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Disertační práce

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Kovové nálezy v Západní Anatolii ve druhém tisíciletí př. n. l.

Metal Finds in Western Anatolia in Second Millennium B.C.

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Prohlašuji, že jsem disertační práci napsal samostatně s využitím pouze uvedených a řádně citovaných pramenů a literatury a že práce nebyla využita v rámci jiného vysokoškolského studia či k získání jiného nebo stejného titulu.

V Praze dne 22.9.2023 Mgr. Miloš Roháček

Abstrakt

Přestože se v poslední době začíná tématu kovových nálezů a metalurgie v době bronzové v Západní Anatolii mezi badateli více věnovat, pro druhé tisíciletí před naším letopočtem neexistuje zatím žádná komplexní práce, která by celkově typologicky, kontextuálně, chronologicky a regionálně analyzovala publikované kovové nálezy. Proto vznikla tato práce, která si dává za cíl posbírat všechny známé kovy ze všech lokalit a podrobit je všeobecné analýze. Jedním ze záměrů je prozkoumat možnou regionalitu kovových nálezů a snažit se odhalit možné unikátní typy nálezů. Tento předpoklad vychází s z mé diplomové práce, kde author postupoval stejně na území pobřeží západní Anatolie. Tato disertační práce rozšiřuje úroveň poznání kovových nálezů z druhého tisíciletí př. n. l

Celkem bylo posbíráno z literatury 1286 kovových předmětů z celé západní Anatolie. Velký počet kovů představuje ty nejrůznější výrobky od prestižních zbraní jako meče a kopí (nalezené většinou na pobřeží v hrobech) po nejdrobnější kovové nástroje a drobné šperky (jejich kumulace se nachází na sídlištích a skromný hrobech na pevnině). Tak se došlo se k závěru, že nálezy vykazují silný anatolský charakter v oblasti pevninské západní Anatolie, který je odlišný od charakteru pobřežního. Pobřeží, zejména jeho jižní část, bylo pod silný egejským vlivem. Celé území bylo rozděleno na několik regionů s jejich centrálními lokalitami. Některé skupiny kovů, zejména na pobřeží (Siana, meče z rozhraní), dokazují možno existenci typologicky originálních místních produktů, které míchají typologické vlivy ze západu a východu. Existují i nesystematické důkazy o místní metalurgické produkci.

Klíčová slova: Západní Anatolie, 2. tisíciletí př. n. l., kovy, typologie, metalurgie.

Abstract

While recent research has started to focus more on the subject of metal finds and metallurgy in Western Anatolia in Bronze Age, there is currently no comprehensive work that provides a typological, contextual, chronological, and regional analysis of published metal finds dated to the second millennium B.C.. Hence, this study was undertaken with the aim of gathering all known metals from various sites and subjecting them to a comprehensive analysis. One of the objectives is to explore the potential regional variations in metal finds and attempt to identify unique types of discoveries. This premise draws from the author's previous master's thesis, which followed a similar approach along the western Anatolian coast. This doctoral dissertation contributes to advancing our knowledge of metal finds from the 2nd Millennium B.C.

In total, 1,286 metal objects from across Western Anatolia were collected from the literature. This diverse collection includes a wide range of items, from prestigious weapons like swords and spears (mostly found on the coast in graves) to the smallest metal tools and simple jewellery (with accumulations in settlements and modest inland graves). Consequently, it was concluded that the finds exhibit a strong Anatolian character in the inland regions of Western Anatolia, distinct from the coastal character. The coast, particularly its southern part, was strongly influenced by Aegean culture. The entire region was divided into several sub-regions, each with its central sites. Some groups of metals, especially on the coast (e.g., Siana, Interface swords) provide evidence of the possible existence of typologically unique items that blend typological influences from the west and east and their possible local production. There are also sporadic indications of local metallurgical production.

Keywords: Western Anatolia, 2nd millennium B.C., metals, typology, metallurgy.

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Contents

1. Introduction

The objective of this disertation is to provide a comprehensive overview of all archaeological evidence of metal finds and archaeological proof of secondary metallurgy in Western Anatolia in 2nd millennium B.C.. The motivation behind this topic was the lack of comprehensive research on metal finds from this region in the 2nd millennium B.C.. So far, in the context of metallurgy and metal objects in western Anatolia during the 2nd Millennium B.C. there has been a lack of comprehensive work that summarizes all the finds and typologically sort them. Current knowledge is primarily derived from published reports of archaeological excavations, alongside a handful of smaller studies and articles. There is only a limited number of ongoing research projects in the West Anatolian sites, and the published material is even scarcer.

My approach is to provide a comprehensive survey of the published metal finds, shedding light on the evidence of metalworking across all regions of Western Anatolia. To provide a new perspective on the entire region in terms of metal finds. The purpose is to provide a new broader understanding of the region, not only known by pottery, settlement pattern, burial practices and so on. This aim is also encouraged by the assumption that Western Anatolia in 2nd Millennium B.C. had a higly developed metallurgical production based on a rich metallurgical tradition in previous periods. Early Bronze Age and Late Chalcolithic showed evidence of significant metallurgical innovations at several sites, along with the utilization of local abundant resources. The initial idea stemmed from my Master thesis where metal objects from western Antolian coast and Eastern Easgean (so-called Eastegean and West-Anatolian interface) islands were collected, typologically evaluated, and compared with other regions in an attempt to demonstrate their local distinctiveness. The East Aegean and West-Anatolian interface in the 2nd millennium B.C. is a geographic-cultural concept defined by Penelope Mountjoy in 1998[1], based in particular on the exploration of Mycenaean ceramics in the region of the eastern Greek islands and the adjacent Anatolian coast, where the Minoan and Mycenaean influence meets with the Anatolian, as well as lively maritime contacts with areas far away. With her outcomes, she has proven that ceramics are not identically identical to those on the Greek mainland or Crete, and that there is a local mix of Aegean, Anatolian and other influences. It also divided the area into southern and northern, where the southern

[1] Mountjoy 1998.

part, especially in the Dodecanese and adjacent Anatolian coast, was under the strong Minoan influence in the Middle Bronze Age, and later on the Mycenaean, and the northern part was more under the Anatolia cultural influence. In my Master research, after overview of published metal finds metal from the Interface area, it appears that some of these items might have been made locally, based on their type and appearance, showing unique mixtures of different cultural influences. Therefore, the author of this work decided to extent this aim to region of Western Anatolia in the same time period. So far there is no archeological work concerning summarization of metal objects in 2nd Millennium B.C. Western Anatolia that is giving them typological, chronological, and regional analysis. The current state of knowledge is limited only to publications from archaeological excavations and several minor works and papers.

The following chapters will summarize my aim and goals of this work, the historical and archeological context of Western Anatolia in 2nd Millennium, the history of research of metal finds from this area,. Then previous metalurgical activities in the area will be discuss, such as sources of metal ores. Finally, chapters on types of metals with their typological representatives and subgroups. In the end there is a conclusion chapter with discussion of regional distribution of metals and also a chapter on chronological differences between finds and general conclusion.

2. Research goals and methods

The aim is to provide a new perspective on the entire region of Western Anatolia during 2nd Millennium B.C. in terms of metal finds by collecting all available and published metal finds and to subject them to typological sorting, chronological and regional analysis. It will also be examined whether some metal objects are typologically located in a region, or have some unique properties that can only occur locally. The methodology used in this thesis is to collect information about all published metal finds from available literature, based on their appearance, to sort them into typologicaly groups and typologically analyse them. The author of this work take inspiration primarily from PBF books, as well as the doctoral works of Blackwell and Lehner.[2] The author of this work summarized and cataloged in total 1286

[2] Blackwell 2011; Lehner 2015.

pieces of published metal finds. The author of this work was not only relying on literature and during his studies he travelled around Western Turkey, visited many sites (he focused on those were archaeological oxcavations and research were carried out) and many museums to see exhited metal artefacts. However, during the development of the work, the idea of taking a more comprehensive approach to the entire field of metallurgy emerged. Therefore I also examine the context and general knowledge of metallurgy based on other archaeological evidence, aiming to present a comprehensive and cohesive picture. However the overall system of metallurgy, the chaine opératoire, and all the associated factors within society will not be included in this disertation. The original idea would predominate in this work, with a focus on the visual aspect of metal finds, particularly emphasizing the metal product. Therefore, the detailed examination of the chaine opératoire is not the primary focus. It should be noted that the available evidence primarily consists of material evidence related to secondary metallurgy (production from already processed ingots) and finished products. Metallurgical evidence is discussed here, althougt it is not catalogized.

To structure analysis, the author of this work will adhere to Pavuk's chronological framework for the Bronze Age in Anatolia, which includes the Middle Bronze Age (MBA) spanning from 2000 to 1700 B.C., Late Bronze Age I (LB1) from 1700 to 1400 B.C., and Late Bronze Age II (LB2) from 1400 to 1200 B.C..[3] In select instances, it will be also referenced to Aegean Bronze Age chronology for clarity and context.

[3] Pavúk 2015.

3. History of research of metal object in the area

As it was already mentioned there is no comprehensive monograph about metallurgy in Western Anatolia in 2nd Millennium. In one of the oldest publications Przeworski summarized the knowledge of metals known from Anatolia.[4] In this work he also published some of the findings that were not found in later literature. A few decades later, Muller-Kapre came up with a summary and typological analysis of metal tools from Anatolia. Finds from 2nd Millennium B.C. were included, although metals from other periods prevailed.[5] Years later, Muller-Kapre published a study about a collection of bronze swords from Anatolia.[6] In the PBF series, Erkanal summarized and typologically processed axes, daggers, spearheads and arrowheads from Central Anatolia.[7] Likewise, for central Anatolia (specifically Boğazköy - part of the Hittite capital Hatussa) Boehmer collected and published all the metal finds.[8]

Publications on this topic are often on the older side and tend to cover Anatolia as a whole or different regions, not so much the Western part. Plus, they tend to focus mainly on specific groups or certain aspects. That's why this dissertation is pretty crucial. It's filling a gap in our understanding of metal production, especially by giving us a good overview of what's happening in Western Anatolia, an area that has not gotten much attention so far. The history of research on the Eastern Aegean islands, especially the Dodecanese islands and adjacent areas, is relatively better covered compared to Western Anatolia.

[4] Przeworski 1939.

[5] Muller-Karpe 1974.

[6] Muller-Kapre 1994.

[7] Erkanal 1977.

[8] Boehmer 1972.

4. Metal sources in the region

Anatolia is well-known for its rich metal ores sources. Central Anatolia, regions along the Black Sea, and eastern Anatolia are well-known for their sulphide copper deposits,[9] and ancient mining and smelting took place in Anatolia perhaps as early as the end of sixth millennium B.C..[10] Except for copper ore deposits, there are also rich sources of silver, gold, lead, iron, and possibly also tin.[11] If we move to western Anatolia, the Troad has known deposits of gold, lead, silver, copper and iron,[12] and the central part of western Anatolia was quite rich in gold sources.[13] The region of northwestern Anatolia has recently been investigated by M. Massa and shown to have rich local copper sources, especially connected with the EBA.[14] However, it is still a matter of debate whether all of the sources could have been mined already in the third millennium B.C..

5. Metallurgy in the region

5.1. The Pre-Bronze Age and Early Bronze Age metalf find and metalurgy in the region

Finding direct evidence of metal production in western Anatolia before 4500 B.C. remains challenging.[15] Discoveries from western Anatolia are rather sporadic, displaying varying dating with a wide range and many gaps in continuous development. However, this could simply reflect the current state of knowledge[16] The northern part of the west is rich in silver, copper, and partially tin deposits, although there are opinions suggesting that tin might have

[9] Massa 2016; Massa et al. 2017.

[10] Yalcin 2008, 15.

[11] Yener et al. 1989; Wagner - Oztunali 2003.

[12] Pernicka et al. 2003.

[13] De Jesus 1978, 101.

[14] Massa et al 2017.

[15] Chernykh 2011, 156.

[16] Efe – Fidan 2006, 19; Mehofer 2014, 478; for general overview about metallurgy in Anatolia see Muhly 2011.

been imported from Afghanistan.[17] However, according to toher opinions, there was a tin min in Anatolia (site Kestel).[18]

Until the middle of the 3rd millennium B.C., there is limited evidence of metallurgy and metals. Most knowledge comes from the late Chalcolithic period, at the end of which progress in production begins and smoothly transitions into the Early Bronze Age I. The site of Hacilar has the oldest discovery of pottery with traces of copper, dating back to around 6000 B.C..[19] In central and eastern Anatolia, there is evidence of metallurgy dating back to before 5000 B.C.. In western Anatolia, there are several possible sites with metal finds dating back to the first half of the 4th millennium B.C., such as the Orman Fidanlığı site from the late 5th millennium B.C..[20] A metal ring was found on Chios.[21] Site of Ilıpınar yielded Chalcolithic weapons, as did the Barçin Höyuk site, where a flat axe dating to approximately 3800 B.C. was found. In Beycesultan, metals begin to appear around the middle of the 4th millennium B.C..[22] Other sites with metal finds dating back to the 4th millennium B.C. include Bağbaşı, Bakla Tepe, Liman Tepe, Çukuriçi Höyük, and Yeşiltepe.[23] Current knowledge indicates that, besides copper or arsenical bronze, silver, gold, and lead were also common during the 4th and early 3rd millennia B.C. in Anatolia, the Caucasus, and the Balkans.[24]

In 4th millennium B.C. there is evidence of connections between Balkans and Western Anatolia in distribution of the so-called "ring idols" made of metal (including silver and gold), originating from the Balkans. Ring idols were found not only in the Balkans but also in Greece, around the southern coast of the Black Sea, and on the western coast of Anatolia. Unfortunately, most specimens lack contextual findings. [25] An analysis of artifacts from western Anatolian sites suggests that these were local products, and the source of metal could

[17] Efe – Fidan 2006, 15–18.

[18] Yener et al. 1989.

[19] Yalçin 2000, 19.

[20] Mehofer 2014, 468.

[21] Hood 1982, 661, fig. 295

[22] Mehofer 2014, 470

[23] Mehofer 2014, 471

[24] Zimmermann 2006, 191.

[25] Hansen 2007, 282–287.

have been somewhere in western Anatolia. The connection between Balkan metallurgy, the Aegean, and Anatolia undoubtedly has a long history.[26]

The 4th millennium B.C. is considered a transitional period with significant social and economic changes.[27] Since the beginning of the 3rd millennium B.C. the interaction between Anatolia and Europe increased.[28] More metals (copper alloys, silver, lead, gold) appear. Finds from western Anatolia primarily consist of everyday objects such as needles, pins, flat axes, and chisels.

The site Çukuriçi Höyük, near the western coast of Anatolia, demonstrates advanced metallurgy with findings of copper and arsenic alloys already in EBA I. The metallurgical ensemble from Çüküriçi Höyük also comprises crucibles, moulds, blow pipes, tools, and semi-finished as well as finished products dating to the Late Chalcolithic and EBA 1 periods.[29] Knowledge of this technology was part of a broader communication and trade network from the early 3rd millennium B.C., flowing from the Near East through Anatolia and the Aegean, disseminating techniques for metal object production. Besides copper, lead, and other metals were also discovered. This system must have developed at the end of the Late Chalcolithic period, judging from the findings at Çukuriçi Höyük. [30] Besides Çukuriçi Höyük, several other Anatolian sites with metal production are known, such as Arslantepe, Çamlıbel Tarlası, Murgul, and Norşuntepe, but the best findings come from the former. Many metal items were found here, including tools, jewelleries and weapons , either finished or semi-finished, or even entirely in raw, unprocessed form. This attests that metal was produced not only for local needs but also for trade.[31] At Baklatepe, metal tools and weapons, fragments of smelting crucibles, molds, and a large amount of slag were excavated.[32]

From the second half of the 3rd millennium B.C., there is a significant increase in the production of metal objects.[33] Due to long-distance connections and the development of state entities and urbanization. In EBA II The advancement of urbanism in western Anatolia and the discovery of luxury items continue to be linked to the integration of sites into long-

[26] Mehofer 2014, 472, 476.

[27] Hansen 2009, 29-30.

[28] Tzachili 2008, 32.

[29] Mehofer 2014, 464, Fig. 1.

[30] Horejs et al. 2010, 10.

[31] Mehofer 2014.

[32] Şahoğlu and Tuncel 2014.

[33] Efe - Fidan 2006, 20

distance communication routes, with this particular region potentially serving as a key link between the Aegean and the east. Number of metal finds increased.[34] In EB II, metal hooks, chisels, knives, razors, needles, and pins are also widely spread throughout the region.[35] In EB II, metallurgy and metalworking witness significant growth and massive production. Additionally, during this time, the knowledge of true bronze, an alloy of copper and tin, begins to spread through trade routes from the Near East. Since EBA III many new production techniques, especially in jewelry making, appear in Troy and Mesopotamia, as seen in the treasures of Troy IIg and Alaca Hoyuk.[36]

EBA metallurgy in the eastern Aegean islands, close to Anatolian coast, and inland western Anatolia sites hava been preferentially investigated over the later periods. Important analysis come from the northeastern Aegean sites of Thermi on Lesbos and Poliochni on Lemnos.[37] Troy is one of the sites with a continuous chronological sequence and provides by far the most complete evidence for metallurgical activities during the later stages of the EBA and the second millennium B.C..[38] Further inland, numerous EBA metal finds from sites such as Demirci Höyük and Seyitömer Höyük have been investigated by M. Massa who subjected them to chemical analysis.[39]

The pre-Bronze Age metallurgy in western Anatolia demonstrates a uniform character and a consistent inventory of findings, both typologically and stylistically. It is possible to speak of an independent metallurgical school in western Anatolia, similar to those in central Anatolia, the Black Sea coast, northern Aegean, southern Aegean, and Crete.[40]

5.2. Evidence for metallurgical activities from Anatolia in 2nd Millennium B.C.

In order to investigate general motivations behind and modes of the exchange of metals in Anatolia one can draw on textual and archaeological resources. Textual evidence is especially pertinent to the MBA Kültepe-centred trade network, while Hittite archives at Boğazköy-

[34] Efe - Fidan 2006, 27

[35] Efe - Fidan 2006

[36] Efe - Fidan 2006, 25–26.

[37] Pernicka et al. 2003.

[38] Blegen 1951; 1953; 1958; Korfmann 994; 1995; 1996; 1997; 2002.

[39] Massa 2016. For an overview of EBA metal finds (especially weapons) from inland western Anatolia see Fidan 2006.

[40] Efe - Fidan 2006, 28

Hattuša inform on the concerns of the Hittite elite in terms of control of production and distribution. Archaeological evidence for metal working can be traced to a centre at Kültepe/Kaneš, where at least nine metal workshops have been recovered.[41] The installations come from the lower city outside the mound with palatial architecture.[42] In central Anatolia, there are several sites showing stratigraphic evidence for metal workshop or at least with finds indicating the presence of one, including Boğazköy, Alaca Höyük, Gavurkalesi, Tepecik, and Tarsus in southern Anatolia. Workshops seem to be located mainly near palaces and temples, such is certainly the case of Boğazköy/Hattuša during the early staged of the LBA. Textual evidence seems to concord with this reconstruction, linking metallurgy with temple and palace economies.[43] This reconstruction, however, might also be related to the limited state of knowledge of productive activities within settlements or lower towns.[44]

6. Metal finds and metalworking in Western Anatolia: general overview

This section provides an overview of sites with evidence for metal finds of any kind (weapons, tools, jewellery). Additionally, published the evidence of metalurgical production, the smelting (crucibles, furnaces, tuyères and pot bellows, together with tools enhancing the pyrotechnological processes) will be mentioned for comprehensive overview.[45] The main aim of this work is still on finished metal objects. Authors of this work hopes it would fill the gap in our knowledge across chronological periods, the Middle and Late Bronze Ages (MBA and LBA), in order to provide an integrated analysis of long-term developments in the region. This is crucial especially as the region's metallurgical innovations and metalworking have been increasingly well investigated for the earlier periods, especially the Early Bronze Age (EBA), showing strong innovation at several sites in coastal and inland western Anatolia, accompanied with exploration of rich sources of metals in Anatolia in general. This research would enable us to consider the continuation and changes in metalworking activities during the following second millennium B.C..

[41] Müller-Karpe 1994, 49.

[42] Lehner 2015, 68.

[43] Müller-Karpe 1994, 66-86; Siegelová - Tsumoto 2011, 286, 288.

[44] Siegelová - Tsumoto 2011, 288.

[45] Lehner 2015, 23

This overview, therefore, espouses a macroregional view by providing information on all known sites that published information of metal use and metal working (e.g., finds of slag, crucibles, moulds, kilns, tuyéres). The material have been categorised geographically into the following regions: the southeastern Aegean (the Dodecanese), the western Anatolian coast, northwestern inland Anatolia, southwestern inland Anatolia, inland western Anatolia. . For the Anatolian regions, Pavúk's chronological sequence for the Anatolian Bronze Age, based on pottery, will be used: MBA (2000-1700 B.C.), LB1 (1700-1400 B.C.), and LB2 (1400-1200 B.C.). In the case of "Mycenaean" sites, the classic chronology of the Aegean Bronze Age (MH to LH IIIC, or MM to LM) will be used. See map 1 for all sites and map 2 for distribution of metal finds and metalworking.

The Western Anatolia can be divided into the following geographical regions:

1. **Coastline**, further divided into Troad, Northeast Aegean Islands, Izmir region, Southwestern coast and the Dodecanese.
2. **Inland**, divided into Northwestern inland Anatolia, Midwestern inland Anatolia, Southwestern inland Anatolia and Eastern Western inland Anatolia.

6.1. The Coast

6.1.1. The Northwestern Anatolian Coast

6.1.1.1. The Troad

The Troad region stands as one of the most extensively studied areas in Western Anatolia and provides a crucial stratigraphic record for comprehending the broader history of the region during the Bronze Age, especially thanks to a site of Troy.

The Troy is one of most import sites in Anatolia and one of the most investigated sites in all Anatolia. 2nd millennia B.C. Troy consists of layers Troy V (2000/1750 B.C.), Troy VI (1750/1300) and Troy VIIa (1300/1180 B.C.). During its continuous existence in Second millennium B.C. Troy provides crucial evidence of metal working and metal finds in levels V, VI and VII. The early and ongoing excavations provided a large number of copper alloy, lead, silver, and golden objects discovered in the settlement. Various working tools made of copper of bronze such as needles, awl, drills many copper alloys working such as tools, chisels, awls, drill, needles were found. Many bronze weapons were discovered as well (spearheads, arrowheads), even possible pieces of armour, also bronze pins and lead, silver and gold jewellery.[46]

There are major evidence indicating that metal working occurred in Troy. However, No true place which could be for sure called a metal workshop has yet been detected. There is a discovery of fragments of moulds and other equipment needed for secondary production, and it is not insignificant. From Troy V, fragments of what might possibly be a mould and a part of another, probably two-piece, mould come from from Troy V.[47] Three moulds come from the level VI. One of them seems that was meant to cast double-axe, another one probably for some sort of working tools/equipment alike objects.[48]

[46] Blegen 1951; 1953; 1958; 1995; Jablonka 2010; 2011; Korfmann 1994; 1995; 1996; 1997; 2002; Pavúk 2005; 2007; 2010; 2014; 2016; Pavúk Et Al. 2014; Pienozek et al. 2020; Schmidt 190.

[47] In Square E6. See Blegen 1951, 289, pl. 324, 32-183.

[48] Schmidt 1902, 266-267.

The so called The Pillar House emerged as an important locus with evidence of several more or less certain finds of mould have been found.The Pillar House might have been dedicated to metallurgical activity for a longer period (Troy VI and VII), as Blegen reports many small scraps and bits of bronze and bronze wire in addition to the finds mentioned above, as well as pottery and small finds.[49] Such an assemblage could indicate workshop waste.[50] Then Blegen reports two other places in settlement with possible finds of mould.[51] Above the floor of House 741, there was another a mould for casting little jewelleries.[52] Additionally, in Troy VII a mould have been found in two different places: in southwestern area inside the fortifications and in the south-eastern area outside the fortification wall.[53] New research on the site revealed five additional moulds from levels VI early, VI late, VIIa and VIIb. Furthermore, among finds was a large amount of copper alloys such as tools, chisels, awls, drill, needles, pins, weapons and jewellery made of silver, gold and lead. Because of moulds, variety of different finished and metal objects, Pieniazek is stressing out the occurrence of metallurgy in Troy, also mentioning the copper working tools that could be connected with the metalworking.[54] In terms of spatial distribution of metal objects in the settlement. Pieniazek also analysed spatial distribution of different metal objects in the settlement. In summary, copper alloy seems to be found everywhere in the settlement. Only objects made of silver and gold were found at two places, close to walls of inner city.

In Troy, a lot of archaeological evidence such as presence of high number of various types of copper alloy objects, then precious objects, significant number of moulds all giving us the some hints on metal crafting/working in Troy. Author of this work assume majority of metal finds might have been almost certainly made locally. Troy was a big centre. It should be noted that Troy had rich sources of silver, gold, and copper. In terms of metal design, the finds are closer to Anatolian styles, but similar finds to those in the Aegean world are also present. Troy appears to be a distinct but metropolitan area, influenced by western influences and influenced by the nearby Balkans. The good position of the site connects it to a coast and to to maritime routes, metal trade, points to possible presence of metal working. Major changes during the Middle Bronze Age (Troy V and VI) and the 13th century B.C. (Troy VIh and

[49] Blegen 1958, 124.

[50] Müller-Karpe 1994, 99.

[51] Blegen 1953, 353, pl. 298, 37-349.

[52] Blegen 1958, 124, pl. 220, 37-389; Pavuk - Pieniazek 2016, 543.

[53] Müller-Karpe 1994, 69.

[54] Pieniazek et al. 2020, 467.

VIIa) are indicative of broader dynamics in political and cultural connections with western Anatolia, the Mycenaean world, and the Hittite sphere. These contacts played a significant role in driving competition and emulation processes, although they did not diminish the influence of local, independent developments, evident in the diverse structures of Trojan polities.[55]

Another site is **Beşik Tepe.** It is an extensive burial site near Troy, used during LB A2-B period (in Aegean chronology LH IIIA2-IIIB1). Excavations at the site have revealed a range of artifacts such as rings, pins, beads, tools (knives, needles). Furthermore, remnants of a sword hilt were found.[56]

6.1.1.2. The Northeastern Aegean Islands

The islands associated with the Troad have been well-explored in terms of EBA metallurgy. There is a large number of metal finds, more than in most other regions for the EBA in the entire Aegean area. In addition, chemical analyses have been conducted.[57] However, the situation changes in the 2nd millennium B.C., the number of metal finds is fewer, although evidence for metallurgical activities is present.

On the island of **Lesbos**, at site **Thermi,** several pieces of interesting metal objects were recovered, few arrowheads, a knide, a pin, a hook and also a bronze sword.[58] The "Mycenaeanized" sword was classified by the author of this work within his group "Interface swords".[59] Lamb who excavated the site in the early 20th century, reported no metallurgical evidence.[60] Important discovery was made on the island at the site of **Koukonisi**. A metallurgical workshop was attested. In the southwest corner of the so-called Pithoi Area (Room XV, Trench 8/'04), a hearth or a furnace with thick layers of ash, charcoal, and slag has been excavated. In the vicinity of the furnace there were a bowl with a bronze plate, two terracotta tuyères, two fragments of crucibles of irregular shape, with a layer of slag with

[55] Pavuk - Pieniążek 2016.

