THE GENESIS OF EARLY STATE FORMATION IN THE AEGEAN PREHISTORIC CULTURES: LİMAN TEPE AND BAKLA TEPE AS A CASE STUDY

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ABSTRACT

THE GENESIS OF EARLY STATE FORMATION IN THE AEGEAN PREHISTORIC CULTURES: LİMAN TEPE AND BAKLA TEPE AS A CASE STUDY

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The Izmir Region is located in the heart of the Western Anatolian coastline and forms a natural bridge between the Anatolian mainland and the Western Aegean. The region is connected to Central Anatolia through deep valleys and is linked to the Aegean Sea via many harbor sites along the coast.

The architectural features and the other remains (such as pottery, metal objects etc.) found in and around those architectural context can provide the information about the genesis of the urbanization. With reference to the fortifications and bastions may show us that societies in question are concerned with some political problems. This study aims to understand how the scale of architecture changed from the Late Chalcolithic to the Early Bronze Age in the comperative basis of Aegean context particularly in Bakla Tepe and Liman Tepe.

On the basis of architectural differences, two distinct community types may be postulated for Early Bronze Age sites in the Aegean. The fortified coastal site of Liman Tepe is an example of a centrally administrated early urban community with a strong economy. Bakla Tepe represents an affluent inland village or small town community interacting with large centers.

Keywords: Late Chalcolithic Period, Early Bronze Age, Chiefdom System, Early State Formation, Urbanization.

ÖZ

EGE PREHİSTORİK KÜLTÜRLERİNDE ERKEN ŞEFLİK SİSTEMİ'NİN DOĞUŞU: LİMAN TEPE VE BAKLA TEPE ÖRNEK ÇALIŞMASI

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Izmir Bölgesi Batı Anadolu sahil bölgesinin tam ortasındadır ve Anadolu ile Batı bölgeleri arasında bir köprü görevi görmektedir. Bölge derin vadilerle Orta Anadolu'ya, limanlar sayesinde de Batı Anadolu'ya bağlanmaktadır.

Mimari ve bu mimari kalıntıların içinde ve çevresinde ele geçen çeşitli buluntular (seramik ve metal buluntular gibi) sayesinde kentleşmenin ortaya çıkması ile ilgili bilgileri sağlamakta. Savunma duvarları ve bastiyonlar sözkonusu toplumların politik sorunlar ile ilişkili olarak kendilerini koruma amacı ile yaptıklarını göstermektedir. Bu tez çalışması ile Liman Tepe ve Bakla Tepe örnekleri üzerinden Geç Kalkolitikten Erken Tunç Çağı'na geçiş süresinde mimarideki değişimin anlaşılması amaçlanmıştır.

Mimari yapılanmalardaki farklılıklar göz önüne alındığında Ege Bölgesi'nde iki farklı yerleşim şekli tespit edilmiştir. Bunlardan ilki olan Liman Tepe güçlü ekonomisi ile merkezi yönetim sistemi bulunan ilk kentlileşmiş toplum özelliği gösterirken; Bakla Tepe, büyük kentsel merkezlerle ilişkili, nispeten zenginleşmiş köy veya küçük kent topluluğunu temsil etmektedir.

Anahtar Kelimeler: Geç Kalkolitik Çağ, Erken Tunç Çağı, Şeflik Sistemi, Erken Şeflik Oluşumu, Şehirleşme.

To my family

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To all my friends, thank you for your understanding and encouragement in many ways, many moments of crisis. Your friendship makes my life a wonderful experience. I cannot list all the names here, but you are always on my mind and heart.

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TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

INTRODUCTION

1.1. Definition of the Problem

Our knowledge is increasing about the region from year to year through the preliminary results of prehistoric researches conducted in the coastal parts of Western Anatolia. Troy, through its important geographical location on the Northwest coast of Anatolia, constitutes a very important part of the prehistoric researches of Western Anatolia. The restricted number of archaeological researches undertaken in the Aegean Region, which are usually being unpublished, set a limit to interpret the issues of early urbanization in the region.

Very important results, especially about Bronze Age in Western Anatolia, have been obtained through prehistoric excavations within the framework of the excavations and researches carried out at important centers.

This is understood through the excavations and surveys; the earliest settlement in the region belongs to the Neolithic Period. The Late Chalcolithic is mainly based on architectural remains and burial gifts.

If we consider the Early Bronze Age we see that the number of settlements was increased throughout the region. There are two groups of characteristics for the urbanization in the Early Bronze Age:

1. Those related to the morphology of the settlements, i.e. the size of buildings, the differentiation in sizes of buildings, buildings of specialized function, the size of the settlement, the layout, and the fortifications;
2. Those concerning the socio-economic structure of the community, i.e. craft specialization, interregional trade, and metallurgy.

The aim of this thesis is to show up and interpret especially the architectural structures which have changed after got through the Early Bronze Age from the Late Chalcolithic. Changes of the period are reflected in both architecture and small finds. The egalitarian society has changed and the chiefdom system should begin to settle in instead through the centralization and extensive usage of metallurgy. Criteria such as the chiefdom system type architectural restructuring, the materials which documents the advance of foreign trade, differentiation in interment will be considered to research this system. Both Liman Tepe and Bakla Tepe chiefdom/administrative system will be analyzed by examining the following features: large wall systems; well-organized city systems as an indicator of the central authority; castles and large settlements surrounded by tall towers; the emergence of pottery wheel (production increase), new types of ceramics began to be seen for the first time such as depas, tankard, double handle, pots, wheel-made plates and pyxis; bronze objects; diversification and increase of the burial gifts and the emergence of seals as an indicator of authority.

This research focuses particularly on the recent investigation taking part in Western Anatolia which gives new evidences of intercultural network in the Aegean world and further research interests as well.

Emerging of the chiefdom system and constituting the public structures will be taken into account as main objective to get the differentiation started in the thesis generally. Architectural finds are considered, however necropolises use and objects are not studied thoroughly in this research. The objective of my thesis is to explain how control has been emerged, and how it has been done.

This thesis will try to examine a set of characteristics which might be related to urbanization in the Late Chalcolithic to the Early Bronze Age and to identify the relationships among those characteristics and the level of urban development of the settlements. This thesis work is confined to characteristics relating to the architecture of the settlements.

1.2. Geographical Characteristics of the Aegean Region

1.2.1. Geographical Setting of the Aegean Region

The Aegean a part of the Mediterranean Sea surrounded by Crete in the South, mainland Greece in the West, and Anatolia in the East, the Cycladic Islands in the middle. The term "Aegean Cultures" is defining the cultures of these four different geographical areas. The Bronze Age cultures of Crete are termed Minoan, those of mainland Greece, Helladic and those of the Cyclades, Cycladic. Western Anatolia cultures have no special term within the Bronze Age Aegean.

The Anatolian part of the Aegean region is comprised of the districts and provinces started with Edremit, continues with the coastline and end with Afyon. In the north the Aegean is separated from the Marmara Region by a stretch of hill territory.

There are district geomorphological differences between the northern and southern stretches of the Aegean coastline. The northern stretch features rocky peninsulas and promonties separated by gulfs whereas the south is characterized by river deltas. The present coastline of the Aegean is a relatively recent formation. Some nine thousand years ago the coastline of Western Anatolia was connected to certain Eastern Aegean islands, including Samos and Chios. With rising sea levels engulfing the low-lying areas, the coastline changed and major

gulfs developed[1]. The Aegean Sea penetrated through the "sinking shores" to a point far deeper inland than the present coastline so that numerous prehistoric sites both in the Aegean coast and lower river valleys disappeared[2]. Rapid rise in sea level in the Early Holocene decreased the gradient thus slowing the flow of the river and transforming its stream valleys into trapped alluvial patches. Later, in Middle Holocene, when the major river valleys further inland were filled up with mostly fine-grained river alluvium and with coarser sands and gravels from surrounding hills, the Aegean coastline started to move westward due to stream deposition of alluvium[3]. This outward expansion would have caused some of the Bronze Age sites situated near the old coastline to vanish under the alluvial fans spreading out from the hillsides[4]. Moreover, excessive deforestation in hills and mountains surrounding the plains and valleys over the past few millennia led to massive soil erosion, resulting in accelerated deposition of silt by the major rivers and their tributaries[5]. In the process most settlements located on lowlands would have been covered by thick deposits of sterile soils. Indeed, this process which decreased agrarian land must have resulted in the shifting of Bronze Age villages and towns to higher elevations. Furthermore, abandoned Bronze Age sites situated on broad flat plains near the mouth of the major rivers would also have disappeared when these were flooded regularly during the winter.

1.2.2. Geographical Characteristics of the Study Area

The Cumaovası sub-region is characterized by the same apparent relief as almost all the Aegean land. The coastal and inner plains are divided by lower hills and

[1] Bammer, 1986/87: Fig. 1

[2] Yakar, 2000: 317-318

[3] Akdeniz, 2000: 1-10

[4] Yakar, 2000: 317

[5] Lambrianides, 1966: 177-178

mountains range extends in the east to west direction[6]. The geomorphologic data shows the sub-region characterizes with schist, limestone layers dated to 2nd geological period (Mesozoic) as well as the simple lava rock formed during 1st geological period (Paleozoic). The mountains range in north-south direction is bordered with Neocene period's lake sedimentary and alluvial formations on the lower plains[7]. Cumaovası characterizes with Middle Miocene's acidic, old volcanism that seems still active. The southern side of the sub-region where open to the narrower coastal side. The area between Gümüldür-Ahmetbeyli-Kuşadası is covered with bays and capes because of mountain ranges. The sea level change during the Holocene played precise role of the recent inner coastal line. Between 5000-3000 BC the sea level was 2 m lower than the recent sea level and during the time until the 1st century AD it became the todays as a result of gradual increase of the sea level. In spite of this traces of the abrasion of sea waves on the upright cliffs were not observed[8].

Cumaovası sub-region is mainly covered with lower plains. The eastern side is alluvial plain while the western is characterized by lower volcanic hills of Neocene age.

Cumaovası (Menderes) has a debris plain it is located at approximately 40 km southeast of İzmir. This basin was formed by vertical tectonic movements during Neogene and Quaternary[9]. The area is situated in between the Urla peninsula in the west and the massif of Menderes in the east. This depression has two large alluvial fans: Tahtalı Çay and Arapkahve Deresi. Tahtalı Çay is leading from the slopes north of Dereboğazı. Tahtalı Çay brings a great deal of alluvium and it has silted up to such an extent that its bed at the end of the south-western corner of Cumaovası Plain reached a thickness of 6-7 meters, whereas in the north the thickness of the deposited

[6] Mater 1982: 31

[7] Akdeniz, 2000:1-10

[8] ibid.: 20

[9] Bostancı, 2004: 25-30

bed measures in 2-3 meters[10]. Other alluvial fans and the gentle hills border the plain to the north and east. On the geomorphological basis, the Cumaovası basin is divided by marshy lands and old lakes which were dried out early in the 1950's. The streams of Arapkahve and Çevlik run out along a second large alluvial fan ending to another old lake basin in the south where K. Menderes (Kaystros) alluvial fan runs nearby extend[11].

The Tahtalı, Arapkahve and Çevlik alluvial fans must have been in active formation and development from the last millennia of the Pleistocene period and through the Holocene period[12].

From the Pre-Holocene to the present the plain surface were determined by three different alluvial units. They have different habitats and reflect different geographical environments. These three units in the northern part of the Torbalı Plain from the base to the surface are as follows: Pre-Holocene basement deposits, lacustrine-swamp fills and Fetrek stream flood fillings[13]. Contrary to these layers, the units in the southern part of the plain from bottom to surface are as follows; Pre-Holocene fillings, marsh, lacustrine shallow marine sediments, and Küçük Menderes River flood filling sediments[14]. From these findings, it is estimated that ancient settlements such as Metropolis was set up at the edge of the plain or on the slopes of the mountains because of the negative environmental effects of lakes and swampy fields in the flood plain. By the changing of the environmental conditions in the region, the findings implicated that new settlements started to develop towards the central parts of the Torbalı Plain[15].

[10] Filiz and Yalçın, 1985: 613-614

[11] Vardar and Sarıöz, 2006: 58

[12] ibid.: 60

[13] Filiz and Yalçın, 1985: 614

[14] Kraft, et. al. 1977: 941-942

[15] Vardar and Sarıöz, 2006: 59

The main vegetation formation is characterized by the Mediterranean lemur on the lower hills as well as by the vineyards and olive groves on the slopes and lower plains and the pine forestry on the upper sides of hills[16]. This seems to reflect same vegetation for the prehistoric times. On the other hand a common feature of citrus trees extended mostly on the coastal side are originated after Crusader Wars and brought to this sub-region not before Medieval Age[17]. It should be also mentioned that the lower plains which are suitable to plant the grains became the fields for to produce tobacco recently[18].

As it is known Cumaovası forms the natural eastern border of the Urla peninsula which projects like a hammer through the Aegean Sea. The sub-region which reflects all features of so called Mediterranean climate also includes large arable fields able to be planted by watery farming served by the opportunity of having hundreds of surface and underground streams. However much it's not precise; the possible lake bed dried by the time which is thought to be located on the same area with the modern dam lake seems to be played an important role in the sub-region's development[19]. There are no geomorphologic studies with focus on this subject. In spite of this the archaeozoology data[20] which examines the Bakla Tepe and Liman Tepe faunal remains indicates that there are lots of bird bones particularly lived within watery exist hoods like lakes. The large arable fields seem to be intensively planted in prehistoric times as like of modern times. The big series of sickle blades uncovered during the excavations on the contemporary building levels of Bakla Tepe as well as the samples collected during surveys confirm this view[21]. On the other hand the archaeobotany evidence[22] gathered

[16] Oybak-Dönmez, 2006: 543

[17] ibid.: 545

[18] Bostancı, 2005: 248

[19] Filiz and Yalçın, 1985: 613-617

[20] Reese, 2006

[21] Kolankaya Bostancı-Bostancı, 2004

from Bakla Tepe indicates the long term production of grains mostly uncovered from the specialized architectural units for storage such as grill plan houses and circular plan storages (diameter 1-1.5 m) at Bakla Tepe[23] and the possible the storage area called previously by Oğuz Bostancı[24] to define this area an accumulation of carbonized grain samples has been found at Sarımeşe Tepe[25].

Fig.1. Early Bronze Age settlements (Şahoğlu, 2004:109).

[22] Oybak-Dönmez, 2006

[23] Erkanal, 1997

[24] Bostancı, 2004

[25] Bostancı, 2005: 248

1.3. Research History of the Study Area

Archaeological research into the Aegean Bronze Age started in the 19th century. Discussions concerning the prehistory of Western Anatolia have been limited to an evaluation of the excavations in Troy and various surveys conducted within the sub-region over years, so much that any discussion of prehistoric Aegean archaeology treated the entire coast Western Anatolia as a virtual blank with only Troy to prove Anatolian interaction within the Aegean world[26]. Investigations focused on the Bronze Age of Western Anatolia started at Troy at roughly the same time as the rest of the Aegean. During the first half of the 20th century prehistoric research in Western Anatolia, Early Bronze Age cemeteries like Yortan[27], Babaköy and Ovabayındır were scientifically investigated. Excavations of prehistoric sites like Kumtepe and Kusura also took place in this period[28]; however these investigations were quite limited. The third quarter of the century evidenced an increase in interest in this sub-region and the extensive surveys of D. H. French took place and enhanced our knowledge of the settlement history of this sub-region during prehistoric times.

The 1980's and especially the 90's new excavations focused on prehistoric sites like Panaztepe, Liman Tepe, Bakla Tepe and Küllüoba.

In 1984-1988, Numan Tuna has conducted a survey in Cumaovası, and discovered numerous sites which produced archaeological material mostly dated to the Late Chalcolithic Period and Early Bronze Age. After some years Recep Meriç also visited that basin and he published new settlements[29]. By the second half of the 1990's IRERP (Izmir Region Excavations and Research Project) started at Bakla

[26] Erkanal, 2011: 119

[27] Kamil, 1983

[28] Erkanal, 1999: 237

[29] Erkanal, 2008: 179

Tepe a salvage excavation on the behalf of the Izmir Archaeological Museum. During the campaigns Hayat Erkanal advanced a new extensive survey project conducted parallel to the excavations for to define the more prehistoric settlements' traces in the area[30].

The task of regional surveys conducted by N. Tuna, R. Meriç and H. Erkanal is to produce a long term history of settlements, but it is particularly designed to reveal the origins of the settled local culture extended to prehistory[31] in the understanding of the colonization and ancient city-state formation in the territorium of the well-known Kolophon city of classical times.

1.4. Settlement Structures and Architecture

In the Early Bronze Age period the Aegean region had several different settlement structures:

a. Nucleated Settlements: These settlements usually have circular compounds. These were enclosed by massive clay and rubble filled stone walls. On top of these mud brick walls provided additional height and protection to the fortification system. Demircihüyük, Troy and Tiryns[32] have such circular systems. At Demircihüyük the original fortification was constructed in the Early Bronze Age I period by building partially embanked stone walls, in conjunction with an obstacle to approach before it[33]. This kind of system, which must have kept the possible attackers at some distance from the walls, could have stood quite high, protecting the defenders from the arrows or stone missiles of the attrackers[34].

[30] Şahoğlu, 2004: 97

[31] ibid.: 97

[32] Kilian, 1986: 66-67

[33] Yakar, 1985: 41

[34] Korfmann, 1983

Such defensive system often incorporated one or more gates, usually with long passageways.

Except from it there are also some cities having fortification systems with bastions. Liman Tepe, Aigina (Fig. 25), Lerna (Fig. 4), Keros-Syros are the best examples (Fig. 35).

b. Towns with urban planning: The houses of the Early Bronze Age discovered in the Aegean can be divided into several major types, among which the free-standing hall, megaron, long houses and apsidal houses are prominent.

The plans can be examined in two main groups. The first group includes megaron and apsidal houses. Enlarging of the adjacent walls of the meragon type houses should have made for acquiring more open places on the ceiling[35]. The closed area which is positioned in the middle of the building sometimes can be divided into two by thin inner walls. Megarons are thought to be the symbol of political authority[36].

Another group is the long houses. In some cases, internal walls have been divided into two by walls to obtain more space. Front places left open to take more light and clean air. All of these places are covered by one roof[37]. It is possible to see this style building at Demircihüyük[38], in inner West Anatolia, at Beycesultan and in Aphrodisias, as well as in Lerna. The samples of Aphrodisias and Demircihüyük were built in a radial system same as the other ones in Bakla Tepe[39].

[35] Erkanal, 1996: 80

[36] Doumas, 2008: 135

[37] Erkanal, 1999: 80

[38] Yakar, 1985: 42

[39] Erkanal, 1999: 79

CHAPTER II

EARLY STATE FORMATION IN THE PREHISTORIC SOCIETIES

Population growth, enlarging of cities and addition of new social classes into social hierarchy are indications of increasing of the size of the community. Even the slightest change in community reflects to public quickly[40].

The chiefdom system is a regional system that center is single but there is one or more building is attached to it. The population of these scattered cities could be about thousand or one hundred thousand[41]. Chief is at the center of the system, inhabitants of whole region are depending on this chief in socio-economic and political terms. The place which contains chief is the most important and largest settlement[42].

Social change is a process which took place in all sectors of society abruptly. However, this change cannot be synchronized with different parts of the society. On the other hand, both speed and scope of the change can be different depending on social phenomena and social sections. For example, the change in population and in economy cannot be similar each other[43].

