).

and at the beginning of the mid-Holocene, the coastline was 7-8 m. below the present level (Öner, 2008: 8). The sea was inserted to form a gulf area, now between the mound of Al Mina and the hill of Hisalli (Figure 5) (Öner, 2008: 8-9).

In the mid-Holocene, the Asi river and other streams began to fill the coastal end of the lower Asi graben and its bay-like area with alluvium (Öner, 2008: 9). In the last five thousand years, the gulf was transformed by alluvial deposition into the present Asi delta plain (Öner, 2008: 9). However, the fault systems[11] which intersect in the town of Samandağ created sharp slopes surrounding the delta plain (Erol, 1963: 9-10). Thus the development of the delta to the sea was restricted by natural causes (Erol, 1963: 9-10). According to Erol (1963: 31), through the reduction in the sea level, the coastal formation of the plain occurred. The present beach, 15 km long, is flat apart from the projection of the river mouth because the prevailing wind blows from the sea toward the shore (Erol, 1963: 12-13; Pamir, 2005: 68; Öner, 2008: 11). Behind the coastal formations, former dried lagoonal areas are observed (Erol, 1963: 12, 20).

About 2800 years ago, the river flowed into the sea through the southwest of the Samandağ village where a lagoon was situated in the present beach (Erol, 1963: 16). In addition, a depression which was observed between Al Mina and the lagoon can be defined as an old river bed (Erol, 1963: 16). In the 20th century AD, the river bed shifted to the present bed (Erol, 1963: 17).

The lake of the Amuq (Antioch) was situated in the center of the Amuq valley as a significant water source between the 1st millennium AD to the 20th century

[11] The fault systems are the southwest fault system in the Amanos Mountains, and a second fault system extends from Antakya to the sea (Erol, 1963: 10).

AD[12]. In the mid-Holocene, however, between three thousand BC to the first millennium BC[13], the basin did not present any watery forms (Casana and Wilkinson, 2005: 33). The formation of the lake proper appeared in the Roman period (Yener et al., 2000: 175; Casana and Wilkinson, 2005: 33).

2.3 The Geomorphology of Regional Sites

Geomorphological studies, although limited, were conducted in the vicinities of the mounds of Tarsus, around the Gulf of Iskenderun and Kinet Höyük in Cilicia, and around the mound of Sabuniye in the Asi delta plain. The mounds in the deltas are candidates for harbor settlements.

2.3.1 Tarsus-Gözlükule Höyük

Geomorphological soundings were conducted in the vicinity of Gözlükule by E. Öner, B. Hocaoğlu, and L. Uncu (2001-2002) to determine the base level of the mound and the location of the mound's port[14] in wetlands areas like the Karabucak swamp west of the mound and the Rhegma, which was the potential ancient port south of Karabucak (Öner et al., 2005: 74). Results of the studies indicate that the Tarsus river did not flow into these swampy areas, the sea never extended as far as the mound and town of Tarsus, and the water level in the lagoon was not enough for boats to approach because of silting (Figure 2) (Öner et al., 2005: 69, 77, 80-81). In

[12] The lake dried in the 1950s and 1960s (Casana and Wilkinson, 2005: 28).
[13] The buried settlements of the third and early second millennium BC were determined beneath lake deposits (Yener et al., 2000: 176).
[14] Ancient resources state that in the first millennium BC, Tarsus used a lagoon (Rhegma) as a harbor, south of the mound (Öner et al., 2005: 69, 80). According to Strabo "is the mouth of the Cydnus (Tarsus river), at the place called Rhegma, which is a lake, and where you may still see the remains of stocks for building of ships. Into this lake the Cydnus falls." Strabo as cited in Barker (1853: 137).

addition, even if a lagoon harbor was used in this time, it could have not been used in the 2nd millennium BC, since the lagoon formed in the 1st millennium BC only (Öner et al., 2005: 76-77, fig. 3). Besides, the marshy land could not be appropriate for long-time occupation, since mosquitoes of the swamp (Seton-Williams, 1954: 128) might lead to the deadly disease, malaria. It seems that geomorphological studies eliminate historical sources on the location of the 2nd millennium harbor of Tarsus which will be discussed below (the section 5.2.3 of Chapter 5).

2.3.2 Kinet Höyük

Geomorphological studies were conducted around of the mound of Kinet within the excavation project of Kinet Höyük by S. Ozaner (1991-1993) (Ozaner 1995) and T. Beach and S. Luzzadder-Beach (1998-2008). In this thesis, results of their studies concerning the second millennium BC location of the mound's harbors will be considered.

The mound of Kinet was located near the waterfront when it was first built (Ozaner, 1993: 339). At the present, the mound is ca. 525 m. inside from the shore because of alluviation and erosion (Ozaner, 1993: 339; Beach and Luzzadder-Beach, 2008: 416). Historical sources[15] and geo-archaeological studies suggest that Bronze Age Kinet had two harbors, which were a natural bay on the north side and an estuary harbor on the south side (Gates, 1999a: 260; 2003b: 17).

The study by Ozaner (1995) determined the old courses of the Deli Çay (stream) (Figure 6). The former course of the Deli flowed just south of Kinet Höyük

[15] Issos as ancient Kinet had a docking place or mooring with Pinaros river (the ancient Deli Çay) Strabo as cited in Ozaner (1995: 515).

then fell into the sea until the last quarter of the first millennium BC (Ozaner, 1995: 516-518). The estuary of the river or stream most likely acted as a river port during the 2nd millennium BC (Gates, 2008: 292). From this date onwards, the Deli reached the sea 2 km south of Kinet along its former course (Ozaner, 1995: 517). Later, presumably in Ottoman times, the river changed its second course farther southwest, and flowed into the sea another 500 m. south of the second course (Ozaner, 1995: 518-519).

In addition, a geomorphological sounding (Operation "R") in a field 100 m. northwest of the mound produced significant evidence for a LB harbor town or port installations beneath the alluvium (Gates, 2002: 55-56; 2003a: 289-290; Beach and Luzzadder-Beach, 2008: 422). LBA in situ occupation and artifacts were determined between depths of 0.5 m. to nearly 4.8 m. (Beach and Luzzadder-Beach, 2008: 422). At 3.5 m. depth, materials are dated to LBA, supported by radiocarbon dates 1680-1130 BC (intercept date 1420 BC ^{14}C) (Figure 7) (Gates, 2002: 56; Beach and Luzzadder-Beach, 2008: 422-423, fig. 5).The artifacts from these deposits include fragments of imported Cypriot and Canaanite potteries (Gates, 2002: 56). It is possible that Kinet harbor settlement of the LBA or maybe a warehouse was located northwest of the mound, on the sea coast (Gates, 2003a: 289-290).

Furthermore, geomorphological studies suggest that aggradation reached the peak around Kinet Höyük in the Hellenistic to Late Roman period when the town was abandoned (Beach and Luzzadder-Beach, 2008: 425-427).

2.3.3 Sabuniye Höyük

Sabuniye which is ca. 5.3 km inland from the sea now is situated on the west of the Amuq where the river Asi which closes its south side reaches the delta plain (Pamir and Nishiyama, 2002: 310; Pamir, 2005: 70-71). Geomorphological studies around the mound of Sabuniye and the delta plain were carried out by E. Öner and L. Uncu within "the Asi Delta Survey" west of the Amuq in 2000 and 2002 (Pamir, 2005: 72; Öner, 2008: 2). According to ceramic findings associated with geomorphological stratigraphy, the site could be occupied during the MBA and LBA (Öner, 2008: 7).

Core drillings (to a depth of 15 m.) were made at several points west and south of Sabuniye, along the river and the delta plain (Figure 8) (Pamir, 2005: 72; Öner, 2008: 6-7). Between 7000 and 5000 BP, the sea inserted itself into inner parts of the delta, between Al Mina and the ridge of Hisallı hill; however, the coastline never reached as far as Sabuniye (Öner, 2008: 7, 10). Sabuniye was therefore not a coastline city in the second millennium BC, but situated in a wetland area created by the river and the sea (Pamir and Nishiyama, 2002: 312; Pamir, 2005: 72; Öner, 2008: 7-8). Sabuniye was, however, closer to the mouth of the Asi than today (Öner, 2008: 10).

In this chapter, the background of the harbors and their settlements was addressed by interdisciplinary studies. Geomorphological studies confirmed that Kinet Höyük had two harbors and Sabuniye might have been used as an inland harbor, whereas, historical sources on Tarsus's harbor and the Tarsus river do not match with geomorphological studies. These studies also indicate that rivers and their estuaries should be considered for the Bronze Age.

CHAPTER 3

ARCHAEOLOGICAL EVIDENCE FOR HARBOR SETTLEMENT PATTERNS

In this chapter I will give some specific archaeological evidence or components for harbor settlements by discussing Levantine harbor settlement patterns. I will discuss the archaeological evidence in three categories which are recognized as landscape, artifacts and architecture.

3.1 The Landscape as Evidence for Harbor Settlements

In the second millennium BC, sea port and river harbor or both of them were in use. On the one hand, natural harbors, which are located on a headland, natural cove, and lagoons, acted as seaside harbors and, on the other hand, river mouths or estuaries were used as harbors, sometimes with some modifications (Blue, 1997: 31-32). Artificial harbors, which were entirely constructed, do not occur until the first half of the first millennium BC (Vann, 1997: 319; Marriner and Morhange, 2007: 146). It can be said that semi-artificial river harbors were used, particularly along the eastern Mediterranean coasts, since some man-made adjustments will be seen below.

River harbors have more advantages than sea ports. Especially, it is sometimes difficult to access the interior by inland road, whereas river harbors simplify the delivery of goods. In addition, the mouth of rivers provided safer anchorages for boats to approach and dock than sea ports, which were exposed to winds and sea waves. The Levantine coast was well furnished with river harbors where settlements were set at river mouths and a bit inland on the same riverbanks (Figure 9) (Raban, 1985: 14): as a typical example, on the Nahal (river) Alexander[16], Tell Mikhmoreth is at the estuary of the river, while Tell Ifshar (Tell Hefer) is situated ca. 5 km upstream of the navigable river, and can be described as an inland harbor settlement (Raban, 1985: 17; Chernoff and Paley, 1998: 399; Taffet, 2001: 130). River harbors in the Levant can be used as a model to identify harbor settlements in Cilicia and the Amuq plain. Most likely, inhabitants in Cilicia and the Amuq Plain, which were enclosed by mountain ranges like the Levant, used estuaries of navigable rivers as harbors.

In Mesopotamia, however, there are many indications that Bronze Age harbors were not entirely natural, but that favorable locations were improved in various ways to make the harbor more suitable against possible perilous natural and man-made factors. In Mesopotamia and Egypt, river harbors were used in a different configuration. Levantine harbors were directly on rivers; whereas harbors in Mesopotamia and Egypt were on canals, which were dug to supply water for irrigation in the arid region (Postgate, 1992: 174, 179). They also facilitated river transport as in ancient Egypt (Hassan, 1997: 52, 54, 62; Wells, 2004: 24). The Old

[16] The river was being used for transportation of crops until the 19th century AD and at least small boats could be towed on it now (Taffet, 2001: 130; Marcus et al., 2008: 221).

Babylonian urban site of Mashkan-shapir (Tell Abu Duwari) illustrates river harbors for southern Mesopotamia (Stone and Zimansky, 1992; 2004). The city, which was located between the ancient Tigris and Euphrates rivers, was divided by digging water channels, two of which were major canals (Stone and Zimansky, 2004: 327). The site had at least two river harbors where the large canals crossed with smaller ones: the east and the west harbors (Stone and Zimansky, 2004: 328). In Egypt, navigational networks were excavated in the Nile Delta to connect the Nile to the city of Giza in the MBA (Raban, 1991: 138; Marriner and Morhange, 2007: 158). Another MB site with modified harbors is Tell el Dab'a[17], on the bank of the Pelusiac branch of the Nile. It functioned as an inland harbor settlement via a navigational channel which reached the sea (Bietak, 1996: 3, 20).

This distinction between river harbors in the Levant, Mesopotamia and Egypt could be rooted in the regime of rivers. The wide or long rivers in Mesopotamia (the Tigris and Euphrates) and the Nile in Egypt were subject to natural and catastrophic floods or overflowing when the volume of water increased annually. Therefore, sites were situated away from rivers and the water was brought into sites by canals to avoid floods (Postgate, 1992: 174, 177). However, rivers in the Levant, Cilicia and the Amuq offered safer conditions for habitation, since the rivers were shorter or smaller and flow in deep valleys (such as the Göksu and the Asi). In addition, swamp areas in Cilicia could absorb the water from overflowing. Therefore, areas near rivers were settled and estuaries could have been used as harbors.

[17] Tell el Dab'a had more than one harbor because the water level of the Nile varied in a year (Tronchere et al., 2008: 338). It is highly likely the site had three harbors: first in the middle of the town, second was to the south, third at the north of the town (Forstner-Müller, 2009: 12). The site followed the Levantine harbor patterns thanks to immigration from the Levant in the Hyksos period (see Bietak, 1996).

The modifications, some of which could be documented in the Levant, involved some common measures to make harbors suitable for boats, instead of the type of river harbor known in Mesopotamia and Egypt. A barrier or a dam could be built upriver to reduce silting, which threatens to close off the river outlet, or a navigational channel was dug to transfer the river opening to a more suitable area (Raban, 1988: 200; 1991: 137; 1995: 144; Taffet, 2001: 128). The channel enables the docking basin of harbors to join the sea (Frost, 1995: 6; Raban, 1995: 145). These patterns are observed along the eastern Mediterranean coast at a number of Middle and Late Bronze sites such as MB Tell Akhziv, Tell Misrefot Yam, Tell Mikhmoreth and Tel Poleg in Israel, and a lagoonal harbor of Malia in Crete (Raban, 1985: 19; 1991: 137, 139-140; Taffet, 2001: 128, 130). Modifications like these, involving a channel and a stone quay[18], are also recognized at Sirkeli (explained in the section 5.2.6 of Chapter 5) in Cilicia (Novák and Kozal, 2011: 44). Other types of modifications, such as excavating harbors to make them larger, and stabilizing their banks with masonry, are not found in Cilicia and the Amuq. It seems that these measures to keep estuaries free of silting were not permanent against geomorphological changes (Raban, 1985: 12, 19). However, the coastline saw a more rapid change in the first millennium BC than in the second millennium, and geomorphologic changes affected the coastline only slowly.

Finally, in the eastern Mediterranean, many harbor settlements used more than one harbor, combining a natural anchorage or sea port on the coast with another

[18] Middle Egyptian literary tales refer to quays as landing places where boats were approached and were connected a rope (Simpson, 1973:50, 59, 70); A text from Ugarit refers to a damaged ship because of crashing into the quay of Ura (Otten, (1975) as cited in Dinçol et al., 2000: 10). Bronze Age quays are also known from Egyptian pictorial evidence which depicted ships on quays of the Nile harbors (Höckmann, 2006: 312, fig. 1.7-8, 314, fig. 2.1).

one inside the river estuary. The pattern can be exemplified by Tell Tweini in Syria (Al-Maqdissi et al., 2007: 6) and Kinet Höyük in Cilicia (Ozaner, 1995: 516; Gates, 1999b: 305). Tell Abu-Hawam also had three ports: a natural bay, river mouth and lagoon (Taffet, 2001: 129). Sidon had a number of harbors: two natural bays, two sea harbors (one of which was the island), and one river harbor (Carayon et al., 2011/12: 434, 437, 439-449). It is known that lagoon formations also were used as harbors in the second millennium BC. Tell Dor had two lagoons as its MB harbors in addition to a natural anchorage (Raban, 1995: 145; Taffet, 2001: 130). It is likely that LB Ras Shamra (Ugarit) also exploited a number of harbors (Astour, 1970: 114-116): Minet el-Beidha and Ras Ibn Hani as sea ports are determined (see below, the section 5.5 of Chapter 5). It is possible that using more than one harbor would have been associated with natural conditions (wind conditions) as well as for special purposes (trans-shipment) (Raban, 1995: 139). Wind and weather conditions might have determined which harbor to use or harbors of a site would have served different purposes, river harbors being more convenient to transport goods to the interior.

3.2 Artifacts as Evidence for Harbor Settlements

Artifacts which are indicators of cultural interactions by boat also provide indirect evidence for harbor settlements. In this section, these artifacts, ranging from pottery, seals, shell and raw materials will be limited to types which are specific for harbor settlements.

3.2.1 Ceramics

Some characteristic types of pottery, and their contents, circulated along the eastern Mediterranean as *koine* by boat. These major types are Cypriot pottery[19], Mycenaean pottery from the Greek mainland, and "Canaanite" jars from Levantine regions. These ceramics can roughly be divided into two categories: ceramics as commercial containers or for storage and ceramics as commercial goods (Matthäus, 2006: 345). In this part, ceramics as containers for maritime trade will primarily be considered. Most of them were initially produced as packaging to carry organic goods (Sherratt and Sherratt, 1991: 362).

A prevalent and widely distributed type is the "Canaanite" jar[20]or amphora, designed as commercial container for the MB and LBA maritime transport (Figure 10) (Sherratt and Sherratt, 1991: 364). This jar type which was produced in various areas in the Levant or land of Canaan[21] was found in the LBA Uluburun shipwreck and harbor settlements in the eastern Mediterranean (Yalçın et al., 2006: 583; Pedrazzi, 2010: 53; Ownby and Smith, 2011). It was produced in a standardized shape[22] and capacity (10-14 or seldom 18-22 litres) (Pedrazzi, 2010: 53-54). Over a hundred "Canaanite" jars from the Uluburun shipwreck prove that these jars carried *Pistacia* (terebinth) resin and liquid (oil and wine) as well as olives in a boat as

[19] Widely distributed types *White Slip Ware* or "milk bowl", *Base Ring ware*, *White Shaved Ware*, *Monochrome Ware* (and possibly Red Lustrous Wheel Made Ware).
[20] The name of "Canaanite" for this jar type derives from in the research of V. Grace and R. Amiran (Pedrazzi, 2010: 53). The type was used as containers from the late MBA (Ownby and Smith, 2011: 279).
[21] This jar also locally produced in some LBA Cypriot sites (Ownby and Smith, 2011: 277).
[22] Its conical body narrows to a pointed base from the shoulder, which is the widest part and has two handles (Yalçın et al., 2006: 583; Pedrazzi, 2010: 53). However, Pedrazzi's (2010) analysis shows that this standardized shape have been morphologically changed in Syrian coast, Cyprus and Southern Anatolia between the end of LBA and the beginning of the Iron Age: its conical body transformed "slightly carinated shoulder and rounded bellied" and its carrying capacity also was large (20-40 litres) (Pedrazzi, 2010: 54).

containers (Yalçın, 2006: 23). These jars were not only used as containers along the sea voyage, but also for the storage of organic goods in Levantine warehouses until their distribution or departure. The best illustration is, the "Canaanite" jars stored in a LBA warehouse of Minet el-Beidha (Figure 11) (Sauvage, 2007: 618-619). "Canaanite" jars, which could be carried by boat, also were imported from Syria-Palestine to Egyptian river harbors like Tell el Dab'a[23] and Memphis (Bietak, 1991; Ownby and Smith, 2011: 279). They are an indication of transfer from sea to river transport. "Canaanite" jars in Tell Tweini, which are similar to the jars of Ugarit and Tarsus in Cilicia, (Vansteenhuyse, 2008: 111), attest to maritime activity between sites in the same route. "Canaanite" jars are also known from Kinet Höyük in Cilicia (Gates, 1999b: 307).

Another common type of container was the *pithos*, a big ceramic vessel (Figure 12). These containers were designed as a safe package for land storage as well as in a boat and during transshipment[24] (Artzy, 1994: 138; Pulak, 2006: 81). At least three out of ten Cypriot pithoi from the Uluburun shipwreck were packed with Cypriot ware (Hirschfeld, 2006: 108). These containers from the shipwreck give significant information about how breakable goods were packaged and transported via maritime trade (Hirschfeld, 2006:109). This information can also explain how considerable amounts of ceramics from overseas were transported to inland centers, such as Cypriot ceramics to Tell el Dab'a (Bietak, 1991) and at Tell Atchana in the

[23]About two million "Canaanite" jars were found as containers however, some of them used at funerary context at this site in the MBA (Bietak, 1991: 41; 1996: 20).Tell el Dab'a (MBA) also presents other ceramics mostly jars, some of them originated in the Levant, Ugarit, the Amuq or Cilicia as well as Cyprus, and the Aegean (Bietak, 1991; Marcus, 2007: 160, 162-163; Marcus et al., 2008: 236).

[24] Egyptian pictorial evidence (on the representation of Theban tomb of Kenamon) also supports the usage of the pithos as container in a boat (Artzy, 1994: 138).

Amuq (Bergoffen, 2005) (see below, the section 5.4.1 of Chapter 5). Valuable raw materials were also put into pithoi. These pithoi were attested at other harbor settlements like Ugarit, Tel Nami, Tell Abu Hawam[25] and Tell Tweini, as local imitations of Cypriot types (Artzy, 1994: 138; 2006: 52; Vansteenhuyse, 2008: 110).

In addition, some small or large closed forms such as juglets, bottles, jugs and jars were used as containers for liquid organic materials, whether they were "bottled at source" (Sherratt and Sherratt, 1991: 362-363) or not (Maguire, 1995: 54). In other words, a producer region might itself use ceramic packaging as containers or its ceramic containers might have been packed with foreign goods.

Moreover, pottery[26] was also widely imported to the eastern Mediterranean as commercial goods because of functional demand and aesthetic value (Matthäus, 2006: 346) alongside its contents. The Uluburun shipwreck proves that Cypriot finewares or table ware (mainly bowls and jugs) were imported for their own sake in ceramic containers as commercial goods by boats (Figure 13) (Hirschfeld, 2006: 105). Whether these ceramics were used as containers in receiver regions or in their own right, they reflect strong interregional or overseas interaction by boat.

3.2.2 Local Trends in Ceramic Styles

Local ceramics also can be used as an index for harbor settlements (Gates, 1999b: 305). In other words, occupants in harbor settlements reflect cultural mix through the decoration and form of their local ceramics. Foreign ceramics were

[25] In the Carmel coast of Israel, Tel Abu Hawam on the Qishon river, Tel Akko, is located north of the Na'aman river and Tell Nami, is located near the Me'arot river, are also defined as river harbor settlements where ceramics and metal industry maintained (Artzy, 1994: 123; 2006:46, 49-50). The coast also took place at the sailing routes of boats in that time (Artzy, 2006: 59).

[26] Some Cypriot ceramics (ongoing from MBA and LBA) and Mycenaean ceramics (especially from LBA) were imported (Matthäus, 2006: 346).

locally imitated; the production was made in different shapes from the original ones thanks to the cosmopolitan nature of overseas interaction. For example, some Cypriot and Palestinian ceramic practices were adapted at Tell el Dab'a (Figure 14) (Bietak, 1996: 59). MBA local ceramics in Tell Ifshar were seen in north Syrian forms with local motifs (Marcus et al., 2008: 236-237). The LBA local ceramics in Tell Abu Hawam[27] were also similar to Cypriot fabrics (Artzy, 2006: 54-55). A group of local Syrian ceramics in Alalakh essentially derived from a MBA Cypriot style (Maguire, 1995: 55).

3.2.3 Shipwrecks and Their Cargos

Apart from ceramics, other archaeological materials which were being carried by boats between harbors, give insight into harbor settlements. These finds were found at eastern Mediterranean harbor settlements and at the LBA shipwrecks[28] of Cape Gelidonya (Bass, 1967) and Uluburun (Yalçın et al., 2006) as cargos.

Shipwrecks themselves are archaeological indications of the presence of harbor settlements as well as overseas interaction. They also illustrate the ship-building industry which would have been supplied with timber from forests in the Levant, Cilicia and the Amuq (see below, Chapter 4). Shipwrecks also can answer questions such as how materials were being transported across the eastern

[27] Anatolian, Aegean and Egyptian pottery was also found at Tell Abu Hawam (Artzy, 2006: 52, 55).
[28] Until now no MBA shipwreck has been discovered, however, a written source of early 12th Dynasty of Middle Kingdom (the Mit Rahina inscription) shows that cargos, some of which are cedar, resin, metals, ivory, building stones and people, were carried from the northern Levant (Lebanon, Syria and probably Cilicia) to Egypt by more than one ships (Marcus, 2007: 132-157,173-176).

Mediterranean. The transport by boat permitted tons of goods to reach harbors. The cargo of the Uluburun[29] well represents the importance of harbor settlements.

A first material is copper in "oxhide" ingots, found at terrestrial sites[30] as well (Gale and Stos-Gale, 2006: 120; Pulak, 2006: 64-65). In addition, analyses of some lead and silver items from the Uluburun and Ras Ibn Hani and Mochlos in Crete correspond with mineral reserves in the Taurus Mountains (Soles, 2005: 434-435; Gale and Stos-Gale, 2006: 127, 131-132). It means that the Cilician harbors must have been used to transport metals by boat (Soles, 2005: 435-437).

In addition, eastern Mediterranean objects, which were produced by the meeting of cultures and ideas, emphasize the cosmopolitan character of harbor settlements. For example, Levantine workmanship and Egyptian iconography were combined on jewelry, one example of which is known from Uluburun: a gold pendant with a representation of the goddess Astarte (Figure 15) (Pulak, 2006: 68; Yalçın et al., 2006: 597), a type known from the MBA southern Palestine (Tell el Ajjul) (Tubb, 1998: 65), was also found at Minet el Beidha (Yon, 2006: 166, fig. 58a).

[29] The wreck includes raw (metal and glass in form of ingots, unworked hippo and elephant ivory, organic bulk), manufactured and luxury objects (jewelries made from gold, silver, bronze, precious stones and faience and glass by both local and foreign interactions; bronze weapons and tools; seals, scarabs, weights) and materials for shipboard use and shipbuilding (lamps, and stone anchors, timber) as well (Bass, 1986; Yalçın et al., 2006).

[30] According to lead isotope analyses of these ingots from shipwrecks, copper ores in the island of Cyprus was responsible for them (Gale and Stos-Gale, 2006: 121, 124,127). These were distributed to Germany, France, Sardinia, Sicily, Greece, Crete, Bulgaria, central Anatolia, Syria, the Nile delta and Iraq (Gale and Stos-Gale, 2006: 120; Müller-Karpe, 2006: 493; Pulak, 2006: 63-64). Oxhide ingots in Mochlos, Crete also match Cypriot copper ores (Soles, 2005: 435; Gale and Stos-Gale, 2006: 127). Besides, one round copper ingot in Kuşaklı/Sarissa, central Anatolia corresponds to Cypriot ores (Müller-Karpe, 2006: 493).