[56] Basedow 2000.

[57] Pernicka 1987; Pernicka et al. 1990.

[58] Lamb 1936; Avila 1993; Sandars 1961.

[59] Roháček 2019b.

[60] Lamb 1936.

stains of copper, and several pieces of crucible slag.[61] This is sufficient evidence to suggest a presence of a workshop.

The evidence of metallurgy on **Samothrace** is documented at site **Mikro Vouni**, a mould and smelting crucibles from various MBA and LBA contexts were discovered. [62]

In 2nd Millennium North-eastern Aegean show quite important evidence for active metallurgy was discovered, however numbers of metal find from the region are much fewer compared to rich and abundant amounts of metals in EBA.

6.1.2. The Izmir , Urla peninsula and adjacent islands

6.1.2.1. Izmir region

An important cluster of sites can be found in the present-day province of Izmir. This region is represented mainly by site of Panaztepe and sites around Izmir city. It is important to note that this region occupies a prominent coastal location, and its prosperity likely resulted from its connections to long-distance international trade. The region has a rich tradition of metalworking from previous periods and the poor knowledge of metallurgical activities in 2nd Millennium may be due to the current state of knowledge. The appearance of the metals in this region falls somewhere between Mycenaean influences and tends more to Anatolia, along with some other local peculiarities.

Bakla Tepe is an important archaeological site that has been excavated since 1985. The site provides significant data for the Late Chalcolithic period, revealing extensive evidence of metallurgical and textile production, as well as the presence of obsidian tools, indicating contact and trade.[63] The discovery of an EBA fortification wall and a new layout of domestic and working spaces suggests increasing centralization and a shift in the organization of production. Interestingly, during the 2nd millennium B.C., there is no evidence of settlement at Bakla Tepe. Instead, a chamber tomb and a pithos grave have been found, both dating to this period. The grave goods include poorly preserved bronze animal figurines and gold objects, which were likely burned during the cremation of the deceased. Unfortunately, there

[61] Boulotis 2009, 202-203.

[62] Boulotis 2009, 177.

[63] Şahoğlu - Tuncel 2014.

are no pictures of the finds.[64] However, four arrowheads are published.[65] The grave assemblage also includes pottery of Mycenaean and Mycenaeanizing style, indicating cultural connections with Greece.[66]

In the centre of a modern **Izmir** on the Western Turkish coast**,** an untypical Aegean Type B sword was found, claimed to be recovered without context from the Roman agora in Izmir.[67] This swords was put by the author of this work into his group of Interface swords. Approximate date of the sword is LH IIIA-B.[68] Another sword of Type B was found in Sarımeşe Tepe, Cumaovası district of Izmir.[69]

Close to Izmir city, there is a settlement site **Liman Tepe.** There boasts a long occupation from the Neolithic to the Classical period and the site was notably significant for metal production during the Early Bronze Age.[70] Its history throughout the 2nd millennium B.C. includes the period Middle Bronze Age which also witnessed reduced metal production when compared to earlier phases. In the LBA, revealed clusters of buildings show strong ties with the "Aegean," and possible specialized workshops for "seal production".[71] Additionally, the 14th and 13th centuries B.C. marked heightened trade and cultural exchange, paralleling the prosperous LBA settlements Liman Tepe and Panaztepe (including Panaztepe cemetery). In Liman Tepe several bronze pins and bracelets from the 2nd millennium B.C. layers have been published.[72]

The neighboring site of **Çeşme-Bağlarası**, quite recently discovered settlement and harbour site on the Urla Peninsula (which was also significant during the EBA), showed evidence of a fragmented metal blade and a mould (or crucible) (in level CB 2A - which is contemporary with MB 2).[73]

The most significant site **Panaztepe**, situated on a hill near the Gediz River delta, is believed to have served as a significant harbor in Bay of Izmir. By that time situated by sea,

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[64] Erdal 2002, 119, 123.

[65] Aykurt - Erkanal 2017.

[66] Erkanal Öktü - Erkanal 2015.

[67] Sandars 1961.

[68] Roháček 2019b.

[69] Gençer 2006.

[70] Manganoğlu - Vortruba 2015.

[71] Erkanal-Öktü – Erkanal 2015.

[72] Erkanal et al. 2009, 305, 320, fig. 7.

[73] Şahoğlu 2015, 605, 602, fig. 10.

nowadays in inladn. This coastal area was shaped by alluvial deposits from the Gediz River.[74] The site shows continuous occupation from the Early Bronze Age (EBA) to the end of the Late Bronze Age (LBA) and into the Iron Age. It was a large settlement during the early 2nd millennium B.C..[75] Excavations, led by A. Erkanal since 1985, have revealed multiple areas within Panaztepe, including the Acropolis, Harbor Town on the eastern slope, and two cemeteries on the north and west sides. Noteworthy finds include a monumental structure in the citadel, a harbor area, and a workshop district during the Middle Bronze Age (MBA), indicating potential administrative and trade functions.[76] MBA and LBA phases feature partially preserved houses, continued trade activities, Mycenaeanizing pottery, and a scarab seal mentioning the god Ptah.[77] The two cemeteries at Panaztepe, one of the largest excavated necropoleis in LBA Western Anatolia, were in use during the second half of the 2nd millennium B.C.. The extensive burial sites, comprising over a hundred burials (dated in different phase from 14th to 12th centuries B.C.), reveal various burial practices (pithos burials, tholoi, jar burials, cist graves, stone box graves, urn burials, a miniature tholos, and chamber tombs), these diverse burial practices offer insights into cultural identity formation and assimilation.[78] A high number of metal finds was discovered in grave context.[79] Several previously published metals were already discussed in the authors Master thesis.[80] After that a new book about a site was published adding to the collection many additional metals. Among finds there are metal spearsheads, arrowshead, knives, a sword; then tools such as razors and chisel and other various working tools. Further more, quite an exquisite collection of jewellery such as pins, earring, ring, often made of precious metals. Even metal vessels and a seal were discovered.[81] Date of the finds is LH IIIA-B. Rich tombs in Panaztepe show finds that can be stylistically associated with both the Mycenaean and eastern worlds. The discovery of a lead ingot with incised marks near the monumental structure suggests involvement in metal trade during the MBA.[82] From the settlement context pieces of moulds

[74] Çınardalı-Karaaslan 2008, Erkanal-Öktü 2011.

[75] Çinardalı-Karaaslan 2008.

[76] Kolankaya-Bostancı 2013.

[77] Erkanal-Öktü and Erkanal 2015.

[78] Çinardalı-Karaaslan 2012.

[79] Ersoy 1988; Erkanal-Öktü 2018.

[80] Roháček 2015.

[81] Ersoy 1988; Erkanal-Öktü 2018.

[82] Erkanal-Öktü 2008.

were discovered,[83] however no workshop has been found.[84] Moreover, it seems that furnaces or kilns were present in the area; however; they were probably not used for metallurgical production, but for pottery making.[85] Additionally, numerous glass beads and glass ingots from the Near East have been found. This indicates the presence of glass production. Furthermore, glass beads were found in the Panaztepe cemetery.[86] All the evidence suggests trade relations and some form of administrative control, with finds from the cemeteries and Harbor Town indicating involvement in trade and contacts with the Aegean during the mature LBA phase. The strategic location of Panaztepe, marked by its rich diversity, suggests a crucial role in connecting western Anatolia to the Eastern Mediterranean.

The region has very prominent coastal settlements. Sites around the Bay of Izmir cumulatively provide evidence for use of a wide spectrum of metal finds. It's worth noting that this area boasts a prominent coastal location, and its prosperity probably stemmed from its involvement in long-distance international trade. The region has a strong history of metalworking in earlier eras, though this assessment may be subject to the current state of knowledge. The metalwork in this region exhibits influences from both Mycenaean styles and a leaning towards Anatolian influences, coupled with distinctive local characteristics.

6.1.2.2. Chios and Psara

Opposite to Urla peninsula, on the Greek side, the islands of Chios and Psara show evidence for strong Aegean impact and heavy consumption of metals.

On **Chios** island Several Aegean-style bronzes dating to LH II-III and LH IIIC were discovered at site **Emporio**.[87] However, there was a remarkable find from the site: a small mould for casting a butterfly-shaped ornament, which bears parallels from Mycenaean-period examples known from Knossos, Mycenae, and Nichoria.[88]

Close to Chios, there is a small island of **Psara**. There was a large Mycenaean settlement of **Archontiki** with stone stone-built houses and cemetery that have been quite

[83] Erkanal 1996, 333; Erkanal-Öktü 2018, 118 (and two moulds).

[84] Erkanal 1996, 333.

[85] Erkanal-Öktü et al. 2009. 28-1, 404; 30-1, 480-481; 31-2 v 106-107.

[86] Erkanal-Öktü 2018.

[87] Hood 1982, 661, 663-664.

[88] Hood 1982, 654, 653, fig. 293, 39.

recently investigated.[89] A rich assemblage of Mycenaean metal finds, such as bronze weapons, tools from both the settlement and the funerary contexts, gold jewellery was also found in local tombs. The strong presence of the Siana group knives is noteworthy.[90] Pottery kiln were discovered in the settlement. An evidence for metal working in indicated by a mould with two forms on its surface for casting of blades or/and tools.[91]

6.1.3. Southwestern Anatolian Coast

Moving further down the coastline, there is another cluster of Bronze Age settlements and graveyards. The most significant sites are Ephesus and Miletus. Additionally, there are few other minor sites on the Anatolian side. The island of Samos is included. This region shows evidence of mostly occasional metal finds (especially weapons or little precious objects). The little evidence comes even from the promisinf large sites of Ephesus and Miletos.

The site of **Ephesus (Ayasuluk)** is nowadays accepted by scholars to be the Bronze Age site of Apasa, known from written sources as capital of Arzawa.[92] The site provides valuable evidence of occupation during the Middle Bronze Age (MBA) and the Late Bronze Age (LBA). The evidence for MBA occupation is attested by pottery. From LBA there are architectural remains of walls build in Hittite architectural style and technique, which might indicate the Hittite influence at the site.[93] Also, the presence of Mycenaean-like pottery was found, indicating some degree of contact with the Aegean. Unfortunately, only one known metal find is reported, a bronze double axe was found in the area of Artemision, unluckily withous a picture.[94]

Another site **Kadıkalesi** is located on the coast south of Ephesus. Excavation in Kadıkalesi has yielded occupation in EBA I-III, MBA, and LBA periods. In 2nd millennium B.C., in MBA level, the pottery assemblage shows connections to other Anatolian sites such

[89] Deligiorgi 2006. Unfortunately, publication of Archontiki on Psara is limited. The only publication is a little pamphlet connected to the exhibition. True publication probably does not exist.

[90] Roháček 2019b.

[91] Deligiorgi 2006, 219.

[92] Hawkins 1998.

[93] Büyükkolanci 2008.

[94] Benzi 2002, 372.

as Panaztepe, Liman Tepe, Bademgediği Tepe, and Beycesultan. In LBA, there is evidence of increased contacts and trade with the Aegean, as indicated by the ceramic assemblage and small finds. There were wares of Anatolian traditions, alongside with Mycenaean and Mycenaeanizing pottery, Only one published metal find come from LBA period. A bronze figurine resembling Hittite metal figurines representing the Storm God, was found, and has been tentatively dated to the 14th century B.C. based on stylistic parallels.[95]

Miletus, a site in western Anatolia, is notable for its historical significance. It plays a pivotal role in understanding the cultural and political history of Western Anatolia during the 2nd millennium B.C.. Commonly identified with "Millawanda" from Hittite texts. The occupation in the site commenced in the Late Chalcolithic period. The evidence for 2nd millennium has revealed local, Minoan, and Mycenaean elements and also some Hittite influence. The site provides evidence of ritual activities, production facilities, and monumental structures in various levels.[96] Interestingly, only published metal finds, a horse bit, from a grave is reported to come from Miletos.[97] Unfortunately, its exact location is not secure. Perhaps the horse bit was originally from Degirmentepe graves accompanied with other metal finds. According to W.-D. Niemeier Miletus had been of central importance to the region for millennia and he has suggested that Miletus was a key hub for metal trade with inland Anatolia since EBA.[98] The excavations of the LBA levels are still rather limited. Therefore, the discovery of three fragments of moulds for casting a metal product, belonging to the Level V (15th century B.C.), is significant.[99]

Değirmentepe is a site located in the vicinity of Miletus. There is an important cemetery, from where three non-Aegean-type swords (Levantine swords) have been excavated; they are dated to LH IIIB (LB 2B). The theree swords belong to the Levantine type.[100] The Levantine swords in this area could not be a coincidence. These swords indicate connections with the Levant or the Hittites and are likely a significant factor in the emergence of the Siana group.[101] Other bronze metals were present, we known about bronze spearheads

[95] Akdeniz 2006.

[96] Thompson 2007, Raymond et al. 2016, Kaiser and Zurbach 2015, Maner 2015, Pavúk 2015.

[97] Akyurt 1998, 34, şek. 23, e.

[98] Niemeier 2001, 133.

[99] Niemeier 2001, 128, fig. 6-8.

[100] Benzi 2004.

[101] Roháček 2019b.

and a horse bit[102], which could probably the one from Miletus, however due to lacks of evidence, tha author of this work would consider to the Horse bit to be originally from Miletus.[103]

Additional piece of the Levantine type sword was found in site **Kastanea** on island of **Samos** (only a blade without a hilt).[104]

From **Kolophon / Değirmendere** is reported a grave, Tomb A. One Siana knife is reported to come from this grave.[105] Approximate dating is LH IIIB-C. Another Siana knive is published in older publication and it is without a context.[106]

Several tombs at **Pilavtepe**, in the region of Muğla, contained rings, pins, knives, chisels, and a spatula, all finds rather of Mycenaean character. Except for metal finds, clay and stone tools, steatite seals and o lot of pottery of local and also Mycenaean tradition came along. Dating of the grave is suggested LH IIIA-C, from early 14th cent. to late 12th cent. B.C. (1375 to 1130 B.C.).[107] Similarly, a Mycenaean bronze arrowhead and a Submycenaean fibula were discovered at **Klaros**, in the area of the sanctuary of Apollo.[108]

Last location is a scarcely published site of **Tavsan Adasi**. Tavşan Adasi is an islet close to ancient Didyma which was a peninsula in the Bronze age and was a convenient place to safe anchoring of ships. That suggest possible place that could be connected to maritime trade. Not yet published, but at least three moulds have been excavated in the 2nd millennium levels. One of them was used in the production of double axes. Also, there is presence of metal wires and pins.[109]

Conclusion, Typologically, the finds in this region lean toward Anatolia but also show Mycenaean influences. There are not many well contextually recorded finds, mostly occasional finds and scares funeral context. But some are items quite precious and interesting objects showing interesting mixture of Aegean and Anatolian influence. The settlement sites occurring in this region show great potential for future research.

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[102] Aykurt 1998, 29, fig. 23, e.

[103] Benzi 2004.

[104] Benzi 2004, 15, fig. 1; Kilian-Dirlmeier 1993, 128, pl. 58, 447.

[105] Greenwell 1902, 5–6, Fig. 4; Przeworski 1939, 47, Taf. V:3; Sandars 1963, 140, Pl. 27:57).

[106] Przeworski 1939.

[107] Benter 2006.

[108] Şahin et al. 2008, 251.

[109] F.Berthemes, personal communication (Roháček, 13.9.2019). He also mentioned stone anvils, which he connectedi to metallurgical production and he suggests ceramic and metal workshop existence at the site.

6.1.4. The Dodecanese

The Dodecanese represent a group of islands in Southeastern Aegean along the Anatolian coast. The group primarily consists of the islands of Rhodes, Kos, Kalymnos, and Karpathos. In the 2nd millennium B.C. these islands were culturally strongly connected to the strong Aegean influence, mixing up with the one from Anatolia and further East. The density of found metals is fairly high from this area and the majority of metals come from funeral context. The tombs share similarities with those in the Mycenaean world, leaving no doubt about Mycenaean influence or even Mycenaean presence.

The island of **Rhodos**, has captured the attention of archaeologists since the 19th century. The Italian annexation of the Dodecanese in 1912 greatly contributed to archaeological advancements on the island. Excavations were conducted in various locations, including the cemetery of Ialysos between 1914 and 1928 by Maiuri and Jacopi, as well as the settlement at Trianda in 1935-1936 by Monaco.[110] The archaeological evidence from Rhodes reveals a rich history, with evidence of occupation during the Neolithic and Early Bronze Age. However, there is limited information available about Rhodes during the Middle Bronze Age. Notably, Rhodes played a significant role in the Late Bronze Age. The Minoans settled at **Trianda** during the Late Minoan IA period, and the settlement thrived through trade, undergoing multiple reconstructions. It was rebuilt later in LMIA and again rebuilt in LMIB. The third settlement at Trianda was Mycenean. Additionally, the great number of chamber tombs at cemetery of Ialysos started its appearance since the LH IIB period and majority of tombs belong to later periods LH IIIA-C. Various metal finds such as weapons and tools (swords, spearheads, arrowheads, knifes, razors, fishing hooks, needles, awls, and mirrors) made of bronze or copper alloys were deposited as part of rich funerary assemblages, together with various golden, silver, and lead jewellery (such as beads, pendants, bracelets, rings, and earrings) and even fibulae from later periods.[111] These tombs share similarities with the rest of 'Mycenaenized' regions (mainland Greece, Crete) and there is no doubt about the Mycenaean impact on the area. As it was already said, the most of the metals come from funeral context of **Ialysos** cemetery (Makra and Moschou Vounara), but there are minor finds from other rhodian sites such as **Siana, Pylona, Passia, Aspropilia, Apsaktiras, Apollakia and**

[110] Jacopi 1930-31, Maiuri 1923-24, Maiuri 1926, Monaco 1935-36.

[111] Benzi 1988, Benzi 1992, Mee 1982, Marketou 1998a.

Kameiros.[112] Settlement context is scarcely published and known, but for example Trianda yielded evidence for copper alloy tool use. Among finds dating to the beginning of the LBA, dated as LM IA, there are chisels, needles, spearheads, spatulas, one fishing hook, earrings, several sheet of bronze and lead weight.[113] Unfortunately, not published, but these are exhibited in Rhodos archeological museum. Bronze figurines from LM IA, similar to a 'Minoan' adorants come from this period as well.[114] T. Marketou has suggested them to be of local manufacture.[115] And some tools made of copper alloy (probably those mentioned by Marketou) are exhibited in archaeological museum on Rhodes. Published evidence for local metallurgical production, however, is limited. Marketou has suggested a presence of a metal workshop at Trianda in the period corresponding to LM IB, she based her suggestion on the presence of waste material, sheets of bronze, fragments of crucibles and smelting cups found in an ash layer.[116] She suggested that the crucibles were made locally. Some chronologically later remains, such as moulds and other metalworking equipment– a fragmentary crucible, a bun ingot (LBA I-II: 1700-1550 or 1440 B.C.), a part of a double-faced steatite mould for casting jewellery (dated to LH IIB-IIIA1: 1550-1430 - 1440-1360 B.C.), and a schist mould for casting chisels – from Trianda are now exhibited in the Rhodes Archaeological Museum. Thus, the presence of metal tools and other finished objects suggests that multifaceted metallurgical production might have taken place at Trianda as early as the 17th century B.C.. The number of metal finds increased with time and, in addition to the evidence from the settlement, a large number of finds come from funerary context of LH IIIA-IIIC.[117] It should be mentioned that glass production on Rhodes is suggested, about 3000 glass objects were discovered from all LBA Rhodes. There is also suggested connection of glass working and goldsmithing in the 14th and 13th centuries B.C. (similar beads made from glass or gold).[118] Presence of goldsmiths and glass maker would suggest strong local complex and various manufactures. Rhodes appears to be a potential major center. It is unfortunate that our knowledge of the settlement situation, not just the well-known burial context, is limited.

[112] Dietz 1984, Sandars 1963, Karantzali 2001, Benzi 1992.

[113] Marketou 1998a, Benzi 1992.

[114] Marketou 1988b, 60.

[115] Marketou 1998a, 62.

[116] Marketou 1998a, 60.

[117] Benzi 1991; Monaco published moulds from Ialysos (1941, 140, figs. 91-92).

[118] Triantafyllidis-Karatasios 2012.

Island of **Cos,** likewise Rhodes, provided some especially rich graves with various bronze swords, spearheads, razors, knives, arrowheads and working tools. The sites of **Eleona**, **Langada** and **Serraglio** show important funeral context. Metal finds evince strong Aegean element. Metal finds also come from settlement context of Serraglio.[119] In terms of metallurgy, this area has yielded a pair of tongs in Zone I,[120] this tool was used to manipulate a hot crucible, and a crucible was found at the Seraglio.[121] Another pair of what might have been tongs (or, less likely tweezers) come from Langada Tomb 11, as identified by Blackwell.[122] It should be noted that the tongs might possibly be also tweezers.[123]

Furthermore, a similar bronze figurine to the one of a Minoan adorants from Trianda was found on an island of **Kalymnos** dates to LM IB.[124]

Additional metal finds have been recovered from funerary context at **Karpathos**, site called **Anemomiloi-Makeli**[125] including a sword, spearheads, a razor and a dagger. The sword is showing typological features of Aegean type B and C swords, bore interesting designs.[126] Few more swords, spearheads and a knife are said to come from unknown context from Sites **Diafani** and **Pigadia**.[127]

Mycenaean influence is evident in **Müsgebi cemetary** on the Anatolian coast near Bodrum. These chamber tombs are a significant discovery related to the LBA occupation, showcasing architecture and grave goods that exhibit distinct Mycenaean or Mycenaeanizing influences. Notably, graves have yielded artifacts such as two swords, several spears, and a razor, indicating a substantial Mycenaean influence, with a suggested date range approximately within LH IIIA-IIIB(-C?).[128] Two swords without context are said to come **Bodrum**.[129] Important element is a presence of typological group Siana in Müsgebi and Bodrum.[130]

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[119] Vitale 2012; 2016.

[120] Morricone 1975, 173, fig. 54.

[121] Marketou 1998a, 60.

[122] Morricone, 1967, 112, fig. 93; Blackwell 2011, 323.

[123] For a definition of tongs see Blackwell 2011, 7.

[124] Marketou 1998b, 63-64.

[125] Melas 1985.

[126] For more about swords see Roháček 2019b.

[127] Melas 1985.

[128] Akyurt 1998.

[129] Müller-Karpe 1994; Yalcikli 2006.

[130] Roháček 2019b.

The Dodecanese show occurrence of interesting and valuable finished objects in rich graves of the local elite. Therefore, this abundance of metal indicates the success of local elite in tapping into regional and interregional networks of trade in metal objects. During the period of LH IIIA-IIIB, the elites might have profited from the convenient location of Rhodes as the the gateway into the Aegean on the trade maritime routes from Cyprus. If the trade was the way how the locals get to metals, we can also assume that only secondary production occurs for example in Trianda on Rhodes According to typology, which was investigated by the author of this work in his previous articles.[131] The authors suggestion is that many metal objects (especially those from copper alloy) found in graves could have been made locally, based on typological approach. In typological point of view, the most obvious evidence for possible local metal production could be the Siana group of metals.[132] The high number of copper alloy tools such as needles, awls, fishing hooks and similar daily life objects could also indicate better access to metal material and abundance of it.

6.2. **The Inland Western Anatolia Inland**

6.2.1. The Northwestern inland Anatolia

The Inland Northwestern Anatolia represent a waste region which in terms of metal finds and metal working is represented by a few numbers of sites. However, some of the most promising sites with most evidence for metal occurrence and metalworking come from this region. The main sites are settlements Seyitömer Höyük and Demircihüyük, thea cemetery in Cavlum and few other minor sites. The metal finds show Anatolian design. The region is rich of copper sources and there was already active mining in EBA.

Seyitömer Höyük is a large fortified settlement, near the town of Eskişehir, with occupation spanning EBA – MBA, Early Iron Age and Middle Ages. It has some of the best evidence for metals and metal working in this area in 2nd millennium B.C.. The occupation on this site extends from the Early Bronze Age to the Middle Ages. The excavations were led by Bilgen. The second millennium is represented only by one layer from MBA (dated to 18th century B.C.). Except for discovery of rich evidence of architectural remains and various types of material, the large number of metal finds was found: weapons (small swords or

[131] Roháček 2018, Roháček 2019a; 2019b.

[132] Roháček 2019b.

daggers, spearheads, arrowheads, axes), tools (needles, sickles, razors) and jewelry (needles, bracelets, rings, earrings, made from various metals such as copper, silver, lead, and gold) and one metal anthropomorphic figurine, which were distributed throughout the settlement. The metal finds evince a dignificant Anatolian design.[133] Notable findspots include also a metal hoard which was found in the settlement.[134] Two pieces of slag were found in the hoard as well.[135] Moreover, evidence for metallurgical production directly in the settlement includes moulds and crucibles. Stone moulds might have served for blade casting, judging from the published image.[136] Additionally, four moulds (for casting axe heads and blades) and crucibles have been discovered.[137] Several axes of the shape which is also on moulds were found on the site as well. This indicate actual local production of products made of metals. However, despite these finds, the position of the actual metal workshop is uncertain. Undoubtedly, there was strong local production in this area.

Moving to the vicinity of current town Eskişehir, a cemetery evidence from **Çavlum** showed metal accessories were buried together with wealthy individuals, and included pins, rings and beads made from copper alloy mostly, but also lead.[138] Dating spans from the Middle Bronze Age II (MB2) to the Late Bronze Age I (LB1) period.[139] Few of the pins are typologically quite unique. A similar pattern can be observed at **Sarıket**, a cemetery located by **Demirci Höyük** near modern Bursa, which was a locus of some EBA metallurgical activity. The burial goods in the cemetery (of LB 1 date) included some jewellery, such as copper alloy pins and rings.[140] From the settlement context of Demirci Höyük there are finds of metal tools such as chisel, needles and a punch from LB1A-B.[141] The EBA metal finds in the region have recently been investigated by M. Massa in relation to local sources of copper

[133] Bilgen 2011; Bilgen 2013; Bilgen 2015.

[134] Sector K, located to the northwest of the H-15 plan square, in the north-western corner of one room of a house.

[135] Bilgen 2010, 381.

[136] Bilgen 2011, 14, fig. 33.

[137] Moulds: Bilgen 2011, 194, 196, fig. 291; 2015, fig. 114; crucible: Bilgen 2015, fig. 113.

[138] Bilgen 2006.

[139] Bilgen 2005.

[140] Kull 1988; Seeher 1991; 2000.

[141] Kull, 1988; Seeher, 1991; Seeher, 2000.

and revealed some significant metallurgical production.[142] There is no evidence of secondary metallurgical production in the 2nd millennium B.C..