[40] Bintliff, 1999: 506

[41] Pullen, 2004: 34

[42] ibid.: 35

[43] Emberling, 2003: 259-260

What “urban” means varies from one to next, but two main schools of thought can be distinguished. Some argue that settlements of a significant size with evidence of communal structures should be understood as socially complex and can be interpreted as town or cities[44]. Other holds that urban settlements are those that are central places in a differentiated settlement system, in which hamlets and villages rely on towns or cities in various ways. Further, a substantial part of urban populations should consists of specialists of various kinds, such as craftsmen, religious personnel, the military, and managers, who subsist on food produced by others[45].

Urbanization may be defined by multiple criteria: socio-economic, geographic, demographic, and others. Socio-economic criteria are: the production of surplus, craft specialization, advanced technology, mass production, division of labor, trade transactions, a redistributive system which presupposes the existence of satellite communities, political or centralized organization, writing, and social organization, especially social stratification or hierarchy[46]. Urbanization can also be defined by criteria related to the morphology of the settlement, such as town planning, fortification walls, and monumental architecture.

Some significant changes occurred in history, have accelerated population growth, urbanization and to become urbanized processes. For example, the population increased in the Paleolithic Period compared with the Neolithic Period by the development of agriculture. Lewis Mumford[47] indicates that oldest settlement remnants are occurred at around 3000 BC, which is considered as the beginning of the Early Bronze Age, some significant inventions came in this period such as cultivation of grain, cultivator, potter's wheel, boat, weaving looms, copper works,

[44] Bintliff 1999

[45] Emberling 2003: 255, Trigger 2003: 120

[46] Konsola, 1986: 9-11

[47] Mumford, 1966

abstract, mathematical, astronomical observations, calendar, writing and several other inventions[48].

According to Mumford, the scattered village economy became to urban economies and to chief and the chiefdom institutions as a result of this explosion in technological developments. The chief of the village played an important role in the creation of the icon of a city. Chiefdom's house is more defensive structured and placed on a different position. This is the most important indicator of difference. The outer wall which is surrounding the city constituted both the limit between the city and the rural area which is surround the city and every exterior danger would happen. This wall also determines the difference between the insiders and the outsiders[49].

Especially by starting to use of the bronze, compound copper and tin, mining processing techniques began to show diversity. An organization began to emerge because of the production of the bronze made goods needs to be expert. In order to guarantee the production, bringing the raw materials from long distances and exchange them with the materials which not to be used by the community caused foreign trade to develop[50].

Increasing trade provided the relation and knowledge between communities; then this knowledge caused an explosion in technologic developments. The increase in production provided an increasing in the population and this increasing caused the villages to become larger. Thus, there was administrator class/king which, collects and retains products, was appeared.

[48] Mumford, 1966: 45-46

[49] ibid.: 49, 63, 82

[50] Şahoğlu, 200341

In pre-industrial societies to ensure functioning of economic activities was the acts which generated by a small group. Administrative class which is appeared in social stratification could do these jobs. This small group which was takes both the city and whole community under control could constitute small part of population and probably settle in the center of the settlement[51].

The production must be one of the main sources of income in these kinds of societies. There must be significant differences between the goods which consumed by the majority of the communities and the ones which used in daily life by low-income groups. We can observe diversity in the goods which were produced in large quantities. A specialization was observed in valuable goods which produced contracted. The inexpensive goods produced to satisfy the requirements of inhabitants' daily use. The production of the goods for an administrative class was occurring in small number of cities; and the masters of this job must be more specialized than the others[52].

In Mesopotamia and Near East, lots of scholars worked about that problem. Although we know much knowledge about Mesopotamian urbanization, we know very little in Aegean. The situation in the Aegean was very different from that in the Near East, the area for which these criteria of urbanization were established. On the Aegean (Anatolia, Greek mainland and Aegean islands) there were no aggressions of people and agglomerations of buildings, no large scale irrigations projects, no written records and no powerful kings or priesthood centered in huge palaces and temples.

Colin Renfrew[53] described the Early Bronze Age as a period with significant changes. A first step of the civilization was performing for the mainland Greece.

[51] Doumas, 2008: 131-132

[52] Mumford, 1966: 82

[53] Renfrew, 1972: 99

The city of Lerna which is dated to this period and located in mainland Greece could be one of the samples which may indicate how great the socio-economic system was. The excavation started here in the 1950's. The Lerna became famous its large size and unique architecture (Fig. 4-6-30), and also for the seal impressions which are found in an uncovered building called as House of the Tiles[54]. Many seal impressions which are found in this region indicate that the production was used by a central power in here. The houses with corridor, seal impressions, and defensive walls show that the city of Lerna was a trade center[55].

Manfred Korfmann was the first scholar to recognize settlement pattern in Anatolia, naming it "Anatolisches Siedlungsschema"[56].

In its simplest form, the Anatolian settlement pattern consists of structures arranged in a radial pattern around a courtyard or open space. Thus the settlement has a circular appearance and is surrounded by fortification walls strengthened with gates, buttresses and bastions, sometimes with stone-paved glacis and saw-toothed outer façades. Inside the city walls are houses with varying plans, arranged radially adjacent to one another, and leaning against the defense or enclosure wall. This settlement organization was certainly pre-planned and in some examples it was applied on the acropolis, an important indicator of stratified social structure. Such early examples, however, do not contain any distinctive administrative structures such as public buildings but sometimes a ruler house is observed[57]. The model suggests an infrequently populated lower city that becomes more pronounced in the second half of the 3rd millennium BC.

[54] Health, 1958: 81-120

[55] Pullen, 2003: 31

[56] Korfmann, 1983: 222-229

[57] Özdoğan, 2006: 573

CHAPTER III

THE EARLY STATE FORMATION IN THE AEGEAN

PREHISTORIC CULTURES

The Early Bronze Age people created forms suited to their own needs, socio-economic conditions and environments. The constructive and formal elements are interwoven with the natural environments, the cultural and trade links of the region, the socio-economic structure, and all are closely involved in the architectural language. The Early Bronze Age II period stood out as a sort of classical period in the 3rd millennium BC; its high level of culture and material prosperity reflects mainly in the creation of large, presumably public buildings[58].

Subjective models of patterns of urbanization in Early Bronze Age mainly based on the evidence of architectural elements are similar but not identical to the called "Redistributive System" and stand very close to the Chiefdom Stage as analysed by Colin Renfrew[59].

B. G. Trigger, discussing the determinants of settlement patterns, considers the individual building as an important unit and lists a number of factors, which may be reflected in the individual structure, for example subsistence regime of society, climate adaptation, structure of the family, differences in wealth and rank within the community, specialization of production, religious beliefs, political institutions and secular tastes and fashions[60].

[58] Renfrew, 1972: 108

[59] ibid.: 211-213

[60] Trigger, in Chang, 1968: 55-60

Between "tribe" and "state" maybe we can put term called "chiefdom". E. R. Service has usefully re-defined the term chiefdom as a society distinguished from the tribal "by the presence of centers which co-ordinate economic, social and religious activities[61]. Specializations in production and redistribution of produce occur sporadically and ephemerally in both bands and tribes. The great chance in chiefdom level is that specialization and redistribution are no longer merely adjunctive to a few particular endeavors but continuously characterize a large part of the activity and society. Chiefdoms are redistributional societies with a permanent central agency of co-ordination. Thus the central agency comes to have not only an economic role - however basic this factor in the origin of this type of society- but also serves additional functions which are social, political and religious"[62].

Chiefdoms show generally both an increase in the population density of the society as a whole, and also an increase in the size of individual residential groups.

Most characteristic features of the chiefdom are seen in the Aegean for the first time during the Early Bronze Age[63].

The size and structure of ordinary houses argue for their functioning as the residence of a nuclear family. By analogy the larger, more formal versions of the living rooms in House of the Tiles in Greece structures would also have a function as the location of a king related group, though not necessarily a nuclear family. On the basis of the architecture and the sealing of the House of the Tiles at Lerna (Fig. 4-6), C. Renfrew[64] proposed a redistributive economy centered on a "chief", resident in the building. The "chiefdom" is only a model to help explain the rise of complex society. It is not a proven "stage" in cultural evolution. Redistribution, the central idea of C. Renfrew's chiefdom model, assumes that individuals unable to provide all their basic

[61] Service, 1962: 143

[62] ibid.: 143

[63] Renfrew, 1972: 360

[64] ibid.: 363

needs give up some of their independence to a central authority in order to share in the increased well-being attained through the redistribution of essential goods[65].

Detailed archaeological testing in several areas of the world has shown that subsistence and other essential items are not subject to redistribution, as the vast majority of communities are self-sufficient[66]. Items which are a subject are those with limited "special purpose", accessible only to the political or social elite. A chief may control access to subsistence of resources, but they do not necessarily control the distribution of subsistence products[67].

The 3rd millennium BC is the period of expansion of settlements. The Early Bronze Age II occupation occurs larger in scale such as Liman Tepe, Thermi etc. This suggests that the area was available for exploitation by Early Bronze Age farming technology at its maximum by the end of the Early Bronze Age I period. The Early Bronze Age II period represents an intensification of exploitation. With land, and probably water, in increasingly short supply, social control over access to resources would inevitably result.

The later Early Bronze Age is a special period with the emergence of the first regional chiefdoms and the rise of elites. In this time long distance relations started and trade routes were created. This kind of structure serves the needs of hierarchically high status people[68]. Corridor houses are the most important evidence about this hypothesis. This kind of corridor houses can also be seen at Lerna (House of the Tiles and Building BG) (Fig. 4- Fig. 6), Akotivika (Megaron A and B) (Fig. 3), Aigina (Haus am Felsrand and Weisses Haus) (Fig. 27), Tiryns (Rundbau) and Zygouries (The House of Pithoi) (Fig. 28).

[65] Renfrew, 1972: 364

[66] Pullen, 1990: 82-83

[67] Renfrew, 1972: 365

[68] Şahoğlu , 2005: 339-361

These various lines of arguments are one of small, centralized socio-political units, often called chiefdoms. Some resources necessary to the society such as land and metals are in short supply and certain groups in the society have gained control of them. The evidence suggests that Early Bronze Age II society is organized into corporate groups, perhaps even into lineages, groups of people related through ether senior male lines. In lineage-based societies, it is the elder, or chiefly, branch which has a higher rank[69]. Land and other resources belong to the lineage, and as the chief is the head of the lineage by virtue of being eldest or highest in rank, chief in effect controls access to the resources.

One of the most important developments of the Early Bronze Age is the developing of metallurgy[70]. Especially gold, silver and bronze gifts which found from in settlements and graves of important centers Central Anatolia, such as Kültepe and Alacahöyük indicate the presence of a rich socio-economic situation in this period[71]. That fact should not be overlooked that metal finds are a sign of social status as well as in this period such as every period of time. From this perspective; the control of using metals such as gold, silver and semi-precious ones generates the change of social status and rich traders constituted an administrator class in Anatolia for the first time.

In particular, this study aims to understand how the architecture changed from the Late Chalcolithic Period to the Early Bronze Age.

A specific terminology was used for each cultural area, such as Minoan for Crete, Helladic for Greece, and Cycladic for the central Aegean islands. Each period is further subdivided into three segments, I, II, and III.

[69] Renfrew, 1972: 364

[70] Stampolidis and Sotirakopoulou, 2011: 52-53

[71] Yakar, 1985: 66

3.1. The Mainland Greece

In human evolution the house is developed as a human structure constructed on a site, with the materials and in a form of human choice. Parallel to the increasing complexity of social relations, there emerges a housing environment, in which these relations are stratified from the individual to the social[72].

While, in nomadic times housing is structured in both the practical and cosmic simplicity of the round form; whereas the setting down process, with variety and complexity of relations and operations it brings along with it, makes a transition to rectangular forms inevitable. The cellular patterns generated by the agglomeration of such rectangular buildings become divided by streets, as the communal organization they represent breaks down and becomes centralized, and surrounded by defense walls. The final point of this break-down is the transformation of the house, which formerly constituted a cell or a room of the community, into a separate living unit[73]. Bronze Age settlements ranged from densely-packed fortified agglomerations to loosely-knit villages and seasonally occupied sites. These settlement types are represented by mounds and flat sites recorded in the major river valleys throughout the region. Un-walled settlement with free-standing dispersed houses which could be interpreted as villages existed both in the Aegean littoral and its hinterland[74]. Even in the Early Bronze Age such villages may have been satellites of economically stronger and better organized fortified towns. When such villages were abandoned permanently or for a long time, they formed very low mounds which are very difficult to detect in archaeological surveys in alluvial plains and valleys or in areas with thick erosion deposits. While some may have been seasonally occupied, others could have been of a more permanent character[75].

[72] Pullen, 2004: 28-29

[73] Pullen, 2008: 20-35

[74] Vermeule, 1964: 155

[75] Yakar, 1985: 94-169

There seems to be continuity in the settlement choice between the Final Neolithic and Early Bronze Age I. Many settlements on the Aegean littoral may have developed into important ports and commercial centers in the course of the 3rd millennium BC.

Early Bronze II has long been recognized as a period of much cultural and social innovation throughout the Aegean. Monumental architecture, fortifications, metallurgy differential access to wealth.

The site of Lerna, excavated by John Caskey in 1952-1959, preserves a well-documented stratigraphic sequence spanning from Early Helladic IIA well into the Middle Helladic Period[76]. Although the stratigraphy of Lerna clarified the Early Helladic sequence, making Lerna the generally accepted type site, it did mask important regional differences and historical trajectories. The Early Helladic II sequence at Lerna (Lerna period III) has been divided into four phases, A through D. Phases A-B fall into Early Helladic IIA and phases C-D into Early Helladic IIB[77]. It should be noted here that these phases and the subdivisions of the Early Helladic II period are most often based on ceramic change, and may not reflect a social change.

At Tsoungiza, House A, a well-preserved building originally excavated in the 1920's by J. P. Harland, provides us some evidence for the beginnings of monumental architecture in the Aegean Early Bronze Age[78]. This house represents a very early form, and thus its plan may be only one example of experimentation that led ultimately to the developed corridor house as seen in the House of the Tiles at Lerna[79](Fig. 2).

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[76] Caskey, 1959: 123-124

[77] ibid.: 124

[78] Harland, 1925: 54

[79] Caskey, 1959: 296-297

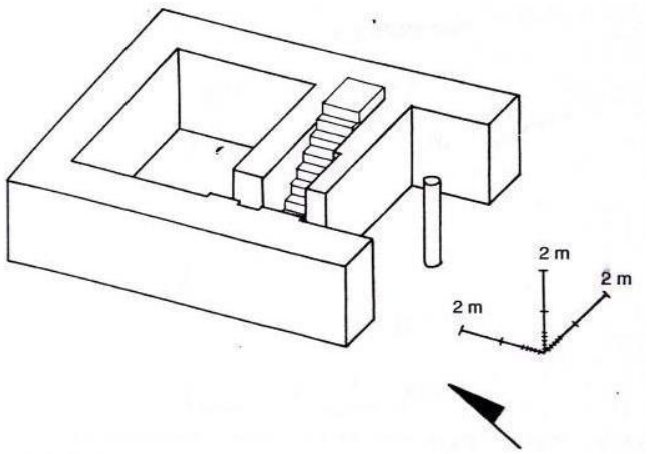

Fig. 2. Reconstruction of House A at Tsoungiza (Pullen, 2008: 29). Drawn by: Cynthia Shelmerdine.

Besides the first steps toward monumental architecture, we see in Early Helladic IIA the early occurrence of other features characteristic of and more developed in Early Helladic IIB, such as the administrative use of seals and sealing, widespread metallurgy, and the beginnings of social complexity. Communal, or large scale, feasting and drinking are activities often associated with attempts by chief to consolidate their power over their constituencies[80]. Evidence for specialized drinking assemblages has been found at Tsoungiza in the "Burnt Room", where the ceramics included sixteen small bowls for drinking and two jugs or pouring vessels[81].

The later portion of Early Helladic II was marked by the development of the corridor house and fortifications, consolidation of settlement, and increased visibility of a number of cultural features such as the use of seals and sealing. Most likely these various attributes represent increasing social complexity and the development of small-scale chiefdoms. These chiefdoms are of special interest and importance, because they represent the most complex social and political organization seen on the

[80] Shelmerdine, 2008: 125-126

[81] Wright, 1990: pl. 94a, 560-565

Greek mainland until the beginning of the Mycenaean period several centuries later[82].

The architecture of Early Helladic IIB sites was more sophisticated than any other appeared before (Fig. 28). Large-scale fortifications surrounded even small settlements. The corridor houses is found at sites from Akovitika (Fig. 3) in Messenia to Thebes in Boeotia[83], suggesting common architectural practices throughout the entire region, though not the same regions as those defined by other cultural markers, such as ceramics.

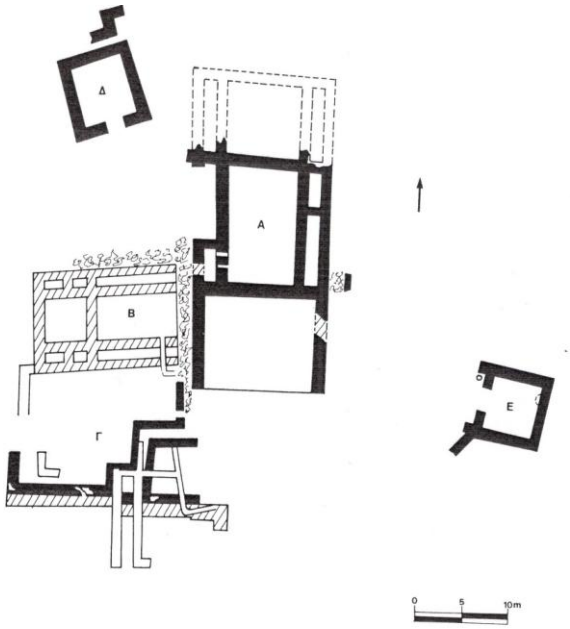

Fig. 3. Long houses in Akotivika (Konsola and Hägg, 1986: 14).

Fortifications have been reported for a number of the Early Bronze Age sites throughout the Aegean, primarily on coasts; Thebes was the only fortified inland site on the mainland[84], but fortifications have been reported at several coastal sites in Attica. The fortifications at Lerna had a very long history of building, rebuilding, and

[82] Vermeule, 1964: 27-29

[83] Goldman, 1931: 35

[84] Aravantinos, 1986: 57-63

modification, but essentially is their form. Two parallel walls set a little over 2 m apart, with cross walls dividing up the intervening space into rooms[85]. Various forms of towers, solid and hollow, projected from the exterior and guarded a low staircase leading up to the entrance (Fig. 4). The gateway was apparently a simple doorway into one of the fortification rooms, with a similar door on the opposite wall leading into the interior of the settlement (Fig. 4). Thus at Lerna fortifications are very different from those of Troy level II with its separate gate buildings and single lines of wall[86].

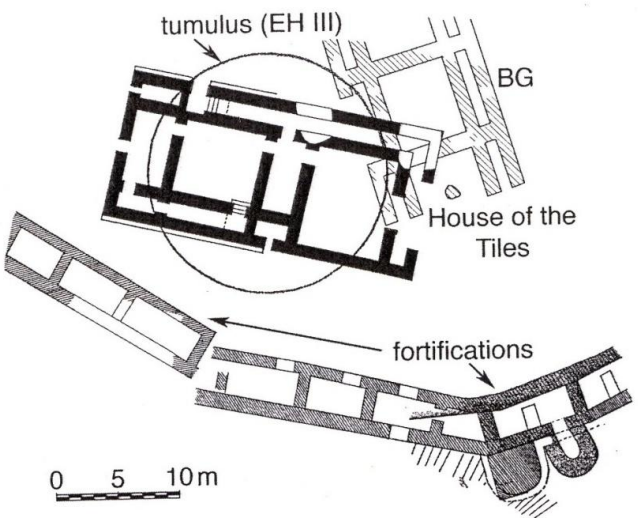

Fig. 4. Early Helladic II building plan in Lerna (Pullen, 2008: 32).