3.2.4 Boats

Thirdly, depictions of boats, which are mostly known from the Aegean and Egypt[31] (Höckmann, 2006: 311-312, fig.1, 314, fig. 2, 317-318, 320, fig. 5-6, 321), can be attributed as archaeological evidence for Levantine harbor settlement patterns. Boats are illustrated on seals from Tell el Dab'a (Porada, (1984) as cited in Marcus (2007: 154) and Ugarit (Figure 16, 17) (Amiet, 1992: 106, fig.42.232; Höckmann, 2006: 314, fig. 2.6, 316) and on a Canaanite jar from Tell Tweini (Figure 18) (Bretschneider and Lerberghe, 2008b: 33, 38, fig. 3.39); incised on an altar at Tell Akko (Artzy, 2006: 50), and carved into rocks on the Carmel Mount Ridge surrounding of Tell Nami (Artzy, 1994: 138). These depictions show that Levantine coastal settlements were engaged as harbors in sea-oriented activities.

Stone anchors are another class of artifacts referring to boats. However, Middle and Late Bronze anchors are mainly known from cultic contexts as votive objects from Ugarit and its harbor Minet el Beidha, Cyprus (Kition and Hala Sultan Tekke), and Crete (Malia, Kommos) (Wachsmann, 1998: 259, 273, 279; Ward and Zazzaro, 2010: 40). Sea activity was thus well integrated into the lifestyle of the harbor settlement.

3.2.5 Marine Industries

Crushed murex shell is an archaeological evidence for dye industry[32]. The industry required experts and the proximity of the sea (Ruscillo, 2005: 100, 102-

[31] A notable example which is known from the tomb of Kenamon at Thebes (14th century BC) shows that Syrian ships approached an Egyptian river harbor and porters carried loads like finds from the Uluburun (Bass, 1986: 293; Pulak, 1998: 214-215; Höckmann, 2006: 314, fig.2.1).

[32] The earliest purpled-dye industry may be derived from the Aegean; especially Crete (MBA), according to *Murex* shells from Kommos (Ruscillo, 2005:101).

104). By the LBA, it was exploited throughout the Levantine harbor settlements (such as Minet el-Beidha[33], Tell Akko and Tell Abu Hawam) and Cilicia (Kinet Höyük) (Gates, 1999a: 263; 1999b: 308; Artzy, 2006: 55; Reese, 2010: 120-121, 124). The Uluburun boat[34] also carried thousands of *Murex opercula*, as raw material for the manufacture of incense, which could have been defined as another by-product of the *Murex* dye industry (Pulak, 2006: 74-75).

3.3 Architectural Features Specific to Harbors

Harbor settlements combined different traditions through external interaction. In the MB and LBA, they participated fully in the urban development of the eastern Mediterranean region (Raban, 1985: 14; 1995: 143). In a general schema, architectural spaces and elements in these harbor settlements were coordinated with the requirements of the site. Building complexes include storerooms, living spaces, workspaces, and a system to supply water. Like the inland settlements, they were protected by ramparts and fortification walls which were strengthened by towers and city gates.

The one architectural structure specific to the harbors is the warehouse, which could store goods in containers (ceramics or sacks) for public or commercial purpose, whether for local consumption or waiting for transshipping (Sauvage, 2007: 621-623). Such a warehouse is well illustrated in the LBA seaport of Ugarit at Minet el-Beidha (Figure 11). It is possible that the warehouse consisted of more than one room, and was arranged as a long building (Sauvage, 2007: 619-620). Rooms in the

[33] Ugaritic texts refer to "blue purple wool" and "red blue purple wool" which were shipped from Ugarit (Heltzer, 1999: 446-447).
[34] It is not known that some "Canaanite" jars from the wreck include some residues of blue, red textile were dyed with the *Murex* dye (Barber (1991: 230-233), as cited in Pulak (2006: 84).

warehouses must have been arranged according to the goods for which they were designed. For instance, Sauvage stated that the dimension of a room of the warehouse, which when excavated contained 80 two-handled jars, could be ca. 3.20 m x 4 m (Sauvage, 2007:619-620)[35]. Clearer examples for warehouses are known from other sites such as in Crete at Knossos, Malia and Mochlos and at Kalavassos Ayios on Cyprus (Sauvage, 2007: 621). Warehouses in these sites indicate that a warehouse consisted of more than one adjacent gallery, to form a long building (Sauvage, 2007: 621). It is likely that buildings intended as warehouses were built along the riversides (Blackmann, 1982: 92) as installations to store goods at river harbors.

Another specific architectural structure is the shipshed, whose function is to store ships (Shaw, 2006: 124). Kommos, a seaport town in south Crete, had a similar LB construction with six adjacent galleries (Figure 19) (Shaw, 2006: 124). The structure, whose one room was ca. 5.60 m. wide (Shaw, 2006: 124; Sauvage, 2007: 621), was identified by Shaw as a shipshed rather than a warehouse for goods, since its open side faced to the sea (Shaw, 1990: 426-427; 2006:124-125). The shipshed functioned to protect boats from natural threat (strong winds and waves) particularly in winter seasons (Shaw, 2006: 39). The shipshed or a building with similar function is not yet known from other sea ports[36] or river harbors.

[35] The dimension can give at least, an idea to illustrate a storeroom capacity in LB harbors. If a room in this size could include 80 jars (Canaanite jars were not small), a warehouse with more than one room could have housed a considerable amount of goods and thus, a warehouse could define a main building for harbor settlements (Sauvage, 2007: 619-620).

[36] A textual reference from Ugarit mentions that ships were stored "at royal stores" (Heltzer, 1999: 432).

CHAPTER 4

THE IMPORTANCE OF RIVERS AND RIVER TRANSPORT

The importance of the river for the theme of this thesis is derived from the relationship between people and rivers. First of all, rivers provide a water source and fertile and flat lands for human livelihood. Therefore, the location of the river could define a pattern for the distribution of its settlements. Second, rivers offer inland routes, especially towards the highlands, for the movement of people and transport of goods. Thirdly, people modify river beds to build systems for water supply and maintenance such as irrigation channels and dams, especially in drier areas (Wilkinson, 2003: 45). Finally, and relevant for this thesis, rivers define a pattern for the distribution of harbor settlements in the second millennium BC, since people used estuaries as harbors by modifying them to some extent (Raban, 1985; 1991).

According to geomorphological studies in deltas, and to ancient authors, it is likely that estuarine areas presented more appropriate circumstances for river harbor and transport in the second millennium BC than in later times. Aegean coastal changes of the fifth century BC were recorded by ancient authors (Horden and Purcell, 2000: 313-314). The Cilician case was recorded by Strabo who noted rapid

progradation in the delta of the river Pyramus (the ancient Ceyhan) so that he thought the Cilician coast would rapidly unite with Cyprus (Horden and Purcell, 2000: 314). The depth of the water in the second millennium BC could enable boats to access the river harbors by less effort than in later times[37] (Semple, 1971: 106-107).

4.1 River Transport

In Cilicia and Amuq regions, the coastline was encircled by mountains which obstruct overland transport, since the contact between the interior and the coast requires passing over mountains. It seems that only rivers provided suitable transport (Raban, 1991: 131). Plying between inland and coast by boat shortens the method of transport and prevents excessive waste of man and animal power. What advantage did river transport offer? A single small river boat can carry an average load of one ton, which is equal to the load carried by 15 mules on flat land. It can be said that the boat was the essential tool to carry more goods safely. It is likely that Cilician coastal communities, who established overseas contact with Cyprus by boat from about 8000 BC (Ammerman, 2011: 33-34), and communities in the west of the Amuq plain[38], who used Anatolian obsidian sources for stone tools from Neolithic/ Early Chalcolithic times (Pamir, 2005: 70) could provide the river transport to the interior. In the second millennium BC, river harbors, whether they were river-sea harbors or inland river harbors could be used for the trans-shipping of goods, which were

[37] River depositions in the estuaries became an important problem for harbors on river mouths because silting reduced the water depth at river mouths; the harbor of Ephesos on the mouth of the Cayster Meander river, suffered from silting and ships did not reach the harbor because it had become too shallow in the first millennium BC like other Mediterranean river harbors (Semple, 1971: 107).

[38] The Amanus ranges between Cilicia and the west of the Amuq plain, which were inaccessible because of vegetation and straight lying mountain to the coast, allow considering boat traffic between the two regions as their only link (Rowton, 1967: 269; Boardman, 2002: 329).

delivered by seagoing vessels, to the interior (Blue, 1997: 38). The location of the 2nd millennium occupations near riverbanks would indicate a predictable possibility of an inland transport provided by rivers. In this framework, it is possible that the MBA and LBA coastal settlements like Tarsus, Kinet Höyük and Sabuniye could have enabled their regions to participate in the 2nd millennium BC network through their river-sea harbors. Cargo delivered to the coastal harbors could have been transferred to a river transport network inland by river boats. It can be inferred that some sites on the middle course of the Ceyhan could act as inland harbors like Sirkeli. Other LBA settlements north of Sirkeli were situated alongside the river bank such as Mercin, Küçük Mantık, Yarım Höyük[39]; these inland sites must have been reached by river transport (Map 3) (Taffet, 2001: 132). The river must have been exploited to connect with settlements on both riverbanks and to access the coast (Taffet, 2001: 132). Goods arriving from overseas to the mouth of the Ceyhan river were then transported along the river to inland harbors like Misis and from there, to Sirkeli, Mercin and even Tatarlı Höyük[40]; or from Misis to Küçük Mantık to Yarım Höyük and vice versa in the northeastern plain (Taffet, 2001: 132). Similar distribution was observed along the Göksu valley (Map 2). Yakar (2000: 367) noted that the region's nomadic population could assist in transporting goods in their seasonal cycle by land route; and they could provide the timber from the Taurus Mountains. In the same vein, cargo might have been transported on the river Göksu toward the interior by river boats. Goods would have been shipped from Cyprus by boat to Silifke where the mouth of the river acted as harbor (Ura?). The goods would have been transferred by

[39] Hittite occupation at these mounds was determined by Seton-Williams (1954: 122, fig. 1,163, 172).
[40] The site, which is situated 50 km east of Ceyhan district and 20 km north of the Iskenderun Bay, had an administrative character during the millennium; a Hittite bulla and seals in Mitannian influence were found at Tatarlı Höyük (Girginer, 2010: 76-77, 80, 83-84).

river boats from there near Kilise Tepe, then by boat until the impassable Çoğla canyon. Transport then depended on the land route for two km until the valley widened again and goods reached around the modern town of Bucakkışla in Karaman by river (In fact, the route was suggested as pathway in Newhard et al., 2008). Otherwise, goods from overseas could not be carried inland by a safe route.

4.2 River Boats

In order to understand river transport for this period, the available information about river boats should be examined. It is known that rivers were used for transport of goods and people from early Holocene in various parts of the world (Anderson, 2010: 6). To exploit river transport, the forms of small boats were adapted for this purpose such as log boats[41], rafts, reef boats and skin boats (McGrail, 2010: 99-100). Mesopotamia, Egypt, Europe, and the western Mediterranean provide clear evidence about river boats from prehistoric and Roman times. Unfortunately, there is no physical evidence to suggest a Bronze Age river craft for rivers in Cilicia and Amuq.

It is difficult to give a certain dimension of river boats since the size of the boats was associated with the extent and depth of the rivers as well as the environment of the rivers. Long navigable rivers made it possible to use large boats: on the Nile, various kinds of boats such as sailing and planked boats are attested already in the third millennium BC (McGrail, 2010: 101-102). However, small boats and rafts were appropriate for small rivers, which were suitable for inland transport like in the Norwegian river system (Nymoen, 2008: 7).

[41] Logboats was produced by hollowing a log (McGrail, 2010: 99).

It is important that various boats could be used in different types of rivers and a generalization will not be useful. However, according to available data, two features could be required for river craft to provide efficient transport on rivers: propulsion and stability with loads. A pole could be adapted to a river boats for punting or sailing propulsion. The stability of a cargo boat and its carrying capacities would be considered more important than its velocity or movement speed (Pomey, 2011: 30).

The choice of the propulsion technique depended on the river environment as well as prevailing winds. The Nile's flow direction (north) and prevailing wind direction (south) allowed the use of sails (Johnstone, 1988: 76). However, river boats could not sail upstream in Mesopotamian rivers, which flow south, unless the direction of the wind shifted south (Johnstone, 1988: 77). Towing or hauling propulsion by animal and man power was therefore used for upstream travel (Figure 20) (Johnstone, 1988: 77; Margueron 2004: 77-78). Another possibility is that unsuitable circumstances of the river environment such as waterfalls, shallow water toward upstream, inconvenient direction of the prevailing wind, border or division of river courses and desert were bypassed on land roads with donkey or mules (Johnstone, 1988: 77). In this respect, watercrafts would have not been abandoned at a riverside, since they were made from valuable material like timbers which are not found in all regions. River crafts could have been manufactured to adapt to such conditions. It is likely that boats and ships could be built so as to be disassembled and to reuse the materials. Ward (2006) suggests such practices to pass the desert between the Nile and the Red Sea as early as predynastic times. Remains of Egyptian boats and ships indicate that they were designed with unlocked mortise-and-tenon

joints[42], in contrast to the sea-going Uluburun boat (Figure 21) (Ward, 2006: 124). The reason for this technical system is interpreted by Ward (2006: 124, 126) so that the hull of the ships and boats could be dismantled with ease by unlocking joints and thus, boats were carried overland in pieces. Thus these disassembled planks, which were often imported timbers (cedar), could be reused. LBA Ship remains from the excavation of Mersa/Wadi Gawasis, which was a Middle and New Kingdom sea port with man-made caves on the Egyptian Red Sea coast, reinforces Ward's theory (Bard and Fattovich, 2010).

Rivers offered more safety conditions for transport than sea conveyance. Sea waves and wind conditions pose serious threat to sea crafts which could suffer from tension on their hulls when overloaded (Monroe, 2007: 4). River crafts in the Nile river enabled the transport of greater loads, especially timber from the Levant, without these risks (Marcus, 2007: 153-154). In order to move larger loads, the hauling propulsion was adapted to river craft and built river barges or lighters, that were used starting from the 3rd millennium BC in Egypt and in Mesopotamia (Monroe, 2007: 4-6). Stability was achieved for river craft in the Nile by using woodworkers' techniques (mortise-and-tenon joints and traverse lashing) and the boats were modified into seagoing ships by small changes to reinforcing planking links (Polzer, 2011: 353-354, 359-360). By achieving stability, Nilotic crafts could carry hefty stone blocks, long timbers and other heavy loads whether they were sailing or not (Monroe, 2007: 4-5). As an illustration of riverine transport in Egypt, the barge of the Queen Hat-shepsut (ca. 1470 BC) from the New Kingdom was at

[42] "Mortise-and-tenon: A union of planks or timbers by which a projecting piece (tenon) was fitted into one or more cavities (mortises) of corresponding size." (Steffy, 2011: 1137).

minimum 60 m. long, and could transport tons (a couple of obelisks weighed about 600-700 tons) (Monroe, 2007: 4). A barge of this dimension could have been made by lashing several hulls of boats together and might have been hauled by other small boats (Höckmann, 2006: 318). Because the river offered less risk, boats designed for river transport could be made in large sizes.

However, the size of Nile boats was exceptional. The size of Bronze Age boats and ships varied from 10 m. to 20 m. and their carrying capacities reached maximum 20 tons, according to shipwreck records and textual analyses (Monroe, 2007: 2, 6, 9, 15). The Uluburun ship (16 m. long, with a capacity of ca. 20 tons) was large enough to be considered "one big ship" sufficient for transport of LBA grain demand, which was ca. 7.7 tons,[43] as a single cargo (Monroe, 2007: 3, 7, 9). A letter from Ugarit which is analyzed by Monroe (2007) describes the situation:

> Now, the people from Ura have requested food from His Majesty (and) His Majesty has assigned to them two thousand (measures of) barley from Mukish. And you, give them one big ship and (its) sailors in order to transport this barley to their country; they will bring (it) in one or two turns. You must not deny them the ship! . . . (It is a matter of) life and death! (Hoftijzer and Van Soldt (1998: 341), quoted in Monroe (2007: 3).

Moreover, a flat-bottomed vessel could be an advantage for a boat used for river transport in terms of stability. In Mesopotamian and Egyptian depictions, flat-bottomed boats were used for river transport from the third millennium BC (Stieglitz, 1984: 134-135**).** In MBA Anatolia, terracotta models of boats from Kültepe in central Anatolia were also made in the form of small flat-bottomed boats (Figure 22)

[43] According to Monroe's analysis (2007: 8), the liquid unit of the *sutu* which is most suitable unit for the unspecified grain measure mentioned in the Hittite text is within the range from 6 to 12 liters; *2000 sutu* is equivalent to 14.000 liters and 7.7 tons and the Uluburun could be loaded about 20 tons and the ship's capacity eligible for definition as a big ship.

(Özgüç, 2005: 185-192, fig. 219-224). These terracotta models must be representative of river boats were used in Anatolian rivers. Such a boat cannot be fast, but a flat bottomed boat is more efficient in rivers. It allows a boat to float even in shallow waters, since the flat bottom makes good contact on water and the bottom hardly penetrates the water. It also increases the carrying capacity of the boat by expanding volume space.

Furthermore, having a light weight also facilitates carrying and hauling it upstream, prevents the bottom of the boat from rubbing stones in shallow waters, and enhances the load capacity (Nymoen, 2008: 12, 14).

According to Nymoen (2008: 3), in the first millennium BC, logboats were used as "inland boats", which means river boats, in Norwegian rivers and lakes. The dimension of a logboat varied from 3m. to 5 m. long and 55- 60 cm wide (Nymoen, 2008: 7; McGrail, 2010: 99). The form of the boat can be defined as bow-shaped, like the Roman barges or lighters with rounded hull to bow and stern and flat bottom, which were used for river transport (Johnstone, 1988: 158; Nymoen, 2008: 6). This type of boat was easily dragged down to the water and had a pole, whose top is wrapped with a rope, for hauling it upstream by people or animals (Johnstone, 1988: 157-158). In case of suitable wind and weather conditions, a sail was used to navigate the rivers as well as travel inshore.

In addition, skin-float rafts were also a suitable type to travel downstream on fast-flowing rivers such as the Tigris and Euphrates (Johnstone, 1988: 30, 37). According to Assyrian representations and historical sources, the skin-float rafts were used for downstream navigation in Mesopotamia for timber transport (Linder, 1986: 273, 277). The use of this type of boat continued for the same purpose on these

rivers (Tigris and Euphrates) in the Ottoman Empire and even they were observed in the Ceyhan river in the nineteenth century AD.[44]

In this century, sailing ships were seen in the Seyhan and Ceyhan rivers by travelers. Sailings and a rowing boat on the Seyhan were depicted by a traveler, Langlois (Girginer, 2000: 81; Yıldırım, 2010: 14). Sailing boats could have approached Taşköprü (stone bridge) near Tepebağ Höyük[45], Adana (Figure 23) (Girginer, 2000: 81; Yıldırım, 2010: 14). Pamir (2002: 295; 2005: 69) stated that river boats were used in the Asi for transport and to sail up to Sabuniye in the twentieth century AD. They are good candidates for harbor settlements in the MB and LBA, and their navigability in the recent past reinforces the idea of using of river boats in these regions over a long span of time.

According to all information, it is likely that river boats could be used in these regions from much earlier (pre-classical) periods when rivers and streams in these regions were more navigable, before the rapid alluviation in the first half of the first millennium BC. Besides, the local evidence from the 19th century AD indicated that rivers in these regions maintained navigability[46]. If the Uluburun wreck is taken as the index of a large ship size in the Bronze Age, a small-sized boat or ship would be more appropriate for river boats or barges elsewhere than on the Nile. In addition, such a river boat or a smaller ship might be produced inexpensively in a short time,

[44] (http://www.sites.google.com/site/tekyeli/kelek).
[45] Tepebağ Höyük (ancient ^{uru}Adaniia) is situated beneath the city center of Adana (Girginer, 2000: 81). The mound, which is situated west of the Seyhan river, would be a Cilician harbor settlement according to coast line of the second millennium BC (Girginer, 2000: 78, 81). The nurse-Sat Sneferu statute of the Middle Kingdom funerary context was found at Tepebağ Höyük, whether Egyptian objects (*aegyptiaca*) made in Egypt or objects Egyptian inspired were locally produced during the second millennium BC or not (De Vos, 2002: 46, 48, 55; Girginer, 2000: 82). A silver Hittite pendant was also recovered from a metal hoard in Amarna, Egypt (M. Bell, 1986).
[46] The river Asi, which is the most navigable, varies in the depth of its mouth from 0.9 to 1.8 m (Pamir, 2005: 69).

and could be plied in shallow water and estuaries in Cilicia and the Amuq, whether the boats were sailed or rowed (Dinçol et al., 2000: 9; Monroe, 2007: 15).

Additionally, the existence of raw material for boat-building could also indirectly reinforce the idea of using river boats in these regions. The moderate and humid climatic conditions of the second millennium BC increased the density of woodland in the Taurus and Amanos Mountains (Yakar, 2000: 17). Cedar,[47] which was local to these mountains, was preferred in ship-building[48] because of its workability and robustness like other types of long and wide trees (Mikesell, 1969: 13; Horden and Purcell, 2000: 336). Cedarwood[49] would be used for river boats in Cilicia and the Amuq to transport goods to the interior and perhaps from it. Absence of direct physical evidence does not mean that rivers in these regions did not provide river transport by boat, especially bearing in mind the impassable mountain ranges. However, archaeological evidence can only be determined through more studies in these regions.

Another issue is how goods were safely transported by river boats. It is very likely that the information and experiences of both maritime and land transport should be combined here, since both water and land routes must have been used.

Packing and unloading of goods are the backbone of transport. According to the available information mentioned above, liquids and breakable goods could have

[47] *Cedrus libani* (Cedar-of-Lebanon) grows in the Taurus and Amanos mountains and its subspecies *stenocoma* (hardy cedar-of -Lebanon) which is between the *Cedrus libani* and the atlas cedar grows in Cilician Bolkar mountains in the Taurus mountains range (Aiello and Dosmann, 2007: 26, 28).

[48] Textual references (from Ugarit) indicate that "shipbuilding" was a "collective work" maintained in "shipyards" by shipwrights and "woodcutters" with special equipment like "masts", "hammers" (Heltzer, 1999: 432, 449-450; Vita, 1999: 488-489) in a northern Levantine harbor for the 2nd millennium BC.

[49] In the Egyptian Middle Kingdom, cedar wood was transported by ships from the Levantine coastal sites according to textual references (Marcus, 2007: 153-154).

been packaged in fragile storage vessels (jars, amphorae and pithoi) at harbor installations where this demanding process could have been done at both the departure and arriving harbours (Frost, 1995: 2). Transport of the goods by river boats required at least the same care, since goods could have changed hands repeatedly during transfers or distributions. In order to use a type of vessel as container, it required special features. The packing had to prevent water and land-based risks. Their survival during the voyage depended on good packing. The vessel also needed to be rendered impermeable to prevent especially organic goods from exposure to external factors like sunshine and moisture (Marcus, 2002: 410). It is also critical that the storage vessel should be in a shape that can be held and carried with ease, with handles to facilitate the transfer (Marcus, 2002: 410).

As stated by Monroe (2007: 7, 9), liquid units might have been used even for grain rather than sacks, as an adaptation of land-based units to sea-oriented units. It is very plausible when the humid condition of waterborne transport and the length of the voyage are considered, since the moisture was not good for healthy storage of cereals, a highly valuable good for the Hittites. In other words, pottery containers were appropriate even for dry goods and goods that were not fragile.

The containers were therefore produced in a standard size and form to serve as capacity units and as indicators for their contents (Marcus, 2002: 410); containers (mostly amphorae) from the Uluburun ship each contain 6.7 liters (Monroe, 2007: 8). In addition, Marcus (2007: 150) indicated that volumetric studies of ceramics were also studied on Levantine MBA containers which were found in Levantine and Egyptian regions. According to these studies, Levantine containers could carry 10 to 30 liters; jugs contain 4.7 and 5.3 liters (Marcus, 2007: 150). Standardization of

containers also could determine a boat's regular load capacity (Marcus, 2002: 410). The size of the containers might also have been adapted to the range of river boats, or they could have been transferred to more than one vessel for inland distribution.

CHAPTER 5

THE ARCHAEOLOGY OF REGIONAL HARBORS

In this chapter, harbor settlements of the 2nd millennium BC will be considered site by site, beginning with the sites in west Cilicia, proceeding east and southeast to the Amuq and northern Syria, under the same administrative area as Cilicia and the Amuq in the LBA and a gauge for harbor settlements. This chapter will discuss archaeological finds as well as geographical settings of the sites, which are multi-periods mounds discovered during excavations and surveys in these plains.

5.1 Western Cilicia/Rough Cilicia

5.1.1 Kilise Tepe

Kilise Tepe is about 55 km north-west of Silifke on the east side of the lower Göksu valley (Baker et al., 1995: 148; Symington, 2001: 167). Kilise Tepe[50] is the only excavated pre-classical site in Rough Cilicia. After an initial survey, it was excavated by J. N. Postgate from 1994-2012 (Postgate, 2007a: 3, 5).

[50] The mound was surveyed by J. Mellaart (1950s) and D. French (1965) under the name of Maltepe, which is a different and neighboring site of Kilise Tepe (Symington, 2001: 167; Postgate, 2007a: 3), dated by pottery of the 2nd millennium BC (Baker et al., 1995: 142-143).

Kilise Tepe overlooked the river Göksu, and controlled an overland route which linked the Cilician south coast with central Anatolia, where the river valley crossed the Taurus Mountains (Baker et al., 1995: 139; Newhard et al., 2008: 87). The mound is located above the east bank of the river or its tributary the Kurtsuyu (Symington, 2001: 167; Postgate, 2007b: 10). The rivers could offer a well-protected river port at their confluence. Mounds[51] in the neighborhood which gave some evidence about their Bronze Age occupations are located on the western bank of the river (French, 1965: 180-181). It seems that Çingen Tepe, ca. 2 km from Kilise Tepe, could be a river harbor town for the mound. It is known that a ferry was used by present inhabitants to cross the river and its tributaries between Kilise Tepe's neighboring villages Gülnar and Mut (Postgate, 2007b: 10).