Another settlement is **Küllüoba,** located in the Eskisehir region. Bronze daggers, two needles, a chisel and probably a spear come from the very early beginning of the 2nd millennium B.C. (MBA 1). These objects could be subjects from the transition period between early and middle bronze.[143]

Interesting stray find come from **Balikesir,** a rare Aegean-like B-type sword.[144] However, it does not look typical and it could be part of the group of Interface swords.[145] Unfortunately, it is without a context. It is exhibited in the museum in Selcuk.

The **Seyitömer Höyük** area is fascinating because it has a lot of metal stuff, like tools, weapons, pins, and gold jewelry. It is known that near copper sources were recognized by analysing the metals around during EBA in Seyitomer Hoyuk.[146] However, things get a bit mysterious in the Second Millennium B.C., where there's only one layer from around 1800 B.C.. This is around the time the Kultepe trading station was active in the East. It is possible to assume that Seyitomer Hoyuk could be connected in the trade network with metals. The site of Cavlum show interesting local metal adornment within buried individuals.

Furthermore, Demircihoyuk seems to have had more metal metals during the Early Bronze Age, and also probably from local sources. This area according to metal evidence from 2nd Millennium is showing a lot of more potential to study metalurgy.

6.2.2. The Midwestern Inland Anatolia

This of region is represented by a site of large settlement **Kaymakçı**. Quite recently discovered prominent site is is dated to MBA – LB 2. It is located in the middle of Gediz River valley by the lake Marmara in the region of Manisa. The site has been the focus of a survey project since 2005, directed by Roosevelt and Luke. The survey has revealed a complex anthropogenic landscape, potentially associated with the core of the Seha River Land kingdom during the Late Bronze Age (LBA). The ongoing research shows it was a large

[142] Massa et al. 2017.

[143] Efe – Fidan 2006.

[144] Yalçikli 2006.

[145] Roháček 2019b.

[146] Massa 2016.

fortified settlement which might have been one of regional centres. From the settlement context, a compact number of small metalworking tools and some slag (inside the inner citadel) have been documented including needles, chisels, awls, drills, some pins, fishing hook and knives, dated to LB1-2.[147] There should be mentioned a knife featuring an interesting design as the most significant metal find from this site. Elemental analysis showed metals present are copper, tin, and arsenic, consistent to LBA metal finds from Hattusa and central Anatolia. Furthermore, a stone anvil might possibly suggest processing of raw materials.[148] All these indices indicate small-scale metalworking as part of household production in the area of lower citadel (especially in areas 99.526 and 108.522/109.523).[149]

In light of recent discoveries in the region, this prominent LBA place stands out as a valuable archaeological site. This fortified settlement, potentially a regional center has revealed so far a little evidence of metalworking. But first published metals and remains of metalworking evidence are showing a significant potential for future study. Notably, the discovery of small metalworking tools, including needles, chisels, awls, and knives, dating to the LBA period, underscores the presence of metal craftsmanship within the community. The identification of copper, tin, and arsenic in these artifacts, consistent with similar LBA finds from Hattusa and central Anatolia, suggests a link to broader metallurgical practices. These findings collectively highlight the significance of small-scale metal production within the lower citadel of Kaymakçı, opening new avenues for metallurgical research in the region.

6.2.3. The southwestern Inland Anatolia

In the East of Meander River valley, the site of **Beycesultan,** a large settlement site, is located near a town called Civril in Denizli region. It is one of the most important archaeological sites in the region. The site's rich finds and complex history make it one of the most important archaeological sites in mainland West Anatolia, spanning from the Chalcolithic period to the

[147] Roosevelt et al. 2018, 669-673.

[148] Roosevelt et al. 2018.

[149] Roosevelt et al. 2015.

Seljuk period in the Middle Ages [150] It was first excavated in the 1950s by Lloyd and Mellaart, and later, since 2007, the site has been newly investigated by Abay and Dedeoglu. The new research has provided valuable insights and some new published material.[151] Also, the recent excavations at Beycesultan have resulted in a revised stratigraphy and chronological sequence, correcting previous dissonant dating.[152] The excavations have revealed a complex and long history of occupation at Beycesultan and have provided insights into pottery traditions, technological developments, and changes in architectural styles throughout the different phases of occupation. The MBA phase layers V and IV (or levels 9 to 6) is characterized by the emergence of monumental buildings (a palace, shrines). The LBA phases (layers III to I, or levels 5 to 1) show further architectural developpement, building called "Little Palace", shrines and megaron-type house appeared.[153] Beycesultan provides abundant number of metal finds and an evidence for metallurgical production. Many finds, jewellery of various types (pins, rings, earrings), weapons (spearheads, arrowheads, daggers), and tools (chisels) were found during the early excavations of the settlement in the 1950s[154] and the later excavations.[155] In terms of production, moulds were discovered in Mellaart's Levels V, IV, III, and I.[156] According to the new chronology, these correspond to the beginning of 2nd millennium B.C. to the end of the 16th century B.C.. In Level V (2100 – 1700 B.C.), fragmented moulds for blade casting (from Trench E) and axe-head casting (Trench J) have been documented. Another mould, this one could have been for a seal(?), was found in Level IV (Trench J; mid-20th - mid-18th century B.C.).[157] Such a mould could have easily been manufactured using plaster and clay, which were also found on the site.[158] Dating to the Level III (19-17th century B.C.) there is a composite stone mould for making blades (Trench R). Then a double-side mould (from Trench A) with a form to cast blades on one side, and a

[150] Mellaart & Murray 1995.

[151] Abay – Dedeoğlu 2014.

[152] Dedeoğlu and Abay 2014, 39, pl. 1.

[153] Lloyd – Mellaart 1965; Lloyd 1972.

[154] Mellaart – Murray 1995.

[155] Abay – Dedeoğlu 2014; Erdem 2015.

[156] New suggested chronology: old V= new 10 and 9:r ange from 2130 to 1685 B.C., old IV= new 7 and 8: 1955-1736 B.C., old III= new 6: 1880 – 1662 B.C., old II= new 5b: 1700-1595 B.C., old Ib= new 5a 1600-1500 B.C., old Ia = new 4.

[157] Mellaart – Murray 1995, 122, 178, fig. O.28, pl. XI, a (see the suggested type of seal).

[158] Mellaart – Murray 1995, pl. XI, b.

chisel or similar tool on the other side.[159] Two broken moulds for casting knife blades were found in Level II (17-16th century B.C.).[160] A greenstone mould with indentations on the upper and lower surfaces for casting a thick oval-shaped object and a thin rectangular blade was found in Level I (Trench T).[161] Moulds were distributed throughout the area, indicating production at a household level. Local production at this site is indisputable. Although no actual workshop was identified. The excavation findings from Beycesultan provide valuable insights into the cultural and historical developments in the region during the 2nd millennium B.C..

Another discussed site is **Aphrodisias** (located in the Aydin region). The settlement site well known from classical period, was also settled during the Chalcolithic, EBA, MBA and LBA. The chronology of the 2nd Millennium is MBA phase (1900/1600 B.C.) and a LBA phase (1300/1200 B.C.), with long gaps preceding and following the LBA occupation. In MBA Joukowsky indentifies a megaron type of building with a hearth at the center.[162] The LBA levels are present only on the Acropolis. Local pottery and poorly preserved structures have been uncovered. Metal finds from the 2nd millennium period are not numerous, only few pieces of simple jewellery, such as copper alloy pins, rings and earrings, and small blades were found. They are roughly dated to MB – LB2. The material is probably in most cases copper alloys, but most of the aphrodisian metals are not identified.[163] No moulds or other hint of metal working was found.

Another site **Çine Tepecik** is located in the Marsyas River Valley in the region of Muğla. It has been continuously excavated since 2004. The occupation of Çine Tepecik spans a long and complex period, ranging from the Late Neolithic/Chalcolithic to the Classical and Hellenistic Periods. In the 2nd millennium B.C., the MBA is represented by levels II2a and II2b, while the LBA phase is represented by levels II1a and II1b. The site features a notable fortification wall, approximately 2 meters thick, with squared towers at regular intervals. This defensive structure is associated with a rectangular storage building. Excavations have revealed clear traces of pottery production and storage within the buildings. The material evidence from the site suggests a combination of local and foreign elements. Local pottery

[159] Mellaart – Murray 1995, 122, fig. O.29.

[160] Mellaart – Murray 1995, 122.

[161] Mellaart – Murray 1995, 124, fig. O.34.

[162] Joukowsky 1986, 173.

[163] Joukowsky 1986.

coexists with finely painted Mycenaean ware, which is both locally produced and imported, dating to the Late Helladic IIIB and IIIC periods. Interesting is a discovery of a seal bearing a Luwian hieroglyphic inscription, interpreted as evidence of administrative control at the site. Along with the Hittite-style fortification masonry, on must suggest a certain degree of influence from the east. Preliminary publications have revealed the discovery of one arrow, one needle, and one punch from the LB 2B-3 period (LH IIIB-C).[164] No moulds or other hint of metal working was found.

In conclusion, this region reveals the presence of substantial settlements, which likely served as local regional centers. Among these, Beycesultan emerges as the most prominent site, characterized by its enduring historical significance. Beycesultan has yielded a wealth of artifacts, including copper alloy, lead, silver, and gold objects, accompanied by metal casting molds. Additionally, lesser-known sites like Aphrodisia and Cine Tepecik have been explored, albeit to a lesser extent.

6.2.4. The Eastern Western Inland Anatolia

East of inland Western Anatolia constitutes a zone close to Hittite territory and area could be culturally conisdered a buffer zone between the Western Anatolia and the Hittite Realm. Among the sites mostly cemeteries are known except for one significant settlement. Culturally the character is more connected to Hittite fashion.

Several graves from the late Middle Bronze Age and the beginning of the Late Bronze Age (MB2 to LB1) were found near the modern Turkish city of **Afyonkarahisar.**[165] There were only a few simple metal rings within the funeral content.

Gordion is a site with a significant cemetery in the Hittite style. Funeral equipment among metal finds is represented only by jewellery in the form of simple rings and a large number of different types of pins.[166] Date is approximately MB2-LB1.

Yanarlar is located near Afyonkarahisar. This archaeological site boasts a necropolis strongly influenced by the Hittite culture. The collection of metal artifacts includes various of

[164] Günel 2015b.

[165] Üyümez et al. 2007.

[166] Mellink 1956.

types of pins, simple rings and beads. These findings can be chronologically classified from Middle Bronze Age II (MB2) to Late Bronze Age I (LB1).[167]

An exception is the settlement of **Kusura**. Excavations conducted by W. Lamb between 1935 and 1938. The main mound at Kusura was divided into three phases: Kusura A, B, and C, as defined by Lamb. Only Period C covers the 2nd millennium B.C. (Periods A and B correspond to the Late Chalcolithic and Early Bronze Age). Lamb proposed a "Hittite" character for Kusura C based on ceramic and architectural elements and she suggest that the settlement was influenced by Hittite powers. There was a group of metal jewelry such as pins, rings, and earrings, tools including knives, sickles, punches, chisels, hooks, and needles. Weapons such as sperhead and arrowheads were also found. The general dating of these findings aligns with the LBA. Lamb also reported a presence of slag, but otherwise no evidence of metal production was found.[168]

On the eastern extent of inland Western Anatolia and central Anatolian plateau, cemeteries and one settlement are known. Culturally the character is more connected to Hittite fashion. Finds made from metals come especially from cemeteries at Yanarlar and Gordion. Hittite-style cemeteries with copper and bronze pins of various types and rings comprise the core of the evidence. An exception is the settlement of Kusura

[167] Emre 1978.

[168] Lamb 1937. These metals were analysed as part of the excavations. See p. 259, fig. 21.

7. Collected Metal finds

In total 1286 metal finds were collected from 2nd Millennium Western Anatolia and Eastern Aegean. All metal finds are catalogized in this. In term of contet 656 metal finds were found in burial context. 536 metals came from settlements. 93 pieces were without any context. Only one find (figurine) was found in a cave. The metal composition of metals is a copper alloy in most case. 1208 piece were made of copper alloy and its variants. 40 artefacts were made of gold and 12 specimens were silver. Finally 24 pieces were reported as lead. The rest

For **Typology** N. Sandars was the pioneer in systematically classifying Aegean swords[169], largely building upon G. Karo's earlier work. [170] Subsequently, I. Killian-Dirlmeier introduced an alternative classification. [171] In the realm of spearheads, O. Höckman[172] laid the initial groundwork, followed by R. Avila, whose typology is employed herein.[173] On Aegean knives, there is only one comprehensive publication from 1955, by N. Sandars,[174] an update is warranted to incorporate recent discoveries. K. Branigan's research is chiefly dedicated to Aegean axes, [175] while H. Erkanal's focus is on Anatolian examples.[176] Arrowheads were categorized by H.-G. Buchholz, [177] with R. Avila offering an alternative approach, with the latter's typology being favored in this article.[178] Lastly, Aegean razors have been in K. Weber's work, encompassing the majority of known Aegean razors. [179]

[169] Sandars 1961; 1963.

[170] Karo 1930.

[171] Killian-Dirlmeier 1993.

[172] Höckmann 1980.

[173] Avila 1983.

[174] Sandars 1955.

[175] Branigan 1974.

[176] Erkanal 1977.

[177] Buchholz 1963.

[178] Avila 1983.

[179] Weber 1996.

7.1. Swords

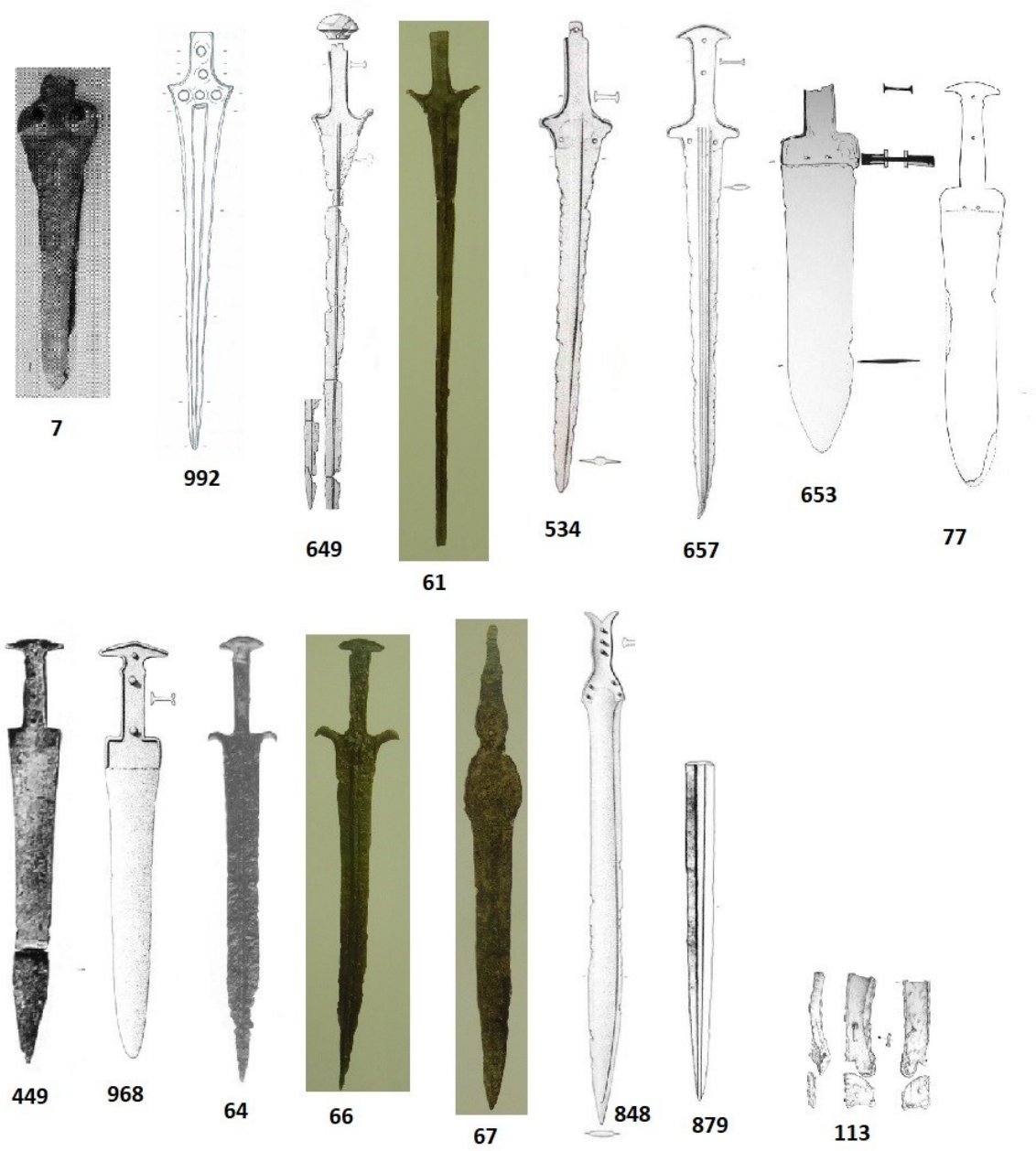

Fig. 1. Swords.

A sword which in addition to the weapon certainly represented a form of owner of self-presentation and social status, is not common finding in Western Anatolia. The LBA period witnesses the emergence of the first swords in the Aegean, which later spread throughout the region.[180] The basic work on swords was conducted by Sandars in two well-known articles from the 1960s. For the early types, she adopted the designation "Karos" for Types A and B.

[180] Bouzek 2010, 24.

This same nomenclature was used in another significant work by Emma Killian-Dirlmeier. This work uses Sandars' typology. Swords are numbering in total 48 pieces (map 3). They occur in high density especially on Dodecanese and along the coast and the majority of swords found and published is concentred on Dodecanese and adjacent coast. In addition, single swords or rarely a group of them were found on other places along the coast and in inland. The context of sword is in most cases funeral context (especially on Dodecanese), rarely they come from settlement context and in same cases the context of the artefact is unknown or uncertain. In Southwestern Anatolian coast (Lower Interface) tombs and graves in mycenean fashion revealed a lot of various swords, strongly influenced by Aegean with a prevalent similarity in craftsmanship and design to those found in Crete and the Greek Mainland. Although there are finds which despite their Aegean fashion seems to be somehow typologically different. Furthermore, the more far away from Southwestern Anatolian coast, the more swords look different yet somehow similar. Most of the swords from Western Anatolian coast I collected and examined in my Master thesis.[181] In this work all types and their representants will be briefly presented and main focus will be aimed mostly on typologically specific group of swords.

7.1.1. Type B

Regarding the development of sword types preceding Type B, an interesting observation by Sandars suggests its origin based on Levantine-Cretan relations. [182] Type B swords typically feature a wide, triangular pommel and a longer tang with several rivet holes. They usually have a central rib as well. The length of these swords ranges from 30 to 55 cm. [183] Type B swords are most commonly found in Mycenaean shaft graves[184], and they date from roughly Middle Helladic II (MH II) to Late Helladic IIIA. [185] According to Sandars, their origin can be

[181] Roháček 2015.

[182] Sandars 1961, 17.

[183] Molloy 2010, 406.

[184] Sandars 1961, 22.

[185] Molloy 2010.

traced to mainland Greece, specifically the Argolid region. They are relatively rare in Crete, with notable finds mainly in the Dodecanese and Turkish territories. [186]
It should be noted that variantions of this type appear quite frenquently along the coast and even in inland of Western Anatolia. These pieces will be discussed in the chapter about Interface swords. There are only two of perhaps just a one secure sword of type B from the area.

The first one only resembles the type B, it comes from a grave in Anemomiloi-Makeli on Karpathos. (Cat. 7; fig. 1, 7).[187] It has flat blade with a small midrib and a guard with two rivet holes. The tang with one rivet hole protrudes from the handle. The date is supposed to be LH IIIA1-IIIB.

The second one which is sure in terms of classification as Type B is from grave in Sarımeşe Tepe (Cat. 992; fig. 1, 992), in the Cumaovasi district of Izmir. The sword seems to be cannonical type B, only shorter. Five rivet holes on the hilt. Three between shoulders, two places on a tang. The dating is assumed to be LH I-III.[188]

7.1.2. Type C

Type C swords, also known as "Hörnerschwert"[189] due to their two-horned pommel, emerged around LH/LM II–IIIA as a new Aegean weapon. [190] Sandars suggests that this weapon adopted the best elements from both previous types in the MBA and replaced Type A swords. [191] Type C swords have a slender blade[192] that widens toward the pommel, a central rib, and a protective pommel with two horns. These swords typically measure around 60–70 cm in length. [193] Apart from the Aegean[194], where they were abundantly found in funerary contexts in the Argolid and Crete, they are also known from Palestine and Bulgaria. [195] Crete,

[186] Sandars 1961, 27.

[187] Melas 1985, 330, 331, fig. 139, 140.

[188] Gençer 2006, 378, fig. 3 - 4.

[189] Molloy 2010, 406.

[190] Molloy 2010, 406.

[191] Sandars 1963, 119.

[192] Sandars 1963.

[193] Molloy 2010, 406.

[194] Molloy 2010, 407.

[195] Sandars 1963, 119.

especially Knossos, is considered by most scholars to be the primary production center for Type C swords. They had a relatively widespread influence on the Balkans.[196] Sandars further divides this type into variants Ci and Cii, but for generalization purposes, this thesis will use the designation Type C for all variants. Two pieces were published from the area. One from burial context and the second from unknown context.

Cat. 649 (fig. 1, 649) from tomb no. 74 in Ialysos[197] features a flat, fragmentary blade with a thin, raised, rounded rib and a remaining non-metallic pommel. It lacks any rivet holes and is dated to LH IIIA1. The closest parallels come from Crete, and it appears that this sword is also of Cretan origin. Kilian-Dirlmeier points out the pommel as a common feature in Cretan swords, as well as in swords from shaft graves, but notes slight differences in its attachment at the end of the hilt.[198] Benzi puts this piece in between Ci and Cii. [199]

With uncertain context there is Type C sword from Archontiki on Psara (Cat. 61; fig. 1, 649).[200] It has Long blade with midrib. Guard and entire general appearence of this piece seems to be typical for C type sword.

7.1.3. Type D

Type D swords are contemporaneous with Type C[201] swords and are primarily distinguished by their hilt design, which features a guard with raised edges resembling a cross. Type D swords may even be slightly older in terms of dating and may have appeared sometime during LH II. [202] Kilian-Dirlmeier refers to them as "Kreuzschwert" (cross swords) and further distinguishes their variants[203], while Sandars divides her Type D into Di and Dii variants. [204] The average blade length of Type D swords ranges from 60 to 70 cm, [205] with Dii subtypes

[196] Bouzek 1985, 30, 37.

[197] Jacopi 1930-3, 297, fig. 43; Benzi 1988, 60, fig. 3; Benzi 1992, 383, pl. 177, b; Kilian-Dirlmeier 1993, 45, pl. 12, 63.

[198] Kilian-Dirlmeier 1993, 50.

[199] Benzi 2009, 61.

[200] Deligiorgi 2006, 142.

[201] Molloy 2010, 407.

[202] Molloy 2010, 405.

[203] Kilian-Dirlmeier 1993.

[204] Sandars 1963.

[205] Sandars 1963, 123.

typically being shorter than Di and C swords. [206] Most Type D finds exhibit a noticeable central rib, a flat cross-shaped hilt end, and rivet holes. Some had pommels at the end of the hilt. [207] In addition to numerous discoveries throughout the Aegean region, Type D swords have also been found in Anatolia[208] and spread to the Balkans.[209] Snodgrass suggests that the origin of this type may trace back to older Minoan daggers and could be directly Minoan in origin. [210] Sandars identifies Knossos as the primary production center for this type. [211] There are 10 pieces of Type D. Eight are concentred mainly on Dodecanse (most of them are from burials, several swords have unknown context). Two swords have uncertain context and come from Archontiki on Psara.

The example Cat. 650 from Ialysos has wide flat midrib, the guard is not in the shape of a regular cross, two holes at the guard, and one at the end of the grip on the pommel.[212] It is nearly identical to a Type D sword found in a grave in Eleona on Cos (Cat. 534; fig. 1, 534).[213] Both have the same flat rib, identically shaped guards, and similar guard. Unfortunately, they are all undated. An interesting Type D sword is from Archontiki on Psara (Cat. 62). This cruciform sword still have non-metal inlaying on the handle.[214]

7.1.4. Type E

Type E more closely resembles a dagger and incorporates many elements from sword types C and D. Its characteristic features include the absence of a hilt and a wide, curved base of the blade. The blade's average length is around 30 cm. At the end of the hilt, there is a flat cruciform pommel, which si solid part of the sword. It is frequently found on Crete and throughout mainland Greece. Sandars further divides it into Ei and Eii subtypes.[215] Three representatives of Type E from the are come were found on Dodecanese from Asclepius on Kos (unknown context) and from Pylona and Ialysos on Rhodes (burial context).

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[206] Molloy 2010, 408.

[207] Sandars 1963, 123–132.

[208] Müller-Karpe 1994.

[209] Bouzek 1985, 31, 37.

[210] Snodgrass 1967, 22.

[211] Sandars 1963, 123.

[212] Sandars 1963, 123, pl. 24, 20; Kilian-Dirlmeier 1993, 61, pl. 24, 127.

[213] Morricone 1965-66, 83, fig. 64; Kilian-Dirlmeier 1993, 61, pl. 24, 126.

[214] Deligiorgi 2006, 143.

[215] Sandars 1963, 131–132.

Example Cat. 991 from tomb no. 3 in Pylona on Rhodes has a wide flat blade without a ridge with a flat cruciform hilt termination. The blade is unusually more pointed compared to other examples of Type E. The sword is dated to LH IIIA2.[216] Karantzali defines this sword as Sandars Type Eii and compares it to similar swords from Zapher Papoura in Knossos, Crete. [217]

The second example Cat. 77 (fig. 1, 77) comes from the area southeast of the sanctuary at the Asklepeion site on Kos.[218] The wide flat blade without a ridge, flat cruciform hilt termination, and four rivet holes have parallels in mainland Greece and Crete. [219] Unlike the swords from Rhodes, it is not as pointed. The dating is uncertain.

7.1.5. Type F

Sandars again divides Type F into suB.C.ategories Fi and Fii. She traces the development of Type F from Type D and Type E, especially in the more angular hilt and slender blade. [220] Earliest pecimens of Type F are first dated to LH IIIA2.[221] Fortenbery mentions more than forty finds across the entire Aegean region. [222] The blade's length typically does not exceed half a meter. [223] Examples are known from Crete, Epirus, and Albania.[224] In total, six finds come from the Dodecanese, Psara, and the Degirmentepe. Except for one sword with unknown context from Kameiros on Rhodes (Cat. 741)[225], all the specimens were found in burial context.

An example From Langadha on Kos, Cat. 846, representing a classic example of Type F.[226] The flat blade without a ridge, bounded by a flat cruciform hilt, and with three rivet holes on the hilt, is typical. It is dated to LH IIIB. Part of the hilt seems damaged, and Kilian-

[216] Karantzali, 2001, 67, fig. 42, pl. 46.