Much more architecture survives from this phase of the Early Bronze Age. The corridor house is rightly emphasized as one of the most important features of the Early Helladic II period[87] (Fig. 28). These structures embody many sophisticated cultural and social ideas, and represent the first monumental architecture on the mainland, though calling such modest-sized buildings “palaces” are inappropriate

[85] Wiencke, 2000: 120-128

[86] Shelmerdine, 2008: 31

[87] Shaw, 1987: 59-79

given the modest scale and complexity of the society. Corridor houses have been securely identified at Akovitika (Buildings A and B)[88] in Messenia, Kolonna (the Haus am Felsrand and Weisses Haus)[89] on Aigina, Thebes (the Fortified Building)[90] in Boeotia, and Lerna (Building BG and the House of the Tiles)[91] in the Argolid.

Fig. 5. Early Helladic settlements in Greece (Konsola and Hägg, 1986: 2-3).

The best preserved example of a corridor house is the "House of the Tiles". It was built over an earlier, less-developed corridor house, Building BG, which was contemporary with the fortifications[92] (Fig. 6). Overall the structure measures 25x12 m. A number of items in Room XI, which is the most important room in this building, do indicate complex economic, social, and administrative behaviors. This small room was accessible only from the exterior. Inside were found a number of

[88] Shaw, 1987: 71

[89] ibid.: 65

[90] Aravantinos, 1986: 57-63

[91] Wiencke, 1986: 41-45

[92] Wiencke, 2000: 213-311

clay sealings, which were used to secure jars, baskets, boxes, and perhaps doorways. The larger number (70) of different seal designs represented shows that a large number of people were involved in stamping the closings[93].

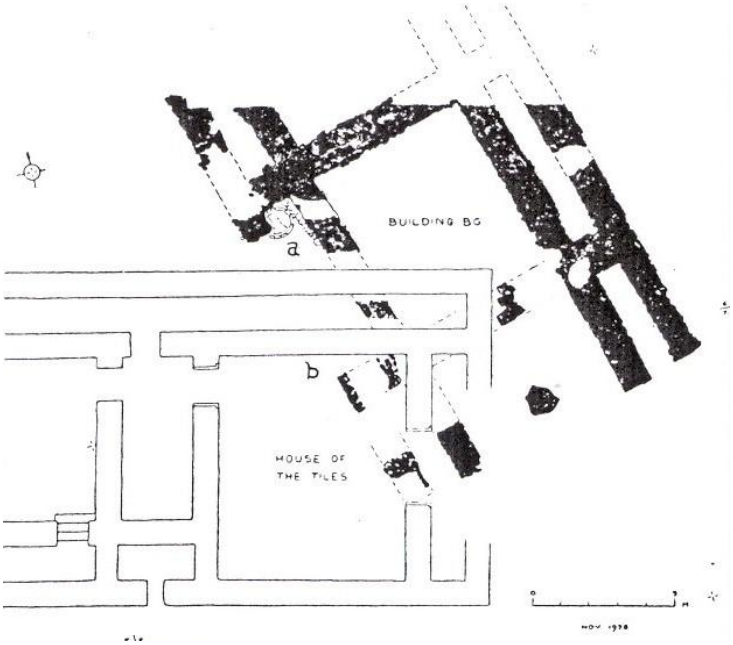

Fig. 6. Plan of building BG in Lerna (Shaw, 1987: 63).

Through such clues maybe we can begin to understand the social organizations of the Early Helladic IIB society. A number of different lines of evidence, including settlement size and distribution, presence of seals and sealing, the corridor houses, and burial evidence, all point to a "chiefdom" type of social-political organization[94]. In a chiefdom an elite controls many resources, such as exotic goods (metals perhaps in the Early Bronze Age), services (specialized craft workers), and ideas (access to the ancestors or divinities)[95]. The chief maintains his position through the distribution of these resources to certain individuals who, plending their loyalty in return, form the rest of the elite. One of the more important features of chiefdoms is

[93] Wiencke, 2000: 218

[94] Caskey, 289

[95] Barrett and Halstead, 2004: 66-67

that they are regionally based; that is, a number of settlements are brought together into one social, economic, and political system. The corridor houses are very good candidates for the chiefly centers of these regional system[96]. The existence of a number of corridor houses indicates that several chiefdoms coexisted. Thus the Lerna evidence supports the regional nature of chiefdom. The sealings in the "House of the Tiles" are a record of the "taxation" of individual households; the chief would have redistributed the goods collected to his retainers to ensure their loyalty[97].

3.2. Aegean Islands

The settlement and the house architecture of Thermi are located on Midilli Island. The settlement system and architecture features of the Early Bronze Age I and II (coincides with Troy I and II) have been continued as unchanged in five layers. In second layer which was organized according to the radial system streets are stone-coated and main entrance of the settlement was equipped with the bastions from both sides (Fig. 31)[98]. The walls of the long houses facing the streets are built with stones. It remains unclear whether or not mud-brick was used in the superstructure. Partition walls typically divided the houses into two or three rooms. These houses with common lateral walls built one against the other in rows, are called row houses. The flat roofs of the houses adjoined one another and thus the roofs of each block became common property[99]. In the forth layer of Thermi plan is like a maritime settlement with house aligned along narrow streets (Fig. 32). In the fifth, the most recent level, the streets are intersected at right angles and the settlement was well fortified by a defence system with an entrance flanked by bastions (Fig. 33). Houses had, on average, become ever longer, although their general appearance remained

[96] Barrett and Halstead, 2004: 70-71

[97] Wiencke, 2000: 120-128

[98] Lamb, 1936: 45

[99] Yakar, 1985: 44

unchanged[100]. The houses in Bakla Tepe and Thermi which is not build regular have stone and mud-brick walls. Mostly, megaron and large houses are found. Also very small, poor looking houses were found as well as very large houses. This situation means there would be differences in social and economic terms[101].

Fig. 7. Geographic location of Thermi (Erkanal, 1996: 70).

Poliochni on the Limnos (Lembos) island (Fig. 8) clarifies the five-layer settlement understanding of Early Bronze Age such as Thermi. The layers were defined by colors in old to new order (Blue, Green, Red and Yellow). In addition to strong defense system, a large street and dead-end streets are opening through the squares. Besides a powerful defence system, there was a wide avenue was well as various megarons opening onto squares[102]. The house walls, built in the irregular construction also witnessed at Thermi and Bakla Tepe, were of stone and mud-brick. Although comparable in the plan to the megaron type or the long houses, the addition

[100] Yakar, 1985:64

[101] Shelmerdine, 2008: 125

[102] Doumas and La Rosa, 1997: 88

of side rooms produced a rather different impression[103]. The houses here, in contrast to those at Thermi and Bakla Tepe, reflect inequality. Beside very large houses stood very small ones of impoverished appearance, indicating that the social and economic structure at Poliochni was quite differentiated (Fig. 34). The location of Poliochni in one of the most anchorages of sea trade routes from and to the Black Sea and opposite Troy quickly resulted in its excessive economic development and its evolution into one of the earliest and most significant early urban centres of the Early Bronze Age (3rd millennium BC)[104] in the Aegean which competed with the powerful settlements of the neighbouring coast of Anatolia, Troy and Liman Tepe.

Fig. 8. Geographic location of Poliochni (Erkanal, 1996: 70).

The equivalent houses with the those seen at Bakla Tepe are identified in Heraion which is located on Sisam (Samos) Island. This central structure is identified as megarons. Very small areas of them were excavated. Walls of the structures located around the squares are not common, that means they were constructed independently in a certain distance from each other[105]. All structures are encircled by a defense wall

[103] Yakar, 1985: 64

[104] Renfrew, 1972: 395

[105] Yakar, 1985: 48

and some structures also based inside the defense wall (Fig. 9). This kind of architectural structure is also seen at Demircihüyük in inner West Anatolia (Fig. 36).

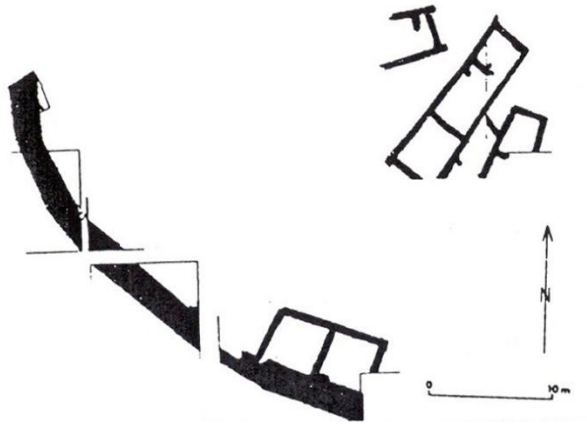

Fig. 9. Heraion settlement plan (Yakar, 1985: 67).

High standard mastery of the period can be understood if we look at the metal forms, techniques and the types of the finds captured during the excavations. Archaeological data indicates that central authority acquired power, settlement is surrounded by strong defense systems and there is a developed trade.

3.3. Western Anatolia

It is not possible to examine the settlement process of the Western Area without considering the effects came through the Aegean Sea and the Balkans. The Çanakkale peninsula, also known as Biga during the Ottoman period and antiquity as Troy, is forming the north-western part of Anatolia, is one of the places which is most affected by these effect because of its position.

Troy is as well as one of the most important land destination between Anatolia and Thrace as it is on the trade sea route between the Black Sea and the Aegean Sea. The traders who visited Troy can easily reach Thrace by a sea voyage.

The first settlement around Kara Menderes/Skamandros is Kumtepe which is dated to 4000 BC. Troy I's foundations were laid in 3600 BC on Hisarlık Hill which is located on the east of Kumtepe[106].

Troy I is dated to The Early Bronze Age (3000-2500 BC) and listed ten layers including Ia-Ij[107]. The settlement is surrounded by a fortification wall and has a diameter of approximately 90 m (Fig. 10).

It seems that the defense wall growth to south over the time while the wall reconstructed. The findings of the archaeological excavations indicates that Troy I, which ended due to fire same as other centers of the Early Bronze Age, is a village which has powerful solid defense walls because of both its level of technology and local structure features. People's livelihoods were agriculture, animal husbandry, fishery, and pottery trade. Trade relations of Troy I has documented in edges Marmara Sea and north of Aegean Sea, inner Mediterranean, Europe and Anatolia[108].

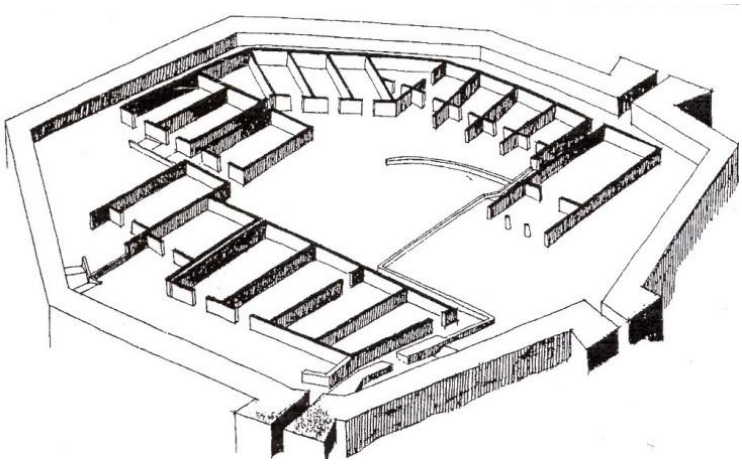

Fig. 10. The initial fortress at Troy in Early Bronze Age I (Erkanal, 1996: 391).

[106] Easton, 1976: 158

[107] Akurgal, 1988: 312-314

[108] Korfmann and Mannsperger, 1992: 33

Troy II, which is constructed over the ruins of Troy I, can be dated to about 2500-2300 BC. The diameter of Troy II is approximately 40 m. It is greater than the previous one. The area is expanded about 9000 m² and contains eight structural phase (IIa-IIg)[109]. It can be considered as monumental even through its gates in terms of its sizes. In IIg (oldest phase), the megaron was placed in the middle. This megaron can thought as the place which chief lived in or maybe at least the place which is used as court of law or assembly[110] (Fig. 11).

Fig. 11. Troy IIg settlement plan (Papadopoulos and Kontorli-Papadopoulou, 2008: 417).

[109] Korfmann and Mannsperger, 1992: 34

[110] Mellaart, 1959: 153

The megaron which has been seen in Troy I in Anatolia for the first time is elongated, rectangular-shaped structure. Its entrance is an open half room and always in tight facade[111].

Rooms are arranged on an axis, and the type of plan, consisting of 2-3 rooms, was found here. The largest room has a stove in the middle[112]. This type of plan has seen in the Aegean islands and in Greece except here.

Differences in the size of the houses have been observed in Troy IIg structure phase of Troy. The beginning of social stratification differences between inhabitants can be considered in this period[113].

When we compare the architectures of Troy I and Troy II, it could be seen that Troy I is similar to a pre-agricultural village settlement which is surrounded by the walls; in case Troy II is similar to a city settlement.

More than 20 metal finds which are revealed from the structural layers of Troy II and named as "*Treasure of Priamos*" during of the excavations performed by H. Schliemann, indicates that this periods people were highly evolved in metal working. In addition, it can be estimated that, foreign trade was started. Revealing of this kind trimmed metals in Troy which have never seen before except Egypt and Mesopotamia, denotes that there is craftsmen's exist in Anatolia[114].

The administrative class who retains excessive products which acquired from agricultural production and foreign trade, probably were managing here as city-state and protecting from external attacks. Especially; the great megaron, which placed in

[111] Yakar, 1985: 55

[112] Akurgal, 1988: 27

[113] ibid.: 30

[114] Shelmerdine, 2008: 152

the middle of the settlement and estimated used as meeting or reception hall, and the powerful monumental walls which surrounding throughout the upper city indicates the presence of an administrative class. It can be took into an account that the administrative class resided in greater buildings than the others by considering the architectural finds which revealed from excavations and researches[115].

Increase has been observed in production and use of the potter's wheel due to specialization in bronze work, using of the produced tools even its rise of use. Over time, transportation of goods and raw materials over long distances for resuming the production, could made here increasingly dependent on foreign trade as a result of lack of resources. The administrative class should be sit up on top in stratification because of holding the organization which is ruling the products which are obtained agricultural production and foreign trade and distribute these products to the public[116].

When we look at ceramics which unearthed during the excavations, we can see the pottery wheel is used in Troy II. This statue can indicate that they could make standardization and mass production to satisfy the increasing need[117]. Merchant class might be originated from suppliers of production and ceramic traders. Thus, an organization seems to be here which occurred from the ruling class, craftsmen, agricultural farmer, the sea traders and fishermen, if we consider the seaside position of settlement[118].

Metal working and building technology is quite advanced in this period. Political power probably was supported by economic growth. And this has led to the

[115] Dickinson, 1994: 181

[116] Trigger, 2003: 35-40

[117] Erkanal, 1996: 73-74

[118] Doumas, 2008: 138

development of local scaled economic activities[119]. There were a production increase and economic developments have emerged, not only in Troy but also in all Anatolia in almost every city-states (Alacahöyük, Kültepe, Limantepe, Demircihüyük etc.), which were supported by developments in technology, in second half of 3000 BC.

Such surplus of production is the main reason of transformation of the agricultural settlements to more powerful city-states which are surrounded by walls.

By looking at the features above, Troy II which has been became powerful increasingly through the socio-economic processes, has been one of the oldest cities of Anatolia which is emerged in the middle of the 3rd millennium BC. The advantages which was provided by location, such as being near to main maritime trade routes, natural mine sources sets Troy to the important place in settlement history of Anatolia[120]. Here has been built and destroyed over and over again until the end of the Roman period thanks to these advantages.

Troy is not only important example for settlement history of Anatolia but also is important for history and archeology of settlements of the Aegean and Anatolia. The metal processing samples found here have also seen in Crete, the Aegean Islands, Greece and the Balkans.

Troy is located on a quite strategic point at the junction of the land and in the sea trade and oldest settlement which has ten architectural phases. Upper and lower city is surrounded by a strong defense wall on its second layer[121]. The great megaron center which is located middle of the city represents central authority. In addition to the rich metal finds so called as “Troy Treasures”, depas, tankard and wheel made ceramics which are found in the ruins of this building and is quite characteristic for

[119] Yakar, 1985, part II: 25

[120] Renfrew, 1972: 127-129

[121] Yakar, 1985: 43-44

period. Planned settlement model represents a central economic and political authority[122].

Demircihüyük is another important settlement in Anatolia. This site lies 25 km west of the city of Eskişehir and discovered by K. Bittel in 1937. After his systematic excavations M. Korfmann excavated in 1945-1979. The mound which lies in the western part of the Eskisehir Plain remains partially beneath the alluvial fill of the mound.

Demircihüyük is the example of M. Korfmann's Anatolian Settlement Plan (Anatolisches Siedlungsschema)[123]. It was fortified with an enclosure wall at a height of 7 m, beveled on its lower part, with saw-toothed, rectangular bastions and four gates with a stone-paved road. The habitual area has adjacently built houses established according to a radial plan around a courtyard (Fig 12)[124]. They are two-roomed structures megaroid and trapezoid in plan, narrowing towards the façade and incorporated into the fortification wall[125] (Fig. 36). A three-roomed house situated to the east of the main gate may have belonged to the ruler/chief[126].

Building remains unearthed at Demircihüyük suggest that in earlier times dwellings were built of lighter materials and, therefore, did not always require the preparation of solid foundations[127].

In discussing the building traditions in Western Anatolia it is possible to point out close similarities to the architecture of Greece where megaroid plans and apsidal

[122] Renfrew, 1972: 127

[123] Korfmann, 1983: 222-229

[124] Efe and Türkteki, 2011: 199 and 200

[125] Korffman, 1983: 222 and 2003: 111

[126] Korfmann, 2003: 110

[127] Yakar, 1985: 41-42

houses existed long before the Early Bronze Age. This similarity in building traditions and settlement layout could indeed reflect the existence of communities with similar ethnic backgrounds, cultural affinities and social organization in Anatolia and Greece[128].

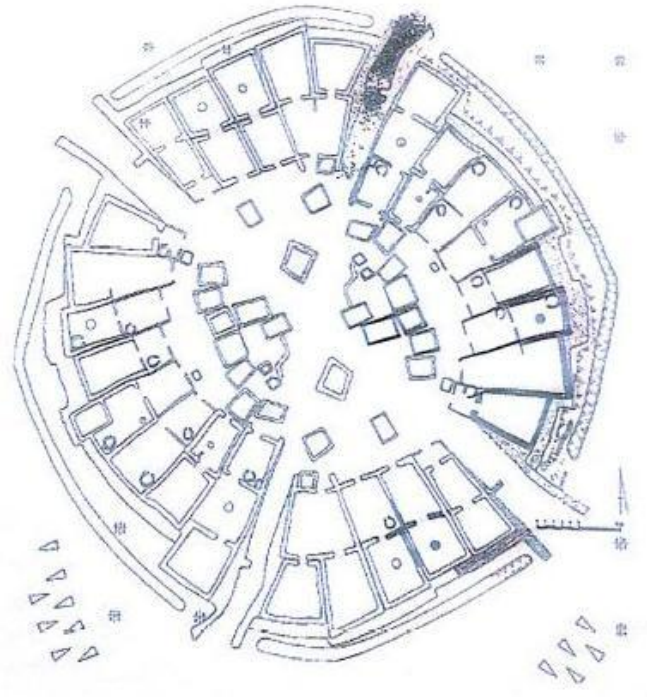

Fig. 12. Settlement plan of Demircihüyük (Efe and Türkteki, 2011: 201).