Many fragments of RLWMW[52] were found at Kilise Tepe from the LBA settlement contexts (Hansen and Postgate, 1999: 113; Symington, 2001: 169; Knappett et al., 2005: 29). A widespread opinion suggests that the origin of the ware in Cilicia and central Anatolia is northern Cyprus (Eriksson, 1991: 81, 93; Schubert and Kozal, 2007: 175). In that case, the ceramic assemblage can show a possible interaction among Cyprus, the Göksu valley and the interior (Hittite heartland) by boats (Baker et al., 1995: 182). One type from this assemblage could act as evidence for this transport. The "arm-shaped" vessel is one of the shapes of RLWMW [53] found

[51] These are At Tepe or Artepe located west of Mut, and Ören Tepe near Mut (Baker et al., 1995:142).
[52] Red Lustrous Wheel Made Ware, which is a red fabric, immensely lustrous and wheel-made, appeared between the 16th and the 12th centuries BC and was distributed in Cyprus proper, Egypt, the Levant, Cilicia and central Anatolia (Knappett et al., 2005: 26-27). The homeland of the pottery is a topic of discussion (see Eriksson, 1991; Knappett et al., 2005; and Schubert and Kozal, 2007).
[53] The main shapes or types of RLWMW are the spindle bottle, lentoid or pilgrim flask, the arm shaped vessel, and bowls (Figure 24) (Symington, 2001: 169; Knappett et al., 2005: 27).

at Boğazköy[54] proper and other Hittite sites in the Anatolian plateau as well as Kilise Tepe.[55] Residue analyses of RLWMW support that these vessels contained a kind of plant oil and beeswax or wax remains, which would have been used to preserve contents (Knappett et al., 2005: 40, 49). These residues were traced in examples from Boğazköy, indicating that this ware could serve for storing or transport (Knappett et al., 2005: 40, 49). The analysis supports the hypothesis that RLWMW vessels arrived in central Anatolia after long travel, such as from Cyprus to the Hittite heartland via the Göksu valley and Kilise Tepe (Knappett et al., 2005: 49). They may have been shipped by river boats under favorable conditions, at least for a certain part of the route (mentioned in Chapter 4).

According to historical sources, Ura[56], which was an active harbor town of the Hittite Empire, could be located near Silifke where the Göksu river flowed into the sea, and its estuary could have been used as a harbor (Baker et al., 1995: 146; Hawkins, (1995:56) as cited in Kozal (2003: 70); Postgate, 2007c: 16; Buchholz, (1999: 51, fig. 15) as cited in Soles (2005: 437). It is possible that Ura was the seaport of Kilise Tepe. Textual references indicate that a large quantity of grain was supplied from Egypt and the Levant "to Ugarit and Mukish" from where it was then shipped "to Ura" in order to reach central Anatolia (Singer, 1999: 715-718). It can be said that ships or a ship laden with grain either was unloaded in the port of Ura or

[54] Huge amounts of RLWM sherds were found in the ponds of Boğazköy, dated to ca. 1400 BC (Schubert and Kozal, 2007: 170).

[55] The origin of the group from Kilise Tepe is not properly determined (Symington, 2001: 170). However, recent scientific analyses of examples from central Anatolia and Cyprus suggest that could have been produced from the same source (Knappett et al., 2005: 48; Schubert and Kozal, 2007: 169, 175). Specific types or forms indicate that the group could be imports from northern Cyprus (Knappett et al., 2005: 48; Schubert and Kozal, 2007: 169, 175).

[56] Ura as a harbor appeared on written sources of Ugarit in the 13th century BC and its location is debated by scholars who recommended a rarity of places: Corycus in the land of Olba; the whole territory and its harbor Corycus/Korykos north of Silifke; the port of Ayaş east of Silifke; the port of Gilindere/Kelenderis near Aydıncık west of Silifke (Beal, 1992; Dinçol et al., 2000:14-15).

was transshipped to river boats on the Göksu. In addition to grain other bulk goods, like ceramics, reached Central Anatolia via Ura.

5.2 Cilician Plain/Smooth Cilicia

5.2.1 Soli Höyük

Soli Höyük which is situated around 11 km. west of the city of Mersin is today ca. 100 m inland from the sea (Yağcı, 2003: 93; 2011: 8). Soli Höyük has been excavated since 1999 under the directorship of R. Yağcı (Yağcı, 2001: 159). The mound stands in the area of ancient Pompeiopolis and its Roman harbor[57]. Until now, excavations reached the MB/LBA or "Hittite layers" as the earliest level of the mound, which is then occupied until Byzantine times without interruption (Yağcı and Kaya, 2009: 466).

Its geographical setting shows that the mound must have been a harbor town from the 2nd millennium BC onwards. Soli was a coastal settlement and was located ca. 500 m west of the Liparis (Mezitli) river which could have flowed nearer the mound in the Bronze Age (Yağcı, 2011: 11). It is likely that Soli used a natural bay as a harbor as well as the river mouth (Taffet, 2001: 132).

In the second half of the LBA, the overseas interaction of Soli increased, according to Late Bronze Cypriot pottery and (possibly Cypriot) RLWMW, which could be related to the site's nature as a harbor (Yağcı, 2003: 93-95; 2004:51; 2007: 178; Yağcı and Kaya, 2010: 335). Mycenaean sherds (Late Helladic IIIC) at Soli

[57] The study of the harbor has been continued as a part of ROMACONS project and an underwater survey has been conducted by H. Özdaş (Yağcı, 2010: 110; 2011: 10-11).

(Yağcı, 2003: 96), were associated with fragments of Mycenaean pottery at Tarsus and Kazanlı (Sherratt and Crouwel, 1987: 329, 335). Similar decoration on these sherds (especially spiral motifs) could show that Mycenaean pottery at Tarsus, Kazanlı and Soli were produced in the same workshop (Yağcı, 2003: 96).

As a final point, Yağcı (2001: 161-162; 2011:8) mentioned that Soli must have been a major harbor town and entrepot for trade goods. It could correspond well with Hittite textual references about Ura, which must have been located near Soli Höyük (Yağcı, 2001: 161-162). It is obvious that Soli engaged an overseas interaction from at least LBA, and developed its role even further during the first millennium BC.

5.2.2 Mersin-Yumuktepe Höyük

Yumuktepe is today situated ca. 3.5 km from the sea, about 12 km east of Soli Höyük (Garstang, 1953: 1; Yağcı, 2001: 162), and ca. 30 km west of Tarsus-Gözlükule (Garstang, 1953: 1). Yumuktepe was first excavated by J. Garstang (1936-1939 and 1947-1948). The new excavation has been conducted by V. Sevin and I. Caneva since 1993 (Sevin and Caneva, 1995: 27). The mound, which covers an area of ca. 5 ha (Jean, 2006: 311), has a very long history of occupation (Garstang, 1953: 3; Sevin et al., 1997: 30, 32; Jean, 2006: 323).

Yumuktepe is located near the Soğuk Su (Efrenk or Müftü) river, which today flows just west of the mound, but in antiquity flowed ca. 100 m east of the mound until the shifting of its course, after Byzantine occupation (Caneva and Köroğlu, 2004: 492-493; 2010: 347-348; Caneva and Marcolongo, 2004: 26; Sevin, 2004: 15-16). The river would have been exploited to reach the sea, and into the interior by

river boats. In addition, the river could have permitted access to possible harbor installations on the coast (Taffet, 2001: 131).

A metal industry in Yumuktepe produced metal artifacts from the Chalcolithic period onwards (Caneva, 2004: 72), and local ores in the Taurus Mountains were exploited, at least, from EBA (Kuruçaylı and Özbal, 2005: 181, 183). Finds from the MB/LBA layers, such as bronze knives, daggers, needles, bracelets, earrings (Garstang, 1953: 215-216; Caneva et. al, 2005: 206; Caneva and Köroğlu, 2008: 382) point to the presence of metal workshops in houses.

RLWMW was found from settlement contexts of the second half of the 2nd millennium (Jean, 2006: 317; Caneva and Köroğlu, 2010: 345). Late Cypriot pottery also signified the presence of the possible interaction of Yumuktepe with overseas at least during the later LBA (13th century BC) (Kozal, 2005: 136-137; Jean, 2006: 317, 322, 329).

5.2.3 Tarsus-Gözlükule Höyük

The mound of Gözlükule is situated on the western bank of Tarsus/Berdan river south of the modern town of Tarsus (Özyar, 2005: 1; Özyar et al., 2005: 48). The first excavation of the site was conducted by H. Goldman (1934-1939; 1974-1949). An interdisciplinary project has been directed there by A. Özyar since 2001.

The naming of the site[58] under different cultures expresses its exceptional continuity (Özyar, 2005: 1). The site might have acquired its port character and transport of raw materials between regions in the Neolithic Period with Cyprus due

[58] Tarsa in LBA; Tarshish was used in the Old Testament; Tarsos in Classical times; Tarsus in present day (Özyar, 2005: 1).

to obsidian sources in the Anatolian plateau as well as north Syria and the Levant (Özyar, 2005: 3). It maintained this character until the end of the occupation on the mound. After the mid-second millennium BC (LBA), Gözlükule came under Hittite influence (Goldman, 1956: 349-350; Özyar, 2005: 4), like other Cilician sites (discussed in Chapter 6).

The geographical setting of the site made Tarsus a gateway between the sea and the interior because of its location on the river bank and just south of the Cilician Gates (Özyar, 2005: 1), which link the Anatolian plateau with Cilicia and its coasts. The river, which flowed formerly along the east of the mound until Byzantine times when the river course was changed, could support Tarsus, 15 km from the sea (Blue, 1997: 39-40; Özyar et al., 2005: 48). Tarsus could have reached the sea and the interior for transport of goods and extracted metals as well by the river (Blue, 1997: 38; Özyar, 2005: 1; Ünlü, 2005: 145). Otherwise, the connection with the interior was difficult when transport of goods was based on the single overland route.

The local metal sources[59] and abundant metal finds certainly demonstrate a developed metal industry in Tarsus from at least the third millennium BC until the Classical period (Kuruçaylı and Özbal, 2005: 179). Deposits of metal tools, slags, and molds from the LBA levels (Goldman, 1956: 45, 50) suggest a developed metallurgy of Tarsus via its metal workshops as well as its mining.

Cypriot vessels of the 2nd millennium BC in Tarsus have parallels with those found at Kinet Höyük, Mersin-Yumuktepe and Soli Höyük in the second half of the

[59] Metal sources or ore (tin, gold and silver) was obtained from the Bolkar and Aladağ ranges in the Taurus (Kuruçaylı and Özbal, 2005: 179, 183-184; Özyar, 2005: 1).

LBA, when the relationship between Cilicia and Cyprus became more developed (Kozal, 2005: 136-137).

Large amounts of Mycenaean pottery (type of Late Helladic IIIC pottery) (Sherratt and Crouwel, 1987: 337, 345; Mee, 1998: 145), from the end of the LBA or the EIA level of Tarsus (Jean, 2003: 86), indicate that Tarsus came into contact with the Greek mainland, the Aegean, the Levantine coast and Cyprus, whether the pottery assemblages were imported or not, since there are some parallels with all these regions, especially in terms of decoration (Mountjoy, 2005: 85-86).

Archaeological materials suggest that Tarsus has overseas interaction from its foundation time. According to Blue (PhD diss. Appendix I: Part II: 24?), Kazanlı could be a candidate for Tarsus's seaport during the second millennium BC. In addition, the Tarsus river flowed southeast of the swamp, therefore the mouth of the river could have acted as a river harbor in that time (Taffet, 2001: 132). It seems that Tarsus had two harbors in this millennium, one of them, likely the river port to transport goods and people between the mound and the sea.

5.2.4 Kazanlı

Kazanlı which is situated near Cilicia's coastline (Seton-Williams, 1954: 160) is east of Mersin-Yumuktepe and southwest of Tarsus-Gözlükule. The site is closer to the sea (ca. 2 km) than these two mounds. The site was surveyed by E. Gjerstad, who also dug soundings here (1930); and by Seton-Williams (1951) (Sherratt and Crouwel, 1987: 325; Seton-Williams, 1954: 160). The occupation of the site began from the end of EBA and continued to EIA according to J. Garstang's excavation (1936) (Sherratt and Crouwel, 1987: 326).

Archaeological studies on Kazanlı recorded large amounts of "Mycenaean pottery or pottery of Mycenaean type" (Sherratt and Crouwel, 1987: 325). These ceramics were dated to Late Helladic IIIA and IIIB (14^{th}-13^{th} centuries BC) and mostly LHIIIC (12^{th} centuries BC) in the LBA context (Sherratt and Crouwel, 1987: 343; Salmeri and D'Agata, 2003: 208).

There are some major reasons behind defining Kazanlı as the harbor of Tarsus in the second millennium BC, even if Yumuktepe seems closer to the site on a map than Tarsus. A first reason is derived from a "geomorphological suitability" of the southwest side of Tarsus for a seaside harbor (Blue, 1997: 40, her personal communication with G. Evans). Kazanlı is situated on the exact location and near the coast and even was on the coast in the Bronze Age. It was possible that Kazanlı had harbor installations on the shore (Taffet, 2001: 131). A second archaeological reason is that Late Mycenaean ceramics from Kazanlı (especially type LHIIIC of the 12^{th} century BC) correspond to those from Tarsus in terms of surface treatment and fabric (Figure 25) (Sherratt and Crouwel, 1987: 327, 331, 337). These parallels suggest that their Mycenaean ceramics could be derived from the same workshop (Mee, 1978: 132), whether local or not. The origin of the pottery in Kazanlı is not known, but some of them must have been imported by boats whether from the East Aegean, Greek mainland or Cyprus, since decoration on sherds is associated with the Mycenaean area (Sherratt and Crouwel, 1987: 327, 332, 339-340; Salmeri and D'Agata, 2003: 208-209).

In addition, Late Mycenaean sherds were also found south of Adana or east of Tarsus at Tanaverdi and Yenice (Salmeri and D'Agata, 2003: 298-209); however, Mycenaean pottery at these two sites must have come via Tarsus and Kazanlı in

contrast to being imported directly from overseas (Salmeri and D'Agata, 2003: 210). Besides, a Middle Cypriot sherd was recorded for Kabarsa[60], which is not far to the east of Tarsus (Seton-Williams, 1954: 133, 158). The sherd could indicate that Kazanlı and Tarsus were responsible for overseas connections of inland sites like Tanaverdi and Yenice. It is likely that those imported ceramics first reached the harbor of Kazanlı, and were then transported to the city of Tarsus, and redistributed east from there.

5.2.5 Domuz Tepe

The 20 m-high mound of Domuz Tepe is located ca. 35 km southwest of Misis near Adana, and ca. 12 km from the sea (Seton-Williams, 1954: 154; Blue, 1997: 40; Yakar, 2001: 42). The site, which was also surveyed by Seton-Williams (1951) had already been briefly excavated by Goldman (Seton-Williams, 1954: 121, 124). The mound was occupied from Chalcolithic to Medieval times (Seton-Williams, 1954: 154).

The settlement of Domuz Tepe was established on the east bank of the Ceyhan river (ca. 200 m away from the river now) and overlooked the river route between Misis and the coast (Seton-Williams, 1954: 154; Yakar, 2001: 42). Domuz Tepe would have had a river harbor, since the site was closer to the estuary of the river in that time (Blue, 1997: 40-41). The height of the mound, which was established on a limestone elevation, could be related to the visibility from the sea (Yakar, 2001: 37, 42). In addition Taffet (2001: 132) mentioned that Domuz Tepe

[60] Kabarsa, dated from Early Bronze Age to Roman times, was surveyed by Seton-Williams (1951) (Seton-Williams, 1954: 158).

could have used lagoons along the Cilician shore as a sea harbor in this millennium. Finds from Domuztepe include Middle Cypriot pottery and Late Mycenaean sherds (LH IIIC) (Seton-Williams, 1954: 133, 154). These ceramics could indicate its overseas contacts if these finds were not brought from other coastal sites.

5.2.6 Sirkeli Höyük

Sirkeli Höyük is situated ca. 5 km from the town of Ceyhan which is 40 km east of Adana (Novák et al., 2009: 297). The survey of the mound was made by J. Garstang (1936-1937) and Seton-Williams (1951) (Seton-Williams, 1954: 168). Sirkeli was later excavated by B. Hrouda (1992-1996) and H. Ehringhaus (1997) (Novák et al., 2009: 298). Excavations of Sirkeli have now been carried out by M. Novák and E. Kozal since 2006 (Ahrens et al., 2010: 55). Archaeological studies on Sirkeli Höyük revealed that it established contact outside its territory with the Amuq and north Syria from the Chalcolithic period onwards (Ahrens et al., 2010: 56-57). The settlement was associated with central Anatolia from MBA, and had influence from overseas from LBA and during the Iron Age (Ahrens et al., 2010: 57, 60, 63).

Sirkeli was located on a road network which acted as a passage between the interior and the coast (Seton-Williams, 1954: 123,127; Özgen and Gates, 1993: 389; Yakar, 2001: 42). Although the site was an inland settlement, several km from the sea, the Ceyhan river which surrounds east and north of the mound (Novák et al., 2009: 305, fig. 1) could have given it access to the transport network of Cilicia's harbor settlements on the coast.

Cypriot pottery and RLWMW as well as a few Mycenaean sherds from LBA levels and the surface of the lower city (Ahrens et al., 2010: 60; Novák and Kozal,

2011: 44) emphasized the importance of the site's location, despite its being an inland site. Alongside the pottery, two "miniature ingots"[61] give parallels with Cyprus; and "a bronze scale pan" or a salver is also known from the Uluburun shipwreck (Ahrens et al., 2010: 60).

These finds could also indicate that Sirkeli was directly included in an oversea or sea-based exchange network. It is likely that Sirkeli had an inland river port via the Ceyhan river. It could be not unintended that the rock relief which depicts the Hittite king Muwatalli II was carved on the eastern side of the mound which was seen from the river, and cannot be viewed from the mound (Kozal personal communication; Taffet, 2001: 132).

Geomagnetic, geo-electrical measurements[62] and archaeological studies back up the possibility of a river harbor of Sirkeli during the Bronze Age, between the northwest side of the mound, its lower city, and south of the riverbank where a row of large stones was discovered (Novák and Kozal, 2010: 479). These stones could belong to the wall of a dock or a pier for a river harbor which was demonstrated by geo-electrical measurements (Figure 26) (Novák and Kozal, 2011: 44). Furthermore, just below the north slope of the mound, a channel, 30 m. width, and a wall east of the channel were documented (Figure 27) (Novák and Kozal, 2011: 44). The channel may be identified with an artificial channel of the Ceyhan river (Novák and Kozal, 2011: 44) to build a protected harbor for boats which could have been moored there (Figure 28).

[61] This type of miniature ingot was recorded from Cilicia, Palestine, Egypt, Cyprus, and some metal hoards of Europe (Ahrens et al., 2010: 60).
[62] In 2009, these geoscience studies were carried out by C. Hübner and B. Hemeier in the lower city of Sirkeli (Novák and Kozal, 2011: 43).

Besides, it is understood from surface ceramics that the settlement of Sirkeli extended beyond the channel thus, the settlement of Sirkeli must be larger than estimated (Novák and Kozal, 2011: 44). In addition, in 1994, B. Hrouda recorded "two smaller mounds", in the village of Burhaniye, north of Sirkeli on the opposite side of the river, one of them dated to the LB according to ceramic assemblages (Ahrens et al., 2010: 62; Novák and Kozal, 2010: 479). It is possible that this mound was connected with Sirkeli or a part of the mound (Novák and Kozal, 2010: 479; Ahrens et al., 2010: 62), and these would have been involved in the river transport as well.

5.2.7 Karahüyük/Erzin

Karahüyük is situated on the Erzin Plain which linked the Cilician plain and the Amuq (Özgen and Gates, 1993: 388, 392). The mound was firstly surveyed by Seton-Williams (1951) (Seton-Williams, 1954: 159) and then by İ. Özgen and M. -H. Gates (1991). The site, which has been deeply buried by alluviation, was occupied at least from Early Bronze to Medieval times (Özgen and Gates, 1993: 392).

In 5000 BP, a sea incursion occurred that enabled the site to be a seaside harbor (Özgen and Gates, 1993: 392). The settlement of the mound initially would have been on the shore like Kinet; however the mound is today 3.5 km inland from the sea now because of alluvium from rivers (the Erzin and Deveyurt streams which flows northern side of the mound) (Ozaner, 1993: 339, 341-342). The rivers changed the site from a sea port to a river port in its later phases.

5.2.8 Kinet Höyük

Kinet Höyük, about 30 km north of Iskenderun in Hatay, is situated on the eastern coast of the Bay of Iskenderun (Gates, 1994: 193; 1999a: 259; Beach and Luzzadder-Beach, 2008: 416). Kinet Höyük[63] was excavated by an interdisciplinary team under the directorship of M.-H. Gates, from 1992-2012.

Kinet Höyük covers an area of 3.3 ha which is the largest mound of the eastern part of the Cilicia (Gates, 1999a: 259), and matching with the size of Levantine harbor sites[64]. According to interdisciplinary studies mentioned above, Kinet had two harbors in the 2nd millennium BC where boats could approach: a bay and an estuary (Gates, 1999b: 305; 2003b: 17)

Settlement in Kinet Höyük[65] started in the Late Neolithic/Early Chalcolithic period (ca. 5300 BC) and continued until the end of the Hellenistic period (50 BC) when the river silted up (Grave et al., 2008: 1975). After a long hiatus the mound was reoccupied in the Medieval times (12th-13th centuries AD) (Gates, 1999a: 260-261).

In the third millennium BC (EBA) a metal industry, represented by a room that included deposition of bronze products, and kiln installations were recovered in the site (Gates, 2007: 687; 2009: 354). Large and tall storage jars possibly from storage rooms and Canaanite blades indicate that the mound already achieved its harbor character in this period (Gates, 2005: 164-165; 2007: 686-687).

[63] The mound was first surveyed by Seton-Williams (Seton-Williams, 1954: 161).
[64] The size of other harbor sites on the Levantine coastline varies from 3 to 8 ha (Marcus, 2007: 147).
[65] Kinet acted as a harbor town during its long history under the names: Zise or Izziya in LBA; Sissu in Iron Age; Issos in Hellenistic Age; and Hisn at-Tinat in the Middle Ages when the site transported trees down the Deli Çay according to later Medieval Arabic sources (Gates, 1999a: 260; 1999b: 303-304; 2001b: 138; Beach and Luzzadder -Beach, 2008: 418).

In MBA (ca. 2000-1500 BC), the site was protected by a fortification wall with a tower (Gates, 2007: 688-689). The period is characterized by a complex "burnt building" of which only ten rooms were excavated, but the building was much larger (Gates, 1999b: 306). The building functionally comprises mainly workshops or service rooms that linked each other (Gates, 1999b: 306). Finds from the building include large numbers of storage jars whose capacities varied from 50 to 80 liters, and contained grain and olive oil; early Canaanite transport jars; and Cypriot imported pottery from the destruction level of the building (ca. 1525 cal BC) (Gates, 1999b: 306; 2002: 60; 2006: 298; 2011a: 185-186).

The MBA building gives evidence for workshops in two rooms (Gates, 2001a: 204; 2005: 165). A hearth for smelting or resmelting activity, a metal ingot as raw material reinforces the metal industry at Kinet (Gates, 2005: 165). In addition, finds which are associated with metalworking such as copper slag, fragments of crucibles, a copper ingot, and pounders from on LBA building show an active metal industry (Gates, 2001a: 207; 2006: 299).

In LBA (15^{th}-13^{th} centuries BC), the mound expanded along the bay at the foot of the mound, probably by a commercial structure or similar installation (Gates, 2006: 295). It indicates that maritime activity developed in this period. Vessels from LBA building indicate that the place acted as a port facility since, they were produced for transport and deposition such as storage jars which included various foods and Canaanite jars (Gates, 1999b: 307; 2011a: 185). Some of the handles of Canaanite jars carry record of a commercial affiliation (see below, Chapter 6).

5.3 A Transition Zone between Cilicia and the Amuq

5.3.1 Dağılbaz Höyük

Dağılbaz Höyük is situated between the foot of the Amanos Mountains and the coastal plain of Iskenderun, ca. 5.5 km south of the sea (Lehmann et al., 2008: 172; Killebrew et al., 2009: 228). The site was discovered in 2006, during a survey conducted by M.-H. Gates, A. Killebrew and G. Lehmann in the region of Iskenderun Bay under the name of "The Mopsos Landscape Archaeology Project" (Lehmann et al., 2008: 172-173; Killebrew, 2011: 39).

The occupation of the site was determined as the LBA to MIA (Lehmann et al., 2008: 172). LBA materials include Hittite finds (see below, Chapter 6) as well as Late Helladic IIIC (12^{th} century BC) pottery (Lehmann et al., 2008: 172-173; Killebrew, 2011: 41). The geographical setting of the site is important because the mound was surrounded by water on its three sides: on the western side by the Gevrek stream and on the eastern and northern sides by the Belen river (Killebrew et al., 2009: 228). It was also situated in a transition zone between Cilicia and the Amuq. There is no evidence to disprove that the site would have had a river harbor connecting an overland transit route between Cilicia and the Amuq regions.

5.4 The Amuq Valley and the Asi Delta Plain

5.4.1 Tell Atchana/Alalakh

Tell Atchana (ancient Alalakh) which is situated in the center of the Amuq valley is today ca. 500 m east of the Asi river (Yener, 2008: 171; 2011: 75). The first

archaeological survey of Tell Atchana was made by R. J. Braidwood between 1932 and 1937 (Casana, 2009: 8). Major excavations were conducted by C. L. Woolley between 1936-1939 and 1946-1949 (Woolley, 1955: 1-2). Since 2000, the excavation of the mound has been conducted by K. A. Yener as part of an interdisciplinary "Amuq Valley Regional Project" (Yener, 2005a: 99). The mound covers ca. 20 ha and was the largest site in the Amuq valley during the MBA and LBA (Casana, 2009: 16).