[217] Karantzali 1961, 67.

[218] Morricone 1972-73, 253, fig. 198, 199.

[219] Sandars 1963, pl. 25.

[220] Sandars 1963, 133.

[221] Molloy 2010, 408.

[222] Fortenberry 1990.

[223] Sandars 1963.

[224] Molloy 2010, 409.

[225] Sandars 1963, 151; Kilian-Dirlmeier 1993, 83, pl. 29, 185.

[226] Morricone 1965-66, 212, fig. 226, 227; Kilian-Dirlmeier 1993, 83, pl. 29, 182.

Dirlmier points out traces of ancient repairs. [227] Sandars considers it one of the earliest phases of Type F and compares it to another sword from Langada Cat. 847. [228]

Interesting case is the occurence of a type F sword in Degirmentepe near Miletus (Cat. 449; fig. 1, 449) from the LH IIIB–C period, it comes from a grave conxtext accompanied with group of three Non-Aegean swords.[229] However, in terms of appearance this piece is similar to those from Dodecanse and rest of Aegean.

7.1.6. Type G

Type G is the successor to Type C[230] and is further divided into two typological subcategories: Gi and Gii. The defining characteristic is the guard[231] featuring horns known as "quillons." The midrib is similar to previous types,[232] the hilt is shaped like a cross and terminates in an apple-like pommel, although this is not a strict rule for all Type G swords. Subtype Gi appears in LH IIIA2-C and does not continue beyond that, with Gii replacing the previous type in LH IIIC.[233] There are two Type G swords from Archontiki on Psara. One comes from a burial, the other have uncertain context.

An example of this type is the one from a grave (Cat. 64; fig 1, 64) from Archontiki on Psara island.[234] It shares the same guard extensions as other horned swords, with a flat cross-shaped pommel at the hilt's end. It features a prominent thin raised ridge and is dated to LH III A2. The closest parallels for this sword are found in Mycenae.[235]

[227] Kilian-Dirlmeier 1993, 86.

[228] Sandars 1963, 133–134; Morricone 1965-66, 238-239, fig. 261, 262; Kilian-Dirlmeier 1993, 83, pl. 29, 183.

[229] Benzi 2004, 15, fig. 2.

[230] Molloy 2010, 409

[231] Sandars 1963, 139

[232] Molloy 2010, 409.

[233] Molloy 2010, 405, 409.

[234] Deligiorgi 2006.

[235] Sandars 1963, pl. 26, 46–47.

7.1.7. Naue II

Snodgrass highlights the Naue II sword as one of the most successful and widely produced sword types, [236] which even continued in use into the Iron Age.[237] Originally from the Aegean region, it spread to the eastern Mediterranean, with finds in Ras Shamra, Egypt, and Cyprus.[238] By the 11th century B.C., it became the predominant sword in the Aegean and the Near East. [239] It originated as the all-European Sprockhoff IIa sword and a slightly later version IIb with an extended hilt.*[240]* The earliest swords are dateed back to around 1350 B.C.. Its usage is noted from Scandinavia to Italy, eastern Mediterranean, France, western Ukraine, and Russia. It first appears in the Aegean world around LH IIIB2[241], just before the palace collapse.[242] Its length usually averages around 70 cm, featuring a tapered blade with a triangular guard extending downward from the blade's base.[243] The hilt often had an organic grip attached. [244] Its likely origin is southeastern Central Europe[245], with Drews narrowing it down to the area from the eastern Alps to the Carpathians.[246] While it follows its late Bronze Age predecessors typologically, later iron examples differ, likely due to material changes. [247] The overall development of the Naue II sword exhibits similarities in Greece, Italy, and the Balkans.[248] Iron was introduced to Greece from the eastern Mediterranean and Cyprus. The earliest iron sword found in the Protogeometric grave no. 2 in Kerameikos in Athens shares similarities with bronze types from the Levant and Cyprus rather than Mycenaean types.[249] From the late Protogeometric to the Middle Geometric period, this weapon is a common find

[236] Snodgrass 1967, 28–29.

[237] Georganass 2005, 68.

[238] Bouzek 1985, 124.

[239] Drews 1993, 194.

[240] Bouzek 2010, 49.

[241] Bouzek 1985, 124.

[242] Bouzek 2010, 45, 49.

[243] Drews 1993, 193.

[244] Snodgrass 1967, 29.

[245] Bouzek 1985, 132.

[246] Drews 1993, 195.

[247] Snodgrass 1964, 170.

[248] Bouzek 1997, 104.

[249] Snodgrass 1997, 229; Georganas 2005, 69.

in graves.[250] Three Naue II swords are known from the area. One from Archontiki on Psara and another one from Bodrum have uncertain contex. The third swords come from a grave in Langada on Cos.

The example from Cos, Cat. 848 (fig. 1; 848) was found in tomb n. 21 alongside with spearhead (Cat. 844). It possesses a distinctive wide and gracefully curved raised ridge, while its hilt terminates in a fish-tail-like pommel. The guard of this sword features four rivet holes, with an additional three found on the hilt. Its dating places it approximately within the LH IIIB–C period. Typologically, it likely belongs to the Naue II Type A category, known as the Cetona sword in Italy and Reutlinger in Central Europe.[251] Benzi interprets this sword as a testament to the interactions between Europe and the Aegean region during the waning days of the late Bronze Age, falling within the era coinciding with the decline of the Mycenaean palaces.[252]

A similar piece, Cat. 301, comes from Bodrum, with minor differences, such as the number of rivet holes on the hilt. This sword is also dated to LH IIIC and corresponds to Type A/Cetona/Reutlinger.[253]

For both swords, parallels exist, such as in Enkomi, Cyprus, and Ugarit.[254]

[250] Bouzek 1997, 104.

[251] Jung – Mehofer, 2009.

[252] Benzi 2009, 157.

[253] Müller-Karpe 1944, 440–441.

[254] Jung – Mehofer 2009.

7.1.8. Levantine swords

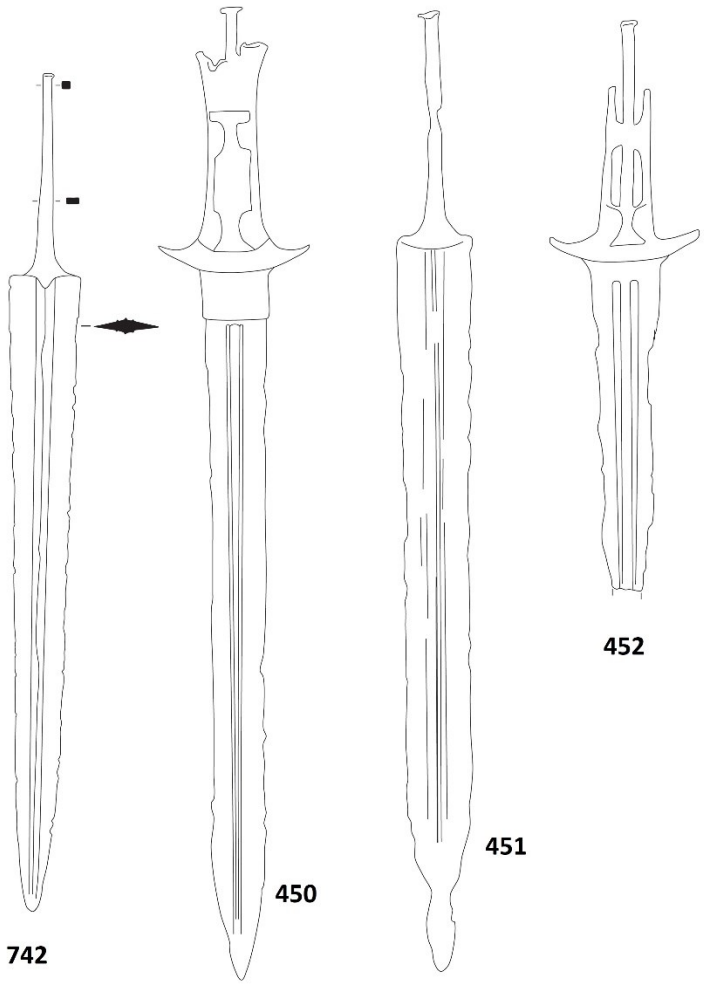

Fig. 2. Levantine swords.

The swords origin is in the Near East, and there's no evidence of their Aegean modification.[255] In contrast to Aegean swords, they consist of two separate pieces

One part forms the blade with a midrib, ending in a long, slender tang onto which a separate hilt is fitted, forming the second independent part. The hilt consists of a crescent-shaped guard. There are 4 swords from Western Anatolia. Three swords are from the Degirmentepe graves near Miletus and a single blade come from Kastanea on the island of Samos (map 4).

While Jung and Mehofer have considered this type to be a Levantine creation and proposed naming it the 'Ugarit' type[256], Wolf-Dietrich and Barbara Niemeier have posited its

[255] Roháček 2019b.

[256] Jung – Mehofer 2009.

origin as Hittite.[257] According to iconography, these swords also find historical usage among the Hittites.[258] Benzi suggests the swords from Degirmentepe were primarily used by the Hittites, based on rock reliefs in Hattusa. He also discusses their presence in the Near East. According to him, these swords were imports from the Near East that reached Miletus from the east through a maritime trade route running from the Levant through Cyprus and further into Anatolia and the Aegean region. He supports his claim with evidence from the Uluburun shipwreck in southern Turkey. He dates this type to LH IIIB–C and notes parallels in Ras Shamra and Atchana, with one specimen also found in Jordan. [259] In this work they are called Levantine swords.

Example of Sword cat. 450 (fig. 2, 450) from Degirmentepe is the most well-preserved among all Levantine swordsfrom this site. [260] It features a narrow blade with a raised ridge and grooving, having a typical long, thin tang. The tang fits into a hilt with a downward-facing crescent-shaped guard. It is likely dated to LH IIIB–C.

Similar to cat. 450 is the one from Kastanea on Samos (cat. 742; fig. 2, 742).[261] This blade is also characterized by a long, thin tang, with the hilt missing entirely.

[257] Niemeier W.-D. 1999, 154, Niemeier B. 2014

[258] Lorenz – Schrakamp 2011, 136

[259] Benzi 2001, 384–385.

[260] Benzi 2004, 15, fig. 2.

[261] Benzi 2004, 15, fig. 1; Kilian-Dirlmeier 1993, 128, pl. 58, 447.

7.1.9. Siana Swords

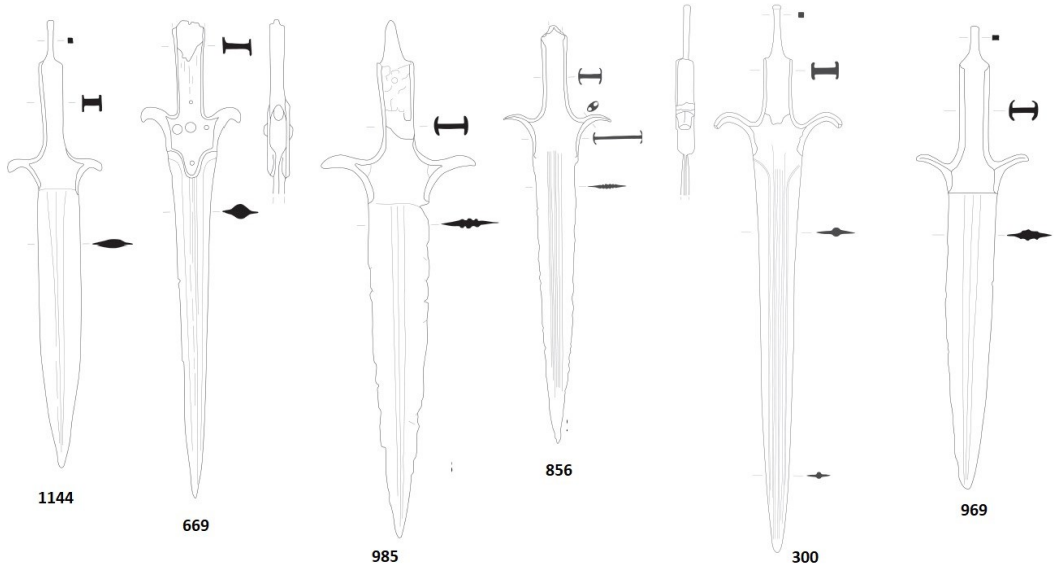

Fig. 3. Siana swords.

This group of Siana swords (along with knives) seem to possess a singular presence within the context of Western Anatolian coast (aka the East Aegean-West Anatolian Interface), showcasing a captivating typological fusion of both Aegean and Near Eastern influences. It was already discussed by the author of this work in his article published in 2019[262], therefore it will be debated here only briefly. Sandars was the first to categorize this group of swords and she classify it as Type H.[263] She has previously elaborated on the distinction between this category of swords and how other scholars embraced Sandars' concepts, recognizing the unique attributes of this particular class of blades. They also identified its presence in the Eastern Aegean and Western Anatolia.[264] Different classification was made by Kilian-Dirlmeier, she placed these swords within her Type 2b of the Horned swords group.[265] These swords seem to be exclusive to the region of the East Aegean-West Anatolian Interface,

[262] Roháček 2019b.

[263] Sandars 1963, 140–142.

[264] Mee 1978, 137; 1982, 60; Kilian-Dirlmeier 1993, 48–49; Akyurt 1998, 32; Benzi 2002; 2004; 2005; Aruz – Benzel – Evans 2008, 382–384; Horejs 2014, 266; Dietz *Et Al*. 2015, 20; Yalçıklı 2006, 37

[265] Kilian-Dirlmeier 1993, 48–49.

displaying a captivating amalgamation of Aegean and Near Eastern influences.[266] They are contextually dated to LH III A2 -IIIB.[267] In terms of typology they showcase an exceptional blend of design elements from the Aegean, along with influences drawn from Anatolia, the Near East, and Cyprus. One of their standout attributes is the horned hilt design reminiscent of Aegean swords. Additionally, at the end of the handle, there is a straight, narrow, thorn-shaped protrusion of the tang for attaching a pommel, a feature clearly influenced by the Near East. Furthermore, the midrib typically consists of three or more lines, and this characteristic stands as the most significant hallmark of Siana swords and knives. Interestingly, none of these six swords exhibit identical features, hinting at the possibility that they might have been crafted in multiple workshops.

There are six examples (map 4) known from the coast or close to the coast (half of them have a uncertain context, the other half was found in graves). Three pieces were found in the Dodecanese region.

The one from Siana on Rhodes (Cat. 1144; fig. 3, 1144) which gave the entite group its title.[268] It has an unknown context, but the person who brought it to archaeologists said it was found in a grave (along with a knife and a spearheadThis artifact appears to be in a damaged state. The handle remains partially covered with organic material, offering potential insights into its preservation. The horns, a distinctive feature, are solidly cast and take the form of downward-hooked quillons, along with a tang designed for pommel attachment. Notably, the midrib exhibits three distinct lines, contributing to its unique characteristics. The dating is aprroximately LH IIIA2–IIIB.

Another example from Ialysos on Rhodes was found in grave n. 53 (Cat. 669; fig. 3, 669). It has a raised, stepped midrib. Horns flanged, the rest of organic inlaying on the hilt, which protrudes into the midrib.[269] The date of the sword is LH IIIB.

The following sword comes from a grave in Pyli on Kos island (Cat. 985; fig. 3, 985).[270] The handle is still covered with organic material. The horns are solid cast and in the

[266] Sandars 1963, 140–142.

[267] Roháček 2019b.

[268] Sandars 1963, 140, pl. 27:53; Dietz – Trolle 1974, 32, fig. 23; Dietz *et al*. 2015, 20, pl. II:5; Kilian-Dirlmeier 1993, 49, Taf. 18:97; Yalçıklı 2006, 36, Abb. 4:5.

[269] Maiuri 1926, 219; Benzi 1988, 61, fig. 4:1; Benzi 1992, 173, 347, tav. 178:a. T. 53/24; Kilian-Dirlmeier 1993, 49, Taf. 18:100.

[270] Kilian-Dirlmeier 1993, 49, Taf. 18:99; Benzi 2005, 17–21, 22, fig. 13.

shape of downward hooked quillons and a tang to attach a pommel. Three lines on the midrib. The date is LH IIIA2–IIIB.

Additionally, another sword was uncovered along the Anatolian coastline, in a grave at Müsgebi (Cat. 856; fig. 3, 856), accompanied by mycenaean burial goods.[271] Its midrib has (probably) four grooves on a flat rib that go straight from the hilt to the tip. The folded horns were shaped by hammering flanged edges of the hilt. The tang is broken. The date is LH IIIA2–IIIB.

The fifth sword is without a context and is said to come from Bodrum (Cat. 300; fig. 3, 300).[272] The midrib is a single line and is round in section with grooves. Flanged horns on a hilt are more bent. Tang at the end of the hilt to attach pommel. The dating is uncertain but it should span in LH IIIA2–IIIB(C?).

The last sword is believed to have originated from Pergamon (Cat. 969; fig. 3, 969).[273] The folded horns are shaped by flanged edges of the hilt. Its tang protrusion is broken at the end (but the attribution is secure), and the midrib is composed of three lines, which tower up in section. Due to the content is date in unknown but LBA would be good assumption.
In the Near East, one can discern significant resemblances to the Siana swords across various sites, such as Ras Shamra-Ugarit[274], Alalakh[275], Sa'idiyev[276], and even in the context of Egypt.[277]

Remarkably, three similar swords have been uncovered in graves in Değirmentepe near Miletos (see the chapter), as well as one on Samos Island in Kastanea.[278] This particular type shares a strikingly similar thorn-shaped tang protrusion, reminiscent of the Siana group.[279] When we compare these swords and Siana group, however the levantine swords differ significantly in construction. They typically consist of two separate components: a blade with an extended tang and a handle with a non-metallic guard. These swords also often

[271] Boysal 1969, 33; Mee 1978, 137; Akyurt 1998, 32, şek. 37, a; Aruz – Benzel – Evans 2008, 382–384.

[272] Yalçıklı 2006, 30, Abb. 1:2, 2:2).

[273] Evans 1909, 63; Przeworski 1939, 192, Taf. XVIII:5; Sandars 1963, 140, pl. 27:52; Kilian-Dirlmeier 1993, 49, Taf. 18:98; Yalçıklı 2006, 36, Abb. 4:4.; Horejs 2014, 266, 274, fig. 4:3.).

[274] Schaeffer 1956, 277–278, Fig. 124, Pl. X; Sandars 1963, 141, 153, Pl. 27:58.

[275] Wooley 1955, 276 AT/36/4, Pl. LXX).

[276] Pritchard 1980, 16, figs. 5:13, 52:10.

[277] Petrie 1917, 27, pl. XXXII:9; Sandars 1963, 153, pl. 27:60.

[278] Benzi 2005, 19–20; W.-D. Niemeier, B. – Niemeier, W.-D. 1997; Niemeier, W.-D. 1998, 36.

[279] Sandars 1963, 140–141; W.-D. Niemeier 1999; B. Niemeier 2014; Shalev 2004, Pl. 22:178–179; Benzi 2005.

feature a pommel at the end. Nevertheless their form suggest some kind of connection to Siana group. Another example of typologically similar finds could be observed in discovery of metal hoard in in Şarköy-Kozman Deresi Mevkii (Tekirdağ Province) in the European part of Western Turkey.[280] Within the hoard, there exists an unusual horned sword alongside a slender flanged-tanged dagger.[281] What sets this sword apart is its unique construction, as it is cast as a single, uninterrupted piece with no additional non-metallic components. The other item from Şarköy has been labeled by Hansen as a 'Canaanite' dagger.[282] It takes the form of a dagger with a tang reminiscent of the Siana group of swords from the Levant. Hansen suggested, perhaps based on the tang's shape, that there might be parallels between these items. The presence of these two items from Sarkoy in Western Turkey, with shared typological features resembling both Siana and Levantine swords, is of significant importance This discovery further supports the notion of substantial metal interactions on the Western Anatolian coast. Comparing the Levantine swords to the Siana group, notable differences in construction emerge. Levantine swords typically consist of two separate components: a blade with an extended tang and a handle featuring a non-metallic guard. These swords often include a pommel at the end. However, their overall form hints at a connection to the Siana group.

In summary, the Siana swords represent a unique blend of features, combining Levantine tang designs, non-Aegean midribs, and Aegean horn shapes. However, within this group, there are variations, with swords from Siana, Pergamon, and Pyli sharing more similarities than the Bodrum sword, which has commonalities with the Ialysos sword. The origin of these swords likely lies in the Aegean and Western Anatolia region, though definitive proof is lacking. Recent research indicates a pattern of local communities in this area combining diverse influences, not only in pottery but also in metalwork. The Siana swords exemplify this cultural fusion, suggesting that the Interface region had a distinctive approach to creating new products. Further exploration into typological irregularities in other sword groups within this region is warranted.

[280] Harmankaya 1995, 222–224, şek. 2:a–b, şek. 3:a

[281] Hansen 2005, 90.

[282] Hansen 2005, 90.

7.1.10. Interface swords

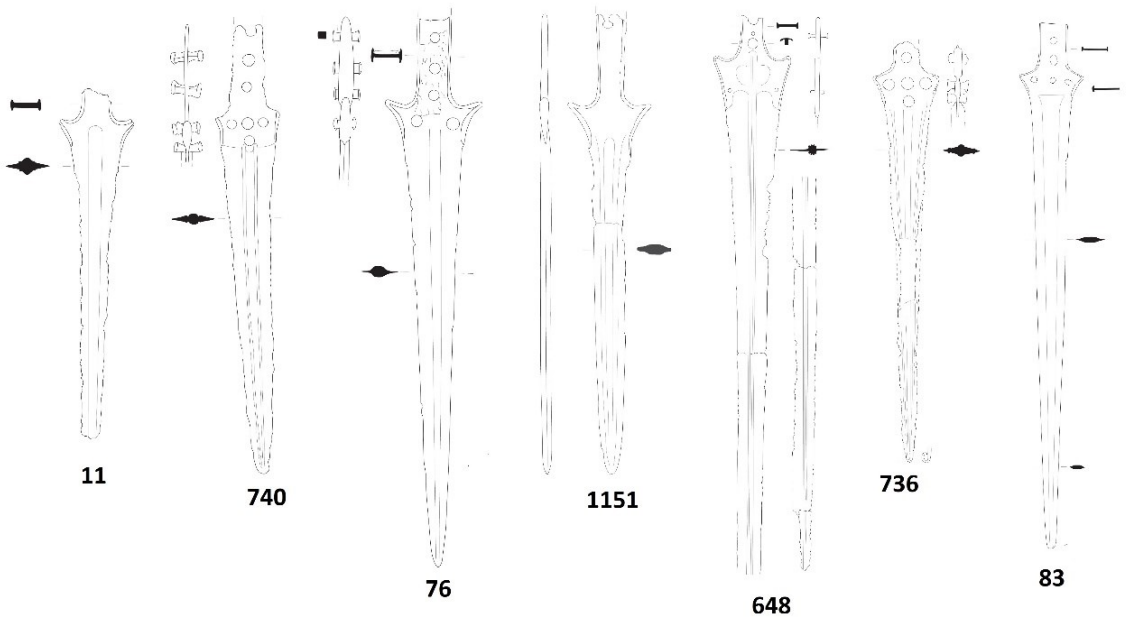

Fig. 4. Interface swords.

A distinctive group of swords (map 5), referred to as the 'Interface swords,' presents an intriguing blend of characteristics that seemingly align with the Aegean spectrum. However, these swords systematically differ from it and appear to amalgamate features from Sandars' Type B and C swords.[283]

Sandars was the first to provide a comprehensive discussion of these swords, distinguishing them from Karo's Type B while acknowledging their distinctiveness and some resemblances to the later horned Type C.[284] She suggested that they result from a combination of classical features from Type B and/or C, which could plausibly occur at trading stations, among other contexts.[285] Author of this work already discussed this group in more details in his paper.[286]

[283] Sandars 1961, 28.

[284] Sandars 1963, 122.

[285] Sandars 1963, 122.

[286] Roháček 2019b.

This group encompasses LBA swords from various regions, including the Dodecanese islands (specifically Rhodes, Kos, and Karpathos), Lesbos, and locations inland in Western Anatolia like Izmir and Balıkesir.

The first sword (Cat. 11; fig. 4, 11) of this group is reported from a chamber tomb at Amenomiloi-Makeli on the island of Karpathos.[287] The context of the tomb is dated LH IIIA–IIIB.[288] The sword exhibits damage, with both the handle and blade being broken, and no rivet holes are present. The hilt possesses flanges, while the midrib is raised, forming a pyramidal shape with a single thin line on each side. Although the sword includes horns, their design doesn't precisely match the typical "horned swords." Instead, they resemble the general shape of the shoulders seen in Type B swords. Melas has identified parallels from various locations, including Crete (Knossos and Chersonissos), Mycenae, Rhodes, and Kos.[289]

The second piece (Cat. 740; fig. 4, 740) has an unknown context and it origins in Kameiros on Rhodes.[290] The short sword presents an intriguing piece that can be classified as an Aegean Type B sword. It features a compact, straight blade with a slender midrib and a flanged guard. The hilt is secured by six rivets, with four arranged in a cross-shaped formation in the upper part and the remaining two on the handle. A broken-off hole for another rivet is visible at the end of the handle. Mee observed some similarities with a sword from the Shaft Graves at Mycenae but questioned its dating.[291] Benzi, on the other hand, proposed a probable date in LH IIIA for this piece.[292]

Within the swords cat. 740 the author of this work would like to point out to an interesting and potentially significant parallel that can be drawn with finds from Seyitömer Höyük in inland Northwest Anatolia. Several short swords/daggers from Seyitömer Höyük exhibit a similar design to the sword from Kameiros.[293] While their midribs are wider and flatter compared to the Rhodian piece, the flanged guard and the blade's shape appear to be identical. The swords from Seyitömer Höyük are associated with Level IV, dated to the 18th

[287] Charitonidis 1961-2, 69, Fig. 15, Pl. 26:12; Melas 1985, 151, 330–331, Fig. 139:C101, 140:C101; Kilian-Dirlmeier 1993, 46, Taf. 15:78

[288] Melas 1985, 28.

[289] Melas 1985, 151

[290] Sandars 1961, 28, Pl. 19:6; Mee 1982, 53; Kilian-Dirlmeier 1993, 38, Taf. 9:47; Benzi 2005, 20.

[291] Mee 1982, 53).

[292] Benzi 2015, 20.

[293] Bilgen 2011, 193, 195, Res. 280; Bilgen 2015, 105, Fig. 118

century B.C. through OSL analysis of ceramic samples.[294] Although the original context of the Kameiros piece remains unknown, it is almost certainly much later in origin compared to those from Seyitömer Höyük.[295]

The Third piece (Cat. 76; fig. 4, 76) was found on Cos island in Asklepeion.[296] It comes from possible graves located 'east of the Lapidarium'. In terms of design, this sword bears a resemblance to the horned Aegean Type C swords but with noticeable differences. Its flanged hilt is secured by five rivets and shows remnants of non-metallic covering. The shoulders are more pronounced and sharply curved compared to the previously discussed atypical swords. The blade itself is short and features a flat midrib. When the sword is compared to the majority of typical Type C swords, it stands out due to its notably shorter blade length.[297] The is assumed to be LH IIIA–LH IIIB.