3.4. Crete

During the Early Prepalatial Period (Early Minoan I-Early Minoan IIB) the architectural landscape of Crete is characterized by tiny hamlets. There was further architectural development in the Early Minoan II period, building Vasilike and Fourno Korifi (Myrtos) containing many rooms with characteristics hitherto

[128] Yakar, 1985: 40-54

unknown in Crete. Here, according to K. Branigan[129], is the first evidence for the emergence of a wealthier class in Cretan society, able to build and maintain a mansion of the size of many contemporary villages.

A peaceful environment encouraged an increased general prosperity. In the start of the Early Bronze Age to the rise of the palaces, there is no evidence for major destruction[130]. The early towns, like the later palatial towns, had no defensive walls, such as are found at Troy, Poliochni, Aegina, Liman Tepe and Lerna during the Aegean Early Bronze Age.

The archaeological evidence for Early Minoan II is much greater than previous period; settlement and population expanded, and this growth has left more visible traces in the archaeological record. Based on ceramic synchronisms with the Cyclades and the Greek mainland, the start of Early Minoan II may place around 2700 BC and the end at around 2200 BC[131].

On the island of Crete, things were developing a little differently at this time. Instead of many separate houses, the Cretans tended to build houses all crammed up against each other, sharing party walls. Or some people see this as one big house, with a lot of doors. Either way it probably means that the Cretans lived more together with their neighbors than the mainland Greeks did.

Myrtos (Fournou Koriphi) is an Early Bronze Age, prepalatial settlement located on the south coast of eastern Crete and excavated by Warren in 1967-1970[132]. Here is one of several new settlements established in eastern Crete at the beginning of the

[129] Branigan, 1970: 48-49

[130] Branigan, 1970: 50

[131] ibid: 15

[132] Warren, 1972

Early Minoan II period. Warren[133] suggests that the ultimate cause may have been an expansion of population from the well-developed Early Minoan I groups in the north central or south central regions of the island into an area with many suitable coastal sites and adjacent fertile land. The Myrtos region perhaps being particularly suitable because of an absence of extensive forest. The actual settlement was cited on the summit of a hill called Fournou Korifi, approx. 66 m high above a narrow shore[134]. It is difficult to get access, may be partially accounted for by needs of defense, although the outer wall of settlement with its two entrances, is only 0.40-0.50 m thick and does not therefore suggest a real security against serious attacks.

The architectural complex seems to contain over 100 rooms and areas, most of them quite small. The exact boundaries of the settlement are largely eroded but it is almost certain that it did not extend much beyond the excavated area[135]. P. Warren has argued that the settlement functioned as an integrated whole; "the form of a single large complex without separately defined houses suggests a social organization based on a single large unit, a clan or tribe living communally and perhaps not differentiated into individual families, and quite without any apparent chief or ruler"[136]. On the other hand, K. Branigan using the same evidence comes to different conclusions[137]. He believes that the site at Fournou Korifi is a precursor of the early palaces with important men occupying these houses. Whitelaw gives a quite different interpretation. He views the site as a "small, egalitarian, rural community, whose basic unit of organization was the nuclear family"[138].

[133] Warren, 1972: 38-40

[134] Preziosi and Hitchcock, 1999, 49-50

[135] Whitelaw, 1981: 326-327

[136] Warren, 1972: 267

[137] Branigan, 1970: 47-49

[138] Whitelaw, 1990: 336

P. Warren emphasizes that many rooms had no door and were entered from the roofs[139]. The layout of the settlement is in the form of a single, large building complex divided by three long, narrow passages, with no suggestion of individual, self-contained houses; and the presence of store-rooms, kitchens, work-rooms and probably living rooms suggests that the settlement was thought of as a single unit with different parts having different functions[140] (Fig. 13).

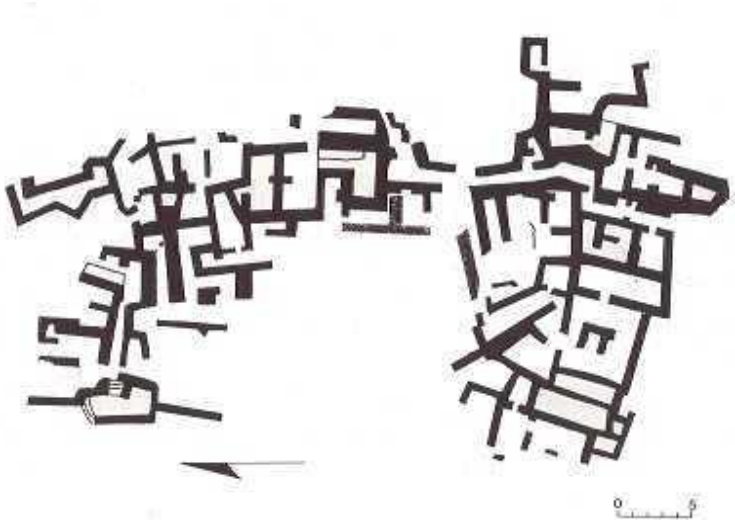

Fig. 13. Settlement plan of Myrtos (Whitelaw, 1981: 323).

Vasilike is another important Early Minoan site which has been variously interpreted by different excavators. Originally excavated by R. B. Seager[141] from 1903 to 1906, and more recently by A. A. Zois from 1970-1982 and 1990 onwards.

Just as K. Branigan interpreted Fournou Korifi (Mrytos) as a unified settlement, possibly the house of a chief, so Vasilike was also initially interpreted in a similar

[139] Warren, 1972: 258-259

[140] Warren, 1972: 266

[141] Seager, 1905

way by R. Seager[142]. Recent investigation suggests that the compound was made up of conjoined structures, possibly belonging to related families. The "House on the Hill" was considered to be a primitive form of Minoan Palace, a stepping stone along the road which would eventually lead to Knossos[143]. Consequently it was considered to be the seat of some local "chiefs".

Vasilike was a typical Minoan village which remained in use throughout most of the Minoan period. In earliest time (Early Minoan IIA) the houses are places side by side, touching each other. A. A. Zois believes that this suggests an egalitarian society[144]. Both the Red House and West House date from Early Minoan IIB.

Red House was built in Early Minoan IIB. It took its name from the color of the red-painted lime plaster used on its walls, forms the basement of this part of the settlement. The house situated is where hill drops are away the south east. The West House, west of the Red House, was built in Early Minoan IIB2 and the remains are of the ground level. It was also in this period that the paved courtyard was laid in what is now the centre of the site, to the north of the West House (Fig. 14).

Vasilike may have been an important regional centre of activity during the Early Minoan Period, and may be seen as a miniature version of other prepalatial sites on Crete, including much larger sites such as Phaistos or Malia[145].

The presence of colored stucco wall surfaces at Vasilike has been seen as an early step in the technology that led to the production of the later figural wall frescoes that are so prominent in the Middle and Late Aegean Bronze Ages[146].

[142] Seager, 1905: 208-210

[143] Preziosi and Hitchcock, 1999: 48-49

[144] McEnroe, 2010: 23-24

[145] Preziosi and Hitchcock, 1999: 48

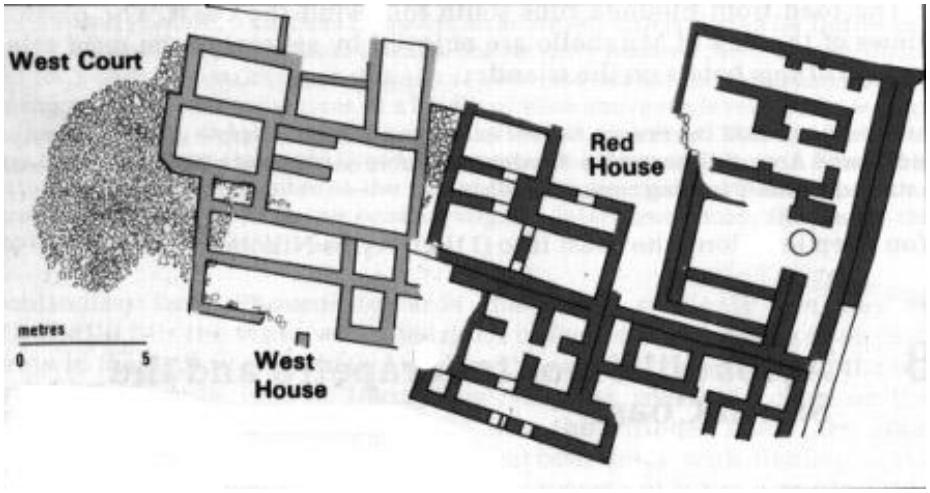

Fig. 14. Settlement plan of Vasilike in Early Minoan II period (McEnroe, 2010: 23).

In general, the Early Minoan period marks the beginning of a new era for Crete. It is during this period that the island witnesses a growth in population and the development of larger communities. According to K. Branigan[147] these changes must have created tension in the traditional social structure and must have reduced the significance of the kin-group.

[146] Shelmerdine, 2008: 95-97

[147] Branigan, 1995: 39

CHAPTER IV

PRELIMINARY RESULTS OF RECENT INVESTIGATION IN WESTERN ANATOLIA

4.1. Bakla Tepe/Bulgurca Excavation

N. Tuna's preliminary unpublished reports (between in 1984-1988) focuses on the survey which conducted in Cumaovası sub-region. His unpublished material includes the documented data from field survey. R. Meriç also visited the basin and after his surveys he published new settlements in Cumaovası. In the second half of the 1990's IRERP (Izmir Region Excavation and Research Project) started salvage excavations at Bakla Tepe.

4.1.1. Location of the Site

The Cumaovası plain, on which the Menderes district is located as well, within the boundaries of Izmir region, communicates both with the Gulf of Izmir to its north and with the Küçük Menderes valley through Torbalı (Fig. 15). The Tahtalı River flows northeast-southwest in the lower, southern, part of the valley, joining many other small brooks originating from higher altitudes and exiting to the plain in the southwest (Fig. 15[148]). The Tahtalı stream then flows through a valley, which is canyon-like in places and meets the sea near Gümüldür[149].

[148] Vardar and Sarıöz, 55-56

[149] ibid.: 55

The former village of Bulgurca is located on the lower portion of Cumaovası to the south of the Tahtalı River[150]. The mound, which is located on a calcareous hill to the north of the village and south of the Tahtalı River, contains prehistoric remains and is called Bakla Tepe as it was mainly used for growing fava beans.

Bakla Tepe is both strategically and economically important due to its location. The area was economically advantageous because it was situated right next to the Tahtalı River, in a position dominating the Cumaovası Plain. The mound due to the fact that it communicates both with the Gulf of Izmir to the north, the Küçük Menderes valley to its southeast through the Cumaovası Plain and directly with the seaboard through the Tahtalı River valley has a strategic and economic value. Bakla Tepe also communicates with Ahmet Beyli through the Çile River valley where ancient settlements like Kolophon and Klaros are located[151].

Bakla Tepe is located 65.50 m above the sea level and 20 m above the level of the plain. The settlement was founded on a mass of calcareous bedrock steeply elevated on its western and northwestern sides. As more architectural layers were situated on the western and northwestern portions of the site, the thickness of the cultural deposits in these areas reach 5.5 m. The cultural layers and the cemetery area extend over an area of 350 m in length and 250 m in width[152]. It fills an area of 1.5 hectares (Fig. 16).

[150] Erkanal, 1996: 72

[151] Akdeniz, 2002: 1-36

[152] Erkanal and Özkan, 1997: 270

Fig. 15. Bakla Tepe's location on map (Şahoğlu, 2008: 495).

As a result of surface surveys, artifacts belonging to the period ranging from the Late Chalcolithic to the Roman times were found together in the western highest part of the mound before the commencement of the excavations. Excavations started in this area to shed light on the stratigraphic sequence of the mound. As a result, it was discovered that a large area had been later refilled at this location[153]. Ceramic examples from various periods were recovered from the same context within the fill. Ceramics, bullets and other artifacts dating to the 20th century A.D. were amongst the finds[154]. Upon this surprising discovery, the elders of the village were consulted resulting in some new information about the processes which affected the archaeological deposits of the mound when both the finds and the new information supplied by the village's elders are taken into consideration[155]. During the war of Liberation, a large military trench was dug on the mound due to its strategic location and cannon had been placed in it. A few years later the pit, which was dug for this purpose was filled when the land wanted to use the area for an agricultural purposes, the fill that was brought to and spread over the area in Bakla

[153] Erkanal, 1996: 399-400

[154] ibid.:1996: 399

[155] Bostancı, 2005: 247-248

Tepe had been obtained from a different site consisted of ceramics and other finds from the site. As a result the surface finds from the top of the mound provide a misleading picture of the remains of what lie beneath[156].

4.1.2. Cultural Deposits at Bakla Tepe

There are five principal cultural levels at Bakla Tepe. The first and most recent, one represents the Byzantine-Roman occupation at the site. These periods are represented by some graves and walls at the highest point of the mound[157]. Due to the fact that architectural features were found in a severely distributed condition, no unified architectural plan can be obtained. Dense pottery deposits were found at the northern part of the mound reflecting the use of the area during these periods[158].

The second cultural level dates in the Late Bronze Age. This level is represented by a chamber tomb and a pithos burial. Ceramic finds from some test-pits provide additional evidence for this period at the site[159].

A cemetery belonging to the Early Bronze Age II period, located to the south of the mound, and architectural features to the east of the mound, constitute the third cultural level[160].

The fourth cultural level reflects the Early Bronze Age I culture of the region. The fortified settlement belonging to this period is located at the western portion of the

[156] Bostancı, 2004: 48-50

[157] Erkanal and Özkan 1999: 45

[158] ibid.: 47

[159] Erkanal, 1996: 401

[160] Erkanal and Özkan 1999: 48

mound. A cemetery of the same date is located to the east of the settlement and is cut into the architectural features of the Late Chalcolithic settlement[161].

The fifth cultural level which represents the Late Chalcolithic Period covers the entire area of the mound (Fig. 16)[162].

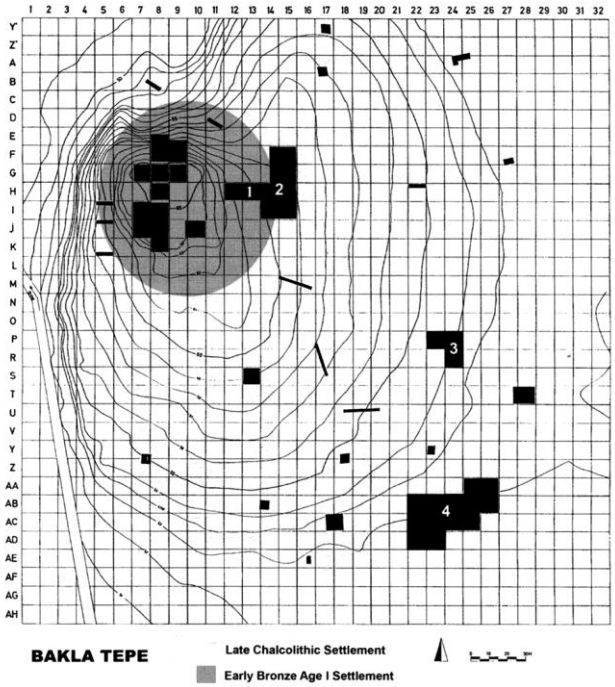

Fig. 16. Stratigraphical plan of Bakla Tepe (Şahoğlu, 2008: 496).

4.1.3. The Late Chalcolithic Settlement Model

The Late Chalcolithic settlement covers an area which is 350 m long and 250 m wide, extending in a north-south direction. It is the most extensive and biggest settlement represented at Bakla Tepe. When we take contemporary settlements,

[161] Erkanal and Özkan 1999: 50

[162] ibid.: 51

known in the region, into consideration Bakla Tepe is important both in terms of its settlement plan and the results obtained from the excavation so far[163].

The excavation has discovered four different architectural phases. Excavation was primarily undertaken in two areas, in the north and sound, within the large extent of the settlement[164]. In the northern excavation area, the Early Bronze Age I burials were cut into the Late Chalcolithic layers, partly disturbing the stratigraphy of the architectural levels.

Since the excavation team opened test trenches to understand the extent of the settlement[165], the last architectural phase of the settlement could only be investigated in a small area. The technique of construction is different here. Instead of grill-plan structures, the floor was paved with stones and probably a more rectangular plan used for the building, while "wattle and daub" architecture continued to be used for the walls (Fig. 17).

The buildings, unlike in Early Bronze Age I, were not tightly packed (Fig. 42). The density of the buildings seems to increase at the centre of the settlement and decreasing as farther away from it. Empty spaces are usually found among the buildings, being mostly used for production activities. In short, daily life seems to take place mostly in open air. Despite the low density of the buildings and the abundance of empty spaces in between, the entire settlement area possesses a proper street network. The main streets were paved with large stones while side streets were hardened using smaller stones and pebbles. The houses located by these streets are apsidal and have grill-plans[166] (Fig. 43).

[163] Şahoğlu, 2011: 130

[164] Erkanal and Özkan: 1997: 261-280

[165] Erkanal and Özkan 1999: 350

[166] ibid.: 134

The facts that an open settlement model was preferred, with light construction and the lack of fortifications provide evidence for the social and political structure of the region which seems not to have formed a threat to the inhabitants[167].

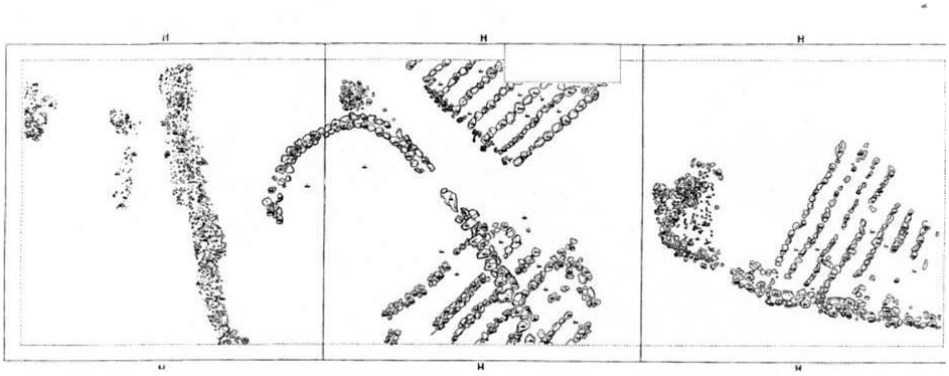

Fig. 17. Late Chalcolithic settlement plan of Bakla Tepe (Erkanal and Özkan, 1998: 348).

4.1.4. The Early Bronze Age I Settlement Model

Contrary to the Early Bronze Age II settlement, the Early Bronze Age I settlement is located on the western portion of Bakla Tepe, in a position dominating the Cumaovası Plain, as a large single unit, protected by a fortification (Fig. 38). This period was investigated in three excavation areas, all located at the highest part of the mound.

The settlement consists long-houses opening up to stone paved streets (Fig. 40). The houses, built with common side walls, are constructed side by side and therefore in blocks (Fig. 39). These blocks also share a common flat roof. Features like silos and hearths are constructed inside the buildings. The floors are partially covered with stone paving. The architectural remains which have been uncovered to date conform to a radial system (Fig. 18).

[167] Şahoğlu, 2008: 484-485

Fig. 18. Early Bronze Age settlement plan of BaklaTepe (Erkanal, 1996: 71).