Indeed, mountains enclosed three sides of the Amuq region and restricted overland transports, but at the same time the Asi river provided an opening for transport (Yener, 1998: 276; Casana, 2007:198). Geo-scientific investigations around the mound point to the possibility of an old river channel or bed of the Asi running between Tell Ta'yinat[66] and Tell Atchana (Yener, 2005a: 105). In other words, the river surrounded the mound on three sides (the south, east and north) in this millennium (Casana, 2009: 10; Yener, 2011: 75). Yener (2005a: 105) notes a possible river port and its facilities along the old river channel before its shifting toward west. Therefore, Tell Atchana as an inland site could have engaged in a sea-based exchange system via its navigable river, and could have acted as "transit station" between the delta plain and inland sites of Amuq valley (Yener, 2005b: 198).

The material culture of the site shows that Tell Atchana benefitted from influence from neighbouring inland regions (central Anatolia, north Syria, the

[66] Tell Ta'yinat is situated ca. 700 m away from Tell Atchana (Yener, 2005a: 105). Tell Ta'yinat was occupied during EBA. During MB and LBA, Tell Atchana was settled and Tell Ta'yinat was resettled by inhabitants in Tell Atchana as continuation of Hittite dynasty throughout the Iron Age probably because of shifting of the river (Casana and Wilkinson, 2005: 38 Yener, 2005a: 105, 111; 2005b: 200; Casana, 2007: 203).

Levant) as well as overseas (Cyprus, the Aegean, possibly Cilicia[67]), because of its geopolitical importance. The city reflects a cosmopolitan character in its architectural and artistic materials (Yener, 2005a: 113), as inland harbor and primary site of the region during the 2nd millennium BC.

Fragments of wall paintings in Minoan fresco technique were found in a room of the MBA palace ("palace of Yarim Lim") (Figure 29) (Woolley, 1955: 228-232). Frescoes in this style were also discovered at Tel Kabri in Israel, dated to its MBA palace (Niemeier and Niemeier, 1998: 71-78); in a massive building of Tell el-Dab'a in the Nile delta, dated to ca. 1450 BC (the late Hyksos and the early 18th dynasty) (Bietak, 1996: 76-79; Niemeier and Niemeier, 1998: 79); and in the MBA palace of Tell el–Burak in Lebanon (Sader and Kamlah, 2010: 135-137). Many scholars agreed that these frescoes were made by Aegean travelling artists or under their influence in a gift giving framework between Minoan palaces and the Near Eastern and Egyptian palaces with maritime relations (Niemeier and Niemeier, 1998: 93-96).

Bronze Age palaces include service areas which acted for storage, and workshop areas as at Kinet Höyük (Bergoffen, 2005: 17, 19; Yener, 2005a:106, 110), and Ugarit. Artifacts made of ivory from Alalakh's palaces, and several unworked elephant tusks (some 1.6 m long) from the service area of the MBA palace, were found (Bergoffen, 2005: 17, 21; Yener, 2007: 153). These finds indicate the presence of ivory workshops (Yener, 2007: 154) or that the palace was trading in raw ivory, which was known from the Uluburun shipwreck (Yalçın et al., 2006: 638).

[67] The transport between the Asi delta plain and the eastern part of Cilicia must have used sea routes rather than an overland route over the Amanos (Boardman, 2002: 329).

Metal working equipment (such as molds and crucibles) and metal residues, as well as several finished copper, lead, gold and silver products suggest a developed metallurgy and metal workshops (Bergoffen, 2005: 21; Yener, 2005b: 199; Yener et al., 2005: 47).

Tell Atchana, despite its being an inland site, also produced remarkable and huge amounts of imported Late Cypriot pottery[68] (Figure 30), as well as RLWMW[69], and Mycenaean ceramics (see Bergoffen, 2005). These ceramic assemblages suggest that Tell Atchana had a river port, perhaps off the east end of the mound and the Asi must have been exploited for transport. These imported ceramics could have been carried by river boats from Sabuniye, as will be detailed below.

In addition, Cypriot style pottery was also produced locally in workshops at the site (Bergoffen, 2005: 44). The production was perhaps made to support local demand as well as that of neighbouring sites, if Tell Atchana is considered a "transit station" (Yener, 2005b: 198).

5.4.2 Sabuniye Höyük/Sabouniyeh

The mouth of the Asi acted as harbor, and thus many ancient harbor sites were established in or around its estuary by inland centers for maritime activities. However, the geomorphological changes (shifting river course and silting) led to frequent relocation of the inland centers and harbor towns (Pamir, 2005: 76; Yener, 2005b: 193).

[68] The Cypriot pottery in Tell Atchana was found mainly in service and official wings of the LBA palace ("Niqme-pa palace") mainly dated to the late 15th and the early 14th centuries BC (Bergoffen, 2005). The amounts of the pottery diminished after the mid-14th century BC (Bergoffen, 2005: 14, 19, 23-24, 26).

[69] RLWMW (arm-shaped vessels and spindle bottles) in Tell Atchana mainly came from LBA houses and tombs (Bergoffen 2005; 31-34). Some of them were locally produced (Bergoffen, 2005: 46-48).

In the Hellenistic period, Seleucia Pieria[70], which is ca. 500 m inland from the sea now, was established ca.10 km northwest of the mouth of the Asi (Pamir, 2005: 67-69). Seleucia Pieria had two harbors: an inner harbor and seaport during Hellenistic and Roman times, related to Antioch (ca. 25 km inland) (Pamir and Nishiyama, 2002: 311; Pamir, 2005: 74-76). In the Iron Age, Al Mina[71], which is ca. 1.8 km inland from the sea, was found on the north-western bank of the river (Pamir, 2006: 538). Al Mina which was related to Tell Ta'yinat acted as trading centers with its warehouses between the 8th and the 4th centuries BC (Woolley, 1959: 156-158; Pamir, 2005: 67, 72-73, 76). During the Bronze Age, the linkage between the delta plain and the Amuq valley in a harbor and urban relationship was first introduced by Sabuniye, which could have been the port town of Alalakh (Pamir, 2005: 76; Yener, 2005b: 198).

The mound of Sabuniye was first excavated in the same project as Al Mina by C. L. Woolley in 1936 (Woolley, 1938). Between 1991 and 2002, the "Asi Delta Survey" was conducted by H. Pamir within "The Amuq Valley Regional Projects", and continued as an interdisciplinary survey[72] since 2002 (Pamir, 2005: 67).

The mound covers a small area (ca. 1.2 ha) on a high hill (Hisallı Tepe) overlooking the northern bank of the Asi, at its confluence with the Mutayran river (Pamir and Nishiyama, 2002: 304-305; Pamir, 2005: 71). The geopolitical location of

[70] Seleuceia Pieria, a harbor city of the Seleucid Kingdom (300 BC) excavated by W. A. Campbell and R. A. Stillwell (1937-1939) (Pamir, 2005: 67-68, 74).
[71] Al Mina was excavated by Woolley in 1936 (Woolley 1938). He focused on the Aegean and Near Eastern relations in the Iron Age, especially "Greek colonization" (Boardman, 2002: 318; Pamir and Nishiyama, 2002: 294; Pamir, 2005: 67).
[72] Within the scope of the survey 52 new sites were determined as addition to Sabuniye, Al Mina and Seleuceia Pieria which were reexamined by the survey (Pamir, 2005: 68). Only two of them, Sabuniye and Virşa Tepe/Hill, which is situated opposite Sabuniye on the top of a hill, were dated to MB/LBA and Iron Age (Pamir, 2005: 70, 72).

Sabuniye overlooked the river gorge as well as the river road; it acted as a gateway or an entrepot between the sea, and the valley (Pamir and Nishiyama, 2002: 305, 310, 312; Pamir, 2005: 67, 71). After arriving at Sabuniye from either direction, loaded or unloaded boats could have accessed the sea via the mouth of the Asi (Pamir, 2005: 69).

Finds of the MB/LBA levels at Sabuniye, support its possible role as port of Alalakh. Middle and mainly Late Cypriot pottery, and Late Mycenaean sherds (LHIII A-C 13^{th}-12^{th} centuries BC) were found at Sabuniye (Pamir and Nishiyama, 2002: 306-307, 310; Pamir, 2005: 72; Yener et al., 2002: 294). These ceramic assemblages and their frequency (less than at Tell Atchana) support two ideas: firstly, Sabuniye as "entrepot" or port city was associated with overseas; secondly, Sabuniye would have transshipped goods to the interior (Tell Atchana) by river boats (Yener et al., 2002: 294; Pamir, 2006: 542). The huge amounts of breakable imported goods found at Alalakh could not have otherwise been transported by overland routes.

5.5 The North Syrian Coast/The Jebleh Plain

5.5.1 Ugarit/Ras Shamra

The site of ancient Ugarit (ca. 26 to 28 ha) is situated on the Tell Ras Shamra in northeastern Syria, 12 km. north of the city of Latakia (Wijngaarden, 2002: 37; Calvet, 2007: 104). Archaeological studies at Ugarit and its surrounding area were conducted by C. F. A. Schaeffer starting in 1929 and continued after the interruption of World War II. Excavations were continued by H. de Contenson (1972-1973), J. Margueron (1975-1979), by M. Yon (1978-1998) (Curtis, 1999: 6-9; Yon, 2006: 8),

and by others since then, recently V. Matoïan (2009-).Wijngaarden (2002: 37) stated that 1/6 of ancient Ugarit has been excavated. As a result, finds and interpretations are derived from ca. 4 ha of Ugarit.

Ugarit defines harbor settlement patterns as an urban city for MBA and LBA. First of all, the choice of the location of the site offered the main pattern for harbor settlements that linked the sea and interior as a gateway. The site itself was enclosed by two small streams: Nahr ed-Delbe which flows south of the site could have connected with a sea harbor at Ras Ibn Hani (see below) while Nahr Chbayyeb/ Shbayyeb flows north of the site (Yon, 1992: 23; 2006: 12). The two streams confluence into the Nahr al-Fidd/Fayd at the west of the site and connect with the sea in a natural bay to the west named "Minet el-Beida[73]" (Van Soldt, 1995: 1255; Yon, 2006: 12). The riverine landscape of Ugarit could supply it with conduits for transport.

The city plan of the LBA Ugarit can be described from the west side (the sea side) of the city. The city was entered through a fortified entry with a tower and a postern gate (Yon, 2006: 27); but the fortified gate only provided an entrance for the royal residences on the west and associated constructions toward the north of the mound (Yon, 2006: 28, 35). Religious buildings (two temples) were located on the acropolis (Yon, 2006: 28). The city center, houses and shops were on the south side of the mound (Yon, 2006: 28). In addition, the south side had another entrance to reach the center of the city by a bridge over the river (Yon, 2006: 89-90).

[73] Ancient *Mahadu* (Astour, 1970: 118) ; the name of the Minet el-Beida, meaning "White Haven", is derived from the white cliffs at the bay (Van Soldt, 1995: 1255; Curtis, 1999: 6).

Artifacts uncovered from the LBA levels (ca.1350-1200) indicate movements of both people and goods. Seals, seal impressions and tablets written in Ugaritic, Hittite, Akkadian, Egyptian, Hurrian and Cypro-Minoan from royal and surrounding residential areas reflect its interregional relations within the eastern Mediterranean, as well as the economy in Ugarit (Curtis, 1999: 11; Yon, 2006: 8, 125, 127, 129). Metal (bronze and gold) and stone statues, vessels and weapons; stone stelae; objects of ivory; faience objects; clay figurines; and local and imported pottery (Yon, 2006: 131-172) indicate the relation with eastern Mediterranean regions (Egypt, Cyprus and the Aegean) by sea, and demonstrate a cosmopolitan character for the city.

Excavations at the mound of Ugarit reveal evidence for workshops to manufacture goods such as metalwork, olive oil and ivory products. Raw materials, tools for production and manufacture discards indicate workshops and commercial storage space in houses of the "Residential Quarter", which includes private houses whose owners were related to commercial activities; and the "City Center" which includes ordinary houses of Ugaritic society (Yon, 2006: 64, 78, 82, 96). Equipment for oil pressing in a house at the City Center and from a private house (the "House of Alabaster Vessels") documents oil manufacture at the site (Yon, 2006: 66, 82). Bronze slag, tools and metal hoards, which were found in a house at the City Center, indicate directly a metal workshop (Yon, 2006: 96). Hippopotamus and elephant tusks[74], which were found as raw material and finished goods in tombs and buildings in Ugaritic palace complex (Gates, 1992: 82; Yon, 2006: 43), may also indicate an

[74] Hippopotamus tusk could have been found in Palestine and around the wetlands of the Syrian coast, while elephant ivory in raw material originated in Egypt and India as well as in west Syria (Caubet and Poplin, (1987: 292-293, 297, 300) as cited in Gates (1992: 78).

ivory workshop in Ugarit. Archaeological evidence reflects that Ugarit was a production center as well as a transshipping center.

Imported potteries in the domestic sphere, from the city center, and their distribution throughout the city indicate that the use of Cypriot and Mycenaean pottery for daily activities was widespread among local people in Ugarit (Wijngaarden, 2002: 43; C. Bell, 2005: 364-365). It is clear that most goods and effects reached Ugarit through its harbor, whether these goods arrived directly from their place of origin or elsewhere (Wijngaarden, 2002: 41; C. Bell, 2005: 368-369), and whether these goods were imported or locally produced by copying different traditions.

5.5.2 Minet el-Beidha

Minet el-Beidha is defined as a sea harbor site of Ugarit because of its location in a natural bay (Van Soldt, 1995: 1255; Yon 2006: 8). The harbor site was excavated by C. F. A. Schaeffer (1929-1935) and was dated to the LBA, ending ca. 1180 BC (Yon, 2006: 8; Sauvage 2007: 618). The natural bay led to establishing a settlement on the east side of the bay (ca. one km from Ugarit) (Van Soldt, 1995: 1255).

The settlement includes houses, sanctuaries and warehouses or commercial installations (Yon, 2006: 8). Finds from this site indicated that the maritime activity of Ugarit could have been conducted through its port of Minet el-Beidha. Deposits of murex shells from Minet el-Beidha indicate a purple dye industry and according to Curtis (1999: 21) a waster of a vessel of Cypriot type shows that imitations could have been produced in a pottery workshop in this same area.

Being cosmopolitan is a characteristic feature for a harbor settlement: Finds from Minet el-Beidha support this pattern, like those from Ugarit and the Uluburun shipwreck. Finds recorded from Minet el-Beidha include seals (Yon, 2006: 129); an ivory duck-shaped cosmetic box with lid (Yon, 2006: 139), a figured ivory lid from the Aegean (Gates, 1992); Mycenaean terra-cotta female figurines (Yon, 2006: 155); a faience vessel in the shape of a female head (Yon, 2006: 157); gold pendants with Egyptian influence (Yon, 2006: 167); and a large amount of Mycenaean, Cypriot and Minoan pottery (Curtis, 1999: 21; Yon, 2006: 143,145; Sauvage, 2007: 619). They parallel Ugarit's interregional relations. Ugarit obtained such goods via Minet el-Beidha. In addition, some of these finds came from tombs in houses whose residents in Minet el-Beidha could have been cosmopolitan characters like the society in Ugarit.

Although the size of Minet el-Beidha has not been determined, Saadé, (1995: 212-213) as cited in Wijngaarden (2002: 37) suggested that ca. 1.4 ha of Minet el-Beidha was excavated and it would cover a much larger area. However, the harbor site was small when it is compared with Ugarit, which was an urban center. It seems that harbors could not be considered crowded urban centers; however, the movement of people and of goods in Minet el-Beidha was underestimated in terms of proportions and diversity when comparing with Ugarit. These derived from its position as a harbor city.

5.5.3 Ras Ibn Hani[75]

The promontory site situated 4 km south-west of Ugarit can be defined as a second harbor of Ugarit during the LBA (Curtis, 1999: 22; Marriner et al., 2012: 35-36). Excavations in the site were conducted by A. Bounni and J. Lagarce (1975-1980). Two palace areas which were recovered were closely related to Ugarit (Bounni et al., (1998) as cited in Marriner et al., 2012: 36). Metal working was well attested at this site: a stone mold for oxhide ingots is a unique find (Curtis, 1999: 23; Matthäus, 2006: 342). LBA Mycenaean ceramics and other foreign goods, which were originated in Cyprus, Egypt and the Aegean, were also found (Bounni et al., (1998) as cited in Marriner et al., (2012: 47); Wijngaarden, 2002: 112).

More recently, palaeogeographical researches were carried out as part of the Ugarit projects to determine the location of Ras Ibn Hani's ancient harbors (see Marriner et al., 2012). The studies determined that the site was on a tombolo, an island connected with the mainland (or territory of Ugarit), during the LBA (Marriner et al., 2012: 46). It offered safe anchorage facilities; it is therefore possible that Ras Ibn Hani acted as an outer sea harbor (Marriner et al., 2012: 47-48) like Sidon's outer harbor (Carayon et al., 2011/12: 447, 449).

The excavations at Ugarit reveal the relationship between Ugarit, Minet el-Beidha and Ras Ibn Hani (Figure 31). The suggestion of another entrance for the city on the south of the site, apart from the fortified western gate, reinforced the relationship between them (Marriner et al., 2012: 13, fig. 10-14). A pier made of ashlar blocks was found on the bank of the south, Nahr ed-Delbe, river (Yon, 2006:

[75]Ancient names might be "Appu, Biruti, or Reshu?" (Yon, 2006: 12). The site was settled after the destruction of Ugarit (Yon, 2006: 12).

90). It is likely that these ashlar blocks were spanned with moveable wooden beams and the upper structure of the pier was made of planks (Yon, 2006: 90). The system could have been used both as a dam to supply water during dry summers and a bridge to cross the river (Yon, 2006: 90). Thus, goods could have been transported by the bridge on the river from its harbors to the city of Ugarit. Although the excavator, Yon (1992: 25-26) did not suggest river transport by boat, it is not technologically impossible that river boats then shipped heavy goods, such as large amounts of pottery containers, when there was enough water in the river.

Ugarit and its ports give an idea about how maritime communities functioned in the 2nd millennium BC. Large amounts of pottery indicated two main aspects of a harbor settlement: Transport and deposition. Thanks to its seaports, Ugarit was engaged in an exchange system extending over a wide geographical network. Its sea harbors were used for transshipping goods (Linder, 1981: 33), since its location was on the destination of the exchange routes by boat along the coasts of the eastern Mediterranean: Egypt, the Levantine coast, Cyprus, Cilicia, Crete and the Aegean (Yon, 2006: 14). The location and its harbor provided the site with supplies of raw material for sea-related industry and the facilities to send its products by boats.

5.5.4 Tell Tweini/Gibala

Tell Tweini is situated on the Syrian coast at the junction of two rivers, today 1.7 km from the sea, around 30 km south of Latakia and 40 km south of Ras Shamra (Bretschneider et al., 2005: 215; 2010: 73). Archaeological research in Tell Tweini has been conducted by M. Al-Maqdissi, K. Van Lerberghe, M. Badawi and J. Bretschneider since 1999 (Bretschneider and Lerberghe, 2008a: 1). The mound

covers an area of 3.6 ha and is analogous to other Levantine harbor sites like Kinet Höyük (Bretschneider et al., 2005: 216-217). Tell Tweini is approximately pear-shaped: the west end of the mound gets narrow pointing toward the sea[76] (Bretschneider et al., 2008: 34).

Tell Tweini is surrounded by two rivers: the larger Rumailiah flows just north of the mound while the smaller Al-Fawar flowed just south and just east of the mound (Al-Maqdissi et al., 2007: 4). It is known that the Rumailiah which reaches the sea from a small bay at the west of the mound was navigable until the early 20th century AD (Al-Maqdissi et al., 2007: 5; Bretschneider and Lerberghe 2008a: 1). According to geomorphological research[77] and palynological analyses, a sea incursion occurred in the Bronze Age (Al-Maqdissi et al., 2007: 6). It could have provided Tell Tweini with direct contact to the Mediterranean by a sea harbor which was the small bay (Bretschneider et al., 2008: 33; Bretschneider and Lerberghe, 2008a: 1). An estuary harbor as inner/inland harbor connected between the sea and the mound directly by boat (Al-Maqdissi et al., 2007: 6). There could be sea or river boats on the larger river to transport goods and people between the coast and the mound and even to the interior in the Bronze Age. It is obvious that Tell Tweini had both sea and river port in the Bronze Age via its geographical setting (Al-Maqdissi et al., 2007: 6).

In LBA, Tell Tweini could be defined as a seaport or a harbor town that was part of the Ugaritic kingdom (Figure 32) (Bretschneider and Lerberghe, 2008b: 31). LBA finds include seals and seal impressions; Canaanite storage jars; Cypriot and

[76] For similar case at Kinet Höyük, see Gates, 2003a: 290.
[77] It was conducted on around the mound by Paulissen during the 2003-2004 seasons (Al-Maqdissi et al., 2007: 5).

Mycenaean ceramics; and a jar handle with a Cypro-Minoan sign, like an Aegean jar from a tomb of Ugarit (Bretschneider et al., 2005: 226; 2008: 35; Bretschneider and Lerberghe, 2008b: 32-33). A seal impression also gives evidence for maritime activity (mentioned in the section 3.2.3 of Chapter 3).

Cypriot and Mycenaean ceramics in Tell Tweini are types observed throughout the territory of the Ugaritic kingdom and its surroundings: at Ras Shamra proper, Ras Ibn Hani, Tell Daruk, Tell Sukas[78], Tell Kazel and Tell Siyannu (Bretschneider et al., 2008: 35-36). These import ceramics could have contained trade goods and indicate the overseas exchange between the Aegean, Cyprus and the Levant (Bretschneider et al., 2008: 37). In addition, a similar weight system was used both in Ugarit and Tell Tweini; it demonstrates the affiliation of Tell Tweini in the Ugaritic kingdom in terms of commercial activity (Bretschneider et al., 2008: 36, 40, fig.III.43).

Excavations at the mound reveal less evidence for workshops. However, a ceramic burnisher could signify a workshop to produce local ceramics (Vansteenhuyse, 2008: 108). It is possible that some ceramics, especially storage vessels, could have been produced locally under foreign influences like Cyprus (Vansteenhuyse, 2008: 110). According to faunal analyses, mollusks were found in almost all periods and may have been used for the maritime industry; waste flakes of hippo-ivory could point to working with ivory (Linseele, 2008: 145). Imported fish remains such as Nile perch from Egypt and *Clarias*, which belongs to the catfish family, could be

[78] From the MBA, Tell Sukas could be defined as a sea harbor by two natural bays. Tell Daruk is situated at the estuary of Nahr Sinn which acted as river harbor (Oldenburg and Rohweder, (1981) as cited in Marcus (2007: 170).

associated with the Asi valley (Linseele, 2008: 145), representing other interregional relations.

Archaeological materials and geographical settings were considered in this chapter. Cilicia, the Amuq and northern Levantine coast reflect similar or even the same patterns for harbor settlements, especially during the mid-second millennium BC.

CHAPTER 6

REGIONAL HARBORS UNDER HITTITE CONTROL

In this part, the history of the second millennium BC will be outlined to describe the political environment, and particularly to underline the role of the harbor settlements in the political configuration. Then, in order to understand the Hittite impact on the harbor settlements in Cilicia and the Amuq, available information from surveys[79] and excavations will be discussed.

In the later part of the MBA, the Levantine coast and its interior consisted of Canaanite city-states or small autonomous kingdoms (Genz, 2006; Marcus, 2007: 164-170). These cities and their harbors[80] established maritime relations with Crete and Cyprus (Bretschneider and Lerberghe, 2008b: 20-21). Their commercial activities extended to the Canaanite settlements in the Nile Delta such as Tell el-Dab'a (Avaris), which became a regional capital under the Hyksos dynasties of the same period (Bietak, 1996: 5, 9, 14, 20; Tubb, 1998:56, 59).

[79] Physical environment (modern occupations, grass and trees, alluviation) limited the visibility of Bronze Ages settlements however, surveys shed light on settlement patterns: For information on Cilicia see: Seton-Williams, 1954; French, 1965; Özgen and Gates, 1993; Salmeri and D'Agata, 2003; Lehmann et al., 2008; Killebrew et al., 2009; Killebrew, 2011, for the Amuq; Casana and Wilkinson, 2005 and for the Asi delta; Pamir, 2005.

[80] The first harbor towns of the Levant to EBA period like Byblos (see Marcus, 2002: 409; Bretschneider and Lerberghe, 2008b:17).

At this time, after the period of Assyrian Trade Colonies, Hattusili I (ca.1650-1620) established the Hittite Kingdom based in Boğazköy (Hattusa) in central Anatolia (Latacz and Starke, 2006: 190). During the reigns of Hattusili I and Mursili I (ca.1620-1590), the Hittites expanded from the Cilician Plain (Kizzuwatna) toward north Syria and destroyed Alalakh (Bryce, 2005: 70-80; 97-100; Latacz and Starke, 2006: 191). Cilicia and the Amuq had crucial strategic importance for the Hittite economy and military force (Bryce, 2005: 81-82, 94). Hittite kings therefore drew up treaties with the kings of the independent kingdom Kizzuwatna from the 15th century (LB I) reign of Telipinu onwards (Bryce, 2005: 104, 113-116).

After the MB developmental phase of maritime exchange, the Levant saw a period of great affluence in the following centuries (LB, ca. 1500-1180), and was caught between rival ambitions of Egypt and Hittite Anatolia (Bryce, 2005: 167-168). By the mid-14th century BC, the Hittite kingdom began to grow as empire. Mitanni (north Syria) was seized and its vassals transferred to the Hittites (Bryce, 2005: 156, 177). Kizzuwatna, Mukish (the Amuq) (Bryce, 2005: 161, 177, 180; Casana, 2009: 11) and Ugarit, which was formerly in the Egyptian domain, came under Hittite control as vassals (ca. 1332-1260) (Bryce, 2005: 165-166; Yon, 2006: 21).

By the thirteenth century BC, the Hittite and Egyptian armies battled at Qadesh in mid-Syria (ca. 1274) (Bryce, 2005: 229-230, 240; Peker and De Vos, 2010: 100, 104), possibly to gain control of maritime power in northern Syria. In the meanwhile, king Muwattalli II had moved the capital to the town of Tarhuntassa, close to or in Rough Cilicia (Yakar, 2000: 371; Bryce, 2005; 230). His successor Urhi-Tesup (Mursili III) (ca.1272-1267) moved the capital back to Boğazköy and his

uncle, Hattusili III (ca.1267-1237) gave Tarhuntassa to Kurunta (Ulmi-Tesub) as a capital city of a new "appanage" kingdom[81], whose heart could be the Calycadnus (Göksu) valley (Baker et al., 1995: 145-146). After the war a peace treaty was signed and the northern Levant remained Hittite (Peker and De Vos, 2010: 100,105).