Another Interface sword[298] (Cat. 648; fig. 4, 76) was discovered in Chamber Tomb 4 at Ialysos on Rhodes and was part of a rich burial assemblage dating to LH IIIA2. The tomb yielded various accompanying finds, including other weapons, jewelry, and pottery. The sword boasts an impressive length and occupies an intriguing place in terms of design, mixing the characteristics of Types B and C swords. While its shoulder design closely aligns with Type B (which is older then Type C), there is already a hint of the horned features characteristic of Type C. Although the tang is damaged, two rivet holes remain visible. A thin raised midrib adorned with four grooves. According to Jung and Mehofer this sword appears to adhere to the older design traditions of Mycenaean swords or at the very least pays homage to these traditions.[299] Kilian-Dirlmeier categorized it as part of her Type 1b of horned swords.[300]

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[294] Bilgen 2015, 8.

[295] The idea of author of this work is potential connections between Anatolia and the Aegean (and Near East). The Western Anatolian swords/daggers may have played a crucial role in the development of Karo's type B of Aegean sword, given that they predate the first shaft graves in mycenae by at least 100 years and strongly resemble the type B swords found in those graves.

[296] Sandars 1963, 145; Morricone 1975, 253, Fig. 198, 257, Fig. 204; Driessen – Macdonald 1984, 69, No. 20 (Ci); Kilian-Dirlmeier 1993, 43, Taf. 9:51.

[297] For Example Driessen and Macdonald Have Categorized this piece as A Sandars' Type C Sword (Driessen – Macdonald 1984, 69, No. 20).

[298] Maiuri 1926, 98, Fig. 15:18; Sandars 1961, 28; Benzi 1988, 60, Fig. 3, 2; Benzi 1992, 172, Tav. 177:A. T. 4/18; Kilian-Dirlmeier 1993, 45, Taf. 14:72.

[299] Jung – Mehofer 2009, 118.

[300] Kilian-Dirlmeier 1993, 45.

The fifth one discovered in Izmir (Cat. 736; fig. 4, 736).[301] It presents a medium-length weapon with an uncertain date due to its unstratified context. The sword from Izmir was found without clear archaeological context, having been unearthed in a construction fill near the Roman agora.[302] It features a central midrib consisting of three lines converging toward the tip, a characteristic seen in swords from Anatolia and the Near East (Boğazköy, Kastamonu, or Ras Shamra-Ugarit), and subsequently appearing in similar variations on swords belonging to the Siana group. Although the hilt is incomplete, it appears likely that not only the shoulders but the entire tang were flanged. The shoulders are secured with four rivets. The unique midrib shape places this sword in a category somewhere between Aegean and Near Eastern types, as noted by Sandars.[303] She already considered it atypical within her classification. Mee, on the other hand, identified similarities with regular Type B swords from the Shaft Graves in Mycenae and suggested a plausible dating to the Shaft Graves period.[304] Akyurt speculated that the sword might have originated from a grave and proposed an LH I date, connecting it to the group of Shaft Grave swords as well.[305] However, a later dating is also plausible, as Type B swords were in use on the Greek mainland from LH I until LH IIIA, as highlighted by Benzi.[306]

The sixth one (cat. 1151; fig. 4, 1151) is reported from Thermi on Lesbos.**[307]** It was Discovered within a settlement (rare for swords). Of all discussed Interface swords so far that combine Type B and Type C features, this one most closely resembles the appearance of Type C. Interestingly, Lamb, who excavated the sword, described it as atypical.[308] The shoulders bear a resemblance to the sword from Asklepeion (cat. 76). The hilt features flanges, and the midrib appears to have been flat. At the end of the handle, there is a section preserving remnants of one rivet hole. Date is LH IIIA2.

[301] Bittel – Schneider 1943, 200–203, 207–208, Abb. 3; Sandars 1961, 27–28, pl. 19:7; Akyurt 1998, 24–25, şek. 19:a; Benzi 2005, 20.

[302] Sandars 1961, 27–28,

[303] 1961, 27–28

[304] Mee 1978, 130

[305] Akyurt 1998, 24–25

[306] Benzi 2015, 20

[307] Lamb 1936, 207, Pl. 25:32.63; Sandars 1963, 146; Kilian-Dirlmeier 1993, 45.

[308] Lamb 1936, 207.

The sword from Balıkesir[309] (cat. 83; fig. 4, 1151), located in the Balıkesir Province, lacks a specific known context. It is assumed to date to LH IIIA2-IIIB. Currently housed in the Archaeological Museum Selçuk under inventory number 1/23/94, this sword has been referenced in. Although its exact origin is unknown, Yalçıklı compared this sword to examples from various regions, including Kastamonu, Boğazköy, Izmir, Tell el Ajjul, Atchana, Ras Shamra-Ugarit, and Mycenae. She dated it to the 14th or 13th century B.C. and considered it to be an indigenous product.[310] However, it still bears resemblance to Type B swords from Shaft Graves. Notably, the midrib is wider than that of a typical sword of this form, and the shoulders do not have a strictly triangular shape but rather exhibit curved sides.

These Interface swords, whether resembling Karo's Type B or Sandars' Type C, hint at distinct metallurgical practices in the region. While Aegean swords have been extensively studied, Anatolian swords, despite their early origins, have received less attention. Western Anatolia shows potential for local sword production traditions, as suggested by scholars.[311] This hypothesis is further supported by Yalçıklı's work on swords from Balıkesir and Bodrum. These non-conventional Interface swords, though not a unified group, likely represent local production influenced by multiple cultures, similar to ceramics. Viewing Sandars Type B/C swords from this angle can open doors for further reconsideration, as it can for Siana swords. By LH IIIB, shorter swords became prevalent in the Aegean, and Types E, F, G, and the local Siana Type may have followed suit under Eastern influences.

7.1.11. Uncertain Type

Three more example of fragmental swords were recorded in the area, however theirs condition makes them difficult to classify.

The remaining fragment of sword Cat. 975 from Pigadia on Karpathos represents a narrow, slender blade with a curved raised ridge.[312] Its exact dating is uncertain but falls within LH III, unfortunately the context is unknown. According to Melas, it may be a

[309] Yalçikli 2006, 31, Abb. 1:1, 2:1

[310] Yalçikli 2006, 39, 40).

[311] Ünal – Ertekin – Ediz 1991; Ünal 1999, 217–221.

[312] Melas 1985, 217, fig. 26.

fragment of the oldest Aegean Type A sword, with parallels primarily found in Crete and Lefkada. [313] However, a secure identification is impossible.

From Panaztepe comes a blade fragment, Cat. 879 (fig. 1, 879).[314] It has a burial context. This long, slender point features a single ridge and a flat profile adorned with spirals and dots on the central ridge. According to Ersoy, the blade belonged to a sword of Type C, D, or G. Frequent parallels in decoration exist in Crete and the Argolid. A similar decoration is found on a spearhead from the famous Dendra grave. However, the ridge slightly flattens towards the point, which Ersoy considers non-Aegean, having origins in the eastern Mediterranean, Levant, and Palestine. It is dated to LH IIIA.[315]

The last piece consists of hilt and guard fragments, Cat. 113, from Besik-Tepe near Troy.[316] Basedow believes they belonged to a sword of Type D and dates it to LH IIIA2.[317]

In summary, the swords are often found in archaeological contexts from the transition period and often bear different typological features from the contemporary Mycenaean centers, particularly in the Dodecanese region, specifically Rhodes and Kos. These differences in typology and quantity suggest the existence of local production centers. Considering pottery, burial practices, and settlement elements, some swords indicate a local transformation of products from central Aegean locations. In terms of typology, they may appear similar to those in other parts of the Aegean region but exhibit minor variations in design and appearance.

[313] Melas 1985, 151.

[314] Ersoy 1988, 58, 59, fig. 3; Erkanal-Öktü 2018, 113, Taf. 114; Taf. 352.

[315] Ersoy 1988, 61–64.

[316] Basedow 2000, 122, taf. 95, fig. 1.

[317] Benzi 2005, 19–20.

7.2. Spearheads

Spears were a widely used weapon during the Bronze Age. Harding dates the introduction of spears to the Aegean region around 2000 B.C..[318] Bouzek specifies that the first spears with shafts in the Aegean can be dated to around the Middle Minoan or Late Minoan III periods.[319] These spears had long shafts and long blades. Parallels to these spears have been found in Anatolia and the Caucasus. Spears may have been present in the Aegean even earlier, as Branigan suggests that some dagger blades in the Early Bronze Age could have served as spearheads.[320] In Mycenaean shaft graves, long and massive leaf-shaped spearheads are common at the beginning of the Late Bronze Age. From LH IIIA onwards, shorter spearheads with shorter shafts begin to appear. Their presence continues alongside longer spearhead types until the early Iron Age.[321]

This work follows Avila's classification of spearhead findings.[322] Additionally, spears are extensively discussed by Höckmann.[323] Typologically, spears from the Western Anatolia onwards appear only from Avilas Type IV, with the preceding three types seemingly absent in the findings. This kind of metal weapons (map 6) was found in 80 specimens. More than a half of them is from burial context (46). 19 spearheads were recovered from settlement. Bronze spearheads were alrealy dealt with by the author in his Master thesis[324] and his earlier papers.[325]

[318] Harding 2004, 162.

[319] Bouzek 1985, 41.

[320] Branigan 1968.

[321] Avila 1983, tafel 63.

[322] Avila 1983.

[323] Höckmann 1980.

[324] Roháček 2015, 42 – 49.

[325] Roháček 2018a, b.

7.2.1. Type IV

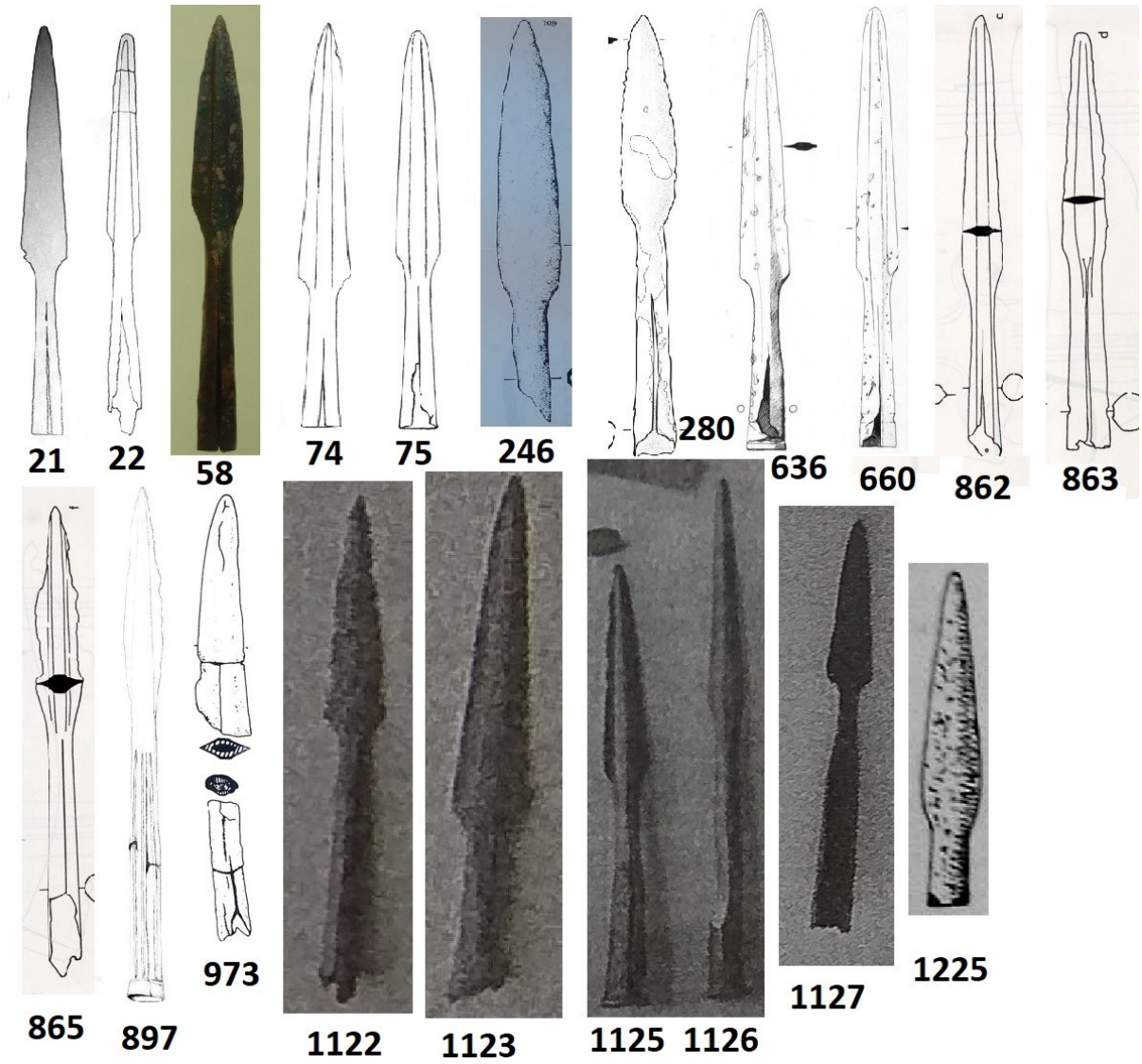

Fig. 5. Spearheads, Type IV.

This type is characterized by a long, narrow, leaf-shaped blade with a round base, and its origin is attributed to central and southern Greece and Crete. The average length of the entire point is 30 cm, and its dating falls within the LH IB-LH IIIA1 period.[326] From the area, 22 finds are known.

Ten pieces were recoverd from graves, all except one come from Dodecanese (Pylona, Ialysos, Asclepeion, Musgebi). Example cat. 863 (fig. 5, 863) has a leaf-shape blade with a

[326] Avila 1983, 24–26.

socket, quite typical for the type.[327] The only piece outside Dodecanse is the one from Panaztepe (Cat. 897; fig. 5, 897). It has leaf-shaped blade with a flat raised midrib and a a longer soclek socket.[328] Four other come from unknown context (three from Dodecanese, example Cat. 973 (fig. 5, 973). From Pigadia on Karpathos which is typical long leaf-shaped tip with a pommel.)[329]

There is also quite substantial bumber of pieces from settlement context. There are many finds in inland Western Anatolia. Two spearheads from Beycesultan (Cat. 246[330] and 280[331], fig. 5, 246, 280) have Socketed leaf-shape rounded spearhead, circular shaft. Another settlement spearhead is the one from Troy (Cat. 1225; fig. 5, 125).[332] It has a broken socket. with shaft hole. End of shaft is broken. Five more settlement specimes are from Seyitomer Hoyuk, three of them come from general contexr settlement of the site (Cat. 1122, 1123; fig. 5, 1122, 1123)[333] and from the Hoard 1 (Cat. 1125, 1126; ; fig. 5, 1125, 1126).[334] It should be noted that some pieces from Inland Western Anatolia are slightly different from Dodecanesian example which are more connected with Aegean influence. However, the Anatolian pieces are still considered by author of this work as Type IV.

The closest parallels for this type are found in Greece, particularly in Crete. Cretan tips are wider and decorated with engraving on various parts of the tip.[335]

[327] Akyurt 1998, 32, şek. 35, d.

[328] Erkanal-Öktü 2018, 114, Taf. 55; Taf. 353.

[329] Melas 1985, 217, fig. 26.

[330] Mellaart - Murray 1995, 134, 159, fig. 0.9, 109.

[331] Erdem 2015, 199.

[332] Schmidt 1902, 255, 256, fig. 6447.

[333] Bilgen 2011, 318, 319, fig. 317.

[334] Bilgen 2011, 381-382, fig. 19.

[335] Avila 1983, pl. 8, 9, 10; Melas 1985, 152.

7.2.2. Type Group C

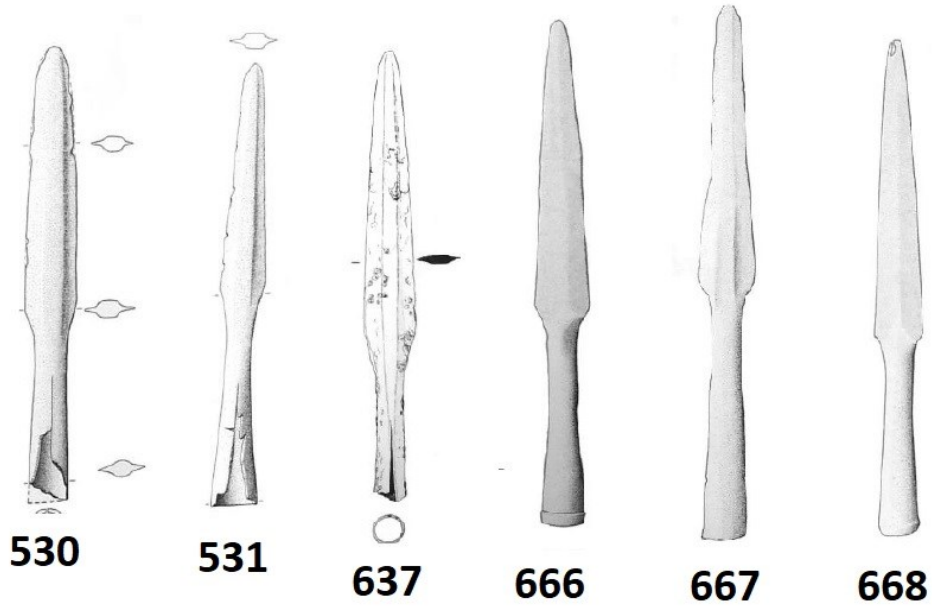

Fig. 6. Spearheads, Type Group C.

The type series C, as defined by Avila, is primarily considered a subtype of Type IV spears, especially in variations of the tip and base, often very subtle. Many spears may be more appropriately classified as part of type Type IV rather than Type Group C, and the precise attempt to differentiate them can be confusing. However it is interesting to include this group in this work, especially because Avila recognized this group of spearheads from Dodecanese and notice slight differences from similar specimen on Crete and Mainland Greece. [336] They are characterized by differently shaped leaf-shaped blades, flat or with a raised central rib.

Six pieces were found. All of them from burial context. As example there are two spearheads from graves in Eleona on Cos (Cat. 530, 531; fig. 6, 530, 531).[337] The Cat. 531 The pommel, although damaged, widens at the end, and the blade is similar to Type IV.

[336] Avila 1983, 47, pl. 10–11.

[337] Cat. 530: Morricone 1965-66, 84, fig. 63, in the middle; 87, fig. 66; Avila 1983, 28, pl. 11, 62A. Cat. 531: Morricone 1965-66, 84, fig. 63; 87 fig. 65; Avila 1983, 28, pl. 11, 63.

Four more spearheads origin from Ialysos on Rhodes (Cat. 637, 666-668; fig. 6, 637, 666-668).[338] Cat. 637 is securaly dated to LH IIIA1. It has a leaf-shaped blade with a flat central ridge and a pommel. The base of the blade smoothly extends from the pommel. Cat. 668s dating range is LH IIIA-C. It has a slim blade, proportional in size to the pommel and indistinct central ridge.

It should be noted that Type Series C is primarily found in the lower part of the coast, on Rhodes and Kos. It may represent local metallurgical production based on the Cretan-Mycenaean Type IV. Avila also compares three tips from Thebes to Type Series C, although they are not identical to those from the Dodecanese.[339]

7.2.3. Type V

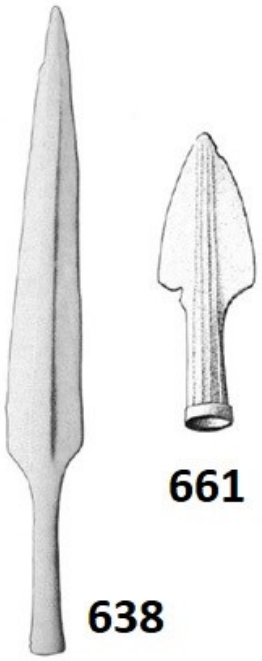

Fig 7. Spearheads, Type V.

Type V derives from Type IV, with a small and short base and a considerably widened blade at the base, with less angular notches than the previous types. Characteristic is the grooving of the midrib, which starts from the end of the base to the tip. Most artifacts of this type come

[338] Cat. 637: Jacopi 1930-1931; 297, fig. 43; Benzi 1992, 174, 383, pl. 178, h. Cat. 666: Jacopi 1930-31, 344, fig. 93; Avila 1983, 27, pl. 10, 60. Cat. 667: Jacopi 1930-31, 344, fig. 93; Avila 1983, 27, pl. 10, 61. Cat. 668: Jacobi 1930-31, 263, fig. 9; 267, č. 14; Avila 1983, 28, pl. 11, 62; Benzi 1992, pl. 179, e.

[339] Avila 1983, pl. 10.

from the Argolid. [340] From Rhodes (Ialysos), there are two atypical representatives, both recorded from burial context:

Cat. 638[341] (fig. 7, 638) spearhead dispose Wide, large blade with a flat raised ridge. The pommel is small and short in proportion to the blade. The date is LH IIIA.

The form of cat. 661[342] (fig. 7, 661) consists of little leaf-shaped (almost hearth-shaped spearhead) and grooves going from base of shaft continuing on midrib towards tip. Its date is assumed LH IIIA2-B.

As it was previously mentioned, most parallels come from the Argolis, and two Dodecanese examples represent unique variations of this type. [343]

[340] Avila 1983, 35–37.

[341] Furtwängler - Löschke 1886, pl. D, n. 16; Zervos 1920, 81, fig. 163; Walters, Catalogue 2, n. 20; Avila 1983, 37, pl. 13, 81.

[342] Maiuri 1923-24, 111, fig. 32; Avila 1983, 37, pl. 13:82A; Benzi 1992, 243, pl. 179:a.

[343] Avila 1983, 35–37, pl. 10.

7.2.4. Type VI

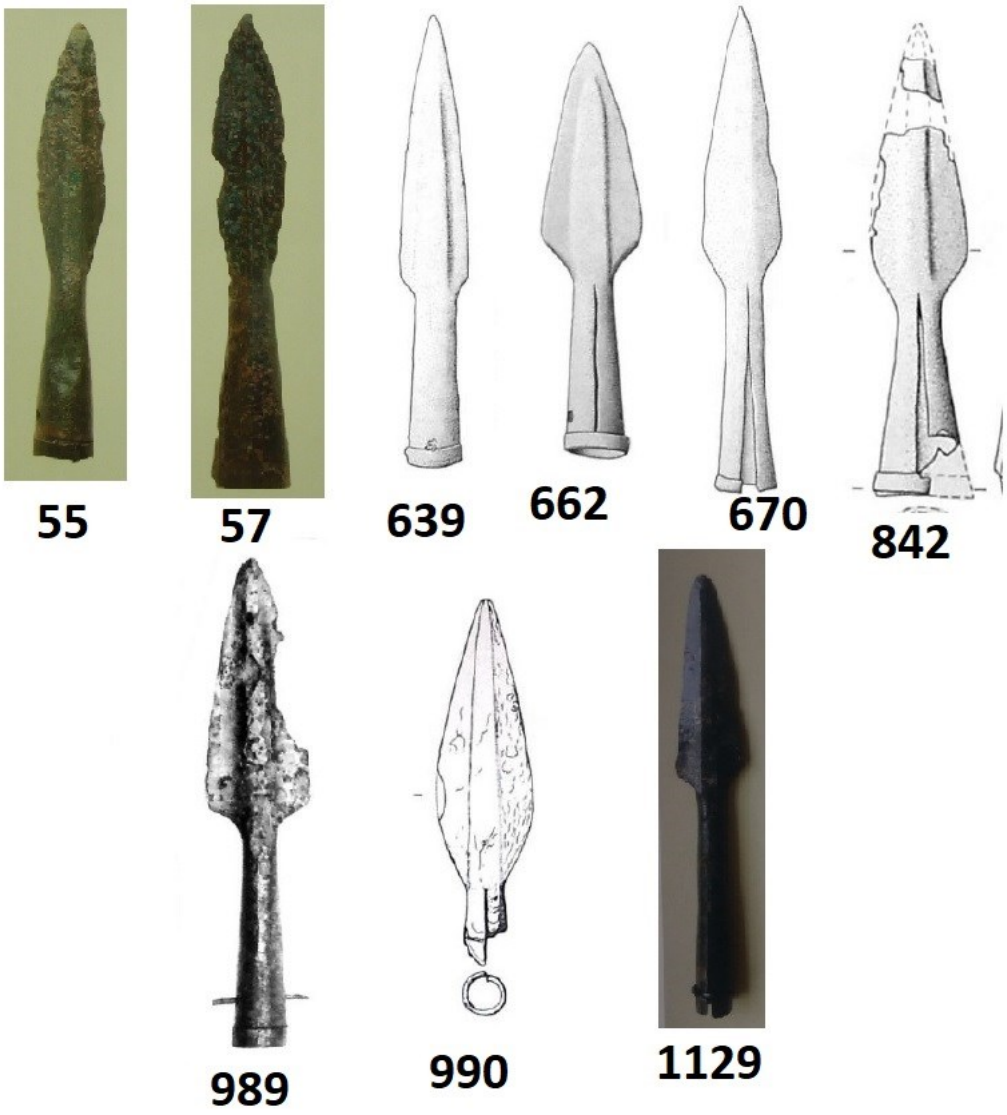

Fig. 8. Spearheads, Type VI.

The homeland of this type is likely in northern Peloponnese. It was used approximately from LH IIIA, and some specimens are dated as late as LH IIIC. The tips range from shorter with a proportionately sized round base to wide, curved leaf-shaped tips. Most have a strong central midrib.[344] 9 pieces were found in total, six of them come burial context of Dodecanese, 4 from

[344] Avila 1983, 38–40, pl. 14.

Ialysos and two from Pylona on Rhodes. Example is cat. 639 (fig. 8, 639) with a leaf-shaped blade with a significantly wide ridge, and a wider socket.[345]

One from Ialysos Tomb 27[346] (cat. 662; fig. 8, 662) is dated to LHIIA2 nad has a smaller hearth-shaped blade with wide midrib that does not continue completely toward the end of the tip.

The is another one from Langada on Cos (ex. Cat. 842; fig. 8, 842).[347] It is a narrow, short, fragmented leaf-shaped spearhead with an equally short pommel nad raised flat midrib. The one from Langada is dated to LH IIIA. Two other come from unknown context in Archontiki on Psara (ex. Cat. 55; fig. 8, 55)[348] and one from settlement context of Seyitömer Höyük (Cat. 1129; fig. 8, 1129).[349]

The distribution of this type is abundant on the Greek mainland (Mycenae, Epidaurus). Dodecanese finds constitute a significant portion of all known specimens and are not significantly different from those on the mainland. Nevertheless, they could be evidence of local production.

[345] Jacopi 1930-31, 344, fig. 95; Avila 1983, 39, pl. 14, 91.