The settlement model seen at the later phases of the Early Bronze Age I period at Bakla Tepe is also found in various sites in Western Anatolia and on the Aegean islands. In Western Anatolia, the same settlement system is found at Aphrodisias[168], Beycesultan[169] and to a certain extent at Demircihüyük[170] (Fig. 36). Despite the similarities that can be observed at these settlements, the closest parallel to the settlement model at Bakla Tepe was found at Thermi[171] (Fig. 31-32-33) on the isle of Lesbos. There are also radial plan houses with stone-paved streets. Besides Thermi, the architectural remains uncovered in a limited area at Emporio-Chios[172] also display a row of adjoining long-houses. This settlement model, with links to those of both the Aegean world and the Anatolian hinterland, has been exposed for the first time on the Western Anatolia coastline at Bakla Tepe. The two regions, Aegean islands and the hinterland of Western Anatolia have therefore been demonstrated to share some architectural features in common.

[168] Joukowsky, 1986

[169] Lloyd and Mellaart, 1962

[170] Korfmann, 1987

[171] Lamb, 1936

[172] Hood, 1981

4.1.5. The Early Bronze Age I Period Cemetery

The Early Bronze Age I cemetery of Bakla Tepe is located to the east, northeast and southeast of the settlement and the fortification. The area over which the cemetery spreads was used as the settlement of the Late Chalcolithic period, with the result that the Early Bronze Age I graves disturbed the stratigraphy of the proceeding settlement[173].

The first type is the pithos graves. These are usually big pithos of more than 1.50 m high. Their mouths in all cases face the east and were always closed with a big pithos sherd or a big bowl. The deceased were in a contradicted position with the head on the east and grave goods were present in all cases[174].

The second grave type is the cist graces. These burials had a rectangular lined cist and flat capstones. An interesting aspect of these graves was the vertically placed pithos standing on the edge of these burials. These big pithos were in all cases filled with stones. Their function must have had something to do with the ceremonies taking place after the burial of the dead. They could have also been used a grave markers in the cemetery area[175].

The third grave type are simple inhumations. These burials were –in some cases- bordered with rows of stones. The dead were placed exactly as their contemporaries in pithos and cist graves. What makes this grave group more special is the fact that they were used only once in contrast to the other grave types[176].

[173] Erkanal and Özkan, 2000: 269

[174] ibid.: 270

[175] ibid.: 272

[176] Ibid.: 274

Although they may belong at different types of burials, certain common traits can be observed in the Early Bronze Age I graves at Bakla Tepe. Except some exceptional cases and infant burials, all the graves are oriented in an east-west direction. The body likewise had the same orientation and was laid in a contracted position, usually on its right side, while the head points east. Except for personal belongings worn on the body, the grave goods were placed by the head or the feet[177] (Fig. 41). In all probability, it seems unlikely that the grave types have to do with social status. Precious grave goods can also be found in the simplest pit burials. In all three types of burials, the grave floor was covered with sand and cereal grains sprinkled on the body of the deceased (Fig. 41).

4.1.6. Agricultural Production and Metal Working

Metal working was important during this period. According to the results of metallurgical analyses, copper oxide ores were used. The ore was smelted inside a baked clay crucible together with charcoal. As a result, the metallurgists of Bakla Tepe must have placed the copper oxide pre-inside the crucible. The charcoal has used as a reducing agent during the process. The copper oxide ore used in the metallurgical processes at Bakla Tepe has obtained from the gossans at the nearest deposits. The ore used probably originated from Sandıköy, located 9 km from Bakla Tepe[178].

The fertility of the soil surrounding Bakla Tepe is also reflected in the settlement's agricultural production. In terms of this, wheat (Emmer and Einkorn) appears to be prominent. Appreciable numbers of grains of crop plants-hulled barley, Einkorn and Emmer wheat-at Bakla Tepe suggest that plant husbandry was of importance there during the 4th millennium BC. In addition, the finds of tools, such as mortars,

[177] Erkanal and Özkan 1998: 399–425

[178] Kaptan, 1998: 109

millstones and flint sickles from the sites recorded by N. Kolankaya-Bostancı (2007) supports the idea of crop production and processing.

During the Late Chalcolithic and Early Bronze Age, at Bakla Tepe both Einkorn and Emmer wheat are predominant whereas barley is less abundantly represented. Lentil and other legumes may have been used as supplements in the diet of the inhabitants of the sites. Small quantities of grape and fig may point to the intentional collecting of the fruits for human consumption while the presence of weeds, bedstraw and rye-grass may be due to contamination in the field. Also we can say that olive oil and wine has been produced[179].

Beside these, spindle-whorls, loom-weights and some artifacts which may be associated with weaving have been found in large numbers at Bakla Tepe. The quantity and variety of these artifacts demonstrate the importance given to textile production and therefore, animal husbandry[180].

4.2. Liman Tepe Excavations

People need to protect themselves both from natural and political threats since the very beginning of the history. Because of it they developed various defensive systems. It is possible to see some examples about such fortification systems with defensive walls both in Anatolia and Greece. Early Bronze Age settlements in the Aegean has surrounded by strong defensive walls such as Lerna and Askitorai in coastal Greece, Aigina in the Aegean islands and Melos, Siphnos, Syros in the Cyclades possess fortified citadels (Fig. 35). Also Chios-Emporio, Lesbos-Thermi and Lemnos-Poliochni on the eastern Aegean islands share a similar character. These sites can show us the threat from the sea considered much more dangerous than that

[179] Oybak-Dönmez, 2006

[180] Erkanal and Özkan 1999: 127

coming over the land in the Aegean region. A preference for inland location by settlements in coastal zones and islands throughout Greece and the Aegean, also in Mediterranean region as a whole generally has been attributed to insecurity, particularly to the threat from pirates. The choice of hills as settlement sites has been explained in the same way[181].

The Anatolian part of the Aegean has also such settlements. One of them is Troy. The walls were developed throughout the various phases of the settlement. Troy is an important center and representative of the region's prehistory, defending the influence of Western Anatolian cultures for a very long time[182].

This site carried this situation until 1979 when Liman Tepe has found by E. Akurgal. He started rescue excavation in 1979 and first prehistoric architectural remains were covered by G. Bakır. Ten years later, in 1992 the Izmir Region Excavation and Research Project started new researches in the İzmir Peninsula[183]. The Project aims to carry out systematic surveys to achieve a wider perspective and better understanding of the prehistoric societies of the Izmir region and their contribution to the Anatolian and Aegean culture. As a result of this investigation twelve Early Bronze Age settlements have been located[184]. Two of them, Liman Tepe and Bakla Tepe showed that these are have been fortified by strong defensive wall.

4.2.1. Location of the Site

The Urla's coastal plain was formed as a result of gradual alluvial fill of a former bay. The bay has been cut off by a barrier made of sand, and later filled up with alluvium. So it became a coastal plain. While this process, a rocky outcrop in the sea

[181] Wagstroff and Cherry, 1982: 259-260

[182] Renfrew, 1972: 127-129

[183] Erkanal, 1998: 179

[184] Şahoğlu, 2004: 97-98

joined with the mainland and a peninsula was created[185]. This peninsula is suitable for the settlements with fertile coastal plain[186].

Liman Tepe is located on a peninsula to the south of the Gulf of Izmir and situated in Iskele district of Urla (Fig. 19). The ancient city of Klazomenai is also located on Karantina Island. This island was connected to the mainland during the Classical period[187]. It is thus possible to define Liman Tepe as a prehistoric version of Klazomenai. The site is located right directly opposite of that island.

During the time, summer houses were built all over the höyük. The Izmir-Çeşmealtı road also cuts through the site in two directions[188] (Fig. 20).

Fig. 19. Location of Liman Tepe (Kolankaya-Bostancı, 2007: 141).

[185] Erkanal, 2008: 179

[186] ibid.: 179

[187] Şahoğlu, 2004: 80

[188] Erkanal, 1996: pic. 6

4.2.2. Cultural Deposits at Liman Tepe

After systematic excavations and researches Liman Tepe's oldest culture can be dated back to the Neolithic period. Because of the ground water level, it has been possible to detail the characteristics of this culture. This occupation belongs to the 6th and partly 5th millennium BC[189].

The Chalcolithic layers were dated to the 4th millennium BC. These remains were uncovered in a small trench since these levels are all under the water level. The period is important for advanced metallurgy and various economic changes. But on the other hand wattle-and-daub technique tradition has continued[190].

The Early Bronze Age is the most common period of the höyük. It's the time when metal economy started playing an important role in the evolution of societies resulting in the emergence of urban settlements[191]. Early Bronze Age I period dated to the first half of the 3rd millennium BC. Period includes long houses attached that surrounded by a strong fortification wall (Fig. 45).

Site continued to be used into the Classical Period. In this period site was known as Clazomenai[192].

[189] Erkanal, 2008: 180

[190] ibid.: 180

[191] Şahoğlu, 2004: 98

[192] Erkanal, 2008: 179

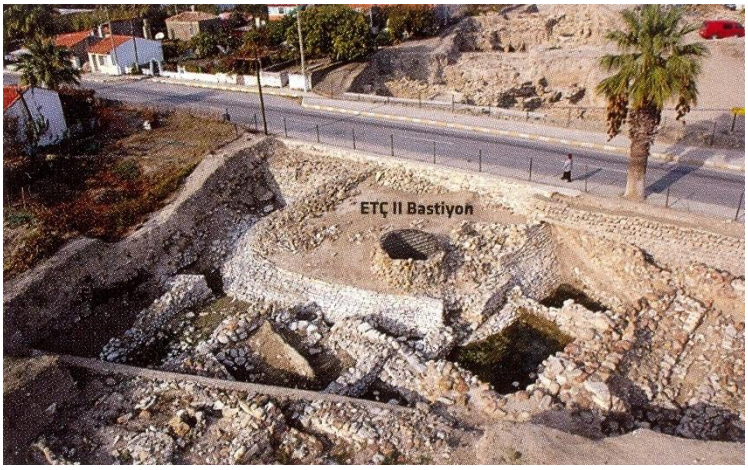

Fig. 20. The Early Bronze Age II bastion and modern İzmir-Çeşmealtı Road (Erkanal, 2011: 131).

4.2.3. The Early Bronze Age Settlement Plan

The settlement of this period is surrounded by a fortification wall constructed in a very different technique (Fig. 46). The fortification system was built by using slab limestones and has a small rectangular projection on the outer face with an interval of 1.5 m. The preserved height of the wall is 2.70 m[193]. The southern part of it has three narrow buttresses. It was strengthened through the additional support provided by these structural elements. The outer part of the wall was covered by stones forming a rampart[194] (Fig. 46). This ramp was constructed of irregular stones and helped to support the wall on the outside, greatly increasing its resistance (Fig. 22). This technique was not constructed to the northern face of the wall. It was constructed vertically[195]. This wall was utilized by at least three architectural levels.

The Early Bronze Age II can be dated to the second half of the 3rd millennium BC. It extends over a much larger area (Fig. 21). The previous fortification wall and the

[193] Erkanal, 1999: 238

[194] ibid.: 238-239

[195] ibid.: 239

other archaeological materials covered with a thick layer of mud, than new structures built on this layer[196]. It can be explained as re-organization of the site cancelled the old one and created more monumental fortification system with horse-shaped bastions (Fig. 49)[197]. One of the most important features of this period is the citadel and the lower city. The citadel has been extended to the settlement borders of the Early Bronze Age I and was encircled with a powerful fortification wall on the south. There were people living both in inside and outside of the citadel. This bastion is horseshoe shaped and its sizes are 20x29 m[198]. The inner part was filled with mud-brick and the outer part was built with smooth stones (Fig. 50). Probably, the bastion was built firstly while the defense system was being created[199].

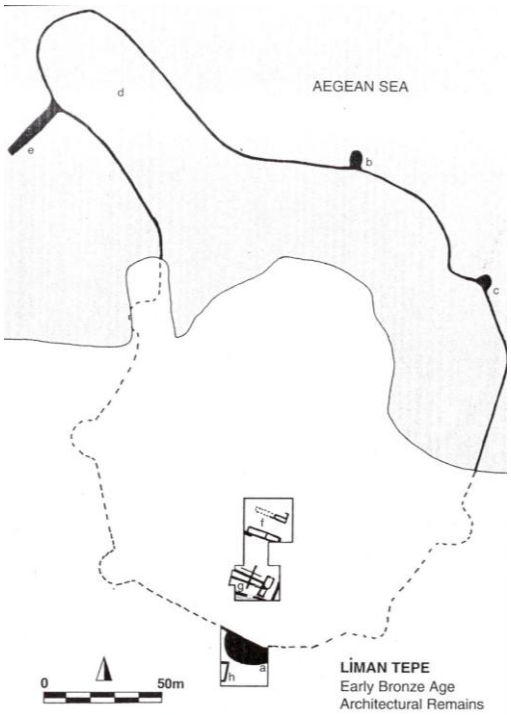

Fig. 21. Architectural features from Early Bronze Age in Liman Tepe (Şahoğlu, 2004: 110).

[196] Erkanal, 2008: 181

[197] Erkanal, 1999: 240

[198] ibid.: 241

[199] Erkanal, 2008: 181

This kind of horse-shaped bastions and towers are quite common both in the Aegean and in Anatolia (Kastri-Syros[200] and Naxos-Panormos in Cyclades, Skyros- Palamari in the Northern Aegean, at Aegina and at Lerna in the Peleponnese) (Fig. 29). Liman Tepe is the only one in the coastal part of the Anatolia. This tower is the largest and most monumental example among the others[201].

The oval defense system is approximately 200 m in length. In the center there is a large building complex called corridor houses (Fig. 45-47-48). This kind of structures can be seat as a political and economic authority. It is the beginning of some sort of administrative formation and possibly the rise of some chiefdoms.

Fig. 22. Early Bronze Age I fortification wall and long houses in Liman Tepe (Erkanal, 2011: 131).

[200] Bossert, 1967: plan 2

[201] Stampolidis and Sotirakopoulou, 2011: 33

The corridor houses located within fortified settlements of the Early Bronze Age II period in the Aegean are normally interpreted as reflections of central authority[202]. This authority most probably directs the political and economic organization.

The central complex, which continues the earlier period, is at central part within the settlement, consists of two long rectangular storage rooms and open courtyard and another, multi-roomed structure opening to the courtyard. This complex is situated topographically at the lowest part of the settlement[203] (Fig. 51).

These central buildings, where the long sides contain corridors, are widely known in Greece. This type is generally found at the centre of a fortified area and believed to be a residence of a lord or chief. Other residential units are scattered around this central structure[204].

Another important find is bull-shaped stamp seal which gives us a clue about the possible administrative function, emergence, development of elite identities, and elite culture of this house[205].

As a result of the recent archaeological researches, a new Early Bronze Age II rampart system is revealed 700 m south-east of Liman Tepe[206]. This rectangular or horseshoe shaped defense system has been built to protect the lower city from dangers which may come from West. We can have an idea about the limit in the west of the lower city by means of this new rampart system. The Early Bronze Age II must be extended over an area about 800-900 m through this information (Fig. 23).

[202] Erkanal, 2008: 183

[203] Şahoğlu, 2004: 102

[204] Barrett and Halstead, 2004: 68-69

[205] Şahoğlu, 2008: 489

[206] Ersoy, 2010: 187

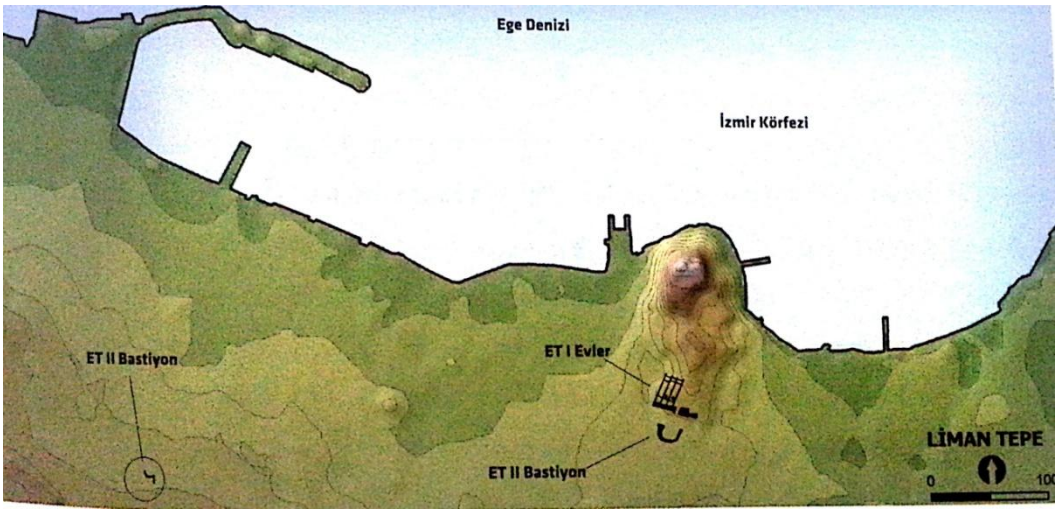

Fig. 23. New bastion features from 2009 excavation season in Liman Tepe (Erkanal, 2011: 133).

Liman Tepe has different characteristics known from all the Aegean of this period. Well organized settlement with a harbor complex linked to the citadel and the lower town is in evidence. Fortification system, harbor, bastions, lower and upper cities suggest that Liman Tepe is a regional center under the elite's control[207].

It can be inferred that the cities had the aim of protecting themselves as a result of developing of trade in Anatolia especially in the second phase of the Early Bronze Age by presence of upper and lower cities which surrounded by strong defense walls, reflection of the administrative mechanism of different social groups on the architecture[208], increase in the use of the seal and presenting richer metal finds by tinned bronze which was used for the first time in economic system; black, red and gray polished depas, double-handed cups, cosmetic boxes, teapots, cut mouthed jugs, Wheel-made plates and presence of the daily use bottles especially Syrian bottles; the

[207] Erkanal, 2011: 132

[208] Doumas, 2008: 132-133

trade of the potter wheel which is especially is used in Central Anatolia for the first time, firstly to Western Anatolia then to the Cycladic Islands by trade ways[209].

Liman Tepe has a great importance in this trade network due to being the door to Inner Anatolia. It is figured out that there had an act as a bridge between Central Anatolia, Western Anatolia and the Western Aegean as a result of excavations. This cultural junction can only be explained by the presence of an important trade road and huge migrations[210]. Changing political and social structures of the Early Bronze Age settlements shows that centralized settlements firstly occurred in Western Anatolia. So, the creation of these settlements could be possible by developments of new technologies, organized sea and land trade[211].

The settlements, located at Urla peninsula that are dating to the same era, are looking different than Liman Tepe. Gölkayası is one of these. It's located at Alaçatı, and it is composed of a mass rock. The spaces in view of a cave in this mass were used to reside. The settlement is surrounded by rocks, so; there is no agricultural land available. With these features, Gölkayası looks like a fortress that is built against threats from the sea. Another place, Kale Tepe, is located on the Izmir-Çeşme way. This 50 m diameter small settlement is surrounded by walls, and it is an outpost controlling the natural road passing the valley. The status of the others, Değirmen and Yağcılar are not different from this. Çeşme-Bağlararası excavations reveal that this city has an important port. The unearthed architectural buildings are the houses that people have lived and these start to provide information about economic and commercial activities of Çeşme. The other Early Bronze Age II settlements at the peninsula are mostly characterized as rural community. When taking into account all these factors, they fulfilled the necessary conditions for a regional defense. This clearly shows that, there is a regional political unity. With its existing features, Liman Tepe should be evaluated as the center of this political union.