In the end of the LBA (ca. 1200/1190 BC), eastern Mediterranean empires and city-states collapsed because of so-called "Sea Peoples" (Bryce, 2005: 333; Genz, 2006: 377) and other natural reasons (see Kaniewski et al., 2010).

In short, it seems that fragmented city-states of the MBA in the Levant were tied to strong states which began to coalesce into empires in the LBA. The history of the second millennium was also configured by the Levantine harbors which led to friendly or hostile relations between great powers. In the later stage of the LBA, a peaceful atmosphere established by diplomatic channels provided political stability until the collapse of the system.

Hittite influence already began to reflect on the material culture of the Cilician harbor settlements starting in the 16th /15th century BC. However, the impact increased between the 14th and the 12th century BC, when the Hittite state annexed western and eastern Cilicia and the Amuq plain, not only for its land-based activity, but also to participate in sea-based activity[82] until the end of the LBA (12th century BC).

[81] The border of the kingdom, which was defined by a treaty, included the Göksu (Calycadnus) valley, Rough Cilicia (Otten, (1988) as cited in Yakar (2000: 371). Ura whose location was mentioned as "western Cilicia" in the text of Ugarit (Singer, 1999: 660), could have been situated in the kingdom in the 13th century BC. There are also texts about maritime interaction between Tarhuntašša and Ugarit (Singer, 1999: 660-661).

[82] Textual sources from Ugarit refer the maritime activity in terms of trade and military function (Vita, 1999: 457-458, 497-498).

In these regions where rivers are found throughout their landscape, settlements were distributed near or on the main rivers and their tributaries (Map 2, 3, 4) (Seton-Williams, 1954: 132, fig.3, 134, fig. 4, 147-174; French, 1965: 179, fig. 2). This preference can be considered a widespread pattern for the MBA and LBA settlements. The choice of river landscape not only provided natural resources for livelihood, but also a network of water ways.

After the Hittite annexation in Cilicia, beside the older, multi-period settlements, new sites were established and the density of settlements increased toward the northeastern and eastern interiors of the plain (Seton-Williams, 1954; Yakar, 2001: 42-43). A number of reasons lie behind this density. It was explained as a juxtaposition of land routes (east to west)[83] by Seton-Williams (1954: 127-128) and as Hittite planned settlement policy by Yakar (2001: 41, 43), for instance to settle the nomadic and semi-nomadic population. As a further explanation, harbor settlements and river transport could also be factors, since the density increased along the middle course of the Ceyhan river and its tributaries (Seton-Williams, 1954: 156,164,169, 173). New smaller sites and harbors could have been established toward the coast like Nergis (Seton-Williams, 1954: 165-166). Small settlements and harbors are, however, hidden because of alluviation, such that the only settlements visible today are on high mounds, like Domuz Tepe near Yumurtalık (Taffet, 2001: 131-132; Yakar, 2001: 42).

[83] Between the Bahçe pass, which linked the north (central Anatolia and beyond), south (Cilician coastline and the sea) and southeast (north Syria and Mesopotamia), and the Cilician Gates (Seton-Williams 1954: 123, 127-128).

According to archaeological evidence, Hittite impact began to affect material culture in Cilicia before the 14th century annexation[84]. After the annexation, pottery was manufactured in a standard shape and with the same technique as copying the dominant Hittite culture for local consumption (Gates, 2001b: 139), which suggests that the economy in Cilicia was transformed into a centralized economy by Hittite administrative entity (Gates, 2001b; 2011b: 400). The system must have affected commercial centers and harbor settlements in these regions. The presence of pottery with potmarks in Cilician harbor settlements[85] not only proves the influence from the plateau but also shows that the Göksu valley (Tarhuntassa) took place in the same sphere of influence with the Cilician plain (Kizzuwatna) (Postgate, 2007a: 6; 2007d: 36).

Harbor settlements would have been modified in accord with Hittite tradition (Yakar, 2000: 365,367). The transformation can be inferred from material culture and architecture in harbor settlements.

Tarsus can be identified as the capital city of Kizzuwatna which was formerly independent in the end of the sixteenth century BC prior to Mitannian influence (Goldman, 1956: 349; Bryce, 2005: 156, 177). A bulla with a personal name of the Kizzuwatna king[86] is an indicator of the administrative character of the city (early in the LBA) (Figure 33). After the Hittite annexation, Tarsus (Tarsa) maintained its

[84] The effect in Kinet did not appear suddenly in the 14th century when Cilicia came under Hittite domination; it began from the 16th century BC (early LBA), when Cilician territory may have acted as departure point for Hittite military to Syria (Gates, 2006: 308).

[85] The homogenous pottery of 13th c. BC which was distributed throughout central and southeastern Anatolia is named "drab ware": bowls were produced in monochrome and their surface was notched with potmarks before firing (Gates, 1999b: 307; 2001b: 138-139). The ware found at Kilise Tepe (Postgate, 2007a: 6; 2007d: 36; 2007e: 142), Soli Höyük (Yağcı, 2007: 179), Yumuktepe (Garstang, 1953: 242; Jean, 2006: 322), Tarsus (Postgate, 2007e: 142) and Kinet Höyük (Gates, 1999b: 307).

[86] Hittite king Telipinu (ca. 1525-1500) signed a treaty with the king of Kizzuwatna, Isputahsu, whose Hieroglyphic bulla with seal impression was found below the Hittite temple at Tarsus, (Goldman, 1956: 46, 63; Goetze, 1936: 212-214. Goldman (1956: 63-64) dated it to the early LBA.

importance and was transformed into a Hittite center. One building was recognized as a "Hittite temple" by its first excavator (Goldman, 1956: 49, 56). It represents well the Hittite temple tradition with its large dimension and cyclopean masonry (Goldman, 1956: 49). Numerous bullae and Hittite seals suggest the official character of more buildings (the "East House") for Hittite administration (Goldman, 1956: 56 Yakar, 2001: 40).

Kilise Tepe could act properly as a riverine town as well as buffer zone or "fort" (Gates, 2011b: 404). From the main excavated building (the "Stele Building") of the LBA mound, large storage vessels, which included remnants of grain and olives, from at least three rooms show they could be used as storerooms (Symington, 2001: 168). A room was also defined as administrative, since a stele and Hittite seals were found at the room (Symington, 2001: 168). Hittite seals of the 13th century BC were also found throughout the LBA levels at the mound, suggesting that commercial activity at the site was organized from this building, perhaps by overseers, who could be associated with Ura, on behalf of the Hittite government (Singer, 1999: 718; Symington, 2001: 173-174). Archaeological finds reinforce the possibility that Kilise Tepe could be an administrative and a military site of the Hittite Empire on the westernmost border of Cilicia in the land of Tarhuntassa (Baker et al., 1995: 143-144). Apart from ceramics, other finds signified relations with north Syria, which was under Hittite influence in this period, and the Hittite mainland. An exceptional Hittite figurine triad made of metal was found at Kilise Tepe and Ugarit, and a parallel configuration[87] was recorded at Boğazköy from a religious context (Symington, 2001: 172). Hittite seals also demonstrated their close relationship,

[87] An ivory plaque representing three figures associated with Hittite cult (Symington, 2001: 172).

including one seal in ivory (Figure 34), a material also familiar from Boğazköy (Collon et al., 2010: 174). However, the seal was also associated with an overseas connection, since the seal is comparable with a Cypriot gold example in terms of craftsmanship and style[88] (Collon et al., 2010: 174). According to Collon these ivory seals both from Boğazköy and Kilise Tepe were made in the same workshop, which would have been located close to or at Kilise Tepe (Collon et al., 2010: 174). It would act a center to organize distribution. Kilise Tepe would have a similar role with other harbor towns in Hittite territory in terms of organization of cargo transport or transshipment.

The material culture of Soli Höyük showed an effective Hittite influence from the 16th /15th century BC. The mound was enclosed by a Hittite type fortification system with casemates, which could be used as storerooms, as known from Yumuk-tepe as well as Boğazköy (Yağcı, 2006a: 36; Yağcı and Kaya, 2009: 467). Hieroglyph seals and bullae with Hittite hieroglyphs, one of which stamped a jar handle with the personal name Targasna (14th century BC) (Figure 35) (Yağcı, 2001: 163; 2006b: 59-60; 2008: 151-152) emphasize the presence of Hittite administration in the port city.

Yumuktepe became a fortified settlement characterized by a casemate system (Figure 36) (Garstang, 1953: Jean, 2006: 320-321), like Boğazköy as well as Soli Höyük (Yağcı, 2006a: 36). The need for a well-protected city could indicate that both Yumuktepe and Soli stood as frontier settlements in the Hittite Empire (Jean, 2006: 321).

[88] Domed seal incised on surface; a floral theme encircling the hieroglyphic characters was recognized on the Cypriot example (Collon et al., 2010: 174).

In Sirkeli Höyük, two buildings dated to LBA have been uncovered. One was identified as a "Stone House", associated with a religious function and the rock relief which depicts the Hittite king Muwatalli II situated on the eastern side of the mound; and another relief was placed next to it (Ahrens et al., 2010: 58). A second building of this period which was possibly connected with a fortification wall gives further evidence of the Hittite influence on the site, together with the Hittite pottery found in a room (Ahrens et al., 2010: 59).

Kinet Höyük records a commercial affiliation via some of handles of Canaanite jars: two of them marked with Hittite official seals (Figure 37); one of them also notched with a potmark (Gates, 2008: 288). Likewise, Dağılbaz near İskenderun, which was established in the border zone between the Amuq (Mukish) and Cilicia (Kizzuwatna) as a linkage (Gates, 2011b: 402), illustrates a similar affiliation with the handle of a storage vessel stamped with a Luwian hieroglyphic seal (Lehmann et al., 2008: 172; Killebrew, 2011: 41).

Only two sites can be seen as harbor settlements in the Amuq plain[89]: Alalakh with its harbor Sabuniye. Alalakh came under Hittite domination as a vassal of the kingdom of Ugarit (ca. 1350 BC), until the end of the Hittite Empire (Bergoffen, 2005: 57-67; Yener, 2005a: 102-103). Texts written in Hurrian and Akkadian, seal inscriptions and bullae with Luwian, Hurrian and Hittite hieroglyphics and the royal residences of Tell Atchana shed light on its administrative and commercial character,

[89] The LB Amuq plain was densely settled with many towns according to written sources (Casana, 2009: 19); however, actual large sites whose main occupation belongs to the millennium are very few (Tell Atchana, one other small settlement Tell Bahlilah) (Wilkinson and Casana, 2005: 37-38; Casana, 2009: 12). Casana underlines that only large Bronze Age settlements maintained their visibility from sedimentation (Casana, 2009: 24).

when Alalakh acted as the capital city for the kingdom of Mukish[90] (Yener, 2005a: 99, 101; Yener et al., 2005: 47). The general architectural layout of Tell Atchana illustrates an urban character like Ugarit. The city began to resemble a Hittite "military fort" after the Hittite annexation (Bergoffen, 2005: 27, 30-31; Yener, 2005a: 102, 110; 2005b: 199). The west of the Amuq (the Asi Delta Plain) was underpopulated (two sites on the hills at the river bank) because of marshy environment (Pamir, 2005: 72). A Hittite style seal from a LB level at Sabuniye indicates that the administration of the harbor town may have been tied to the Hittite Empire with Tell Atchana[91] (Yener, 2005b: 199).

In north Syria, the LB archives from Ugarit mention a harbor town of Gibala together with other Ugaritic harbor sites[92]. It is likely that the ancient city of Gibala can be identified with Tell Tweini as a Ugaritic harbor on the southernmost limit of the kingdom of Ugarit in the 14th century BC (Bretschneider and Lerberghe, 2008b: 11, 32). A seal with a Hittite-Luwian hieroglyphic inscription also reinforced the relationship (Figure 38), since Ugarit in the LBA was a vassal state of the Hittite Empire between the 14th and the 12th century BC (Yon, 2006: 20-22; Bretschneider et al., 2008: 37; Bretschneider and Lerberghe, 2008b: 33). At the same time, Ugarit and Kilise Tepe may have held similar roles within the Hittite Empire to organize exchanges of goods on behalf of Hittite administration.

[90] Mukish is the ancient name of the Amuq and the Asi Delta Plain during the Bronze Age (Casana, 2009: 8, 18). Before the Hittite annexation, between the 18th and the 16th centuries BC, Alalakh was a vassal state in the kingdom of Yamhad which occupied Aleppo as center (Casana, 2009: 10); Between the 15th and early 14th century BC the kingdom of Mitanni ruled the city (Bergoffen, 2005: 57-67, 68, fig. 8; Yener, 2005a:102-103).

[91] Texts from Ugarit state that grain for Hittite needs was loaded from the harbor of Mukish (at the estuary of the Asi) to Ura in one or several shipments (Singer, 1999: 716).

[92] Some of them are identified by Astour such as Su-uk-si with Tell Sukas, Atlg/A-tal-li-ig with Qal'at er-Rus/ Qalat Er-Rouss and Gb'l /Gi-ba-la with modern Jebeleh (Astour, 1970: 115).

More generally, large and small inland settlements in Cilicia and the Amuq[93] are defined as nucleated settlements (Wilkinson and Casana, 2005: 38-39; Gates, 2011b: 400). These settlements depended not only on agricultural activity. They also could participate in river transport with their river harbors in a linear distribution along rivers. Indirect evidence of the fact that they depended on their rivers is given by sites such as Alalakh, which was abandoned due to a changing river course (explained in the section of 5.4.1 of Chapter 5; Yener, 2005b: 193, 199-200). Likewise, urbanization developed toward the sea coast in Tell Tweini and Kinet Höyük, since the estuary was silted and only the small bay could still be used as harbor in the LIA (Gates, 1999b: 304; 2006: 295; Al-Maqdissi et al., 2007: 7; Bretschneider and Hameeuw, 2008: 69).

Estimating the population in harbor settlements can be speculative, since harbors are places where people circulate seasonally. However, it can be suggested that harbor settlements in Cilicia and the Amuq were crowded, averaging 100-250 individuals per hectare[94]. Although the sizes of most sites are not known, it can be said that harbor settlements involved small and large urbanized mounds[95] such as Alalakh (20 ha). Their harbors were small mounds such as Sabuniye (1.5 ha). Transshipping harbor towns were medium-sized mounds such as Kinet (3.3 ha), and the Levantine port town such as Tell Tweini (3.6 ha). The differences in size of the mounds could be derived from their specialized character (Gates, 2011b: 404) after the Hittite annexation.

[93] It seems that they had separate cultures in this millennium; for example Tell Atchana inclined to Syria compared to Cilicia (Gates, 2011b: 402).
[94] Broshi and Gophna, (1986) Gophna and Portugali, (1988) Falconer, (1994: 312) Greenberg (2002) as cited in Marcus (2007: 147).
[95] Ugarit fits for measure as the largest harbor settlement of the millennium (between ca. 26 and 28 ha) (Gates, 2011c: 389).

To sum up, the Hittite state annexed Cilicia and Amuq in order to participate directly in maritime activities. Harbor settlements were transformed in Hittite tradition and were affiliated economically to Hittite administration. New river harbor settlements could have been established in Cilicia. The maritime activity in Cilicia and the Amuq might have increased under Hittite control as well (Yakar, 2000: 365) according to ceramics which were associated with overseas centers (extensively discussed in Chapter 5).

CHAPTER 7

CONCLUSION

In this thesis I examined the settlement patterns of 2nd millennium BC harbors in order to try to evaluate a number of issues concerning the harbors and their settlements in Cilicia and the Amuq, such as their physical setting, their functions and their locations. In the Middle and Late Bronze Age, harbor settlements depended on the river landscape in Cilicia and west of the Amuq, in agreement with the Levantine harbor model, which was starting point of this thesis:

> Many trade centers along the Levantine coast were located some distance inland, having a separate quarter or a "Daughter" on the shore as their harbour…In many cases there is a river course connecting the two centers and in some it was probable navigable, at least for small crafts (Raban, 1991: 134).

Raban's proposal is also taken up by Blue (1997) and Taffet (2001) in order to identify where harbors in Cilicia were located. I applied the model to the Cilician and Amuqian plains in this thesis.

In the previous chapters I tried to investigate theoretically these issues from comparative perspectives and to apply the model to these regions. First of all, I considered geomorphological changes to illustrate the river landscape of the second

millennium BC (= the mid-Holocene era). I proceeded to investigate how harbor settlements can be inferred from archaeological contexts by recognizing specific archaeological evidence from the Levantine harbor sites. After a chapter on river transport, which was essential for the thesis since rivers and streams linked harbor settlements with estuarine harbors, eventually the sea and the interior, I continued by examining sites in Cilicia and the Amuq from the perspective of harbor settlements. I then tried to assess the Hittite impact on harbor settlements after the annexation of these regions in the mid-second millennium BC. Finally, I tried to combine the topographical conditions with information from archaeological surveys on maps, to describe settlement distribution near or around ancient river courses that connect to ancient coastlines. All in all, the following conclusions can be drawn.

Rivers are the crucial components of harbor settlements and harbors both for the transport of goods inland, and because river outlets provide well-protected estuarine harbors for river boats sailing up from the seacoast and back.

It is likely that the settlement pattern of the second millennium BC in Cilicia and the Amuq can be defined as riverside harbor settlements. Inhabitants in these regions could have established harbors at or near estuaries which offered appropriate physical conditions for lifting boats and docking facilities with or without any modifications. Their settlements were often established behind the coastline and somewhat inland on the same riverbank, a location that was more stable for long-running habitations.

These sites can be defined as inland river harbors. Their locations allowed them to oversee the river-sea routes as well. Estuarine and coastal ports then formed partnerships with river harbors that were inland. Rivers and streams provided their

linkage: examples are Minet el-Beidha and Ugarit; Çingen Tepe, Ura? and Kilise Tepe; Ura? and Soli; Sabuniye and Alalakh. There must be other, undiscovered harbors at or around the mouth of rivers. However, the current rivers did not flow along their present courses. The Göksu river, for instance, flowed into the sea somewhere north of its present course. The ancient riverbed can help in suggesting the likely location of an estuarine harbor like Ura.

The topographical conditions of the 2nd millennium BC in Cilicia and the Amuq invite the following inferences about river transport. On the one hand, delta formations had just begun, and rivers and streams still dominated the lowlands. Therefore, to go from one place to another across the coastal interior was almost impossible without passing rivers and wetlands. To the north, the coastal lowlands were surrounded by mountain ranges which blocked overland passage. At the same time, the speed of geomorphological changes was not fast enough to obstruct the exploitation of rivers and their estuaries because of increasing shallowness of water or silting. Therefore, navigable rivers and their estuaries were suitable for docking facilities and transport.

Under these natural and topographic circumstances, I believe theoretically, river harbors facilitated transport and allowed heavy and breakable goods to be shipped more easily by boat in these regions. There is no archaeological evidence for river boats in Cilicia and the Amuq; however, it is plausible that river transport was widespread given the river landscape, and that rivers in these regions maintained their navigability until the recent past. Likewise in antiquity, small river boats, which provide stability for loads, would have transported goods and people between river harbors in these regions even if in shallow water or to go upstream, where boats were

towed or hauled by animal and man power. When I looked at various examples from different regions, river transport not only depended on waterways but also on inland routes due to the limitations of river transport. Where rivers divided, at waterfalls or over stretches of desert like in Egypt, land roads were used and people carried their boats in pieces.

River transport can be demonstrated archaeologically by finds; ceramics from overseas can be good archaeological evidence for inland river harbor settlements and river transport. Cypriot ceramics, which are specific components in Kilise Tepe, Sirkeli and Alalakh, reached them with river boats, since these centers were inland. Alalakh, for instance, displayed huge amounts of imported Late Cypriot pottery, some of which are very large vessels. It is likely that these ceramics, as breakable commercial goods, could be carried by river boats from their estuarine harbors to the sites. These ceramics together with other finds, especially, from the LBA levels of the sites themselves can also be presented as archaeological evidence for their function as harbors.

In this thesis, I try to specify the identifying components for harbor settlements during this period. They answer questions about how harbor settlements can be inferred from an archaeological context and how the harbors were furnished: for example, certain types of ceramics, which stem from Cyprus and Syria, were used as commercial containers for maritime transport in boats, and as storage jars in ports' warehouses. Somes type of ceramics could be designed as containers for river transport in boats and in the warehouses. Unfortunately, there is no study as yet on ceramics for river transport.

Harbor settlements were also responsible for various types of ceramic production as well as ceramic importation in the overseas exchange network. The original intent of a ceramic type was changed in different regions where ports led to acculturation, one characteristic feature for harbor settlements. Other sources like shipwrecks, some raw and manufactured materials, boat depictions, anchors and shell are further components of harbor settlements. Their presence required the use of harbors and boats.

Harbor settlements presented urban layouts like non-harbor sites, whether they covered a large surface area or not. But they included additional specialized buildings such as warehouses and shipsheds. Buildings were built according to these particular needs. Goods to be loaded or unloaded were stored in the warehouses for at least a short term. In other words, the warehouses were the place for goods which were merchandized. Another specific structure is the shipshed. These two constructions were found at some sea-side harbors. It is likely that heavy silting buried similar specialized buildings as yet undiscovered at estuarine harbors; or these harbors transshipped goods instead of storing merchandise in public warehouses.

The role of the river harbors could have been primarily transshipping and re-distributing the goods as "gateways" on a regional scale to the interior or as an outlet between the sea and land to participate in maritime activities (Gates, 1999a: 260; 1999b: 309; Horden and Purcell, 2000: 392-393, 395). They also acted as transit stops on a shipping route such as harbors in Cilicia[96] (Gates, 1999b: 308-309). Henceforth, harbor settlements configured political environment.

[96] Boats often followed a coastal route (or navigation) from Egypt to the Levant to Amuq to Cilicia and vice versa. The route is defined as cabotage or "touching" at harbor settlements which used

The Hittite state annexed western and eastern Cilicia and the Amuq in the mid-second millennium BC. Hittites would have benefited from the knowledge of the local inhabitants about water-borne activities. Estuarine harbors could connect them with the outside or overseas and thus they obtained indispensable goods such as grain through harbors in Kizzuwatna and Mukish. Archaeological evidence from harbor settlements suggested that Hittites transformed harbor settlements into administrative and fortified outposts and tied them to an economical affiliation with central Anatolia. It is possible that Hittite overseers controlled maritime activities from harbor settlements like Kilise Tepe, Tarsus, Sirkeli, Kinet and Alalakh. The density of settlements in Cilicia increased during the LBA along the middle course of the Ceyhan river and its tributaries in a linear distribution. It can be inferred that sites in the middle of the course also transferred goods to the hinterland by river.

It is also clear that Bronze Age harbor settlement patterns changed toward the end of LBA into the early Iron Age, since rapid alluviation led to "abandonment of estuarine harbors and settlements and relocation to more viable coastal sites away from silted-up fluvial outlets" (Marriner et al., 2012: 47). The situation then required artificial harbor works in natural bays: the old estuarine harbors were buried beneath the alluviation and replaced with artificial sea harbors (Blue, 1997; Dinçol et al., 2000: 8).

This thesis also tried to overcome the prejudice that harbor settlements are only located on seacoasts, and inland sites can only be land-based settlements. Archaeological finds at sites in Cilicia, the Amuq and the northern Levantine coast

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estuaries as harbors (Braudel, 1989: 55-57). The coastal route can explain the frequency of harbor settlements along the Levant and the Cilician coasts (Sherratt and Sherratt, 1991: 357-358).

support the proposal that inland harbor settlements are associated with overseas as well as inland sites.

In addition, according to this thesis, rivers can be seen as trade roads, since rivers acted as linkage between sea and land and gave access to their natural resources like timber, metals and maritime products.

In short, my thesis suggests harbor settlements in Cilicia and the Amuq followed the Levantine model because of sharing a similar physical environment in the northeastern Mediterranean. Harbors played a key role for the option for settling and the development of many settlements and regions. In other words, harbors determined the settlement patterns in the coastal zones and in the interior regions that depended on them.

However, a next step requires that the model which is suggested in this thesis be tested, since it can be verified or disclaimed only by archaeological fieldwork. An intensive regional archaeological survey with interdisciplinary investigations (such as geomorphologic and geophysical techniques) may document or recover the Bronze Age Cilician harbor settlement patterns in their environmental and cultural contexts. The main challenge for this archaeological survey is to determine the location of the pre-classical harbor sites because of their difficult surface visibility[97]. My thesis, by defining some specific components from available archaeological data, may help to recognize approximate or potential locations of harbor settlements around the ancient or paleoriver courses across the Cilician plain. A more intensive geo-archaeological study of the Cilician plain and the ancient river beds themselves

[97] The absence of pre-classical (river) harbor structures or facilities and silting, modern urbanization and vegetation.

may also provide evidence for their sediment history. Through such a study, archaeology can date subsurface data and integrate these records with surveys exploring harbor settlement patterns. In the Göksu plain, the ancient river course, somewhere around the modern town of Bahçeköy, should be determined before looking for the region's ancient harbors such as Ura. In contrast, in the deep valley upriver where the river course did not change, and also near sites such as Çingen Tepe sediment history could be checked with some test trenches. Çingen Tepe could produce information specific to river harbors and its surrounding areas. Likewise, the northeastern part of Cilicia is significant for the relationship between harbor and inland settlements. Archaeological research shows this part of the plain to be densely populated during the LBA. Excavations at sites like Sirkeli are therefore very promising for river harbors. Finally, the relationship between Tarsus and the ancient coastline needs further documentation through survey.

This thesis can conclude that candidates for the 2nd millennium BC harbors and their settlements should be investigated around the ancient courses of main rivers in Cilicia and Amuq: the Göksu, Seyhan, Ceyhan, and Asi rivers and their tributaries. In addition, one can choose a river course and settlements around it to examine harbor settlement patterns by geo-archaeological analyses, as well as ethnoarchaeological evidence to compensate for the lack of archeological evidence/ study on the river transport. These analyses can be combined with related textual evidence as well. Future research should elaborate this preliminary study, since inland river harbors and river transport are untouched subjects for these regions.