[346] Maiuri 1923-24, 153, fig. 76; Avila 1983, 39, pl. 14:89; Benzi 1992, 290, pl. 179:b.

[347] Morricone 1965-66, 120, fig. 102, on he right, 121, fig. 103; ; Avila 1983, 39, pl. 14, 92.

[348] Deligiorgi 2006, 146, first from the top.

[349] Bilgen 2011, 193, 195, fig. 280; Bilgen 2015, 105, fig. 118, first from right.

7.2.5. Type VII

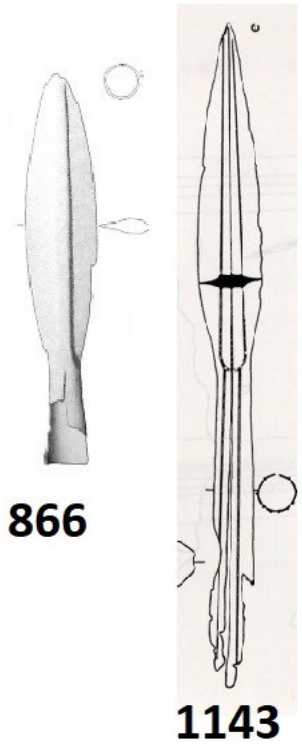

Fig. 9. Spearheads, Type VII.

Avila defines Type VII as a tip with an oval leaf-shaped tip with a short round base. It is dated from LH IIIB, with a higher occurrence in LH IIIC1-2, main examples occur from in northern Peloponnese and central Greece. The average length of the tip is 25 cm.[350]

There are two example both from the coast-Dodecanese. One of them, a spearhead from Siana (Cat. 1143; fig. 9, 1143) on Rhodes, which came together with a sword and a knife) has rounded leaf-shaped form with a short pommel.[351] Sandars classified this specimen within the group Siana.[352] Unfortunately, the group of Siana sword, spearhead and a knife had no secure context. However, later Avila defined the spearhead within his Type VII. It was originally dated, such as the entire group Siana, to LH IIIB-C. Nowadays, author of this work would suggest earlier possible date LH IIIA2-B, at least for swords and knives of Siana.

[350] Avila 1983, 46–50.

[351] Sandars 1963, 140, 152, pl. 27, 55; Avila 1983, 48, pl. 16, 104.

[352] Sandars 1963, 140.

group.[353] Nevertheless, similar date could have had the second example of this type, a spearhead from Tomb 1 in Musgebi (Cat. 866; fig. 9, 866).[354] It is a similar rounded leaf-shape blade with a socket.

In addition, this group has parallels mainly in northern Peloponnese and central Greece, near Lefkada and Ithaca. Compared to them, the spear from Siana is quite similar but smaller with a wider blade.[355]

[353] Roháček 2019b.

[354] Akyurt 1998, 32, şek. 35, g.

[355] Avila 1983, pl. 16.

7.2.6. Type Group E

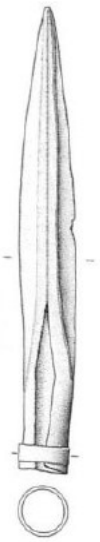

Fig. 10. Spearheads, Type Group E.

This series is characterized by a small leaf-shaped tip, with its convex and hollow central rib serving as a base from which the blade protrudes. Its distribution is primarily on the Peloponnese and the eastern Greek mainland. The approximate period of appearance is LH IIIA1-2.[356]

Only one piece recognized Avila from Langada cemetery (Cos, Cat. 843; fig. 10, 843).[357] The spearhead from Tomb 46 is dated to LH IIIB.A Spearhead was found alongside a sword, a razor, and knife as part of the grave equipment of the tomb. The unique leaf-shaped tip stands out in its appearance and construction compared to other spearheads from the same group. It was not cast as a single piece but is joined together on one side of the central rib, indicating the presence of a crack. Additionally, it is dated as late as LH III B, which is younger than the other specimens from this group. It is very different form and it does not resemble any other. Spears with a similar head and central rib construction are found in Messenia and Knossos.[358]

[356] Avila 1983, 34–35.

[357] Morricone 1965-66, 212-214, fig. 226, 228; Avila 1983, 35, pl. 12, 75.

[358] Avila 1983, pl. 8.

7.2.7. Group of various forms

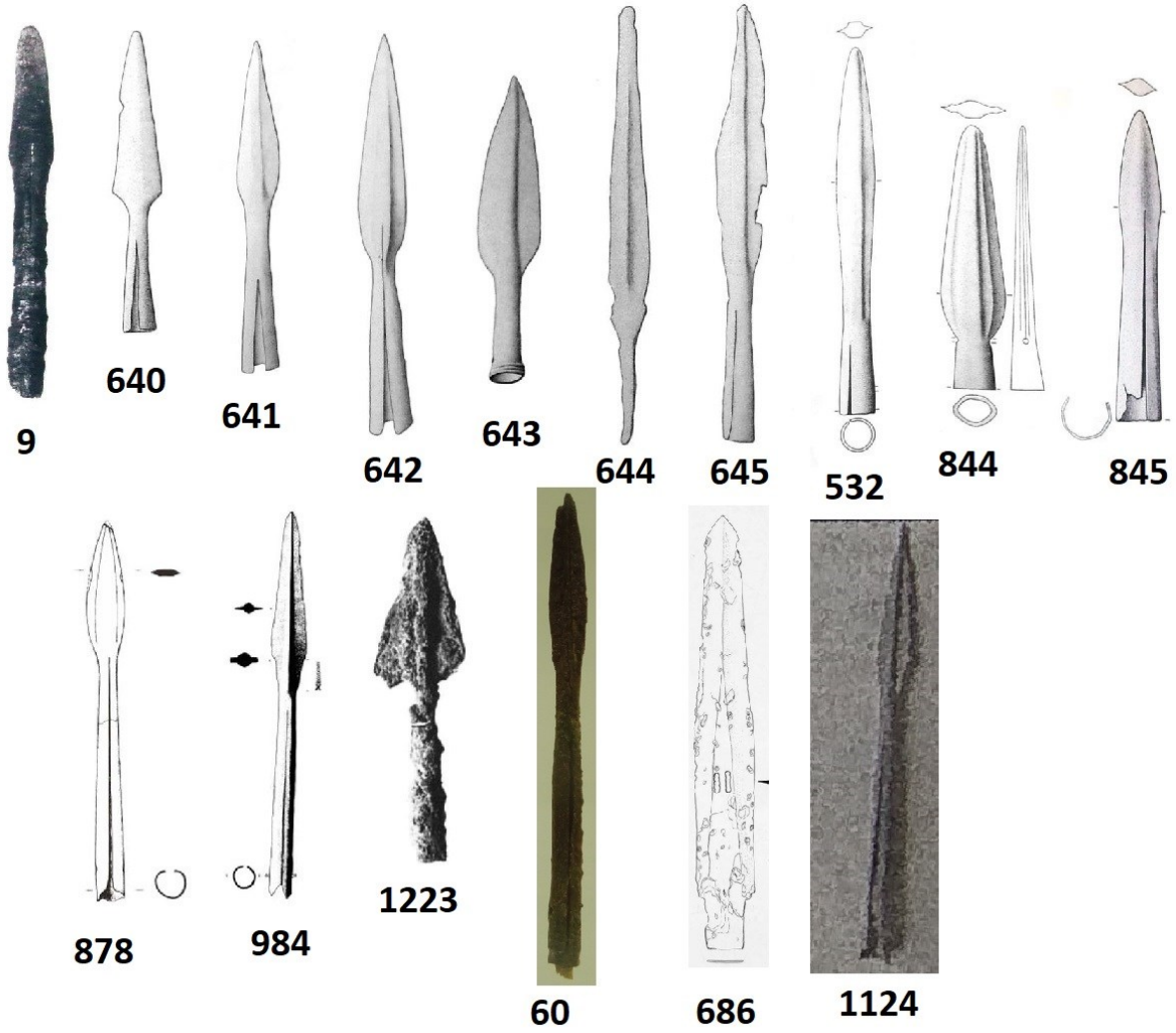

Fig. 11. Spearheads, Group of various forms.

Precise typology, especially for spearheads, is challenging and difficult-to-define. Therefore, some of the spearheads were divided by Avila in several groups. It includes types that Avila refers to as various spears with long, narrow leaf-shaped tips and short socket (*verschiedene lanzenspitzen mit langem schmalem Blatt und kurzer Tülle*)[359], another group of spears of

[359] Avila 1983, 40.

various forms[360], and a group of variations.[361] Author of this work decided to simplify and place all these types into a one major group named Group of various forms.

There are 15 specimens from the coast. Dozen of them come from the Dodecanese, mostly from cemeteries (7 finds), the rest have a unknown context (but they come from Ialysos site). Three more specimens are known from the Anatolian coast. One is from Panaztepe (grave), Second one from Archontiki in Psara (Cat. 60; fig. 11, 60)[362] without a context and the third one is from settlement Troy. Only one piece come from settlement context in Seyitömer Höyük.

As an example there is the spearhead from the site Anemomiloi-Makeli on Karpathos (Cat. 9)[363], found together with a sword, a spear, a razor, and dagger. It has a short leaf-shaped tip with a disproportionately long socket. It is dated within the LH IIIA1–IIIB. Melas compares this piece with those from Crete, Kos, and Cyprus.[364]

Another spearhead (Cat. 640; fig. 11, 640)[365] from Ialysos is labeled by Avila as a combination of Type IV and Type VI.[366] It is designed as square-shaped leaf-shaped head without a pronounced midri and the socket is quite long.

Third spearhead (Cat. 644; fig. 11, 644)[367] from Ialysos represents a unique type with a thin tang instead of a socket. Unfortunately, the context is unknown. Similar spears are found in Cyprus (spearheads with a tang, resembling the Near Eastern daggers with holes).[368]

An important piece is from Cos (Cat. 844; fig. 11, 844)[369], grave no. 21 in Langada. The short blade with a rounded end, a short shocket, and an unusually protruding and rounded midrib with two smaller ones on the sides make it stand out. It is dated to LH IIIC1. Sandars suggested Balkan origins based on the midrib's grooves and compared it to examples in Romania.[370] Bouzek refers to this piece as an Aegean product influenced by spearheads

[360] Avila 1983, 54.

[361] Avila 1983, 73.

[362] Deligiorgi 2006, 147.

[363] Melas 1985, 330, 331, fig. 139, 140; Avila 1983, 134, pl. 34, 874.

[364] Melas 1985, 152.

[365] Furtwängler – Löschke 1886 pl. D, n. 10; Walters, Catalogue 2, č. 23; Avila 1983, 56, pl. 17, 121.

[366] Avila 1983, 56.

[367] Furtwängler – Löschke 1886, pl. D, n. 3; Avila 1983, 79, pl. 22, 162F.

[368] Catling 1964, pl. 12.

[369] Morricone 1965-66, 26, 137, fig. 122; 140, fig. 125; Avila 1983, 61, pl. 18, 129.

[370] Sandars 1963, 53–55.

Europe.[371] Jung distinguishes it from Mycenaean and East Mediterranean spears in terms of casting. He finds identical parallels only in northern Italy and Greek Achaea and associates this type with the Urnfield culture.[372] He suggests it is more likely an import from Europe, brought by its users, probably mercenaries from the LH IIIC period.[373]

Spearhead (Cat. 878; fig. 11, 878) from Panaztepe on the Turkish side comes from an unknown grave.[374] The leaf-shaped blade, with its wider and flat midrib and short shocket is dated to LH IIIB. It is decorated with small geometric engravings. Ersoy notes that this spear exhibits unusual elements for Aegean with its dimensions and proportions resembling types from shaft graves and Avila's Type II, even though Type II was much older than LH IIIB. It might be more related to loose inspiration or a connection to the older Type II, which is otherwise not present on the coast. On the other hand, the decoration is different and is similar, or directly identical, to a knife with incised decoration which also comes from Panaztepe. It is believed that the spear and the knife were made in the same workshop probably located somewhere in western Asia.[375]

The one from Seyitömer Höyük (cat. 1124; fig. 11, 878)[376] resembles the pieces from this group from Panaztepe, Pyli and Psara.

[371] Bouzek 1985, 139, fig. 68.

[372] Jung 2009, 73.

[373] Jung 2009, 75.

[374] Ersoy 1988, 58, 59, fig. 3, 3; Erkanal-Öktü 2018, 114, Taf. 114; Taf. 352.

[375] Ersoy 1988, 67–68.

[376] Bilgen 2011, 318, 319, fig. 317, third from left.

7.2.8. Minoan Long Thin Type a socket

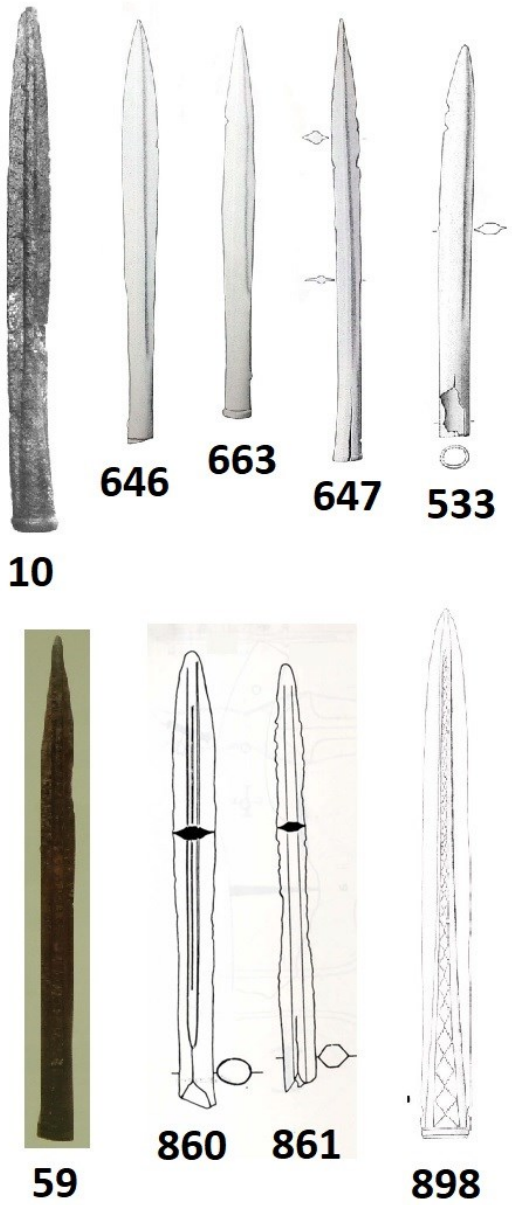

Fig. 12. Spearheads, Minoan Long Thin Type a socket.

This type Avila defines by its long, narrow, and elongated leaf-shaped head with a very short socket. The origin of this type is from Crete, dating back to the MM period.[377]In Western Anatolia, 9 pieces was found. Seven of them are from the Dodecanese, found in graves and

[377] Avila 1983, pl. 32, 33.

tombs except one specimen from Ialysos of uncertain context There is one more from a grave (Psara) and a very interesting piece from a grave in Panaztepe.

From Anemomiloi-Makeli on Karpathos comes a spear (cat. 10; fig. 12, 10)[378] from a grave. It has a long, narrow leaf-shaped tip with a thin central midrib and an undistinguished socket. According to Melas, this spear is typical of post-palatial Crete and dates it to LH IIIA1–IIIB.[379]

Another example (Cat. 533; fig. 12, 533)[380] from Eleonas on Kos (Grave no. 4 or 5) does not differ significantly from other examples; only its sides are not nearly as rounded, and the edges of the blade are almost parallel.

Another examples come from Ialysos (Cat. 646, 647, 663; fig. 12, 646, 647, 663)[381] and Musgebi (Cat. 860, 861; fig. 12, 860, 861).[382] Compared to the Cretan spears, the Dodecanese spears exhibit simpler craftsmanship, smaller proportions, and a different central rib.[383] They could have been produced by a local workshop under Cretan influence. In comparison with the Cretan specimens of this type, the Dodecanese spearheads slightly differ especially midrib is more „simple".[384]

Quite interesting example is the spearhead from Panaztepe from Grave Ğ (Cat. 898; fig. 12, 898).[385] It has narrow blade with a high and flat midrib. The midrib is decorated with incised zig-zag lines going along the entire lenght of the midrib, The blade has a very short socket. Erkanal-Oktu considers this piece as rather Avilas Type III[386] but author of this work classifies this piece as a Long Minoan type with an interesting decoration.

In neighbouring area of Panztepe, on island of Psara near Chios, from a Tomb context, there i one last piece with prolongued narrow blade with very short socket (Cat. 59; fig. 12, 59).[387]

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[378] Melas 1985, 330, 331, fig. 139, 140; Avila 1983, 134, pl. 34, 873)

[379] Melas 1985, 152.

[380] Morricone 1965-66, 83, fig. 61-62; Avila 1983, 133, pl. 33, 868.

[381] Cat. 646: Furtwängler – Löschke 1886, pl. D, n. 4; Avila 1983, 133, pl. 32, 862. Cat. 647: Furtwängler – Löschke1886, pl. D, n. 5; Sandars 1963, 149, pl. 24, 25; Avila 1983, 133, pl. 32, 864. Cat. 663: Maiuri 1923-24, 231, fig. 147; Benzi 1992, 359, pl. 178, g; Avila 1983, 133, pl. 32, 863.

[382] Cat. 860: Akyurt 1998, 32, şek. 35, a. Cat. 861: Akyurt 1998, 32, şek. 35, b.

[383] Avila 1983, 32–33.

[384] Avila 1983, pl. 32–33.

[385] Erkanal-Öktü 2018, 114, Taf. 20; Taf. 352.

[386] Erkanal-Öktü 2018, 114.

[387] Deligiorgi 2006, 147.

This group of Aegean spearheads show another strong Aegean influence in Dodecanese and along southwestern anatolian coast.

7.2.9. Spikes

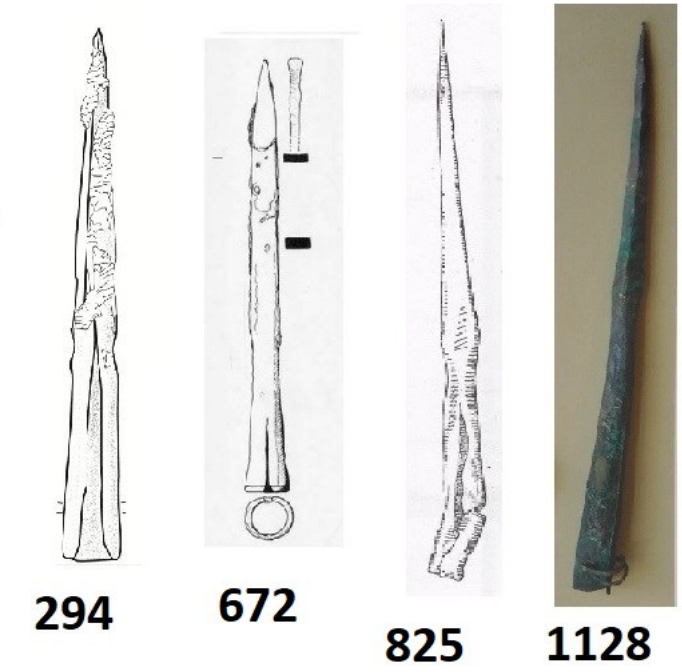

Fig. 13. Spikes.

Intersting group of four specimes is the one named by author of this work as „Spikes“. The type is caracterized by a narrow head, reminding a leaf-shape head but it is almost a same widht as its socket. In total four specimens. Three come from settlement of Beycesultan (cat. 294; fig. 13, 294)[388], Kusura (cat. 825; fig. 13, 825)[389] and Seyitömer Höyük (cat. 1128; fig. 13, 1128).[390] The fourth one (cat. 672; fig. 13, 672)[391] comes from from a grave at Rhodes island, however its belonging to this group is for discussion. The Seyitömer Höyük (cat.

[388] Erdem 2015, 209.

[389] Lamb 1937, 258, 259, fig. 21, 1.

[390] Bilgen 2015, 105, fig. 118, first on left.

[391] Benzi 1992, 175-176, pl. 179, c.

1128) specimen is securely dated to MBA (18th century), the others belong to LBA, only the pieces from Ialysos (cat. 672) dates to range LH IIIA1-IIIC.

7.2.10. Short spikes

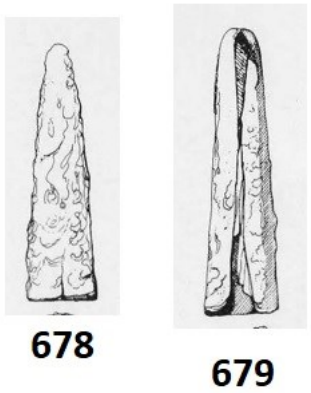

Fig. 14. Short spikes.

The types form is a short pointy head with a tip and short socket. There is no distiction between the head and the socket. There are two examples from Western Anatolia. Both come from graves in Ialysos on Rhodes[392] (Tomb 17, Cat. 678; fig. 14, 678), dated LH IIIA1-IIIC; and (Tomb 43, Cat. 679, fig. 15, 679) dated tp LH IIIA-C. [393] They are the only known representant of this type from Western Anatolia so far.

[392] Maiuri 1926, 127; Benzi 1992, pl. 181:b.

[393] Maiuri 1926, 199; Benzi 1992, pl. 181, c.

7.2.11. Unclear

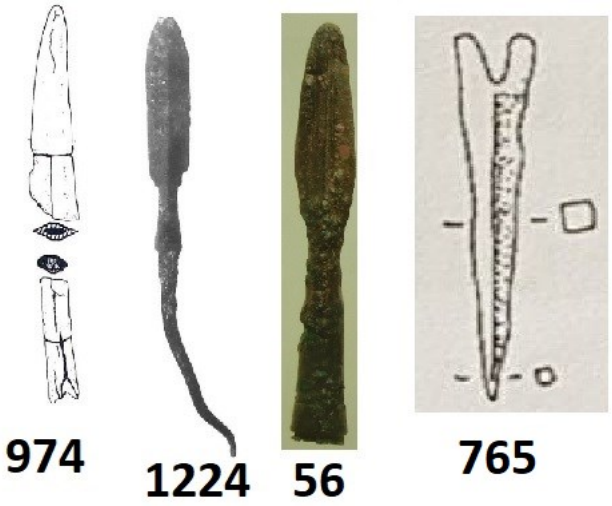

Fig. 15. Spearheads, uncertain types.

This group represents a unique finds of spearheads which cannot be safely classified with any group of type. It consists of seven spearheads. Majority come from settlement context from Westenrn Anatolia: three pieces from Beycesultan (Cat. 245. 247, 270)[394], one from Kulluoba (Cat. 765; fig. 15, 765)[395] and one from Troy (Cat. 1224; fig. 15, 1224).[396] Another specimen from burial Context is from Archontiki on Psara (cat. 56).[397]

The spearhead (Cat. 974)[398] comes from Pigadia on Karpathos with an unknown context. The fragmentary remains of the blade and a socket only reveal the raised midrib. The blade likely had a leaf-shaped form. It is broadly dated to LH III. Melas compares it to parallels from Knossos, Mallia, Gournia, Kos, Rhodes, and Mochlos.[399]

An interesting LH IIIC example comes from Troy (Cat. 1224; fig. 15, 1224), level VIIa, marked by Korfmann as a javelin or throwing spear. The Spearhead, from settlement context resembles a knife with a socket/or handle from which a long tapering, and tang emerges. It comes from

[394] Cat. 245: Mellaart – Murray 1995, 134, 104. Cat. 247: Mellaart – Murray 1995, 134, 110. Cat. 270: Erdem 2015, 192.

[395] Efe and Fidan 2006, 43, fig. 6.

[396] Korfmann 1995, 24, fig. 21.

[397] Deligiorgi 2006, 146, second from the top.

[398] Melas 1985, 217, fig. 26.

[399] Melas 1985, 152.

the layer of Troy VIIb, dated to LH IIIC. The long, thin tang has many parallels in the east; finds of arrows from Bogazkoy and Alacahoyuk have a similar tang but the blade from troy is unique.[400] The closest in shape are the arrows from the Samsun province on the Black Sea coast in Turkey.[401] The author of this paper would also suggest the possibility that this piece could rather be considered as a special sort of arrowhead or some other kind of a "missile".[402]

[400] Erkanal 1977, pl. 18.

[401] Bilgi 2005, 134, fig. 10, 11, 12.

[402] It has the size of larger arrow but it is too small to be a spear. This specimen is on exhibition in the Archaeological Museum in Çanakkale.

7.3. Daggers

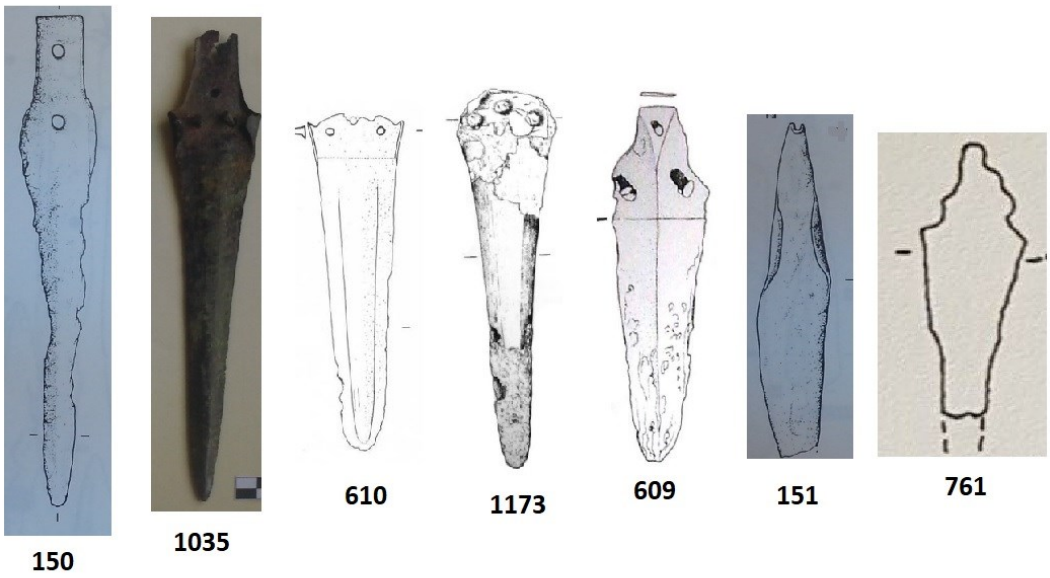

Fig. 16. Daggers.

In total 16 examples of daggers is known from Western Anatolia (map 8). One dagger is from burial context. Majority of this category was found in settlement context (14 pieces, Beycesultsn, Seyitömer Höyük, Küllüoba, Troy). The context of one dagger is unknown.

Among the daggers there is one (cat. 609; fig. 16, 609)[403] found in Rhodes (Ialysos), originating from grave no. 3. By the design of the blade, tang, and arrangement of rivet holes, it resembles type B swords. Benzi places its origin in Cyprus, where similar types have been found since LC II. An example from Rhodes dates to LH IIIA1.[404]

Another of the Rhodian daggers is (cat. 610; fig. 16, 610) from Ialysos. [405] With its flat shape, raised midrib, and two rivet holes, it connects to older types. Benzi considers this piece uncertain regarding dating and typology.[406]

[403] Benzi 1992, 173, pl.181, a.