[209] Papadopoulos and Kontorli-Papadopoulou, 2008: 413-414

[210] Erkanal, 2008: 184

[211] ibid.: 184

CHAPTER V

DISCUSSION

V. Şahoğlu[212] has mentioned that, in the second half of the Early Bronze Age there is some kind of trade network. It led the way to urbanization in Anatolia and important cities with administrative buildings emerged along the road in the Central and Western Anatolia[213] (Fig. 24). As a result of changes arising from the trade, the social structure became more cosmopolitan and in the face of new demands, some spatial shifts occurred in the Anatolian settlement pattern and it transformed from a radial arrangement to a linear scheme[214]. Inside the fortified acropolis, we find monumental and impressive structures and houses of local administrative authorities (also called as chief or "bey"), and sometimes the houses of other aristocratic elites[215].

According to this theory[216] that is proved by the seals which was obtained from the excavations and the presence of the big administrative buildings, Malatya Arslantepe has made a long distance trade with Mesopotamia at ca. 4000 BC and this trade has seen expanded in 3000 BC by increasing of the use of metal more widely and with different techniques in Central and Western Aegean[217]. Especially the technical developments of first half of this millennium constituted an extending trade network which has a route starting from North Syria and firstly to South and

[212] Şahoğlu, 2005: 339-355

[213] Yakar, 1999: 505

[214] Efe, 2003: 274

[215] Özdoğan, 2006: 573

[216] Şahoğlu, 2005: 339-355

[217] ibid.: 340

Central Anatolia, then from there to the Aegean Sea and the Caucasus, to the Cycladic islands and up to mainland Greece[218].

Küllüoba is located on an estimated trade route which is leading from Central Anatolia to the Aegean Sea. This center located in city of Eskişehir is famous for its unique architecture. There is a fortification around the settlement and the houses which are opening through a middle courtyard are based on a defense wall. This wall is shaped as zigzag in some places. Rampart has not got monumental attribute. This situation gives the impression that these walls had a function to separate the upper and lower settlements rater than defending them[219] (Fig. 52).

Another settlement is Demircihüyük (Fig. 36) which has a wide range defense wall. There is also a zigzag shaped wall which is surrounding the city same as Küllüoba (Fig. 54). The only difference of here is that these shapes are rounded to match the natural shape of the mound[220]. The houses' rear walls are also based on defense wall such as the houses in Külloba. Settlement is increasingly more rounded in second phase of the Early Bronze Age.

The trade between the Cyclades which is on the roads of the merchants who came from Liman Tepe and Anatolia dates back to Neolithic Period[221]. However, most intensive trade was in The Early Bronze Age[222].

Tools dated to the Early Bronze Age I made by obsidian which came from the island of Melos rather than Anatolian obsidian[223] shows Liman Tepe had very close

[218] Şahoğlu, 2008: 340-341

[219] Efe and Türkteki, 2011: 201

[220] Yakar 1985: 41

[221] Tuncel, 2011: 124

[222] ibid.: 127

[223] Kolankaya Bostancı, 2011: 155-156

relations with the Cycladic Islands (Fig. 29). On the contrary, we see in later periods that Cycladic and Anatolian obsidian used in almost same amount; and it shows that there were close relations in this geography.

Metal is in the first place of this trade network which is emerged from the desire of reaching and obtaining sources of raw materials[224]. As a result of negotiations which have started by tin trade, pottery wheel is also got started to seen in Western Anatolia.

This mentioned trade network has effected on the social differentiation between Aegean and Anatolian people which is a result of political mergers. The main raw material of this trade network which has reached the most extensive borders in the time until that period is especially tin and silver[225]. Olive oil, wine, textiles, essential oil and perfumes were mainly used as substance materials in exchange for silver and tin. In addition, cups were produced for important class people were played important role in this trade[226].

Social and politic changes have seen extensively as a result of this trade in the second phase of the Early Bronze Age. The construction of smaller buildings in place for large administrative building in the inner castle at Liman Tepe is one of the best examples for these changes[227]. In Troy also the sizes of settlements were decreased visible and huge buildings which built in previous periods were abandoned.

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[224] Keskin, 2011: 150-151

[225] Şahoğlu, 2005: 354-355

[226] ibid.: 354-355

[227] ibid.: 354

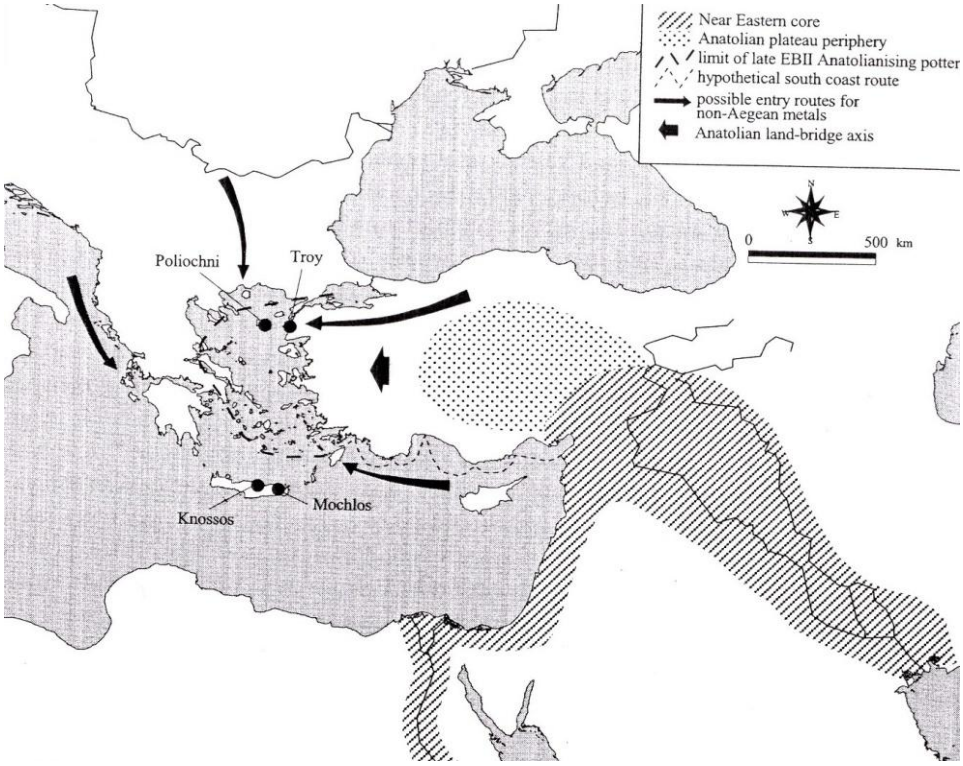

Fig. 24. Anatolian Trade Network (Broodbank, 2000: 284).

At Vasilike the plan shows a carefully laid-out building complex, more than 30 m long, with rectangular rooms. Some writers regard the "House on the Hilltop" here as a "mansion"- implying the existence of many smaller houses in the village -a different interpretation seems more plausible. This house at Vasilike may constitute much or the entire village there, a village on the agglomerate plan like Çatal Höyük in the Anatolian Early Neolithic[228].

Myrtos looks like a small village than Vasilike. The foundations of the walls are of stone, their upper parts of mud brick, and they were sometimes decorated with red painted plaster. This is the only example which has painted walls. The rooms are rectangular. A complex of rooms at the north side of the summit area contained a large spouted tub and channels for drainage. R. Seager[229] suggests that this area may have been used for the filling and dyeing of textiles.

[228] McEnroe, 2010: 23

[229] Seager, 1905: 152

In Greece, the Early Bronze Age is the period of existence of large and presumably public buildings. The House of the Tiles at Lerna is rectangular in plan, and the building was divided into several rooms, with corridors and stairways leading to an upper storey[230] (Fig. 30). Within this building was found an important deposit of clay sealings[231] (Fig. 4).

Large central buildings at Lerna, together with the fortification wall, would in any case indicate some degree of central authority[232]. The sealings give the strong presumption that some kind of redistribution of goods was taking place, although there is no suggestion that the central organization was supporting full-time specialists. The existence of some ruler or chief, on whose authority dues were collected, or under whose patronage exchanges were transacted, seems indicated[233].

Poliochni II (Blue period) becomes larger. A defensive wall surrounds the settlement. Several building blocks have been excavated at Poliochni and give the impression of a town rather than citadel[234].

Thermi was likewise enclosed by a defensive wall, which give the impression of a peaceful agricultural community without fear of aggression. Thermi IV and V give a clear impression of proto-urban settlement[235].

Troy I was also fortified and have a citadel. The houses were separate and free-standing; Thermi and Poliochni were more crowded. The important central building of Troy II indicates a central organization and probably the rise of chiefdoms. The building remains preserved indicate in Greece, Troy and Liman

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[230] Preziosi and Hitchcock, 1999: 45-47

[231] Wiencke, 2000: 218

[232] ibid.: 120-128

[233] ibid.: 213-311

[234] Shelmerdine, 2008: 64

[235] Renfrew, 1972: 126-127

Tepe, the emergence of central organization. The seals and sealings give an insight into the economic factors favoring this social and political development.

Bakla Tepe had an open structure model in the Late Chalcolithic. In Early Bronze Age settlement had shrunk and surrounded by a strong defense wall. The settlements with such strong walls in this period can be described with political and social changes rather than coming of new ethnic groups to the area[236]. In addition defense system was not enough in the beginning of the Early Bronze Age; trenches were built to protect themselves and their settlements. As a result of excavations which made at Bakla Tepe same as the ones which is performed in Küllüoba and Demircihüyük, this has been seen that the walls of houses based on defense wall (This kind of houses are named as Anatolisches Siedlungsschema by M. Korfmann[237]). The absence of rampart walls in the Late Chalcolithic shows that the region has not faced with any threat but in this situation has changed in the Early Bronze Age.

On the base of architectural differences, two distinct community types may be postulated for Early Bronze Age sites in the Aegean region of Anatolia. The fortified coastal site of Liman Tepe is an example of a centrally administrated early urban community with a strong economy. Bakla Tepe represents an affluent inland village or small town community interacting with large centers. This variation in settlement type may be attributable not only to different economic and social structures but also to different ethno-cultural background[238].

All of these settlements, although small in size, differ markedly from the Neolithic villages of the Aegean[239]. With their stone-built fortifications and their controlled

[236] Erkanal, 2011: 130-131

[237] Korfmann, 1983: 222-229

[238] Şahoğlu, 2008: 485-486

[239] Tuncel, 2011: 124

use of space within them, they may be regarded as "proto-urban" in character[240]. Thermi and Poliochni were small towns but Liman Tepe and Troy a fortress.

Stone-built fortifications are well documented only in the eastern Aegean in the Early Bronze Age I[241]. The extent of the defensive walls is clearly seen only at Troy and Liman Tepe.

In the Aegean Early Bronze Age II, fortification walls were more common and more efficient. Several sites on the Aegean coast of the Greek mainland (Lerna[242], Tsoungiza[243], Zygoures[244]) had stone fortifications.

The fortified settlements of the Aegean Early Bronze Age are set on or near coast[245]. The need for trade and communication clearly outweighed the dangers from sea[246].

[240] Yakar, 1985: 51-52

[241] Erkanal, 1996: 78-79

[242] Caskey, 1959: 123-124

[243] Harland, 1925: 54

[244] Shelmerdine, 2008: 32

[245] Renfrew, 1972: 394

[246] ibid.: 395

CHAPTER VI

CONCLUSION

Within the scope of archaeological researches conducted in the environs of İzmir, the highly beneficial data were obtained from Bakla Tepe (Bulgurca) which has an important place in the Late Chalcolithic Period. The settlement is limited to the Aegean Sea in the west and Cumaovası in the north. Bakla Tepe have pervaded over wide area and constituted an open settlement model in the period from the Late Chalcolithic Period up to 3000 BC.

Choosing of an open settlement model, absence of defense system and building of houses by light materials; clarifies the societal and political structure of the region. According to this, can be conceived there was not any societal and political formation which threatened or obsessed the region or people of region in Late Chalcolithic Period.

Settlement plan completely changed with the beginning of the Early Bronze Age. The settlement covers an area of 80x90 meters and there was a powerful city wall built around the settlement in the third millennium BC. Here is a settlement containing long houses that is opening to stone-paved streets. The houses that built side by side were using the same side walls, so they were being built as blocks (Fig. 37). These blocks have a single common flat roof. Unearthed architectural remains up till now reveal to a radial system of settlement.

The reason of this dramatic change in settlement of Bakla Tepe, between the Late Chalcolithic and Early Bronze Age, cannot be related to coming of a new ethnic group to the region. There is no cultural divide observed in these two periods in the

region; this change, highly likely evaluated in the terms of the effects of political and social structure of the region. This new settlement model is not only seen in Bakla Tepe but also seen in anywhere in Aegean region, so that it means this model cannot be limited with Bakla Tepe.

Liman Tepe is the best in the region for observing the urban model in the 3rd millennium BC. The centre was situated in a strategic point which was taking benefit from economic opportunities. The settlement was formed by houses. Mainland had been encircled with powerful defense walls and bastions.

When we consider the topographic structure of the land, we can see that both sides of this defense system, encircled with the bastions of Early Bronze Age II, lengths to the north; towards the sea.

The Izmir is situated between Gediz and Küçük Menderes basins that connects Central Anatolia and Aegean to each other. In addition, the sea route from Aegean Sea to opponent coasts starts here. And it constitutes a safe coastline for the sea traders by means of the advantageous topography which created by the coastline where is in both north and south sides of Urla Peninsula. It could be used because of that there were shorter and safer sea route for the merchants who came from north to the south in the Early Bronze Age. In this context, this has been understood that Liman Tepe, which is one of the largest settlements in this period, was the shortest trade route from the north to the south. This region is also on a very important point in both in mainland and sea trade through its strategic location.

Corridor houses and lower city shows that there were a settlement with central authority and well planned political structure in Liman Tepe. The reflection of this features on architecture and discover of the port structure indicates the presence of close relations between mainland Greece and the Aegean Islands. The presence of the settlements with strong defense system in the mentioned geographical area indicates information about the political situation in Early Bronze Age. In addition,

not only political but also cultural relations are observed through pottery and other small finds.

In the Early Bronze Age there was indeed a single process of urbanization and local, unique settlement pattern -urban model- in Anatolia reflected its own internal dynamics, cultural environment and historical background and had its roots in the early stages of the Chalcolithic Period. This urban model appears to have developed and gone through a spatial evolution that stemmed from changing social dynamics throughout the Early Bronze Age.

During the Early Bronze Age, at least two related units of social organization may be identified: the household and the community. In general, social change during this period can be read as a progression away from a communal model of society, where households are subordinate to and regulated by higher-level or communal forms of organization, to one where the communal becomes subordinate to the interest of specific households, who take responsibility for the ongoing wellbeing of the community and become the main agents (elite) of socio-economic development. On the basis of architectural differences, two distinct community types may be postulated for Early Bronze Age sites in the Aegean region of Anatolia. The 6 hectare fortified coastal site of Liman Tepe, consisting of lower and upper towns, is an example of a centrally administrated early urban community with a strong economy. Bakla Tepe, on the other hand, represents an affluent inland village or small town community interacting with large centers. This variation in settlement type may be attributable not only to different economic and social structures but also to differences in ethno-cultural background.

The conclusions are drawn from the brief survey of the evidence for Aegean Early Bronze Age that testifies clear enough contacts between Mainland Greece and Western Anatolia through Aegean Islands as stepping stones in an agreement by most of the scholars. The eminent facts from the evidence of architecture as well as artifacts found in necropolis areas and elsewhere as follows:

i) From the similarities discussed above it seems very obvious that Aegean cultures continue in continental and overseas relations with each other during the Early Bronze Age in the form of architecture, artifact attributes of imported and local products as an evidence of early state formation.

ii) These characteristics of sub-regional differences are not discovered presence of early-palatial structures and elite tombs sufficiently. To understand and explain sub-regional differences of Early State Formation characteristics and processes in the Aegean cultures it is needed further research and extending data available.

Spatial data of social organizations can be identified in the archaeological records of excavations and surveys as well. Mapping the sites and settlement systems for Bronze Age would be useful a GIS tool to explain the emergence of Early State in Aegean Region. Further field studies and GIS analyses fulfilled for a comparative nature of sub-regional similarities in Aegean Early Bronze Age urbanization would provide us a better understanding and explanation for the socio-political processes of the issue.

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APPENDICES

A. FIGURES

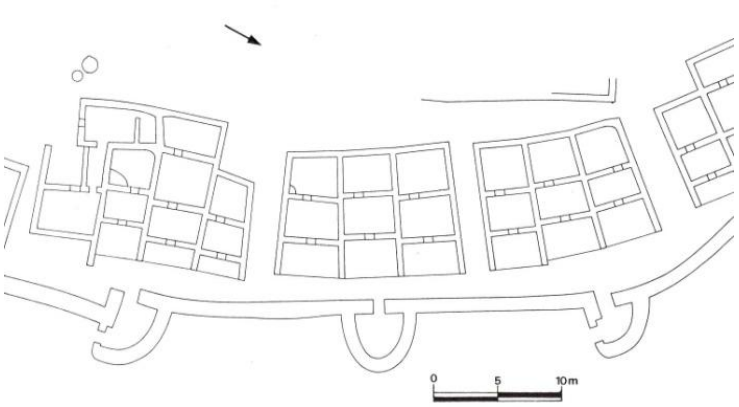

Fig. 25. Ancient Aigina settlement with fortification wall (Konsola and Hägg, 1986: Fig. 13).

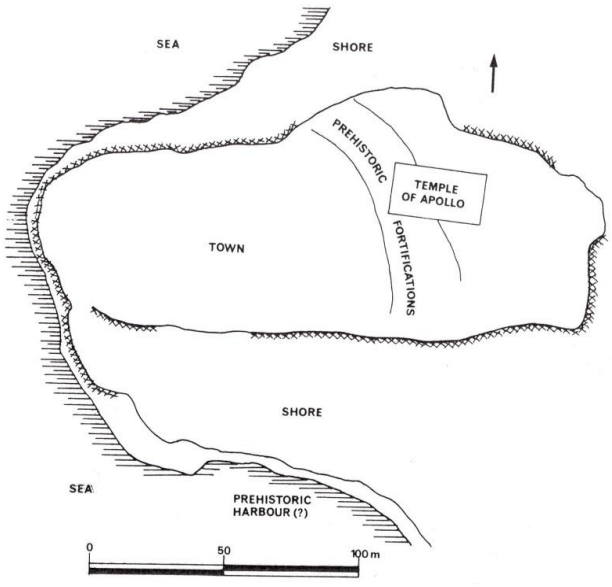

Fig. 26. Area of EH settlement at Ancient Aigina (Konsola and Hägg, 1986: Fig. 5).