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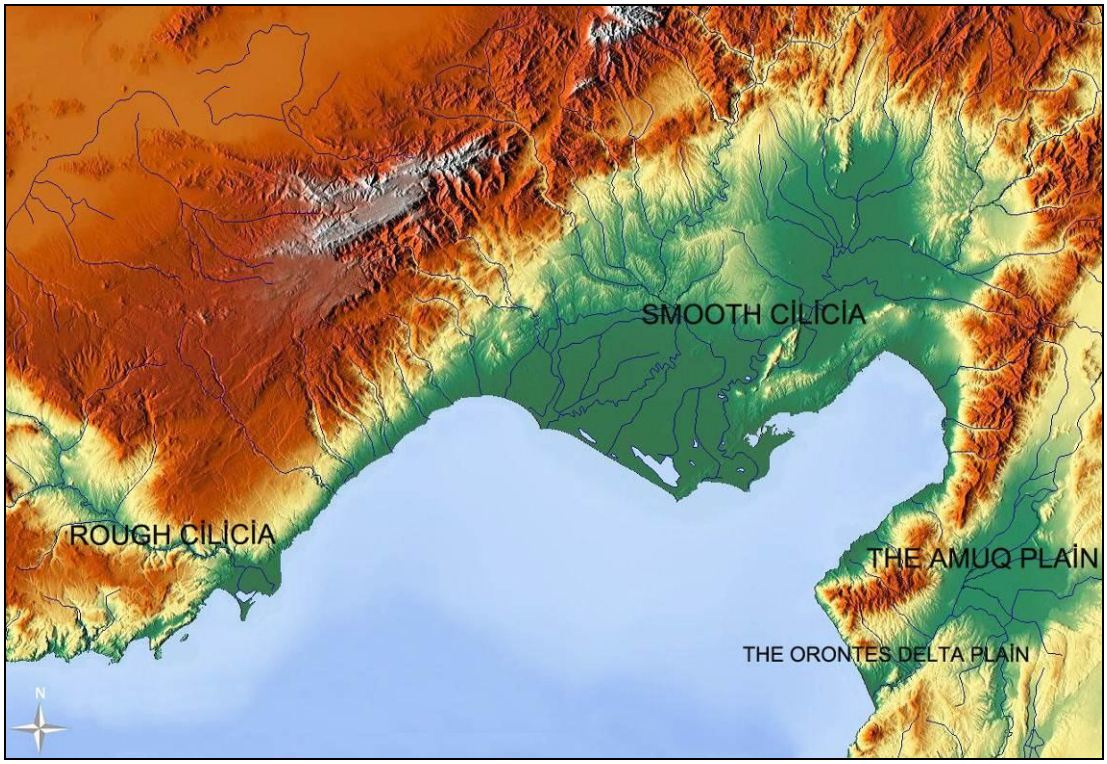
MAPS

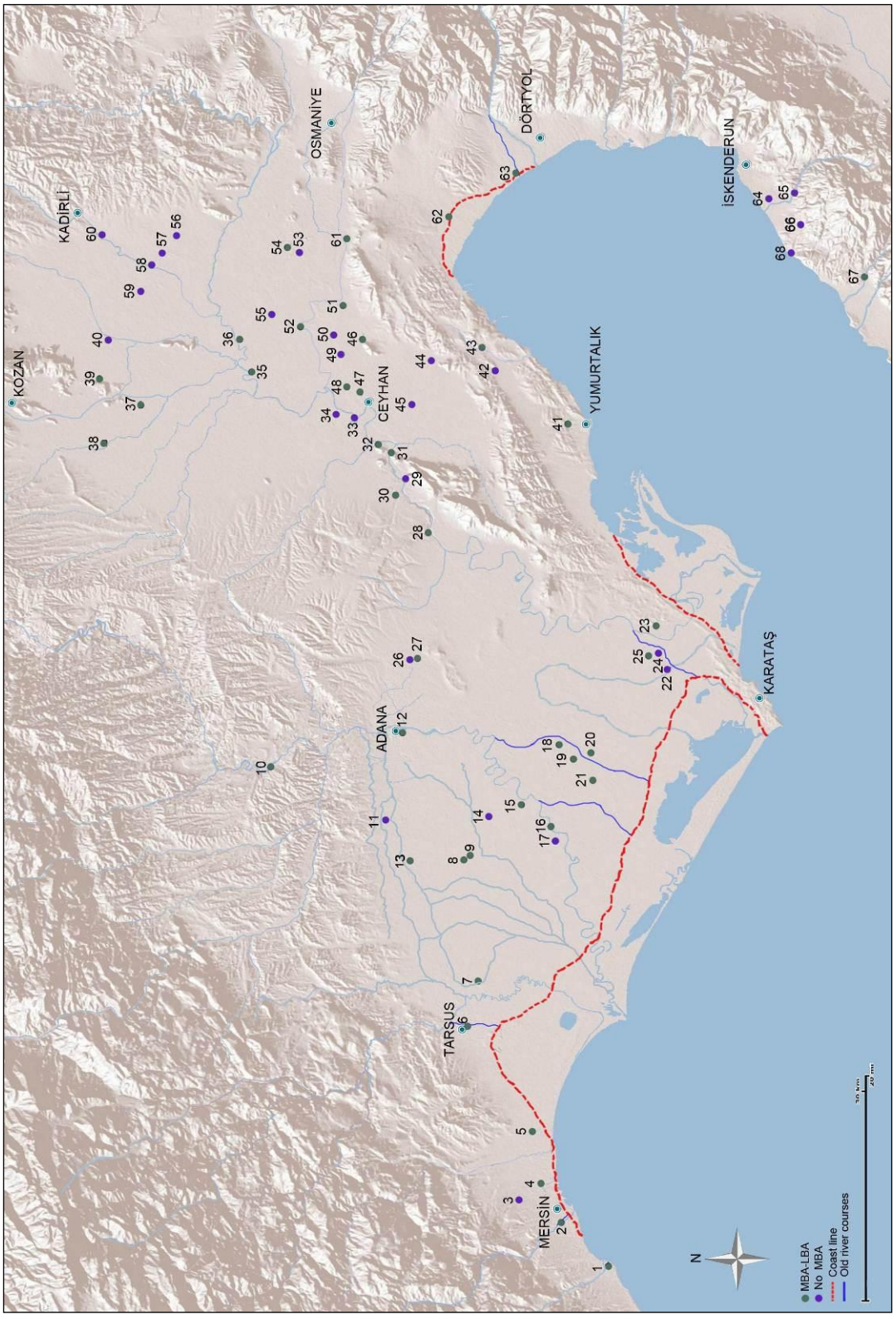


Map 1: Geographical scope of the study area (base-map adapted from http://www.maps-for-free.com/)

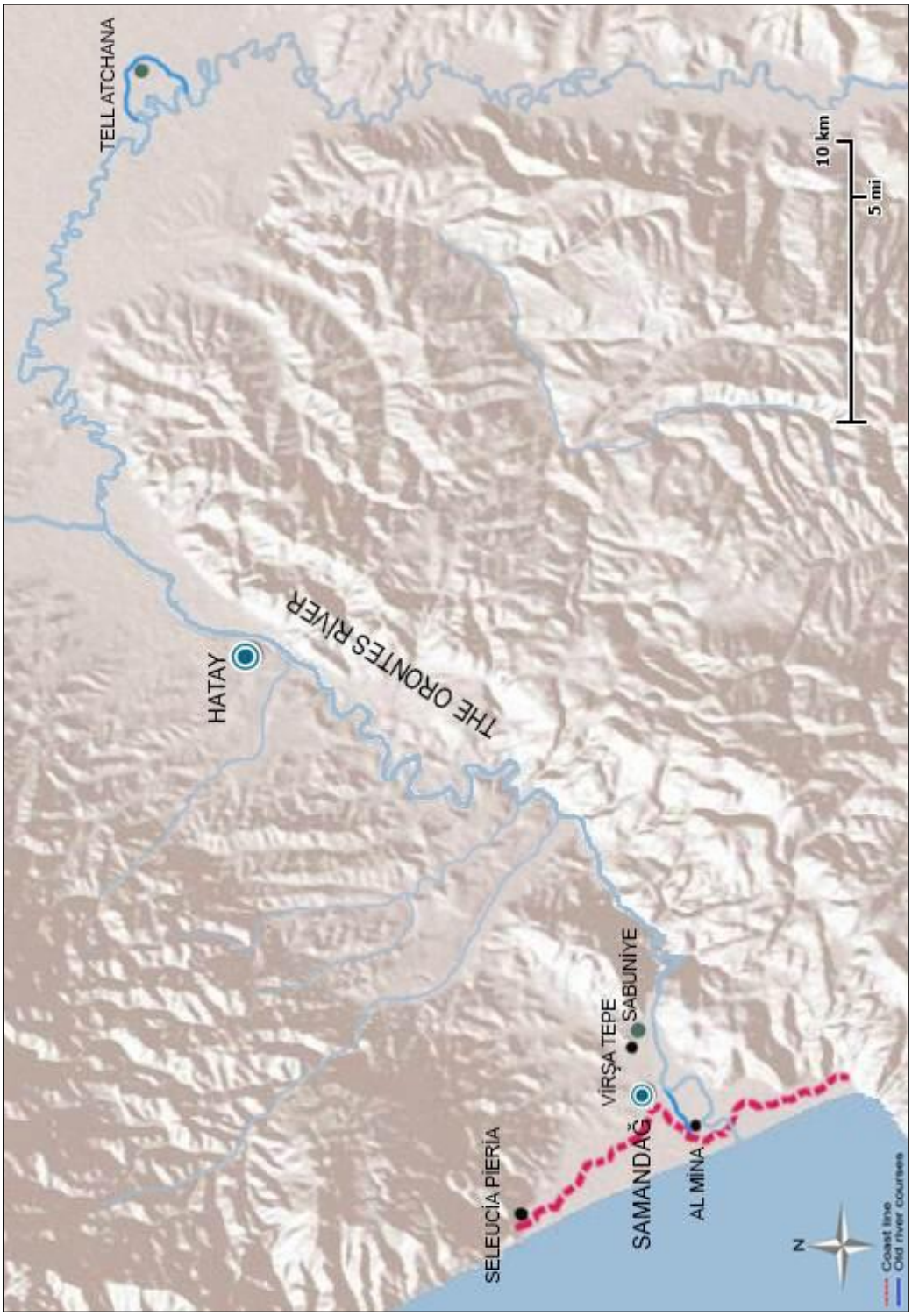
Map 2: The Göksu Valley

Index of Cilician Sites on Map 3.

Ada Tepe II (46)
Alapunar (39)
Alyahanun (16)
Anberinharkı (60)
Arpaderesi Mağara (66)
Boz Höyük (51)
Camili (27)
Cebra (36)
Ceyhan II Höyük (47)
Çaputcu Höyük (15)
Çatal Höyük (58)
Çavuşlu (3)
Çukur Köprü (40)
Dağılbaz (65)
Dalbaz Höyük (67)
Dervişli (17)
Dikili Höyük (11)
Domuz Höyük (25)
Domuz Tepe (23)
Domuz II (24)
Eşkiler (57)
Fenni Kireç Höyük (29)
Gavur Köy (21)
Geçemey (53)
Hamzalı Buran (42)
Hesigin/Tülek Höyük (44)
Höyük (14)
İncirlik (26)
İslamkadı Çiftlik (45)
Kabarsa (7)
Karaağaç (64)
Karahöyük/Erzin (62)
Kazanlı (5)
Kızıl Höyük (59)
Kinet Höyük (63)
Küçük Çiftlik (49)
Küçük Mankıt (34)
Mercin (33)
Misis (28)
Molla Ahmet (48)
Nergis (22)
Paşa Höyük I (8)
Paşa Höyük II (9)
Paşcu Höyük (55)
Pınar Tepe (68)
Sirkeli Höyük (31)
Soli Höyük (1)
Soyalı/Boyalı Höyük (43)
Sultan Tepe (61)
Şamsı Höyük (56)
Tanaverdi/Tenevardi (18)
Tarmıl Höyük (38)
Tarsus-Gözlükule (6)
Tatarlı Höyük (54)
Tepebağ Höyük (12)
Tepesidelik (50)
Tırmıl (4)
Tilan Höyük (37)
Velican (10)
Yalak Özü (52)
Yarım Höyük (35)
Yaşıl Höyük (30)
Yenice Höyük (20)
Yeniköy II (41)
Yeniköy III (19)
Yılanlı Kilise (32)
Yumuktepe (2)
Zeytinli (13)



Map 3: Plain Cilicia



Map 4: The Asi Delta Plain and the Amuq

FIGURES

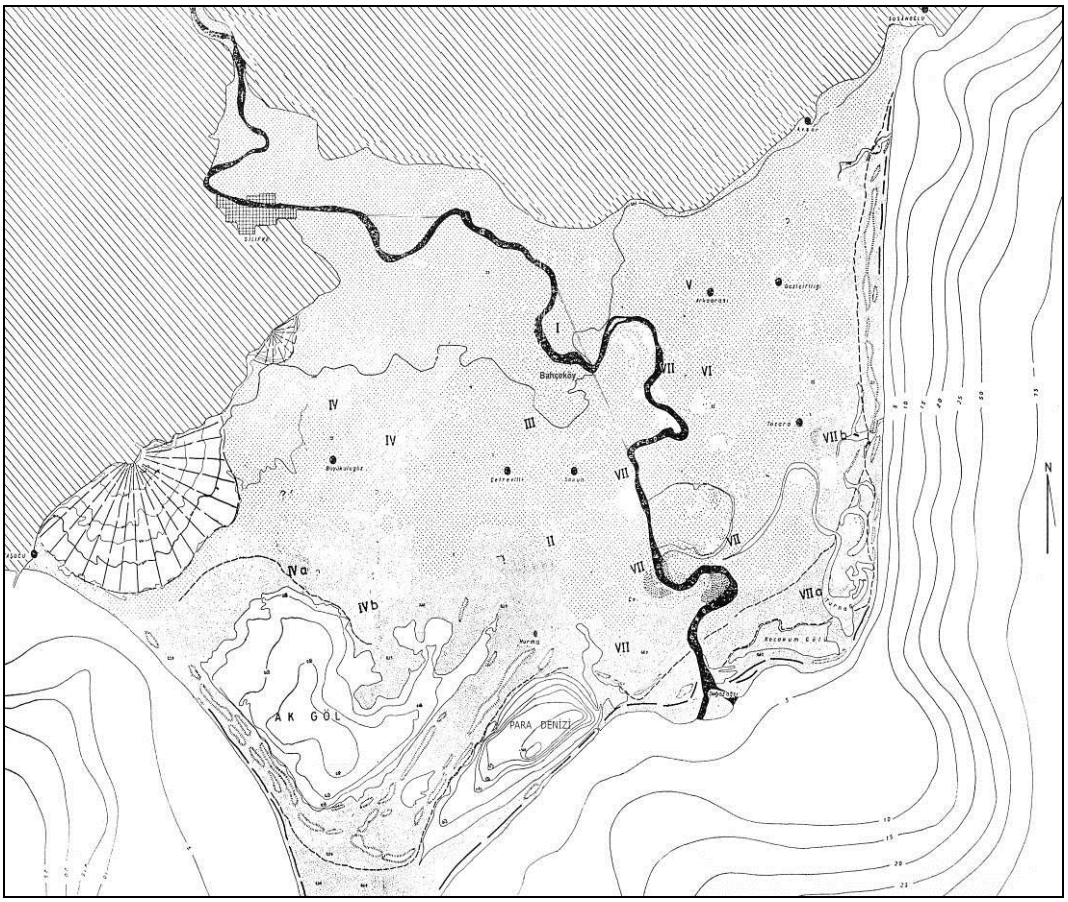


Figure 1: Developmental stages of the Göksu plain, phase I showing the first stage (after Bener, 1967: fig. 3)

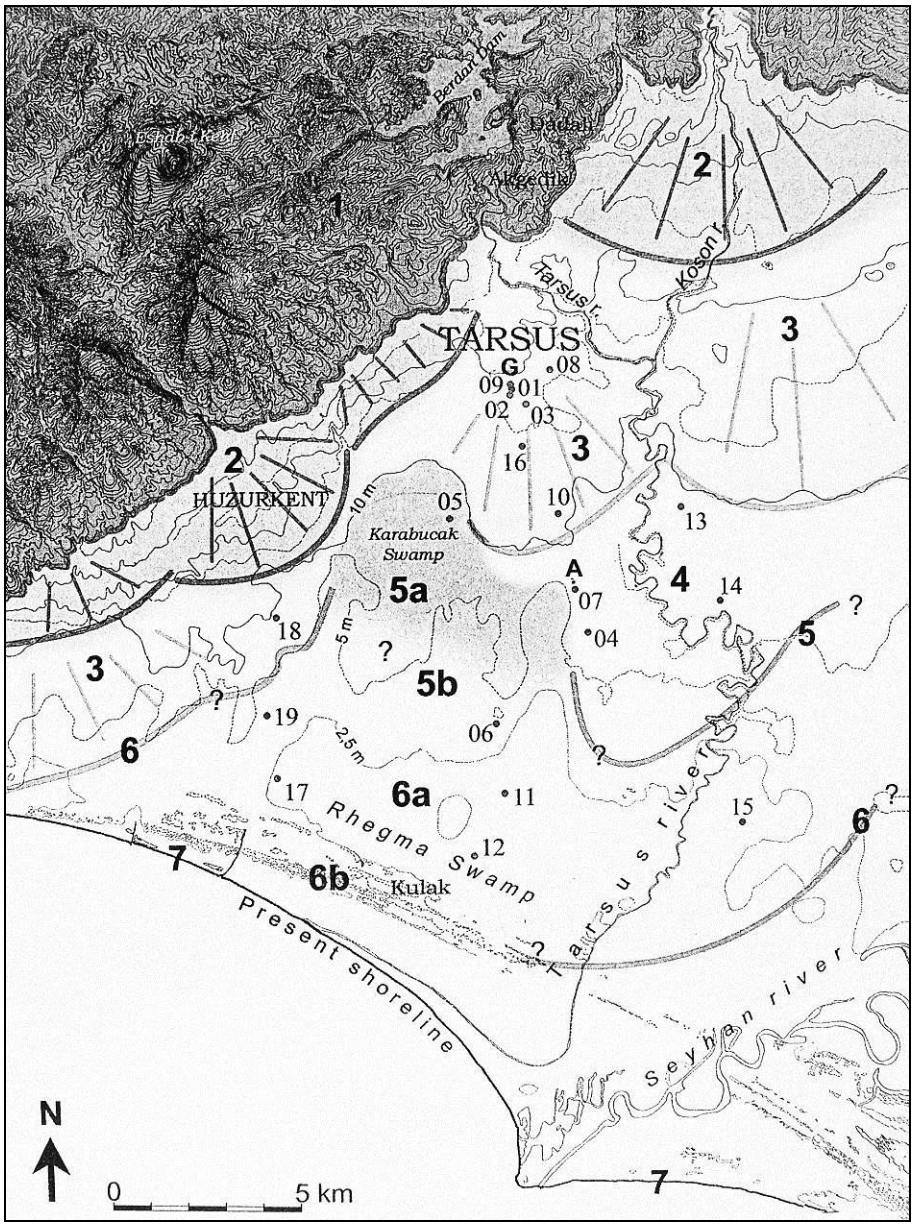


Figure 2: Developmental phases of the Tarsus plain, stage 5a-b showing the shoreline of the mid-Holocene (after Öner et al., 2005: fig. 3)

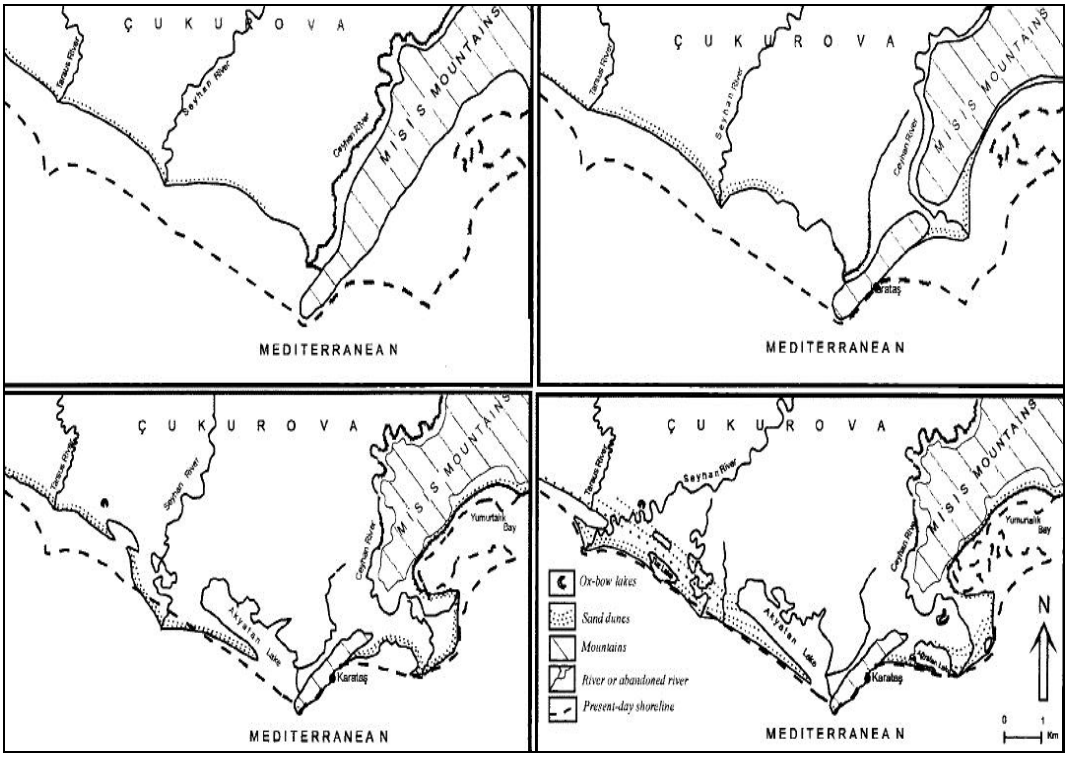


Figure 3: The evolution of the Ceyhan river (after Gürbüz, 1999: fig 2)

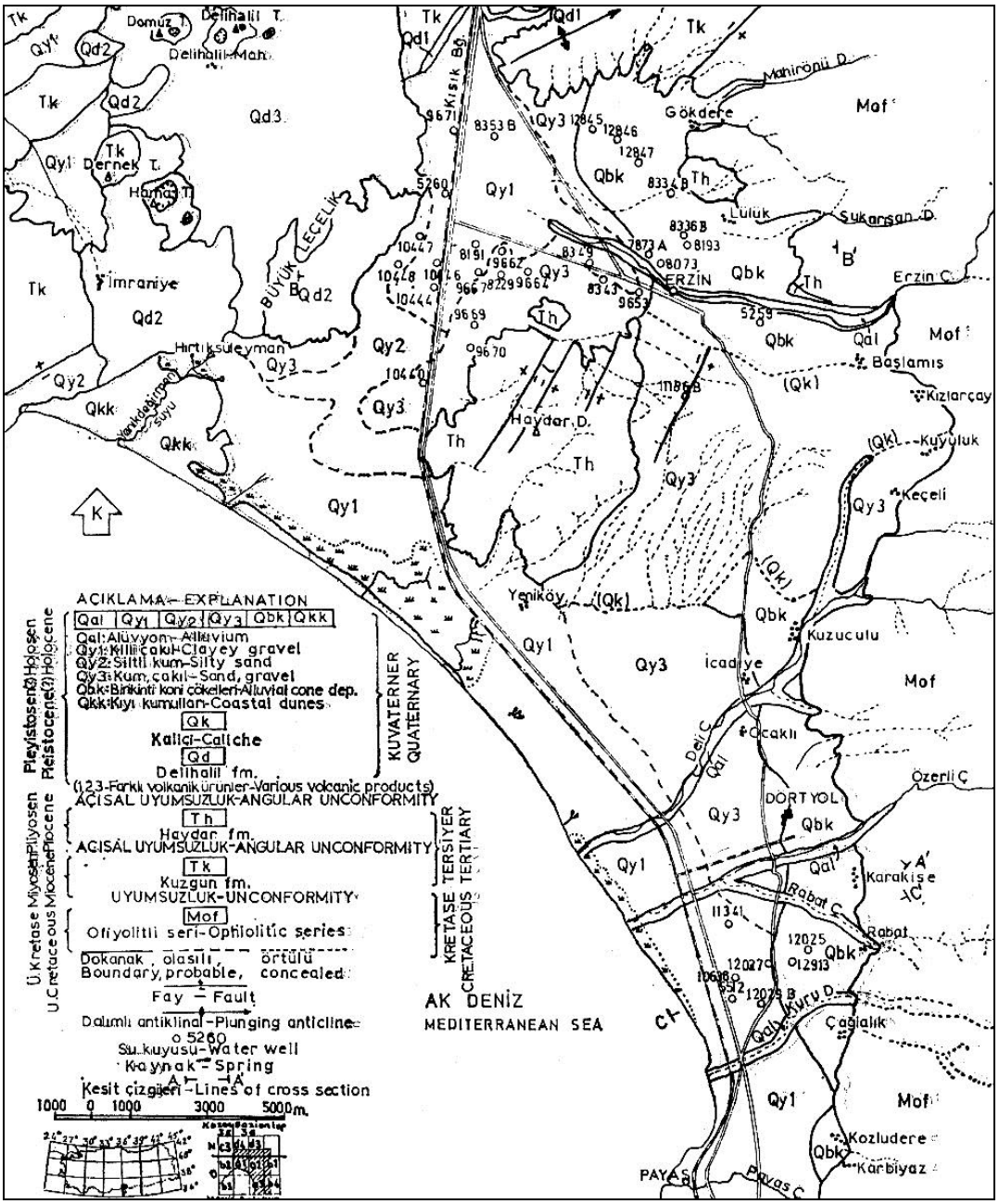


Figure 4: Map showing the plains of Dörtyol and Erzin (after Doyuran, 1982: fig. 4)