[404] Benzi 1992, 173.

[405] Benzi 1992, 173, pl.181, u.

[406] Benzi 1992, 173.

Interesting is a group of daggers were discovered Seyitomer Hoyuk.[407] They strongly resemble a little version of Aegean Type B swords. Therefore, author of this work marks them within this type. Example (cat. 1032) has a blade narrowing toward tip with wide flat midrib. The Guard and the handle dispose of few rivets. This description would be the same for other daggers from Seyitomer Hoyuk.[408]

Two more daggers of Type B comes from Beycesultan. Example (cat. 150; fig. 16, 150) disposes of flanged hilt and a blade with two rivet holes.[409]

[407] Bilgen 2011, 478-479, fig. 308.

[408] For possible connection between these daggers and Aegean Type B swords see chapter Interface sword, cat.740 (Kemairos, Rhodes).

[409] Mellaart – Murray 1995, 134, 158, fig. 0.8, 106.

7.4. Arrowheads

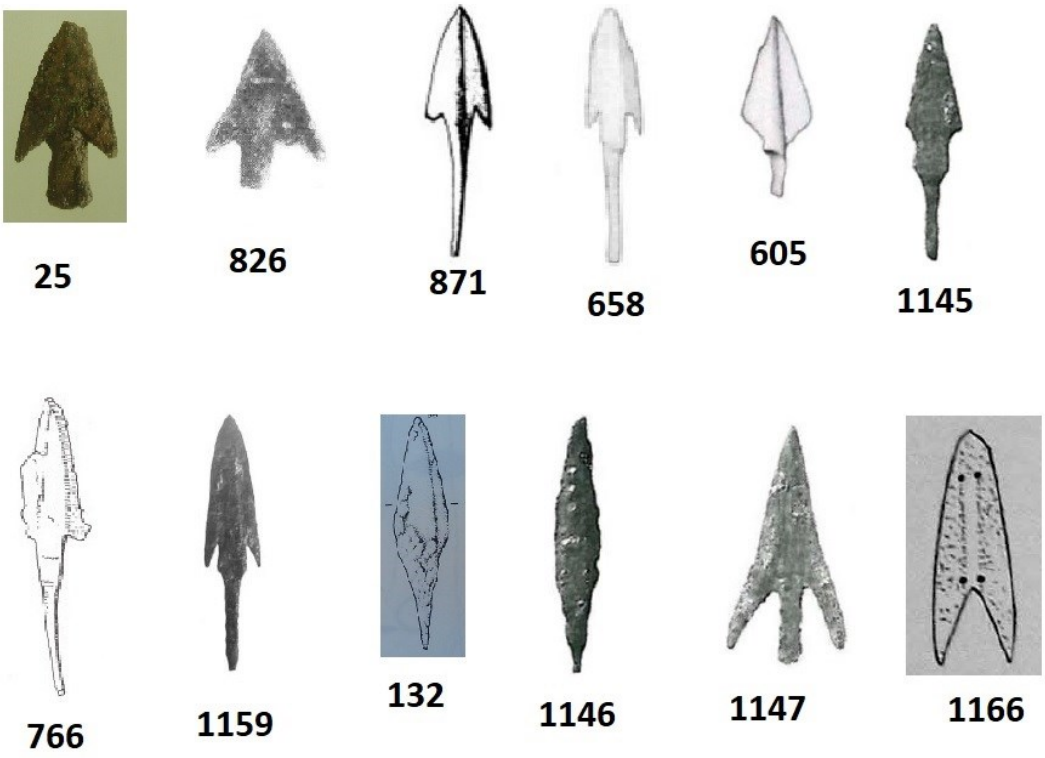

Fig. 17. Arrowheads.

Arrows have been common weapons from the early Bronze Age, with a history of use dating back to deep prehistory. Arrowheads are common on both coast and inland, and are in shapes known from Greece and Anatolia. Total of 90 arrowheads were found in Western Anatolia (map 7). In archaeological contexts 29 were discovered in graves (interestingly exclude to coast sites), and 51 from settlements. Except for Troy and Thermi, the majority of spearheads from settlement were found in inland (Beycesultan, Seyitömer Höyük, Kusura, Cine Tepecik). This study follows the typology of arrows as developed by Avila.[410] According to Avila's classification[411], arrowheads can be categorized into two primary forms. The first form (head without a tang) is entirely absent in the area of Western Anatolia. In contrast, the second form

[410] Avila 1983, 83.

[411] Avila 1983.

(type with a tang) is prevalent in various variations. In terms of shapes and designs, there are no significant differences compared to examples found in other regions. Furthermore, it's important to acknowledge that mixtures of arrowhead types can also be found in the Aegean, Anatolia, and the Near East.[412]

7.4.1. Class 2a

Class 2a defines Avila as small triangular barbed points. 14 specimens were identified as arrowhead of Class 2a.

There are three arrowheads from burial context in Dodecanese (Rhodos and Cos, cat. 602,603, 826)[413]. Cat. 602 has a triangular shaped barbed head with a thick tang. From settlement context one exemple was found in Seyitömer Höyük (cat. 1000)[414] and five from Troy (ex. Cat. 1156).[415] The piece from Seyitömer Höyük (cat. 1000) has triangular head and longer tang. The barbed head, one barb broken. Two other pieces come from Langada as well, but without a context. Another solid example come from Langada on Cos (cat. 827).[416] The arrowhead composes od wider triangular blade with barbs and a tang.

7.4.2. Class 2c

Class 2c characterizes a slightly smaller point with wider and shorter barbs and a long, not very wide tang. Most specimens have a central rib. It appears approximately from LH IIA and continues in various variations until LH IIIC.[417] 20 arrowheads of this class wer found. 17 were discovered in grave (Ialysos, Panaztepe). Two specimes origin from settlement (Seyitömer Höyük, Troy) and the last one is from unknown context (Archontiki).

[412] Roháček 2019a.

[413] Cat. 602: Maiuri 1926, 90; Benzi 1992, 176, pl. 181, g. Cat. 603: Maiuri 1926, 90; Benzi 1992, 176, pl. 181, h. Cat. Morricone 1965-66, 175, fig. 183.

[414] Bilgen 2011, 318, 319, fig. 316, second from left.

[415] Korfmann 1995, 24, fig. 21.

[416] Morricone 1965-66, 268-270, fig. 303, 305; Avila 1983, 105, pl. 27, 724K.

[417] Avila 1983, 107–108.

The Rhodian representative (cat. 604) originates from Tomb 27 in Ialysos. [418] It features a broader leaf-shaped blade with a raised central rib, adorned with hooks on the sides and an elongated tang at the end. It is dated to LH IIIA2.

Another arrowhead[419] from Ialysos (Cat. 658; fig. 17, 658), from Tomb 50, closely resembles some of the specimens of Class 2e. It has a leaf-shaped tip with multiple offset hooks and an exceptionally long tang. Its dating remains unknown.

Arrowhead (cat. 871, fig. 17, 871)[420] from a tomb in Panaztepe is another representative selected from a group of similar arrowheads. The leaf-shaped blade with a raised central rib and short hooks is reminiscent of the previously mentioned examples from Rhodes, albeit slimmer with a longer, more slender tang. It is dated to LH IIIA–B.

For further comparison, arrowheads from surrounding regions include those from Spata and Phylakopi. [421]

7.4.3. Class 2d

This class inherits the long tang from the its predecesors. The head is more narrower and sharper, lacking the barbs. Avila designates this group as a potent projectile capable of strong penetration upon impact, suitable for both combat and hunting.[422] Six specimens from the Interface are known. Two from funeral context (Ialysos, Panaztepe). Three from settlement (Thermi, Kusura). One arrowhead has no context (Chios).
From Rhodes, the arrowhead (cat. 605; fig. 17, 605) from Ialysos features an unusually wide leaf-shaped blade with a long tang.[423]

From the Kato Phana locality on Chios, another arrowhead (cat. 744)[424], is known. It is a considerably corroded tip with a thick and then thin long tang, with an unknown context.

Arrowhead (cat. 872)[425] from Panaztepe has a peculiar drop-like shape (resembling some spearheads) without hooks, featuring a long, tapering tang. It is dated to LH IIIA–B.

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[418] Maiuri 1923-24, 153, fig. 76; Benzi 1992, 176, pl. 181:i; Avila 1983, 109, pl. 28:749.

[419] Maiuri 1923-24, 211, 220, fig. 142; Avila 1983, 109, pl. 28, 751.

[420] Ersoy 1988, 58, 60, fig. 3.

[421] Avila 1983, pl. 28.

[422] Avila 1983, 110–111.

[423] Maiuri 1923-24, 211, 220, fig. 142; Avila 1983, 111, pl. 28, 758A.

[424] Lamb 1934-1935, 138, pl. 32, 10; Avila 1983, 110, pl. 28, 755.

[425] Ersoy 1988, 58, 60, fig. 3.

This specimen is non-canonical and displays a unique form, possibly representing a distinct variation of this class.

Equally interesting is the find from Thermi on Lesbos, arrowhead (cat. 1145, fig. 17, 1145).[426] The tip resembles a tall, slender pyramid, with an extension below and a thin, longer tang. It is dated to LH IIIB. Lamb seeks similar parallels in Tylissos and Isopata in LM III.[427]

There are not many parallels, earliest ones are from palaces of Pylos and Knossos in Aegean. Nevertheless, it appears that the Interface specimens lack parallels in the Aegean.[428]

7.4.4. Class 2e

Arrowheads of Class 2e incorporated the best features from the previous types. They have a long tang with a central rib, a sharp leaf-shaped point, and barbs on the sides. They are prevalent in the later LH IIIB–C periods. 31 arrowheads were found in Western Anatolia. 5 pieces were recover from graves along the coast (Baklatepe, Panaztepe, Langada, Passia). 25 arrowhead are known from settlement (majority from Seyitömer Höyük, few finds from Kusura and Troy). One piece without a context is reported from Cos. This class seems to appear more in Western Anatolia inland than in the coastal area.

The example from Baklatepe (cat. 80) has a Triangular head with barbs and base with long thin tang. [429] From Seyitömer Höyük, an arrowhead (cat. 1002) has the form of ariangular head with a tang and little barbs. [430] It represents a larger group of similar arrowheads from the site.

In addition to Western Anatolia sites, an example of this class is also known from Mycenae. [431]

[426] Lamb 1936, 205, pl. 25,47; Avila 1983, 110, pl. 28, 754.

[427] Lamb 1936, 205.

[428] Avila 1983, pl. 28.

[429] Aykurt - Erkanal 2017, 204, fig. 62, right.

[430] Bilgen 2011, 318, 319, fig. 316, fourth from left.

[431] Avila 1983, 111.

7.4.5. Class 2f

Avila places origin of Class 2f in the Near East or Cyprus. The dating is approximately LH IIIA2–IIIB. The arrowhead's form is a rounded long, and narrow head, (resembling a narrow legume pod) with a tang similar to that of class 2d. There are not many finds in the Aegean area. They were found in Phylakopi on Crete, Mycenae, and Thebes, as well as in Ras Shamra in Syria.[432] Similar types are also common in central and eastern Anatolia.[433] There is 13 arrowhead of Class 2f. Two them come from Graves (Baklatepe). 9 from settlement (Beycesultan, Thermi, Troy). The rest have no context (Ialysos).

One example from Rhodes has a regular typical shape of this class and has a nearly missing tang (Cat. 606).[434]

Another one is from Thermi (cat. 1146) on Lesbos.[435] It represents a classic long, narrow oriental blade with a fish-scale shape and a damaged tang. There is an enlargement between the point and the tang. It is dated to LH IIIB.

Depicted example of this group comes from Troy and was found under a Greco-Roman sanctuary (cat. 1160).[436] The long, somewhat leaf-shaped point with a midrib and a long tang, resembles a dagger or spear more than an arrow. Its dating is LH IIIB–C (Troy VIIa–VIIb layer).

The group from settlement Beycesultan (ex. Cat. 134)[437] represent quite unique group within this type, however it still can be considered as Class 2f. Specimens from Beycesultan have more triangular head, which is wider by its base, not in the middle.

[432] Avila 1983, 112–113.

[433] Mellaart – Murray 1995, 161, fig. O.11; Erkanal 1977, pl. 17; Bilgi 2005, 134, fig. 11–12).

[434] Jacopi 1930-31, 344, fig. 95; Avila 1983, 113, pl. 28, 770H.

[435] Lamb 1936, 205, pl. 25,47; Avila 1983, 112, pl. 28, 770.

[436] Korfmann 1996, 35, fig. 28.

[437] Mellaart - Murray 1995, 134, 157, fig. 0.7, 102.

7.4.6. Unclear

Among found arrowheads there is number of 6 pieces which can be hardly classified or they were published withou a depiction, such as example from Klaros (cat. 760).[438] All the arrowheads were found in settlement context (Klaros, Thermi, Troy, except for one example from Archontiki.

The good example of a difficult classification is cat. 1147 (fig. 17, 1147) from Thermi.[439] It has A broader triangular blade with long, spread-out hooks and a barb. It sesembles Class 1a although they are not completely similar. The date is LH IIIA1-2.

[438] Sahin et al. 2008, 251.

[439] Lamb 1936, 205, pl. 25,47; Avila 1983, 114, pl. 28, 770O.

7.5. Knives

The essential and practically the only work on Aegean knives still remains Sandars' article from 1955.[440] Branigan also dedicated chapters to knives from the Early Bronze Age (EBA) and Middle Bronze Age (MBA) in his general metallurgical works.[441] The first flat Aegean knives with a single edge typically vary in shape and blade length, as well as the number of rivet holes. Flat single-edged knives likely have their origins in Asia Minor, from where they spread to the Aegean through Lesbos and the Dodecanese islands.[442] Knives with a straight or slightly curved blade and a division between the handle and the blade date back to the late third millennium B.C.. Such knives are known from the late EBA in Troy II and Thermi V. From the beginning of the 2nd millennium B.C., they began to appear in Boeotia and Crete.[443] Their full modification came during the period of shaft graves, and finds in various variants are distributed throughout Greece, on the islands, and in Crete. Sandars classifies knives into four classes, and the knives from the Interface belong to the first classes Ia, Ib, followed by class 2 and the specific Siana group.Total number of 87 knives were recovered from Western Anatolia. (map 9).

[440] Sandars 1955.

[441] Branigan 1968; 1974.

[442] Sandars 1955, 183.

[443] Sandars 1955, 175.

7.5.1. **Class Ia**

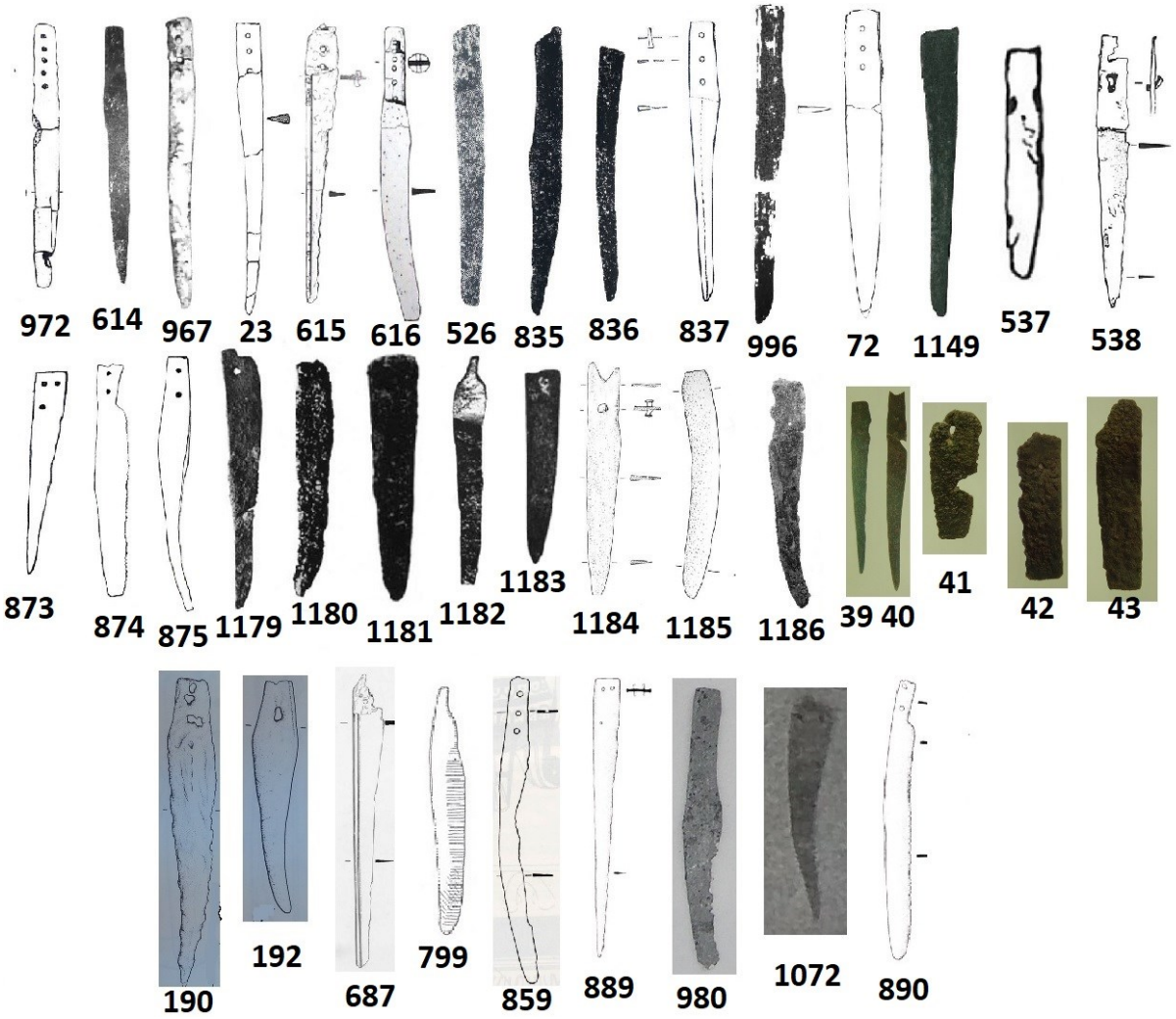


Fig. 18. Knives, Class 1a.

This class represents knives with a flat tang for attaching the handle. The length of the blade varies, as does the number of rivet holes. In Crete, they appear from EBA and spread to the islands and the mainland.[444] They were widespread from the MBA period and continued to be used throughout the LBA . They were found throughout the Aegean, including the Dodecanese, Cyprus, Anatolia, the Levant[445], and southern Italy.[446]

[444] Sandars 1955, 183.

[445] Sandars 1955, 175–177.

[446] Melas 1985, 153.

In total 40 knives of this class were recovered from Western Anatolia. 13 was put to graves (Langada, Musgebi, Passia, Panaztepe, Pilavtepe, Serraglio). 16 was discovered in settlement (Beycesultan, Kusura, Thermi, Seyitömer Höyük, Troy). 11 has an unknown context (Apsaktiras, Archontiki, Panaztepe, Pigadia).

A good example is the knife from Beycesultan (cat. 190; fig. 18, 190) it has a tapered curved blade. Three rivet holes, no central rib.[447]From Kusura (cat. 799, fig. 18, 799) there is a single edged blade with tang. The tip is a little bit curved up.[448]It is dated to LBA. From the coast, there is a knife found in from Pigadia on Karpathos (cat. 972; fig. 18, 972) with an unknown context.[449] The flat, slightly curved fragmentary blade has an unusually five rivet holes in the handle. Its dating spans the entire LH III. Melas compares this knife to finds in Crete, mainland Greece, and other pieces in the Dodecanese, labeling it one of the most common types in the Aegean region and the east.[450] Cat. 615 (fig. 18, 615) is a long knife with a flat blade with the edge pointing upward toward the tip. It was on Rhodes, in Ialysos. It is dated to the LH IIIC.

[447] Mellaart – Murray 1995, 132, 156, fig. 0.6, 74.

[448] Lamb 1936, 41, 42, fig. 19, 6.

[449] Melas 1985, 217, fig. 26.

[450] Melas 1985, 153.

7.5.2. Class Ib

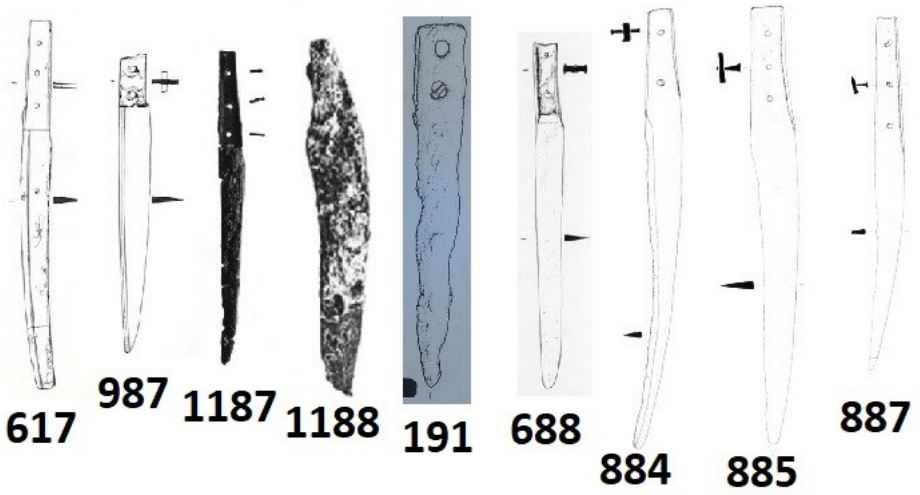


Fig. 19. Knives, Class 1b.

Iin the mid-16th century B.C. knives began to feature flanged hilt, giving rise to Class Ib.[451] Although this class only emerged during the LBA, its predecessors were common items in Mycenaean shaft graves. On Crete, they appear from the late LM II period. Unlike Class Ia, this class is not widespread, and it is not known to exist on Cyprus. From the transitional periods, two examples are known from Rhodes and two from Troy. 9 pieces of this class were found. 5 from burial context (Panaztepe, Pylona, Ialysos). Three from settlement (Beycesultan, Troy). One with unknown context (Ialysos).

An example of knife of this Class 1b is cat. 617 (fig. 19, 617) from Ialysos, grave No. 59.[452] It has a long curved blade with a carved line along the blunt side and a handle guard with three rivet holes. It is dated to LH IIIB. Another one from Pylona[453] (cat. 987; fig. 19, 617), from grave No. 18, is a long blade with remnants of a handle with two rivet holes. A line is engraved along the straight upper edge of the blade. It is dated to LH IIIB–C.

[451] Sandars 1955, 183.

[452] Maiuri 1926, 231, fig. 147; Benzi 1992, 359, pl. 179, i.

[453] Benzi 1992, str. 177, pl. 179, l.

The one from Panaztepe[454] (cat. 884; fig. 19, 884) is a slightly curved knife with two rivets. One side of the hilt seems to be flanged. There are two Class Ib knives from Troy. Cat. 1187 (fig. 19, 1187) is a long specimen with a flat blade and a handle guard with three rivet holes.[455] The blade tapers towards the tip. It is dated to LH IIB. Sandars mentions it and suggests it may be more of an Aegean import in Troy.[456] The second is cat. 1188 (fig. 19, 1188) from layer VIIb2, representing a fragment of a curved blade resembling a razor.[457] It is dated to LH IIIC.

7.5.3. Class 2

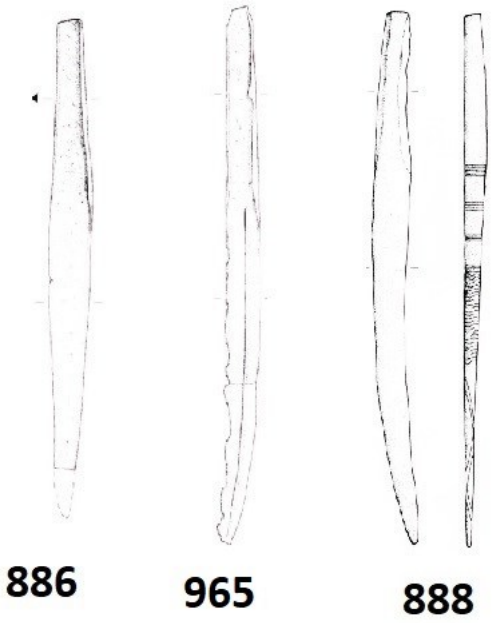


Fig. 20. Knives, Class 2.

Class 2 features handles and blades similar to Class Ib but with a significant difference: the absence of rivets. Like the previous class, it first appears in shaft graves, likely during LH I. It is not very common on Crete or Cyprus. [458] There are only 3 known examples from Western Anatolia, all three come from graves in Panaztepe.

[454] Erkanal-Öktü 2018, 108, taf. 30, taf. 347.

[455] Blegen 1953, 270, fig. 297.

[456] Sandars 1955, 179.

[457] Blegen 1953, 270, fig. 297.

[458] Sandars 1955, 179.

An interesting example is the knife (cat. 888; fig. 20, 888) from Panaztepe. It has Long, slender, curved blade with an upward-pointing tip. The flanged handle has no holes. It is dated to LH IIIB. Its significant feature is the engraved decoration with geometric patterns on the upper edge of the blade. Ersoy, who publishes the knife, seeks similar decoration on tools from Central Europe, specifically knives and fibulae.[459] Benzi also argues that the decoration is not Aegean and cites its frequency in Italy and Europe from the 13th to the 10th century B.C.. He compares this piece to a similar specimen found in the Uluburun shipwreck.[460]

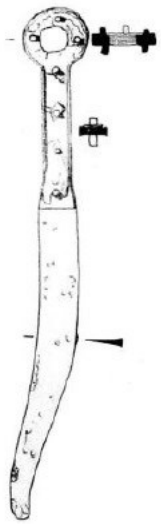
From Grave B (Panaztepe) comes the non-decorate knife of the same class (cat. 965, fig. 20, 965).[461] It is a simple slightly curved single-edged blade. One side of the hilt is flanged.

[459] Ersoy 1988, 69.

[460] Benzi 2005, 18.

[461] Erkanal-Öktü 2018, 108, taf. 9, 229-230, taf. 346.

7.5.4. Class 3b



618

Fig. 21. Knives, Class 3b.

Sandars Class 3 is quite small froup. It is similar to previous class 2 but the flange is continued around the top of the haft which broadens at the end.[462] From Western Anatolia region there is only one known find – the knife from a Tomb at Ialysos on Rhodes.

The knife (cat. 618; fig. 21) has a curved blade with flanged handle ended up with a ring-shaped pommel.[463] The rest of the organic material is still preserved on riveted haft and pommel. On both sides of the blade there is incised decoration of a perhaps floral motif. With rivets this knife spans within suvariant of Class 3b (3a is unriveted). There is carved decoration with an emblematic motif on the blade near the handle. It is dated to the LH IIIC period. Sandars studied the circular termination and, apart from a few knives from Mycenae, she also compares the find to those in Romania. [464] In the eastern Mediterranean, Bouzek notes a similar discovery in Enkomi, Cyprus, attributing their origin to the influence of the

[462] Sandars 1955, 179.