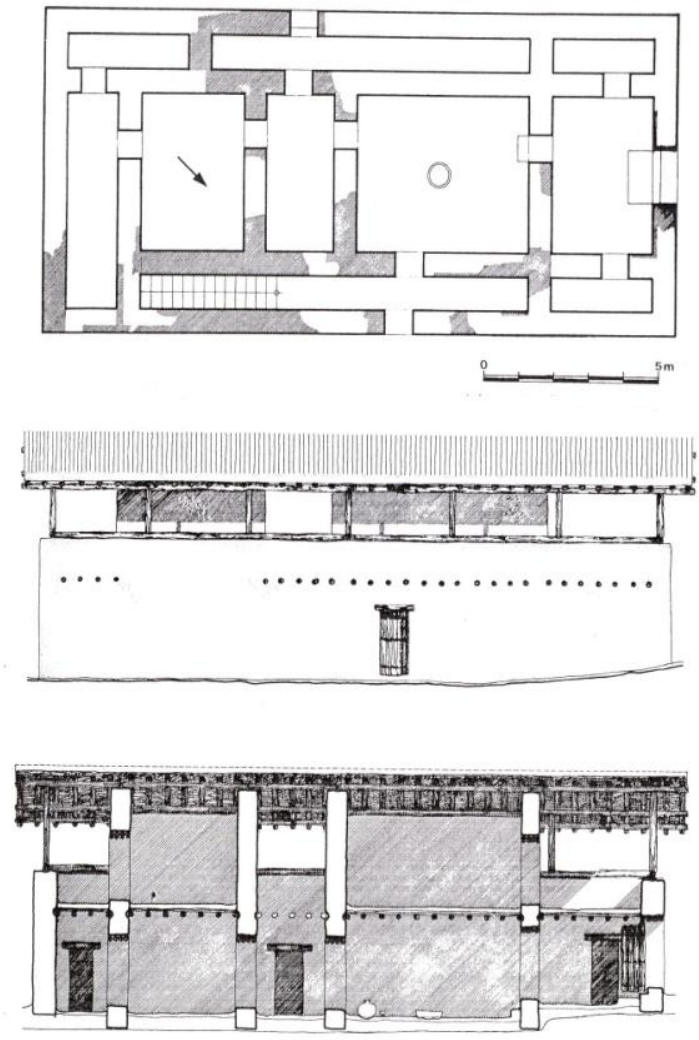

Fig. 27. Weisses Haus at Ancient Aigina. (On the top, ground plan; in the middle, reconstruction view; on the bottom, section of the) (Konsola and Hägg, 1986: Fig. 9-11).

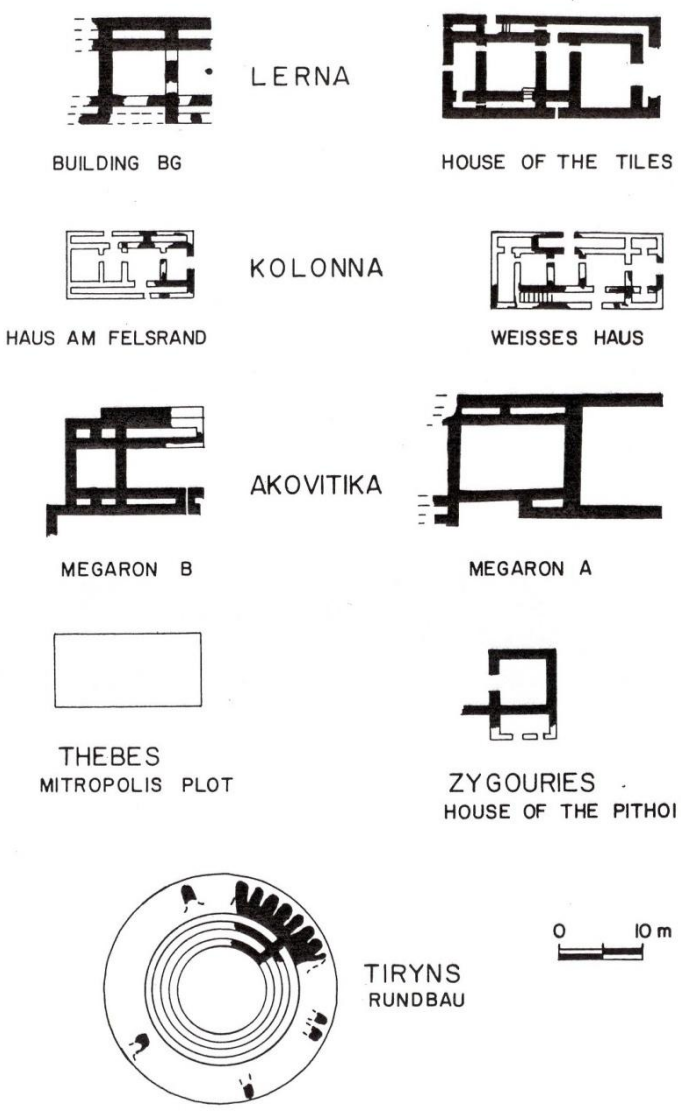

Fig. 28. Early Helladic house plans (Konsola and Hägg, 1986, Fig. 4).

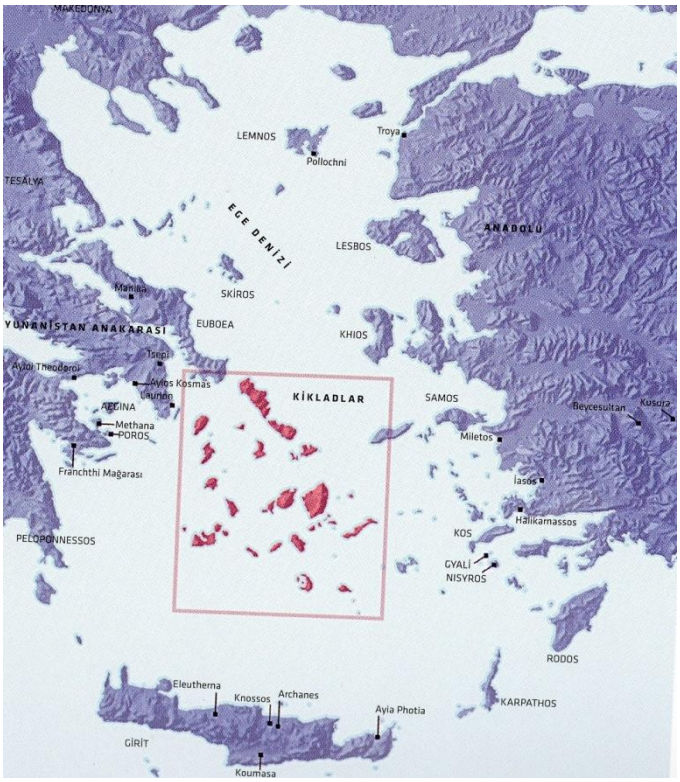

Fig. 29. Geographical location of the Cycladic Islands (Stampolidis and Sotirakopoulou, 2011: 18).

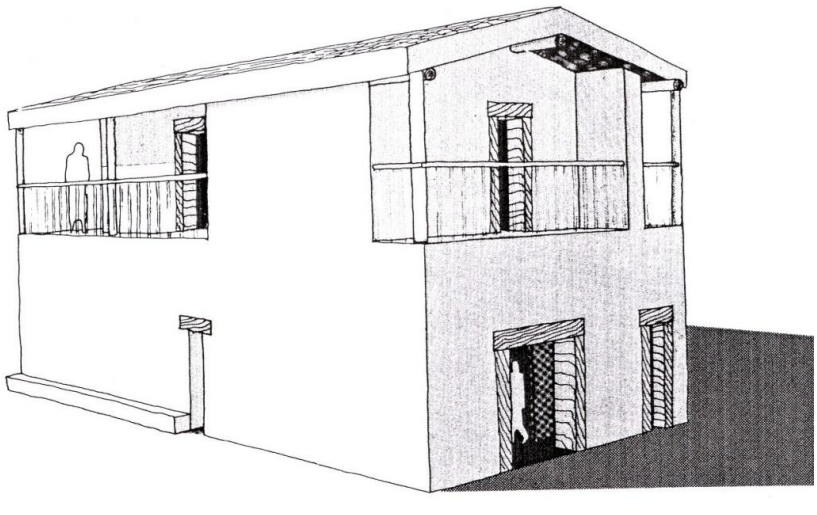

Fig. 30. Reconstruction of the House of the Tiles at Lerna (Drawn by Giuliana Bianco) (Shaw, 1987: 64).

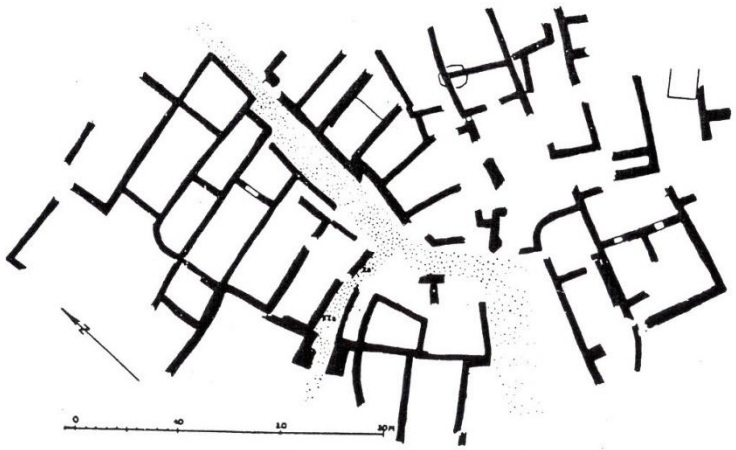

Fig. 31. Thermi II settlement plan (Yakar, 1985: 65).

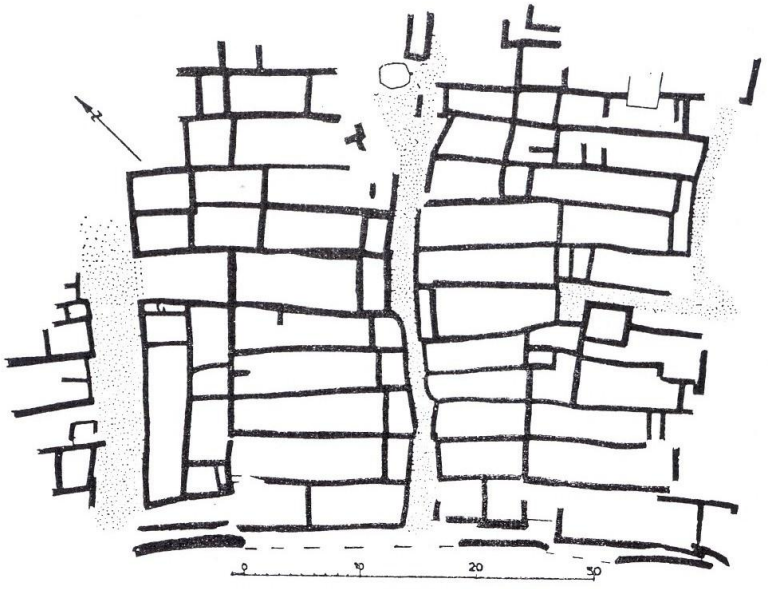

Fig. 32. Thermi IV settlement plan (Yakar, 1985: 69).

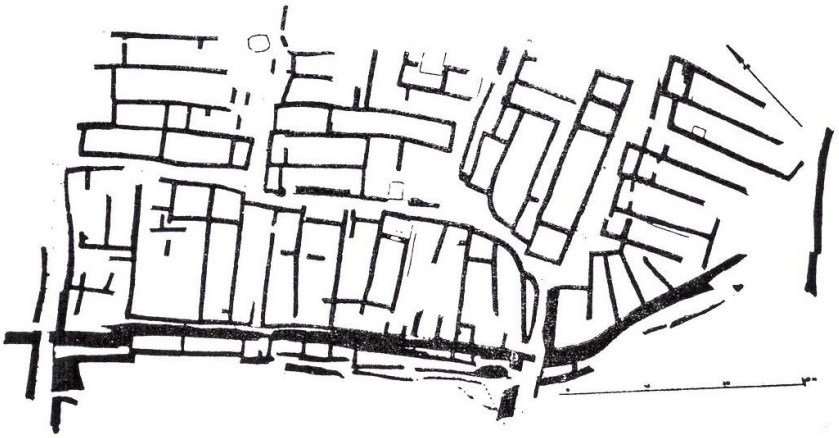

Fig. 33. Thermi V settlement plan (Yakar, 1985: 69).

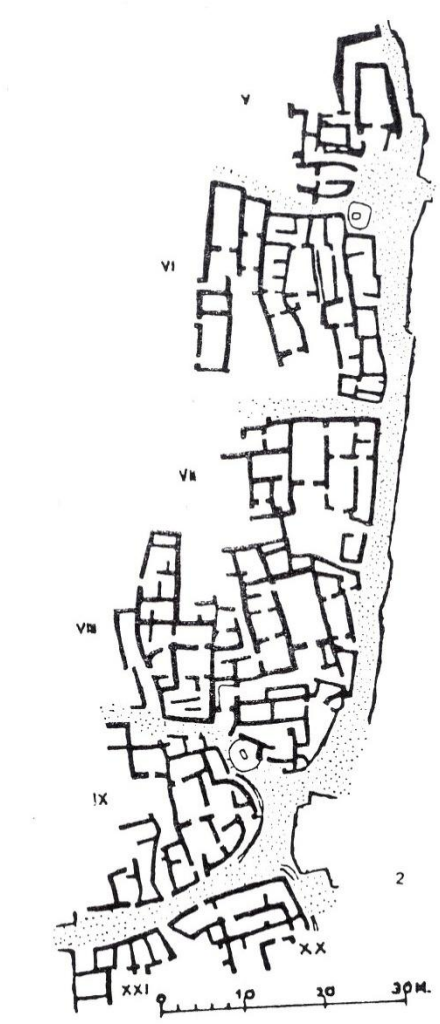

Fig. 34. Poliochni settlement plan (Yakar, 1985: 67).

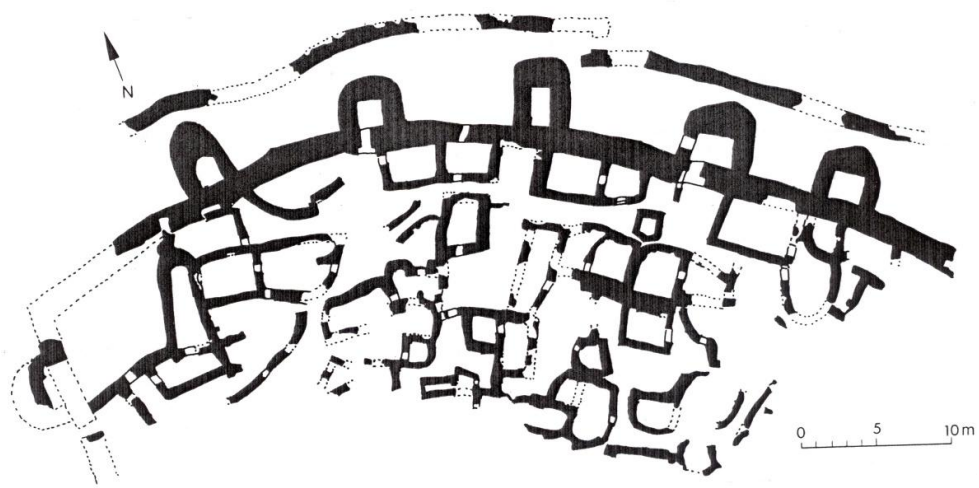

Fig. 35. Fortified settlement of Keros-Syros (Papadopoulou and Kontorli-Papadopoulou, 2008: 419, Fig. 4).

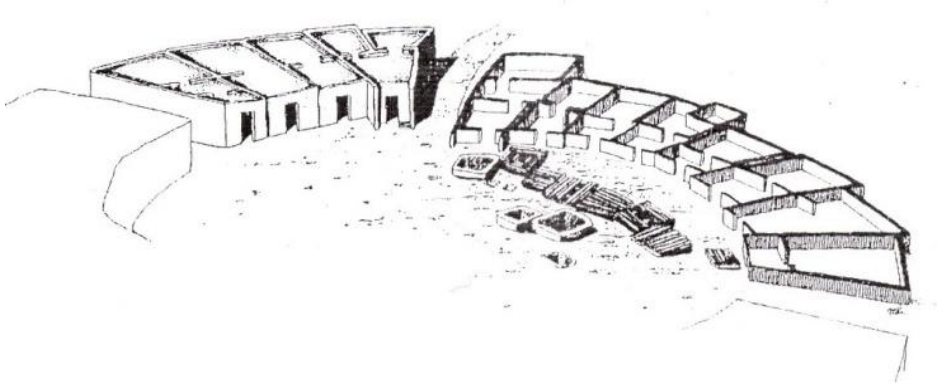

Fig. 36. Demircihüyük settlement plan (Erkanal, 1996: 391).

Fig. 37. Aerial photo of the Early Bronze Age I settlement at Bakla Tepe (Erkanal, 2011: 130).

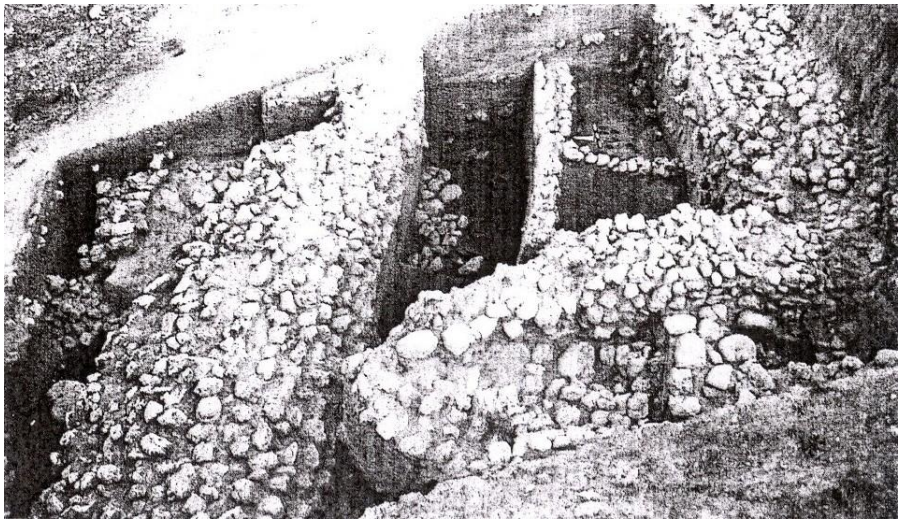

Fig. 38. Early Bronze Age I defense wall at Bakla Tepe (Erkanal, 1999: Fig. LIId).

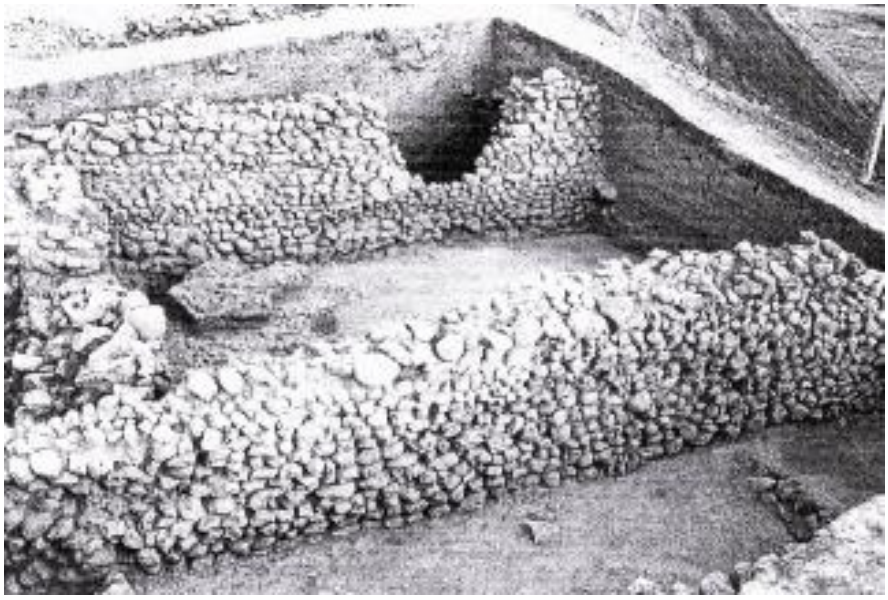

Fig. 39. Long houses from Early Bronze Age at Bakla Tepe (Erkanal, 1996: 72).