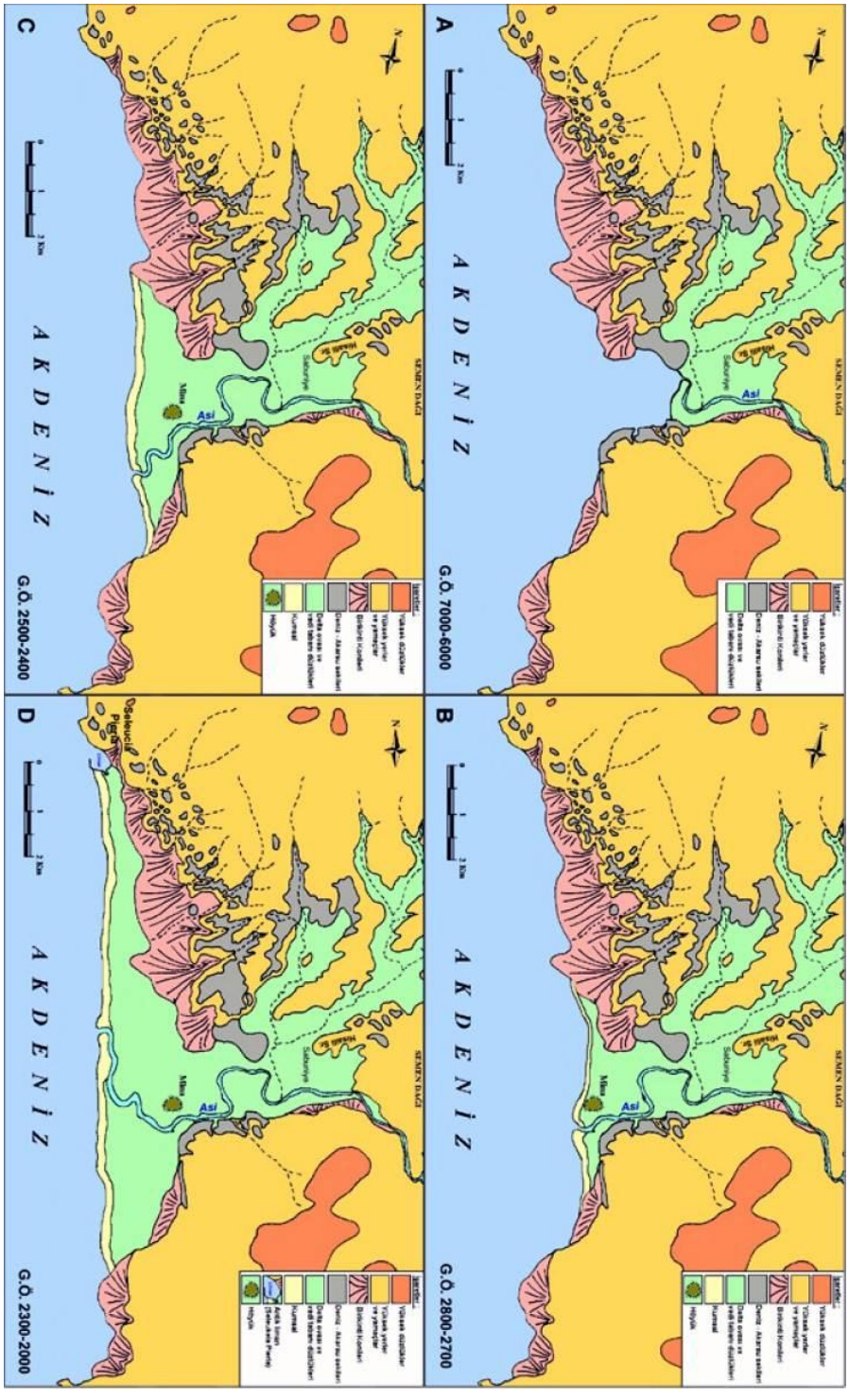


Figure 5: Developmental phases of the Asi (Orontes) delta plain
(after Öner, 2008: fig. 15 A, B, C, D)

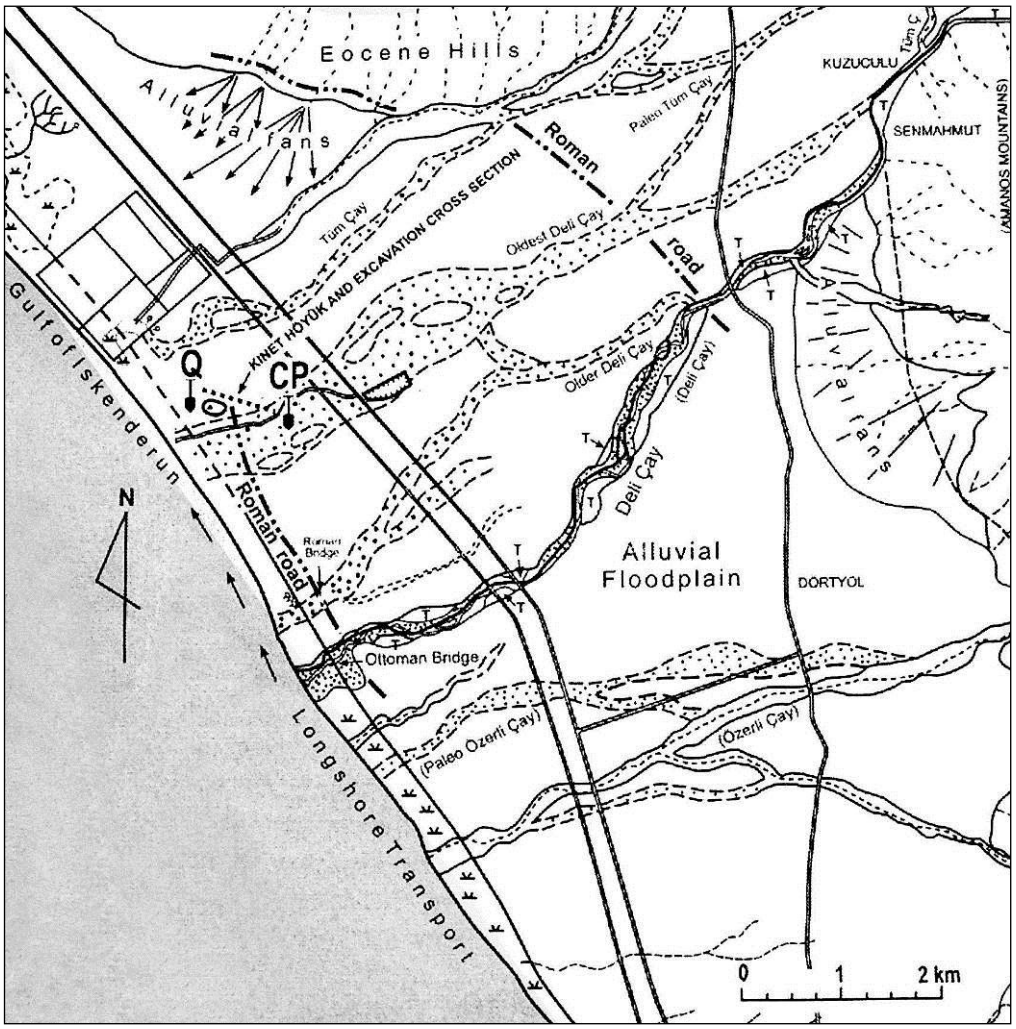


Figure 6: Geomorphologic map of the Kinet Höyük area, map showing the oldest Deli river (after Ozaner, 1995: fig. 1; Beach and Luzzadder-Beach, 2008: fig.1)

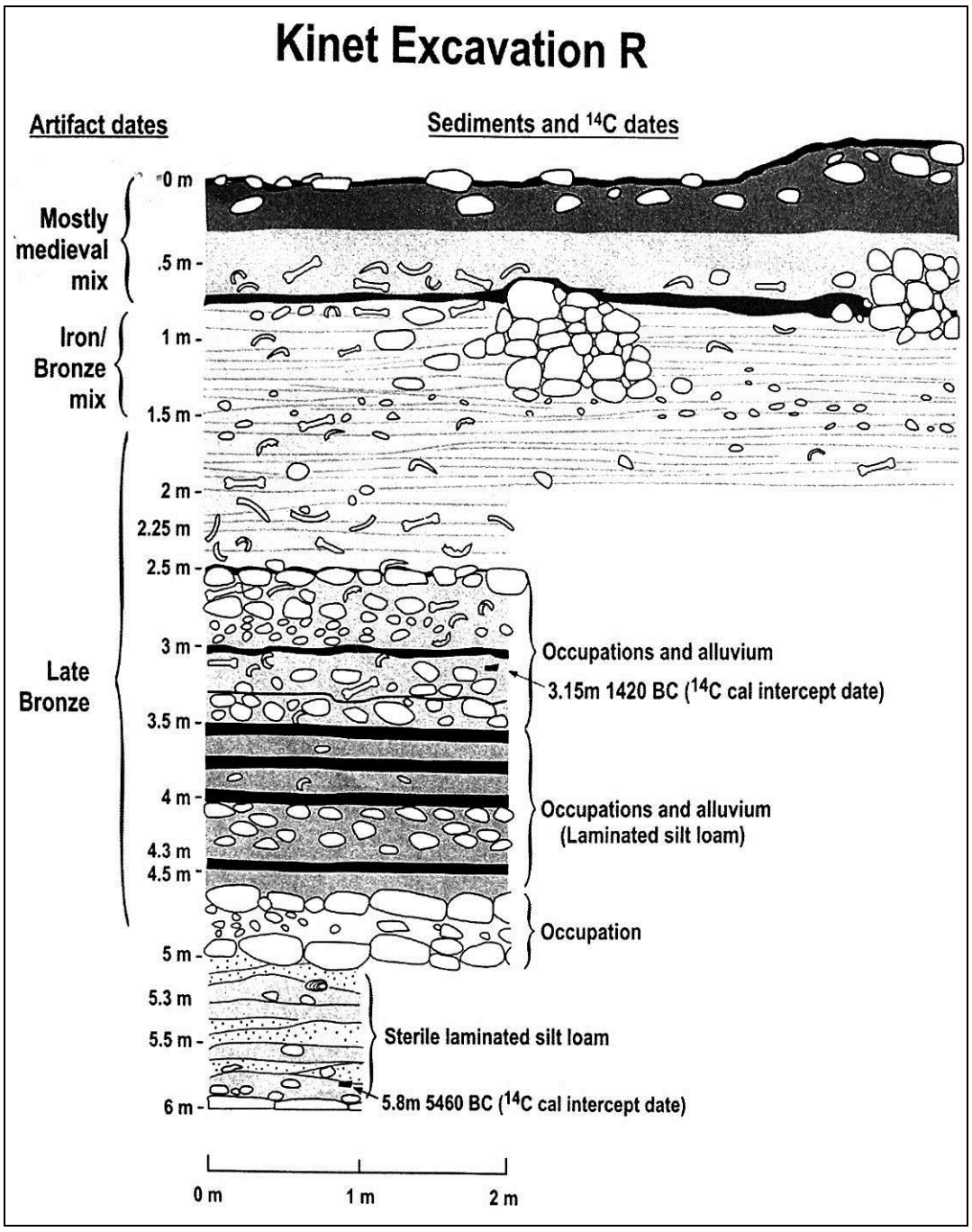


Figure 7: Kinet Höyük, Operation R showing stratigraphic units (after, Beach and Luzzadder-Beach, 2008: fig. 5)

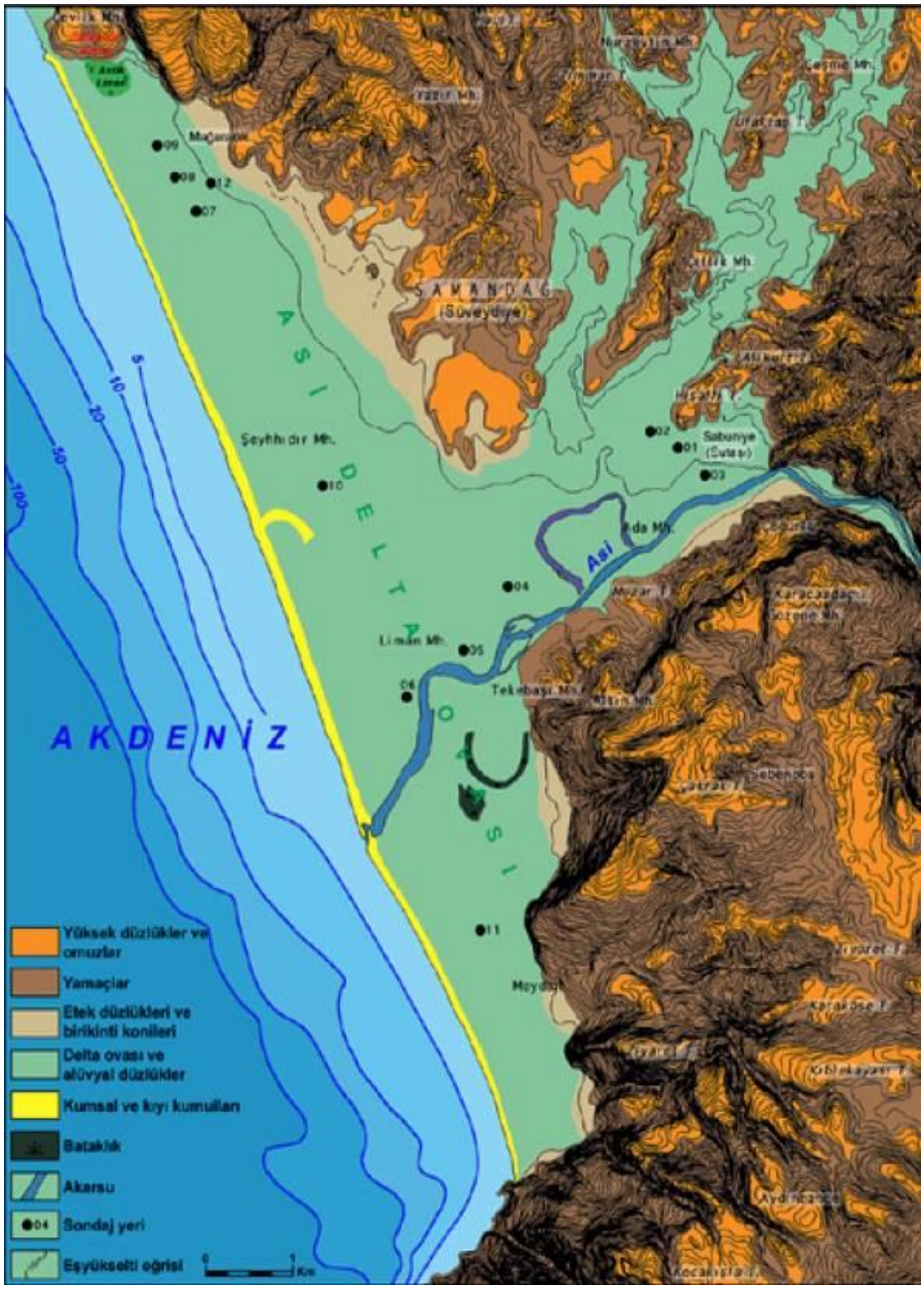


Figure 8: Geomorphologic map of the Asi delta plain showing soundings (after Öner, 2008: fig. 6)

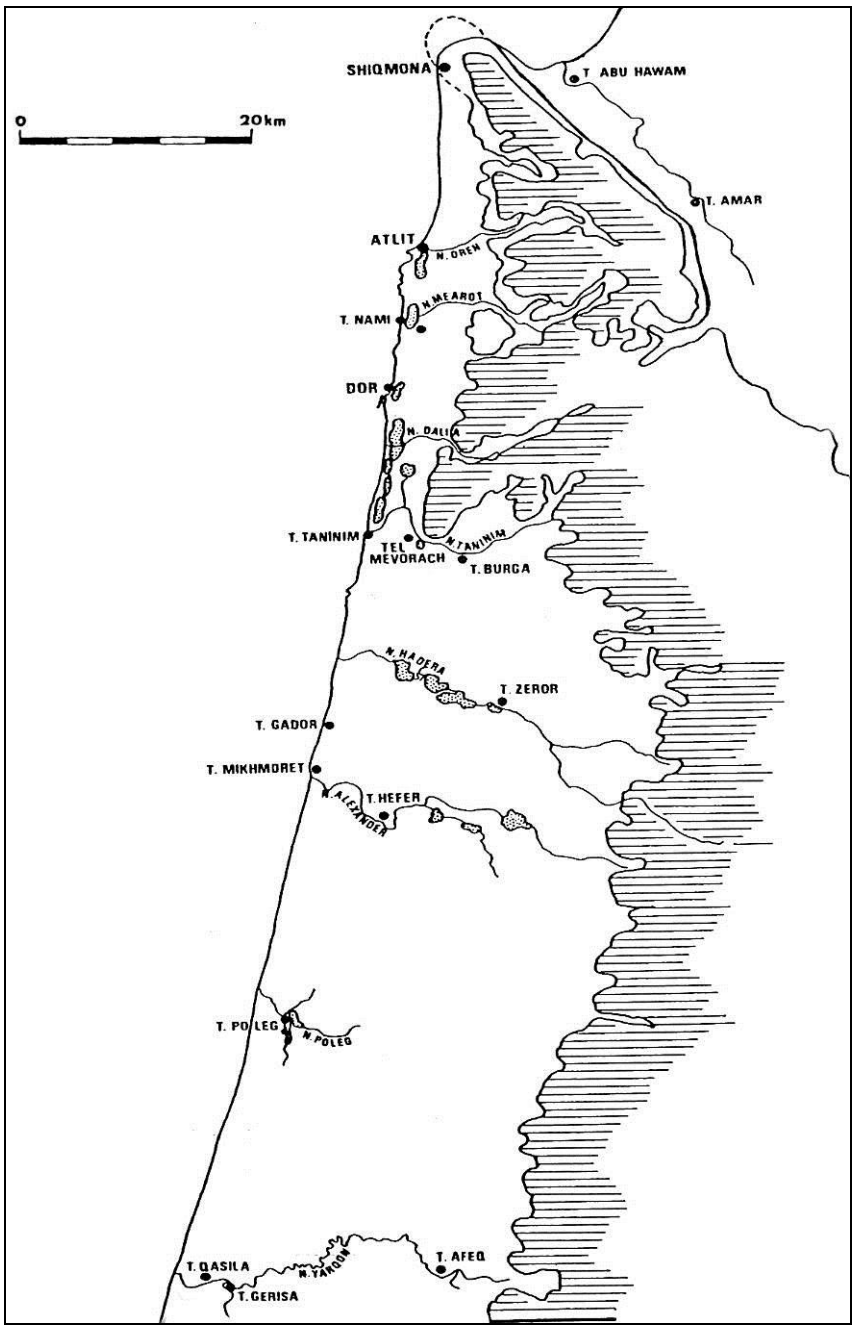


Figure 9: Map showing MB river harbors along the middle part of coastal Israel (after Raban, 1985: fig. 2)

Figure 10: A commercial container from Uluburun, the Canaanite jar (after Pulak, 2006: fig. 24)

Figure 11: Canaanite jars stored in the warehouse of Minet el-Beidha (after Sauvage, 2007: fig. 4)

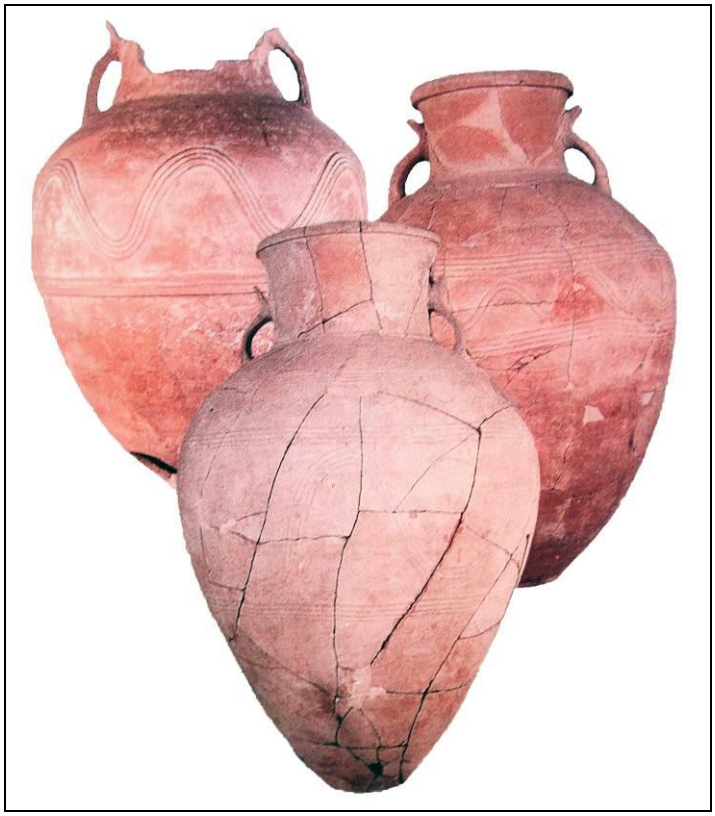


Figure 12: Commercial containers, the Cypriot pithos (after Matthäus, 2006: fig. 14)

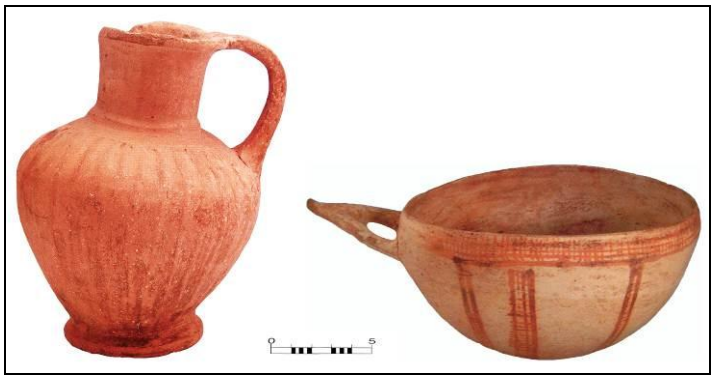


Figure 13: Commercial goods, the Cypriot fine ware from Uluburun (after Pulak, 2006: fig. 31-32)

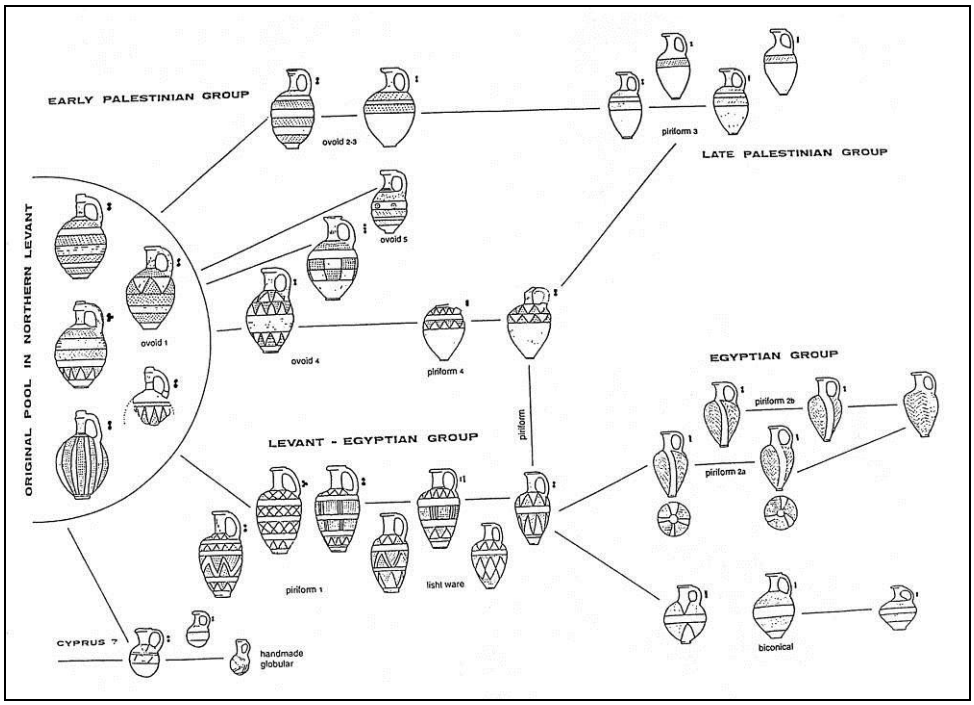


Figure 14: An example for local trends in ceramic styles from Tell el Dab'a (after Bietak, 1996: fig. 47)

Figure 15: A gold pendant from Uluburun showing a representation of Astarte (after Yalçın et al., 2006: fig. 104)

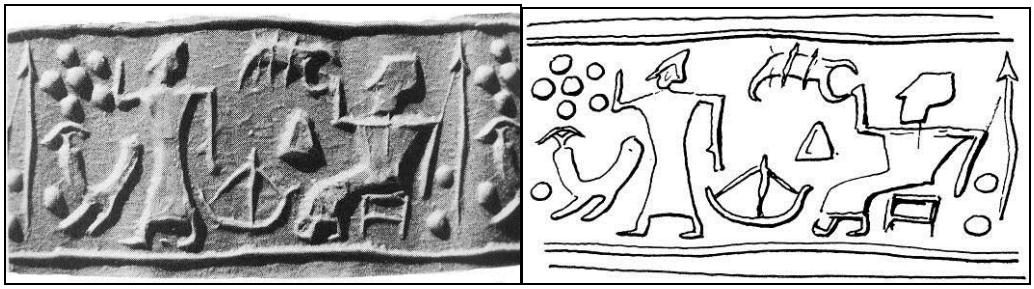


Figure 16: A boat depiction on an Ugaritic cylinder seal (after Amiet, 1992: fig.42.232)

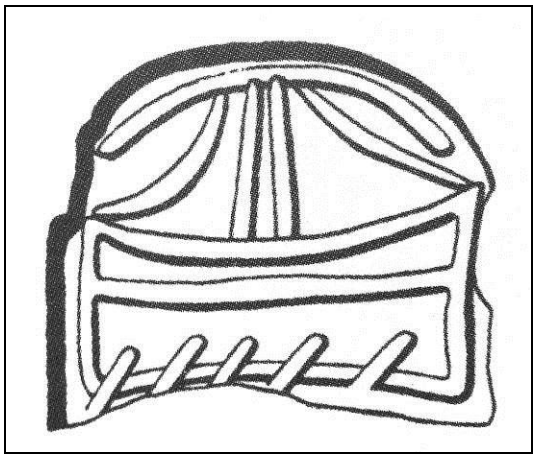


Figure 17: A boat depiction on a faience seal from Ugarit (after Höckmann, 2006: fig. 2.6)