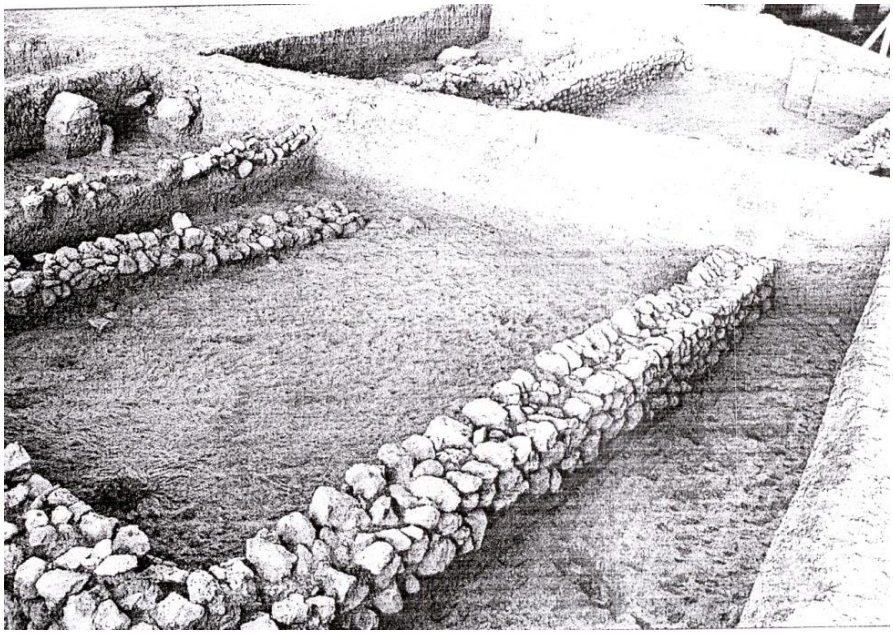

Fig. 40. Early Bronze Age I long houses at Bakla Tepe (Erkanal, 1996: 73).

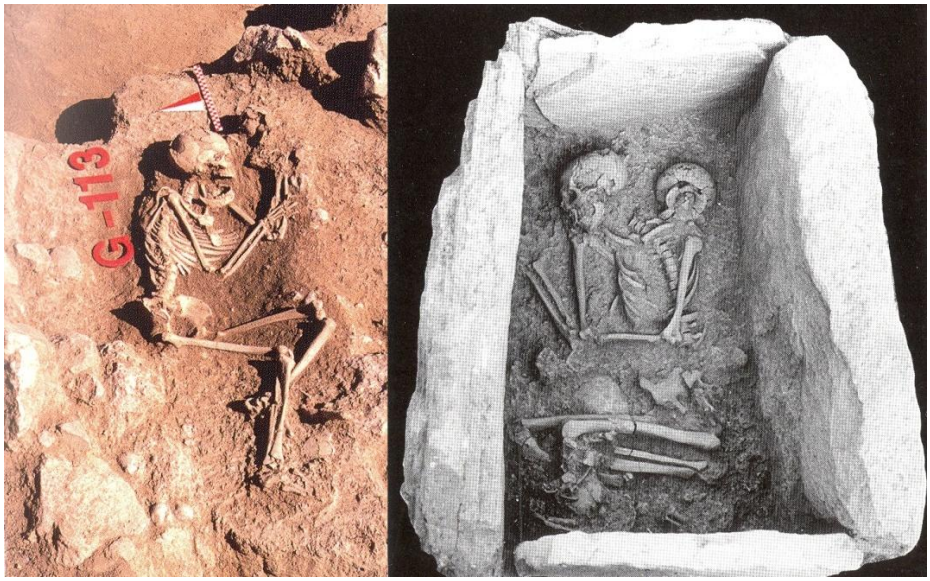

Fig. 41. Cist and Pithos graves in the Early Bronze Age I at Bakla Tepe (Şahoğlu and Massa, 2011: 167).

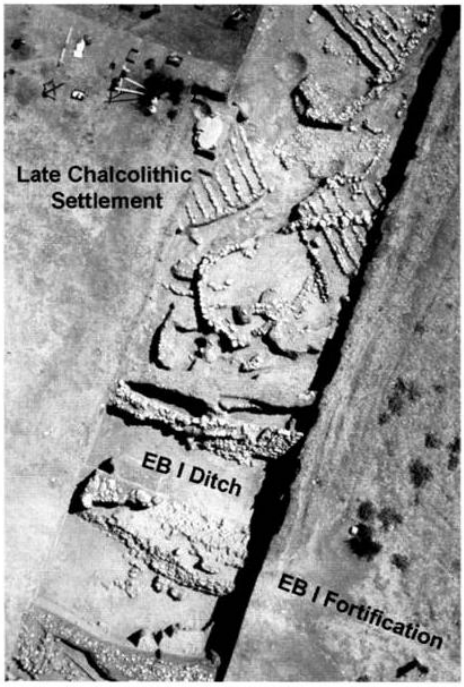

Fig. 42. Late Chalcolithic and Early Bronze Age I settlement plan at Bakla Tepe (Şahoğlu, 2008: 497, Fig. 5).

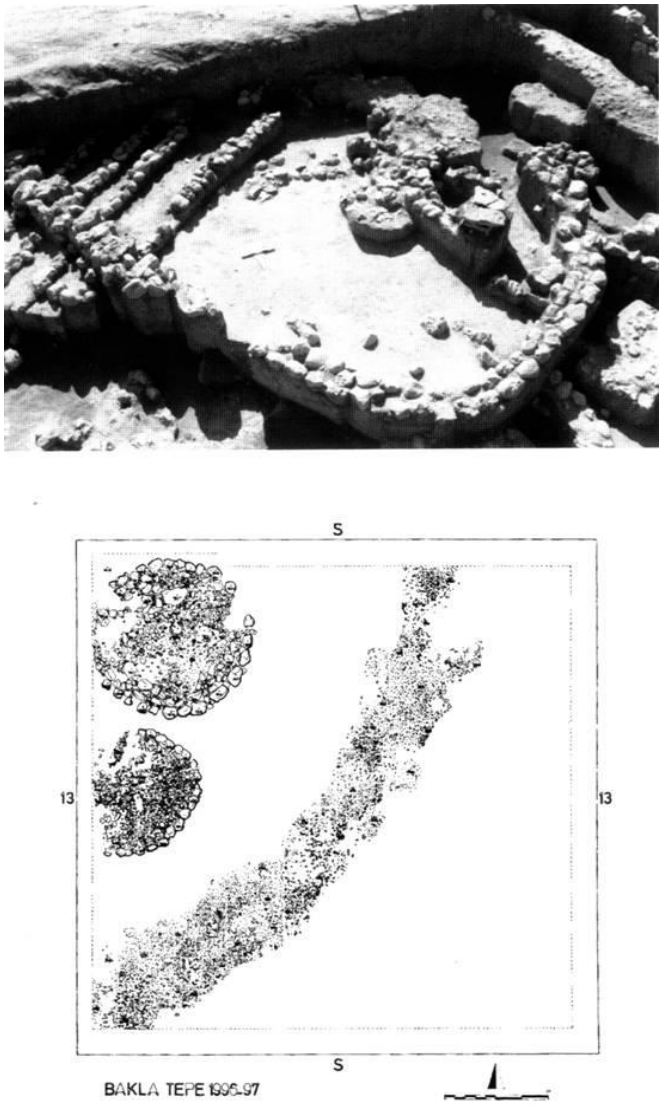

Fig. 43. Detail of the Late Chalcolithic Period houses at Bakla Tepe (Erkanal and Özkan, 1998: 348).

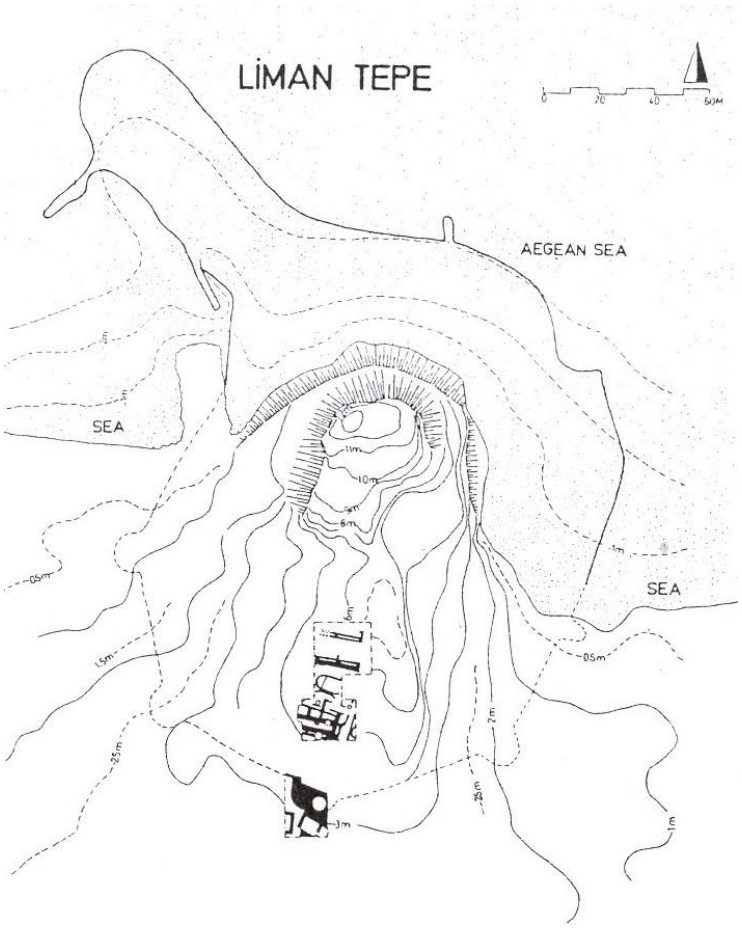

Fig. 44. Topographic plan of Liman Tepe (Erkanal, 1999: Fig. LIIb).

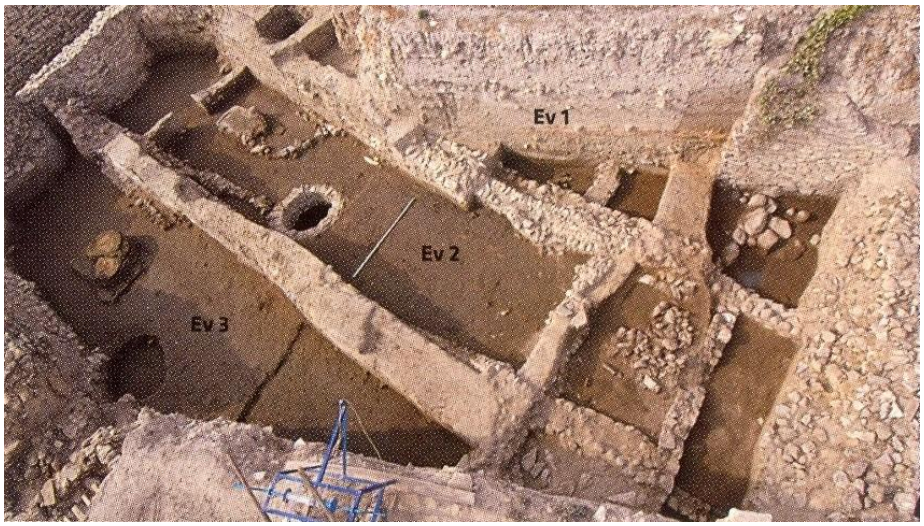

Fig. 45. Early Bronze Age I long houses at Liman Tepe (Erkanal, 2011: 131).

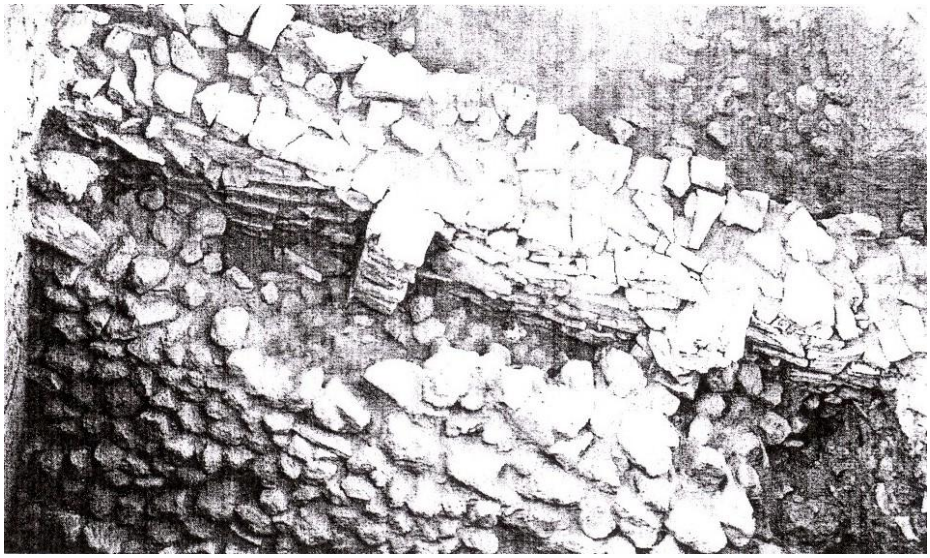

Fig. 46. Early Bronze Age I defense wall at Liman Tepe (Erkanal, 1999: Fig. LIIc).

Fig. 47. Early Bronze Age II long houses at Liman Tepe (Erkanal, 1996: 78).

Fig. 48. Early Bronze Age II long houses at Liman Tepe (Erkanal, 1996: 78).

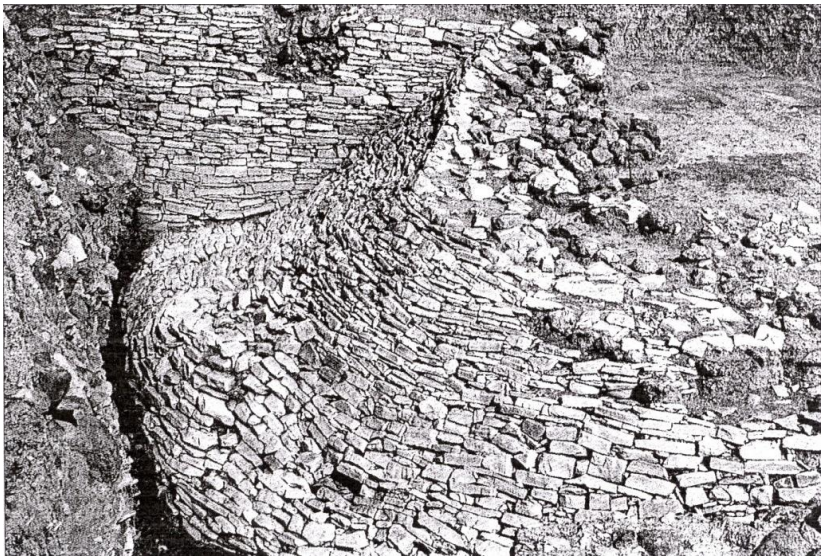

Fig. 49. Early Bronze Age II bastion at Liman Tepe (Erkanal, 1996: 77).

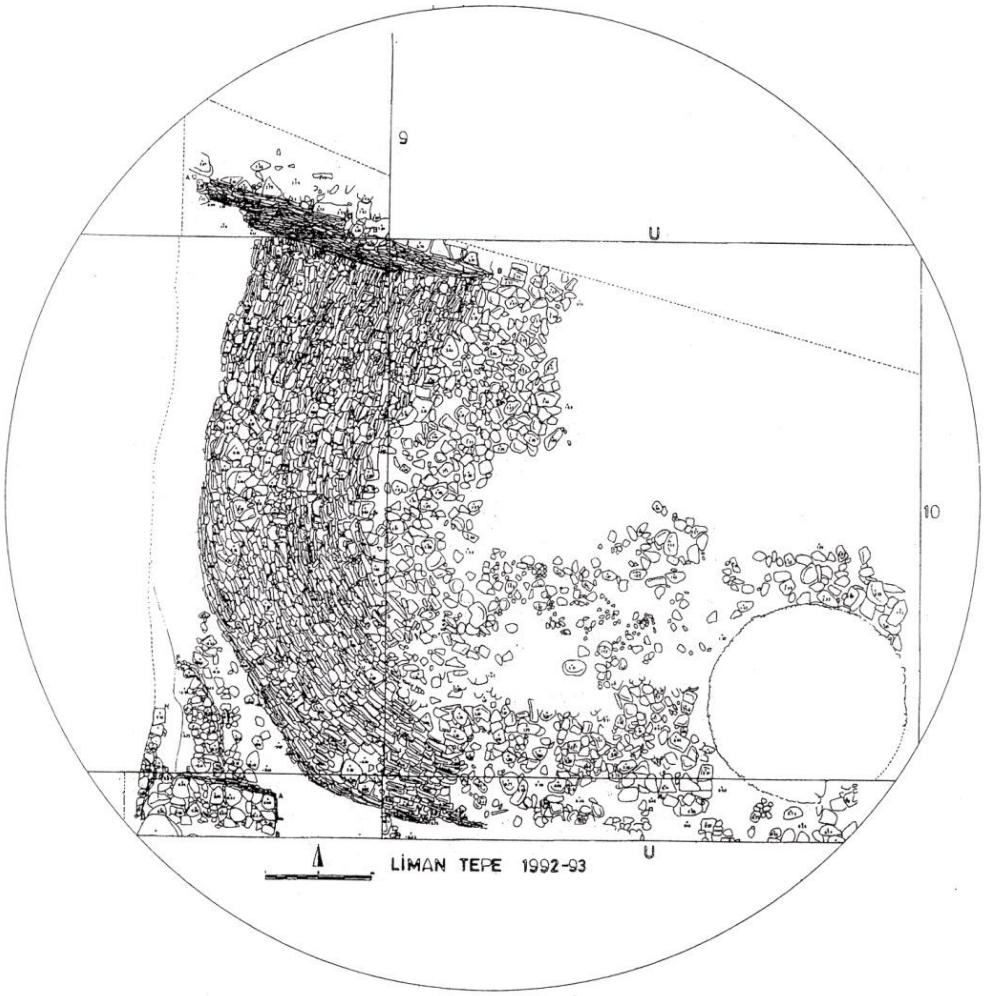

Fig. 50. Early Bronze Age II bastion at Liman Tepe (Erkanal, 1996: 76).

LİMAN TEPE

1- EB I Fortification
2- "Stratigraphic Trench" in House 2
3- Central Complex
4- EB II Structures

Fig. 51. Structures from Early Bronze Age at Liman Tepe (Şahoğlu, 2008: 498, Fig. 6).

Fig. 52. Early Bronze Age II Küllüoba settlement plan (Efe and Türkteki, 2011: 203).

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YAZARIN

Soyadı : Durğun
Adı : Pınar
Bölümü : Settlement Archaeology

TEZİN ADI (İngilizce) : The Genesis of Early State Formation in the Aegean Prehistoric Cultures: Liman Tepe and Bakla Tepe as a Case Study

TEZİN TÜRÜ : Yüksek Lisans [X] Doktora [ ]

1. Tezimin tamamı dünya çapında erişime açılsın ve kaynak gösterilmek şartıyla tezimin bir kısmı veya tamamının fotokopisi alınsın. [ ]
2. Tezimin tamamı yalnızca Orta Doğu Teknik Üniversitesi kullancılarının erişimine açılsın. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) [ ]
3. Tezim bir (1) yıl süreyle erişime kapalı olsun. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) [X]

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