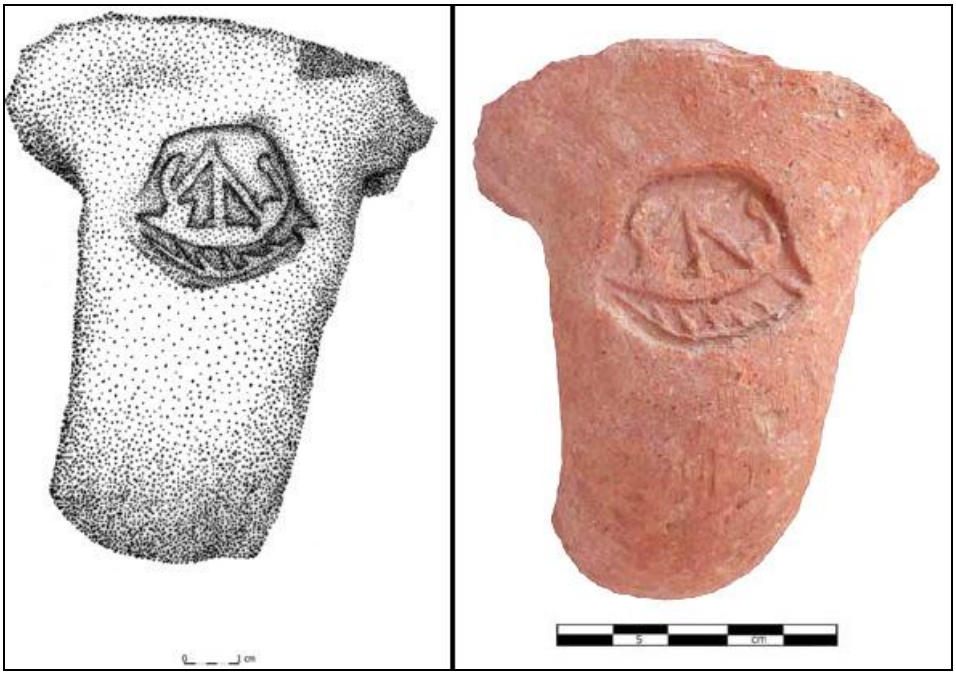


Figure 18: A depiction of boat on a Canaanite jar handle from Tell Tweini (after, Bretschneider and Lerberghe, 2008b: fig. 3.39)

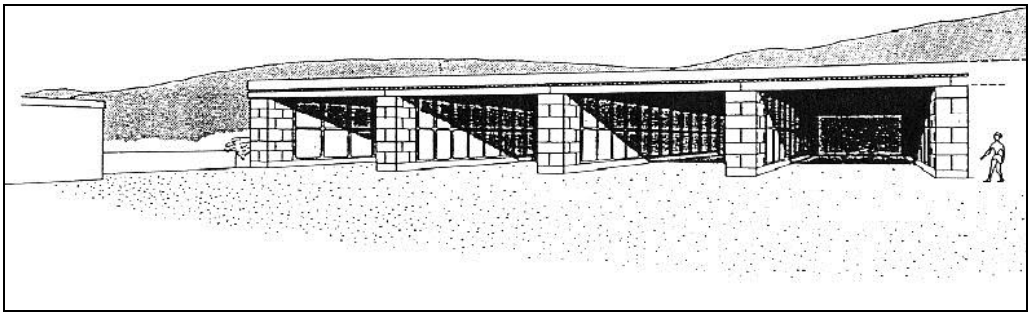


Figure 19: The shipshed at Kommos (after Shaw, 1990: fig. 9)

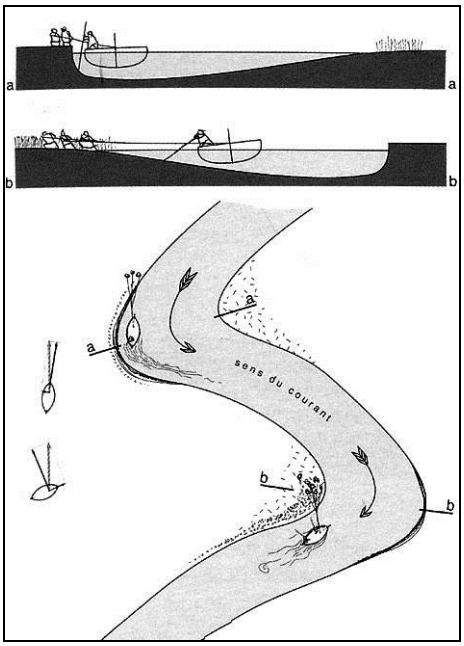


Figure 20: Illustrations of hauling river boat on the Euphrates river (after Margueron, 2004: fig. 38-39)

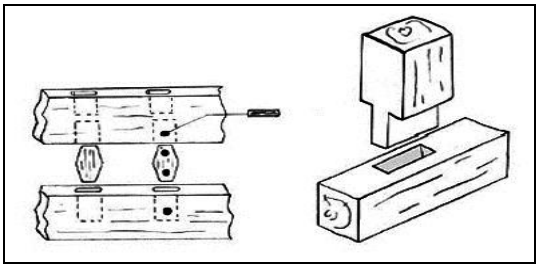


Figure 21: Mortise-tenon joints (after Ward, 2006: fig. 4)

Figure 22: A MBA terracotta model of boat from Anatolia
(after Özgüç, 2005: fig. 222)

Figure 23: Langlois' gravure showing boats on the Seyhan in the 19th century AD

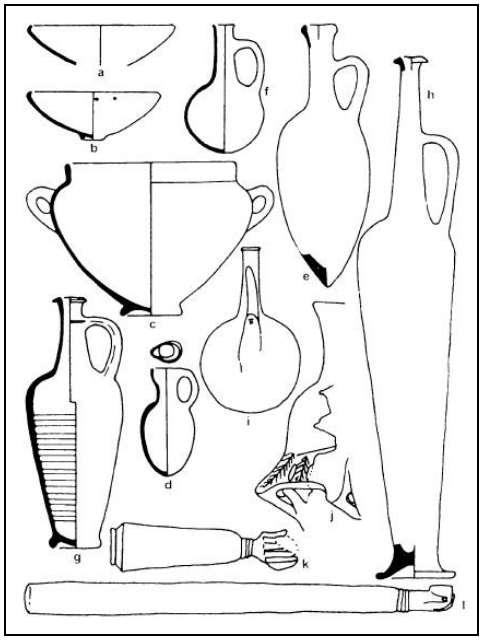


Figure 24: The main shapes of Red Lustrous Wheel Made Ware
(after Knappett, 2005: fig. 2)

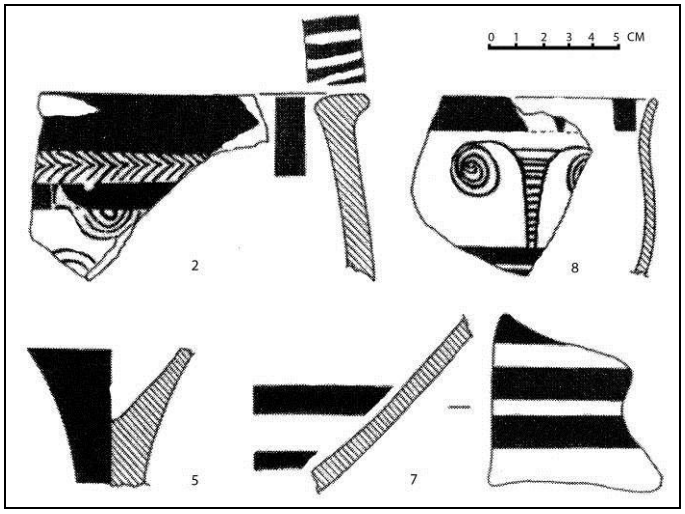


Figure 25: Late Mycenaean sherds 2, 5, 7 from Kazanlı and 8 from Tarsus (after,
Sherratt and Crouwel, 1987: fig. 5)

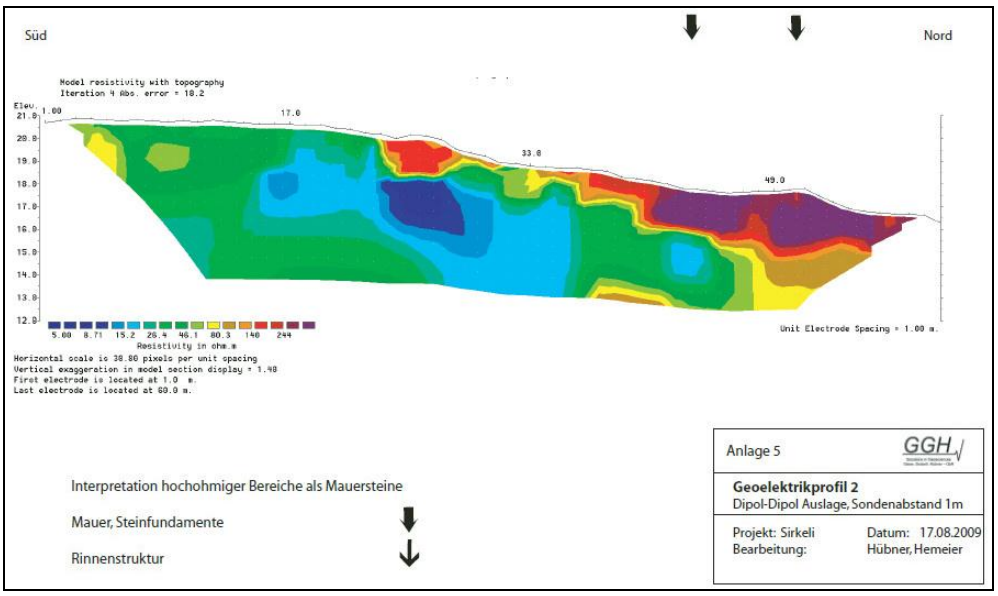


Figure 26: Sirkeli Höyük, geo-electric profile 5, showing the wall of a dock (after Novák and Kozal, 2011: fig. 8)

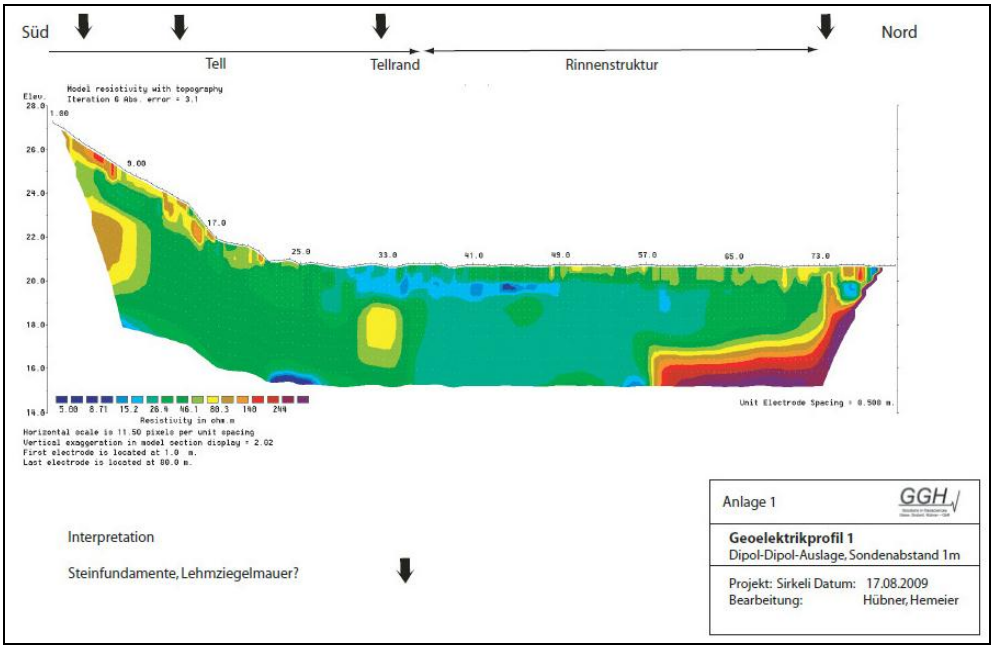


Figure 27: Sirkeli Höyük, geo-electric profile 1, showing a wall east of the channel (after Novák and Kozal, 2011: fig. 6)

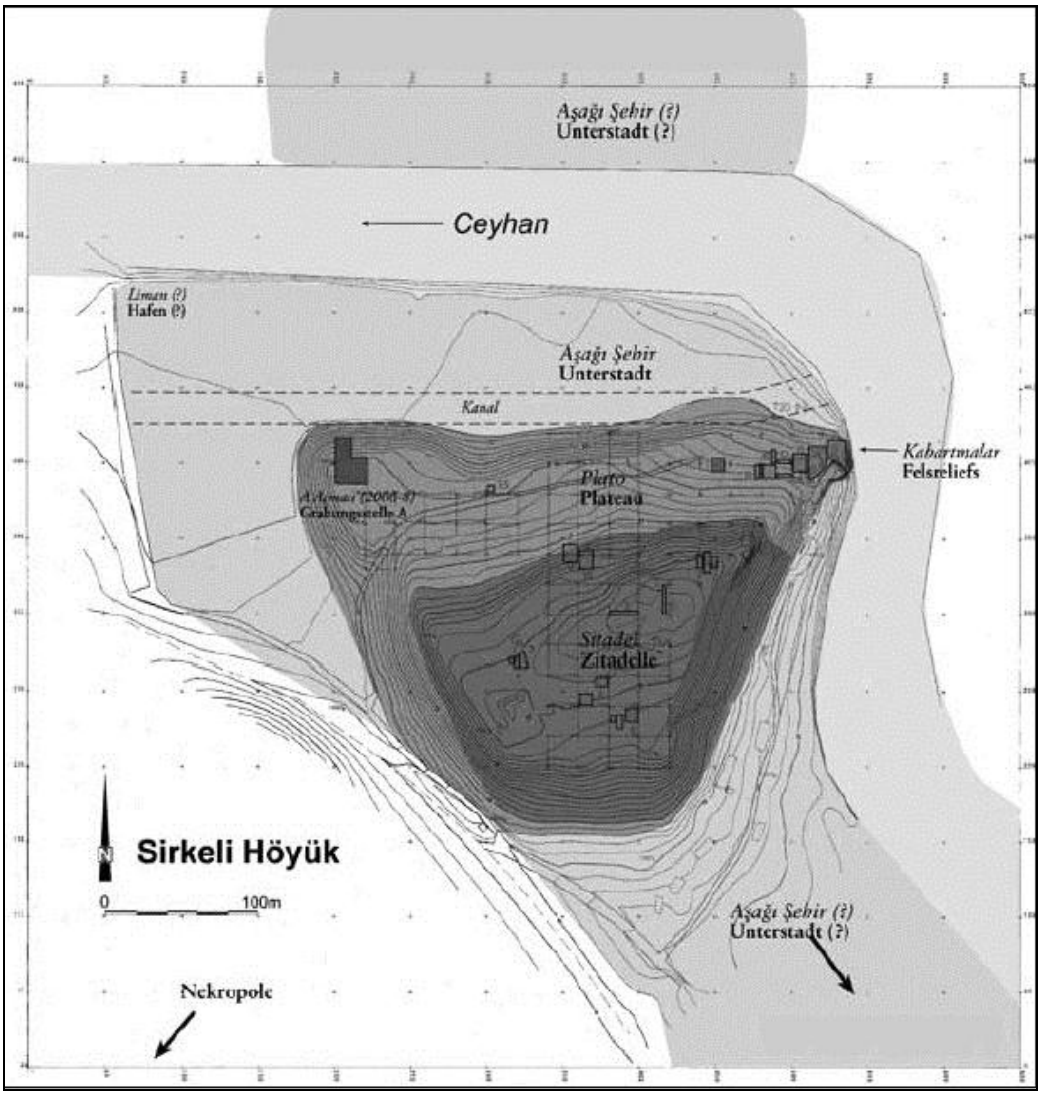


Figure 28: The topographic map of Sirkeli Höyük, showing an artificial channel of the Ceyhan river (after Novák and Kozal, 2011: fig. 2)

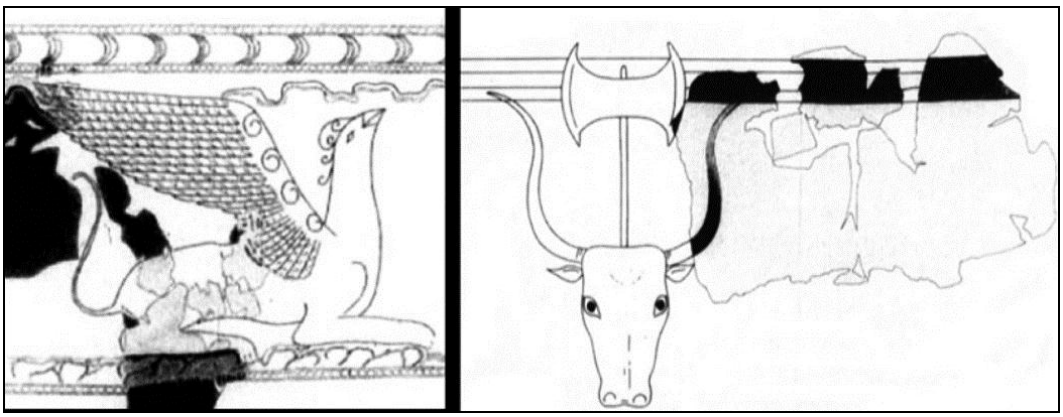


Figure 29: Tell Atchana, wall paintings in Minoan fresco technique (after Niemeier and Niemeier, 1998: fig. VIe, VIf)

Figure 30: Tell Atchana, some imported Late Cypriot ceramics (after Bergoffen, 2005: fig. 13a, 14c, 15b, 37a, 43c)

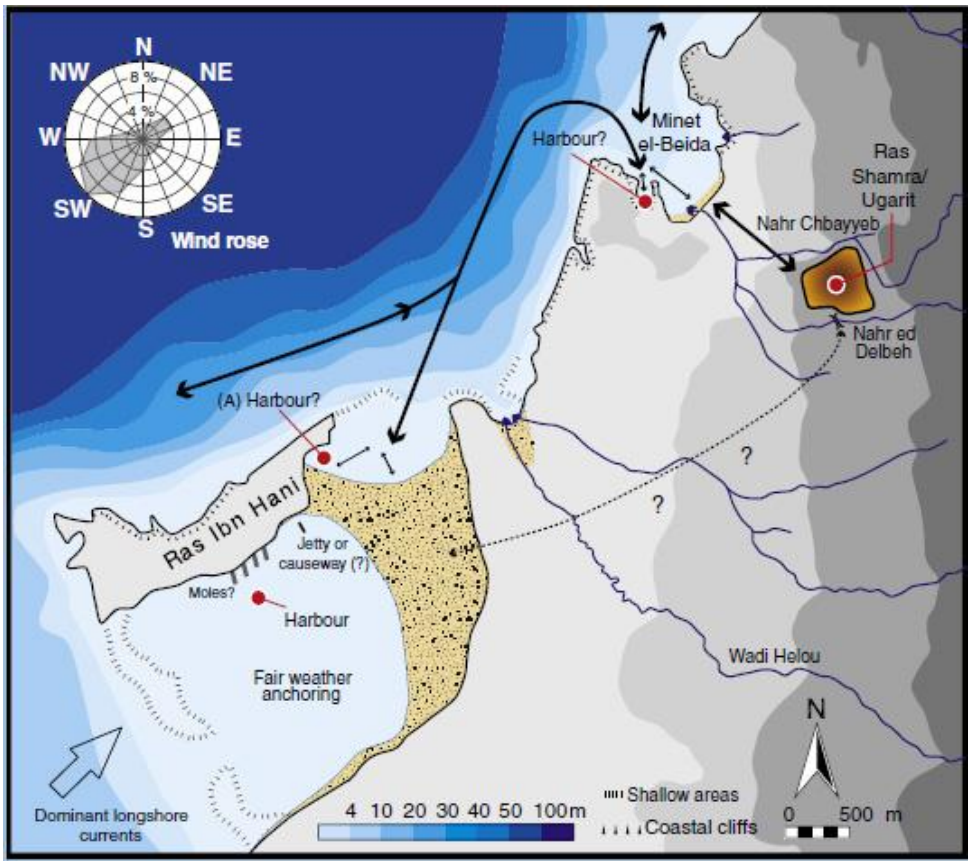


Figure 31: Map showing the relationship between Ugarit and its harbors, Minet el-Beidha and Ras Ibn Hani (after Marriner et al., 2012: fig. 10)

Figure 32: Map showing the Ugaritic Kingdom and its harbor towns (after Bretschneider and Lerberghe, 2008b: fig 3.1)

Figure 33: Tarsus, a Hieroglyphic bulla with the personal name Isputahsu (after Goetze, 1936: fig. 1)

Figure 34: Kilise Tepe, an ivory stamp seal (after Collon et al., 2011: fig. 8)

Figure 35: Soli Höyük, a Hieroglyphic bulla with the personal name Targasna (after Yağcı, 2006b: fig. 4)

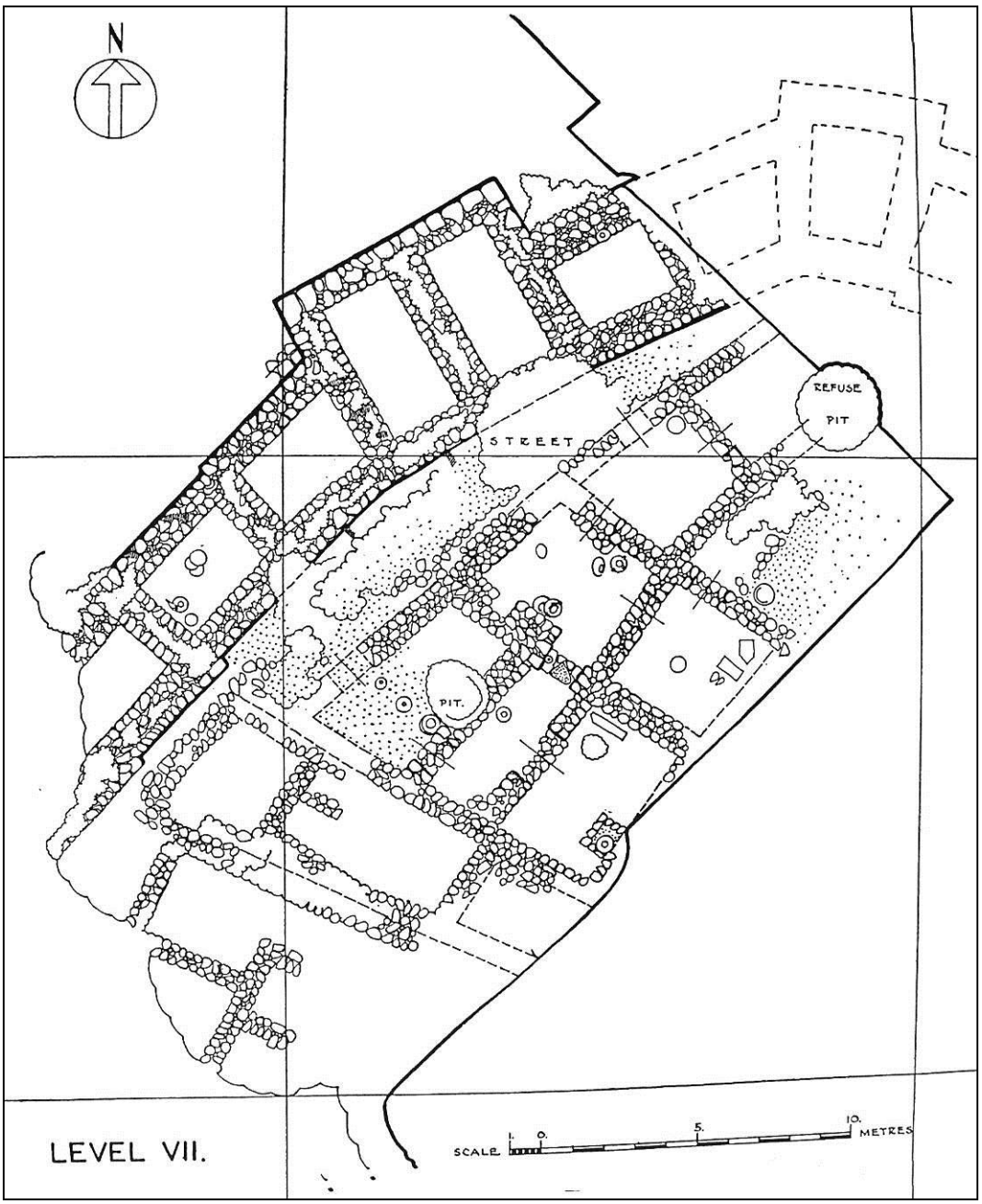


Figure 36: Yumuktepe, Building levels VII-V showing a casemate system (after Garstang, 1953: fig.151)

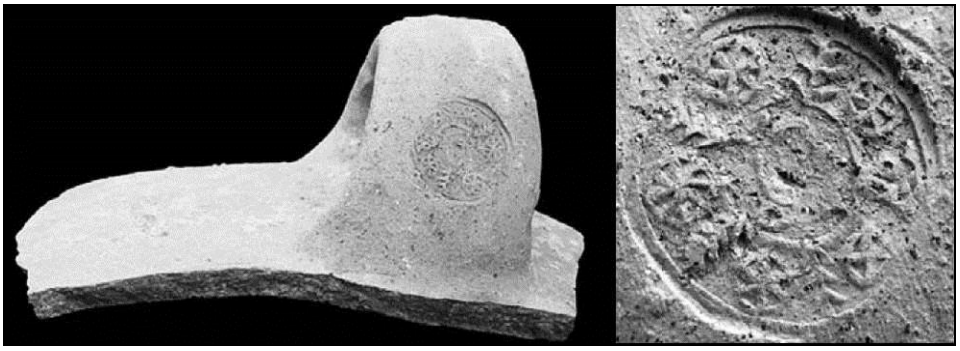


Figure 37: Kinet Höyük, a stamped Canaanite jar handle with a Hittite official seal (after Gates, 2008: fig. 9)

Figure 38: Tell Tweini, a seal with a Hittite-Luwian hieroglyphic inscription (after Bretschneider and Lerberghe, 2008b: fig. 3.37)