[463] Maiuri 1923-24, 175, fig. 101; Benzi 1992, 177, pl. 179, h.

[464] Sandars 1955, 185.

European urnfield culture.[465] Benzi also studied this knife, considering it as evidence of connections between the eastern Aegean and Europe. He found parallels in Italy with knives of the Montegiorgio and Baierdorf types from Central Europe. Despite the apparent similarities to the Balkans and Europe, Benzi notes that this knife is very rare in its region and likely served ceremonial purposes, possibly as a ritual or sacrificial tool. This hypothesis is based on seals depicting animal sacrifices with a knife or sword from Naxos and Mycenae. Benzi also analyzes the knife's decoration and seeks parallels on a small number of tools in Greece and Crete that may have had ritualistic significance. He also considers this piece as a special tool, maybe ceremonial, and compares it to a knife from Phaistos.[466] This one has a straight hilt without any pommel but a similar kind of depiction on the blade. The interesting thing is, that some scholars marked the Phaistos knife as a product of Aegean and European or some other "foreign" influences.[467]

7.5.5. Class 4

Fig. 22. Knives, Class 4.

In the Class 4 the knives are casted as one piece the handle itself was metal.[468]

[465] Bouzek 1985, 147.

[466] Benzi 2009, 159 – 162

[467] Benzi 2009, 159–160. Bouzek 1985, 147; Matthäus 1980a, 131

[468] Sandars 1955, 181.

There are two knives. The first one (Cat. 38; fig. 22) come from a grave in Archontiki on Psara. It has One-edged narrow blade curved up. At the end of flanged handle there is button-shape pommel. The knife seems to be casted as whole piece. It is dated to LH IIIA1-B1.[469]

The second one[470] was found in Kaymakci (Cat. 750 fig. 22). Interesting blade with midrib. The handle is decorated with one line in the middle and a lot of lines on sides. The handle is ended by pommel in shape of button. The blade, handle and pommel are cast as one piece. [471] This piece was researched by Pieniążek in the recent publication.[472] According to her, parallels can be found in Peloponnese, Crete, Psara, and Troy, however the style of geometric designs is corresponding more to Anatolian finds. Therefore she claim this piece as a local product influenced by Aegean and Anatolian impact. [473]

[469] Deligiorgi 2006, 150.

[470] Roosevelt, Luke and Ünlüsoy 2015, 263, fig. 4.

[471] Roosevelt, Luke And Ünlüsoy 2015, 263, Fig. 4.

[472] Pieniążek et al. 2019.

[473] Pieniążek et al. 2019, 208.

7.5.6. The Siana Knives

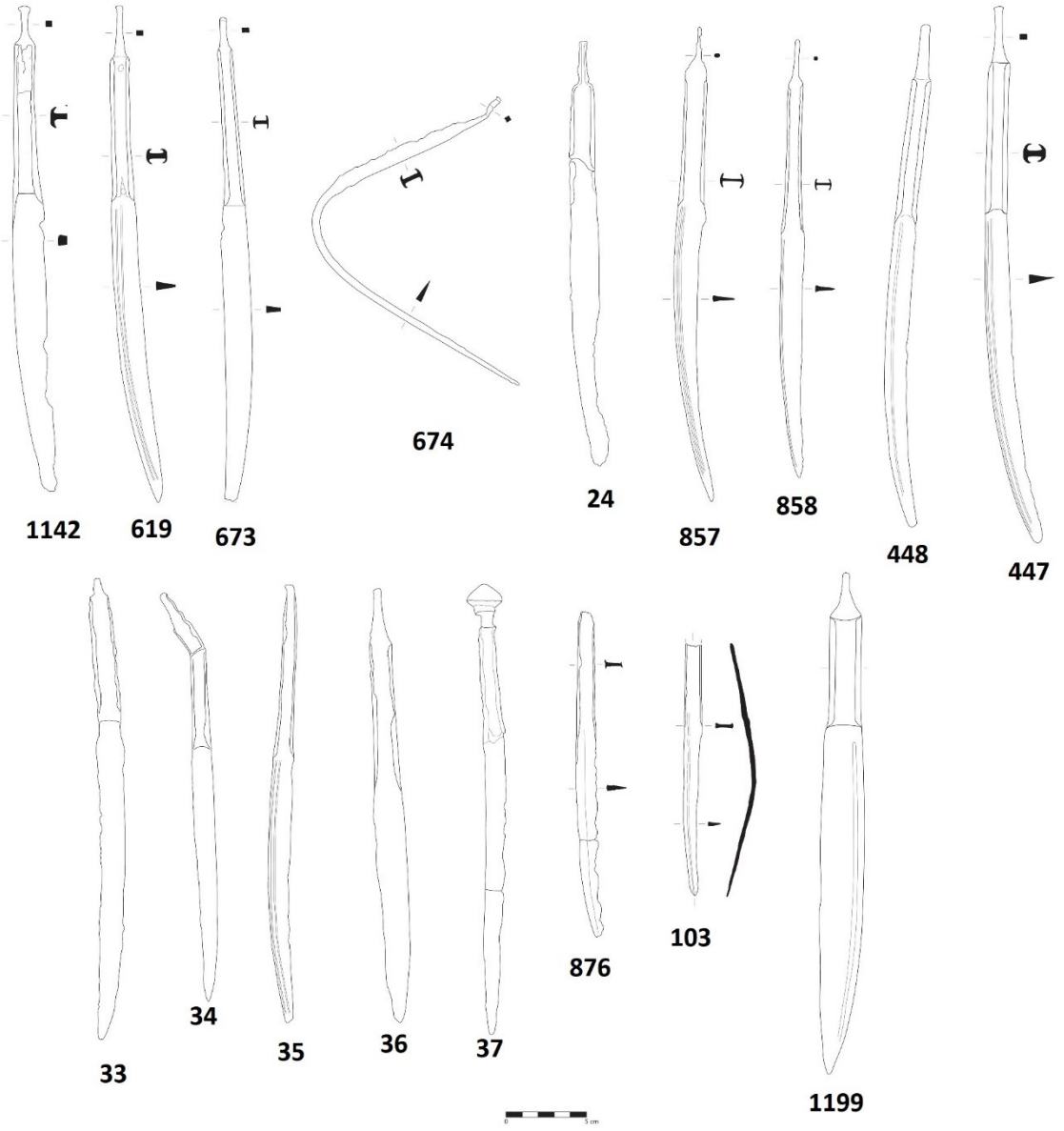


Fig. 23. Knives, Siana Group.

A specific group of knives can be classified as Siana the so-called Siana group are knives (map 10). The group was identified by Sandars. initially in her earlier work as she put them within her Class 2.[474] Lately She eventually classified the Siana knives as a distinct group, along with her Type H swords.[475] Since then, scholars discussing these swords have also included these

[474] Sandars 1955, 179, 193

[475] Sandars 1963, 140).

knives in their studies.[476] A standard representation of this category features a single-edged narrow blade, potentially with a slight curve, and it may or may not have line(s) along the non-cutting edge. The hilt is flanged and lacks rivets. A key identifying characteristic is a brief thorn-shaped tang extension at the handle's end, reminiscent of the Siana swords.[477] Knives share a typological connection with the sword group, as initially identified by Sandars, and were presumed to belong to the LH IIIB–IIIC period.[478] However, with the discovery of more knives and new contextual information, it appears that the dating of these knives could be extended to the LH IIIA2–IIIB period.[479] The occurrence in LH IIIC cannot be exluded. This group was already dealt with by the author.[480]

The with 17 pieces from the area, in numbers the knives exceeds Siana swords, and the count of known knives has notably increased in recent decades. These knives are distributed across various locations. In the are of Western Anatolia, few examples were found in Rhodes, and five in Archontiki on of Psara. Along the Anatolian coast, we have records of pieces from Müsgebi, Colophon, Panaztepe, and the Troad (Beşik Tepe and Troy). Additionally, there are two pieces that remain typologically uncertain.[481] previously associated with the Siana group, but their typology warrants reevaluation. Unlike the Siana swords, Siana knives are not limited to the Eastern Aegean and Western Anatolian coasts; they are also found in Athens, Franktin in central Anatolia, and two pieces were recovered from the Uluburun shipwreck.[482]

First example is the one from Siana on Rhodes (cat. 1142; fig. 23, 1142).[483] Dating was originally proposed as LH IIIB–IIIC. This Siana knife was discovered alongside the Siana sword and spearhead, serving as a defining artifact for the entire group. The context is unknown (reportedly it was retrieved from a chamber tomb). The knife features an exceptionally thin blade with a slight curvature, and its handle nearly matches the width of the blade. At the end of the flanged handle, where traces of organic covering are still evident, a characteristic short tang is present for a pommel extension.

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[476] Mee 1978, 137; Mee 1982, 60; Dietz 1984, 58, 105; Dietz Et Al. 2015, 29; Akyurt 1998, 32; Basedow 2000, 123; Benzi 2002; 2004; 2005; Pulak 2005, 300; Aruz – Benzel – Evans 2008, 382–384.

[477] Sandars 1963, 140.

[478] Sandars 1963, 140.

[479] Dietz 1984, 105; Benzi 2005, 18.

[480] Roháček 2019b.

[481] One knife is from Panaztepe (Ersoy 1988, 67) and another from Beşik Tepe (Basedow 2000, 123–124)

[482] Roháček 2019b.

[483] Sandars 1963, 140, pl. 27:54; Dietz – Trolle 1974, 32, fig. 23; Dietz et al. 2015, 29, pl. VIII:43

Another one (cat. 619; fig. 23, 619) from Rhodes comes from n. 27.[484] The knife recovered from Ialysos initially served as the basis for dating the entire Siana group.[485] It bears a resemblance to the eponymous knife from Siana. The blade displays a gentle curvature with two lines running along its unsharpened edge. A characteristic tang is present at the end of the flanged handle. Sandars initially dated it to LH IIIB–IIIC.[486] However, Mee argued that the tomb should be dated to LH IIIA2–IIIB.[487]

Five knives come from Archontiki on Psara (cat. 33-37; fig. 23, 33-37).[488] Only one has secure funeral dating to LH IIIA2-B, other lack context. These knives generally conform to the typological characteristics of the Siana group. Of particular note the on cat. 37, which retains remnants of its non-metal handle covering, situated between flanges and featuring a button-shaped pommel with a pyramidal top crafted from the same material. Despite damage and corrosion, this knife offers valuable insights into the probable appearance of Siana knives. The remaining four specimens from Psara share common traits: flanged handles without rivets, slender curved blades, and a tang at the end.

The last presented knife was recovered from Troy (cat. 1199; fig. 23, 1199).[489] This knife is associated with Level VII.[490] Dating: LH IIIB–IIIC. The blade, in contrast to most Dodecanese knives, exhibits increased thickness. Notably, the non-cutting edge of the blade features characteristic incised lines. The handle retains remnants of its covering. Buchholz's discussion suggests that this knife belongs to a group of knives from Crete, the Greek Mainland, Troy, and Cyprus characterized by a similar style. Some of these knives were classified by Sandars under her Class 4, which typically featured a solid cast handle that terminated with a knob-shaped or similar pommel.[491]

The Siana knives provide valuable contextual evidence for the typological group. They are generally dated to the late LH IIIA2-IIIB, with some possible LH IIIC examples. Knives from Rhodes, Müsgebi, Değirmenedere/Kolophon, and Psara show typological

[484] Furtwangler – Löschke 1886, Taf. D:9; Sandars 1963, 140, Pl. 27:56

[485] Sandars 1963, 140, pl. 27:56.

[486] Sandars 1963, 140.

[487] Mee 1982, 106; Dietz 1984, 105.

[488] Deligiorgi 2006

[489] Schmidt 1902, 256, Abb. 6464; Buchholz 1999, 475, Abb. 83:B; Hänsel 2014, 134, 184, Taf. 5:3.

[490] Schmidt 1902, 256, Abb. 6464.

[491] Sandars 1955, 181.

consistency, representing the typical appearance of the knife.[492] In contrast, a knive from Troy differs in proportions and sizes. The one knife from Archontiki Psara preserves its original pommel, providing insight into their original appearance. The relationship between Siana and Class 4 knives warrants further exploration. Additionally, the discovery of a similarly tanged knife from Kaymakçı (cat. 750; fig. 23, 750) in Western Anatolia adds to the discussion.[493]

Given the limited information on Aegean knives, a comprehensive reevaluation of the corpus, in light of new findings, is overdue, as there are few known parallels for Siana knives beyond those discussed here.[494] Notably, all the evidece is suggesting that the Western Anatolian coast (East Aegean-Western Anatolian Interface) might be the origin of Siana knives.

7.5.7. Uncertain

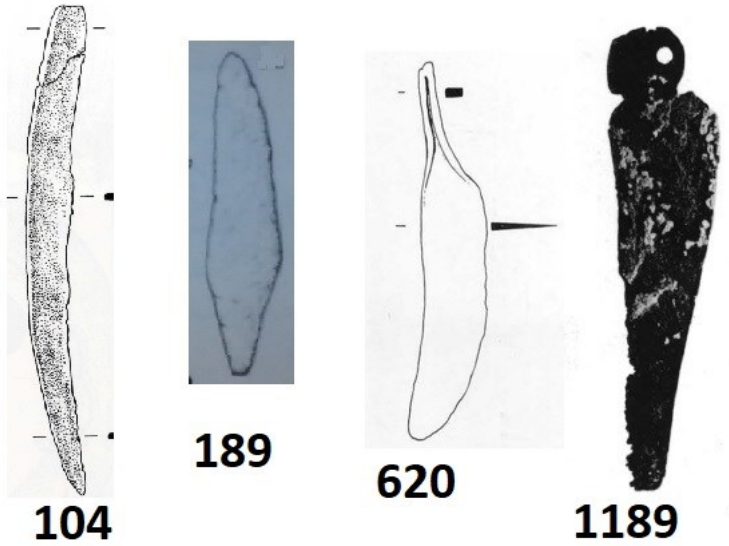

Fig. 24. Knives, uncertain types.

Several pieces with uncertain classification. Only one example will be introduced here.

[492] Dietz 1984, 105; Benzi 2005, 18.

[493] Roosevelt et Al. 2018, 673, Fig. 22, 1; Pieniążek Et al. 2019.

[494] Sandars 1955.

The knife from Rhodes (tomb no. 88, Ialysos), an is quite unusual (cat. 620; fig. 24 ,620).[495] Its shape is more reminiscent of a razor with a defined tang. Benzi finds that this type is not Aegean and likely originates from Anatolia. He dates it to LH IIIB–C. [496]

7.6. Axes

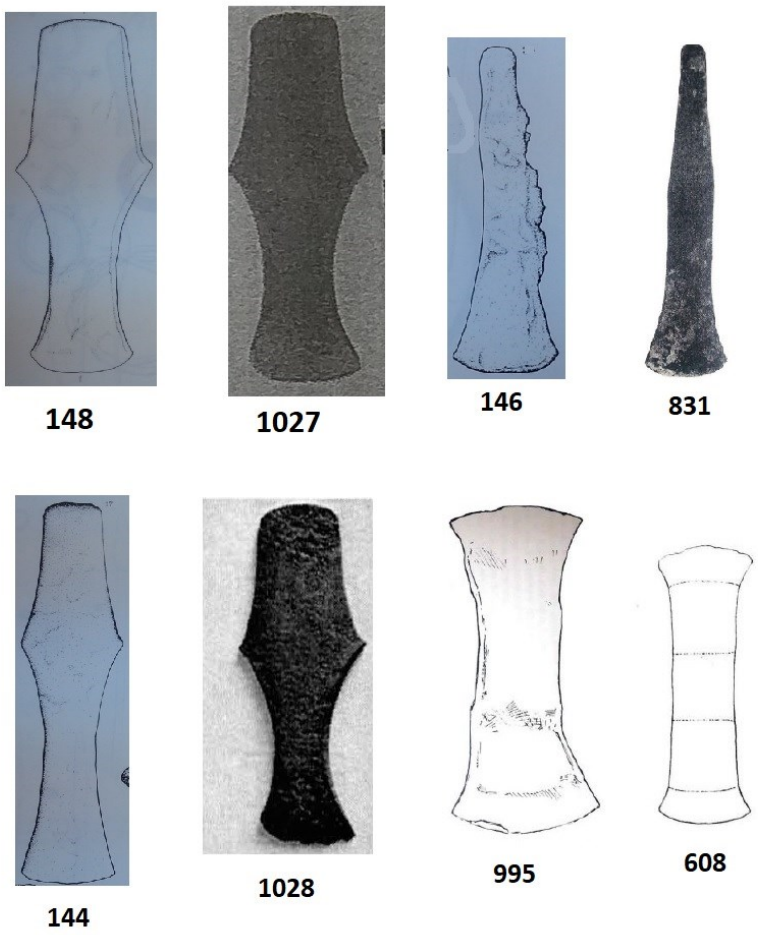

Fig. 25. Axes.

In total 24 axes were found in Western Anatolia (map 11). Except for minor evidence from burial context (5 pieces, Dodecanese) and one pieces with unknown context (from Cos), the most of axes (18) were discovered within settlement context (Beycesultan, Seyitömer Höyük, Troy). They are withneses of everyday craftmanship happening on the sites. Axes are not the most common find in Western Anatolia**,** the types of axe appear to be close paralales from all

[495] Jacopi 1930-1931, 335; Benzi 1992, 178,402, pl. 179, o.

[496] Benzi 1992, 178.

Anatolia.[497] Interestingly, double-edged Aegean shapes[498] appear in the region of southwestern coast. For Anatolian axes, this work follows the typology of Erkanal in PBF series.[499] General shape of all axes (Types I-V) represent a very common anatolian axe form. Other forms are rare.

7.6.1. Type I

In the first type, Type I represents the basic shape of a flat axe with a collar and is characterized by a wide, flat blade with an expansion in the middle of the blade body. The blade end can be straight or curved. This type is very common in eastern Anatolia.[500]
Eight pieces, six of them as a settlement find.

One come from Beycesultan (Cat. 142) a five from Example from Seyitömer Höyük (cat. 1023)[501], (cat. 607)[502] from Rhodes and (cat. 993)[503] from Serraglio on Cos come probably from Burial context, athought they were not designated to any grave. The piece cat.1023 has a typical with narrow blade with "sleeves" in the middle. The dat eis MBA (18th century B.C.). It was recovered from a hoard.

7.6.2. Type II

The second type, which does not differ from the first in terms of the shaft and blade shape, has a special feature in the absence of pronounced arms and it is usually quite thin a prolongued. Four specimen are known.

One come settlement context in Beycesultan (Cat. 146; fig. 25, 146)[504], a flat axe with prominently raised sides, damaged on one side.

[497] Erkanal 1977.

[498] Branigan 1974.

[499] Erkanal 1977.

[500] See for example Erkanal 1977.

[501] Bilgen 2011, 381-382, fig. 19.

[502] Benzi 1992, 180, pl. 181, t.

[503] Morricone 1972-73, 276, fig. 233.

[504] Mellaart – Murray 1995, 130, 154, fig. 0.4, 36.

It is interesting that rest of the identified pieces as Type II come all from island on Cos in Dodecanese. In two case from burial context Langada[505] (Cat. 831; fig. 25, 831) and Serraglio (cat. 994) .[506] The thirds piece is an old find from area of Asclepeion (Cat. 71) without a context, however assupmtion of its belongence to LBA graves could be reasonable.[507] The one from Serraglio seems to be difficult to recognized if it is an actual axe. That is an actual issue with these types of cases.

7.6.3. Type V

According to Erkanal, this type is a special form because, apart from the curved blade, it has no similarities to the types first described.[508] The arms of this group are designed symmetrically, so that the shaft part, like the blade, forms an almost biconcave outline. The numerous specimens belonging to this group do not vary in their overall shape, but in their proportions. Six specimens are known from Western Anatolia. All was found in settlement, in this case only in large sites of Beycesultan and Seyitömer Höyük.

One Type V axe from Beycesultan is dated to MBA, two others to LBA. The one from MBA (cat. 144) has a Flat head with prominently raised sides.[509]

Two out of three pieces from Seyitömer Höyük come from a hoard (Cat. 1024 a 1025).[510]

7.6.4. Socketed Axe

Two examples from Troy settlement (Cat. 1168-69)[511] represent European-Balkan influences in Troy. Unfortunately, the axes are described in publication but not depicted.

[505] Morricone 1965-66, 175, 176, fig. 183.

[506] Morricone 1972-73, 169, 170, fig. 47.

[507] Morricone 1972-73, 255, fig. 200, 201.

[508] Erkanal 1977.

[509] Mellaart - Murray 1995, 129, 152, fig. 0.2, 17.

[510] Cat. 1024: Bilgen 2011, 381-382, fig. 19. Cat. 1025: Bilgen 2011, 381-382, fig. 19.

[511] Schmidt 1902, 256.

7.6.5. Aegean Double Axe

Axes of Aegean origin are not well distributed, the present knowledge of their occurrence is limited in the finds from the Southwestern Anatolian coast. All four examples in the catalog come from the Western Anatolian Coast and adjacent inland. In one case, there is burial context (Ialysos), two axes were foundin settlement context (Troy, Ephesus) and one pieces has un certain context (Serraglio).

As an exemple of the group, there is a double axe from Rhodes (cat. 608; fig. 25, 608), found in Ialysos grave no. 70.[512] It is a longer, elongated axe with a double-edged blade and a hole in the middle for attaching a handle. This particular axe is dated to the LH IIIA2-IIIC period.

The piece from Troy (Cat. 1172) has a shaft decorated with incision.[513]

The Double Axe is reported to come from Ephesus (cat. 540), however it is only mentioned in the text, there is no depiction. [514]

[512] Jacopi 1930-31, 285, fig. 28; Benzi 1992, 180, pl. 180, i.

[513] Schmidt 1902, 257, fig. 6481.

[514] Benzi 2002, 372.

7.7. Razors

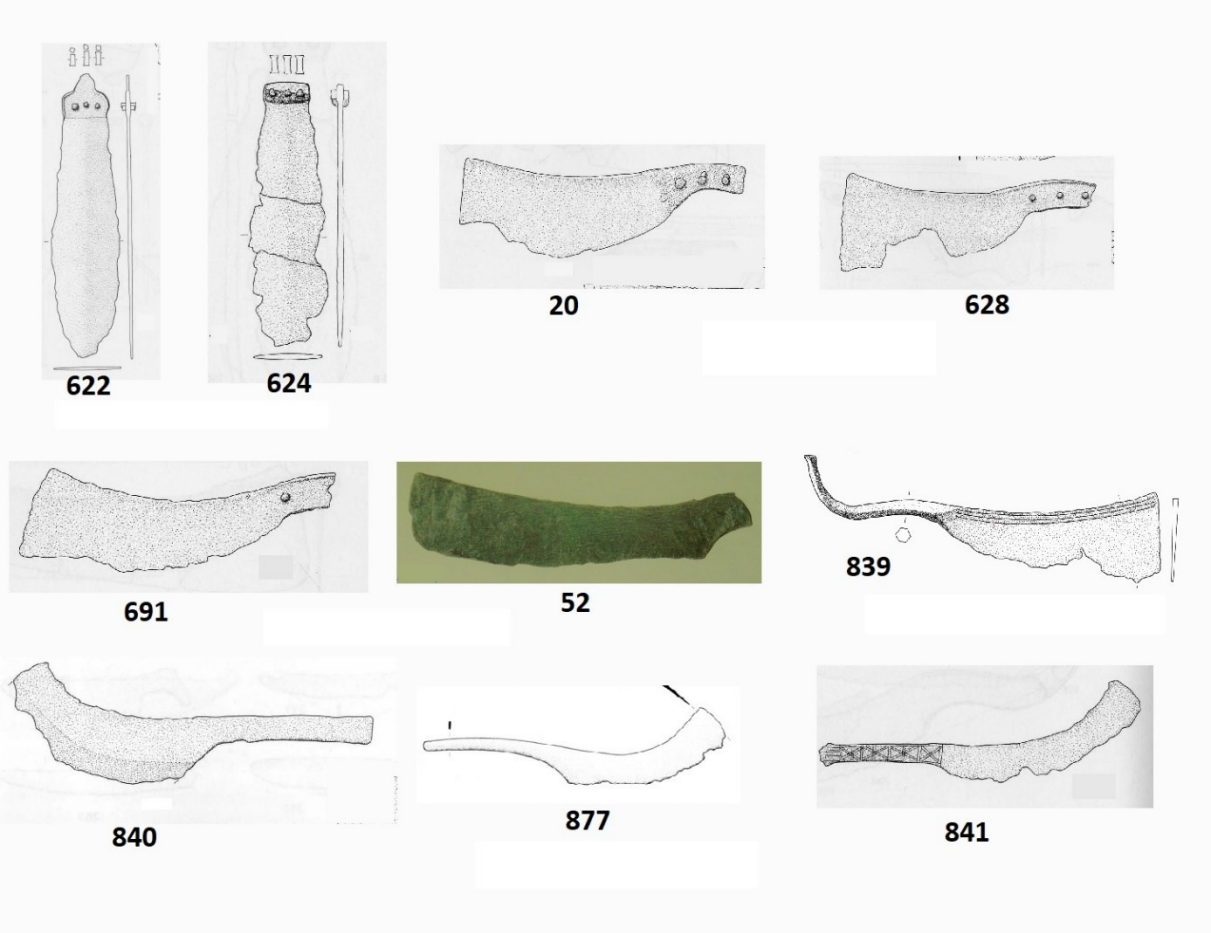

Fig. 26. Razors.

There are two basic form of razor: single-edged blade razor and double-edged blade razor. Bost groups are very common in Mycenaean Greece and on Crete. A single-edged and double-edged blade razors was found in high number of shape variants on Crete and Mainland Greece in MBA and LBA.[515] Their genuine meaning was discussed by many scholars as a tool or a weapon.[516] Razors have a long tradition. Branigan mentions double-edged razors that appear from the early Bronze Age in Crete.[517] They are subsequently widespread throughout the Aegean region, especially in the late Bronze Age [518], coinciding with the appearance of single-edged blades.[519]

[515] Weber 1996.

[516] Blegen 1937; Pendlebury 1939, 71; Xanthoudides 1924, 28, 47, 108.

[517] Branigan 1968, 38.

[518] Blegen 1968, 38

[519] Weber 1996).

Up to 40 pieces of single and double-edged razors from Western Anatolia were collected (map 12). As an Aegean-connected item, it is not surprising the majority of razors was found in the area with a strong Aegean influence, precisely in the Dodecanese. From islands of Rhodes, Cos and Karpathos come 35 specimens, 29 of them were discovered in burial context, another six have no context at all, however they were mostly connected with cemetery site at Ialysos. It should be noted that they were in many cases accompanied by other metal objects such as weapons. The razors from rich LBA graves on Rhodes and Cos were not very different from the pieces found on the Greek Mainland and Crete, athought two specimes could suggest local unique product.[520] More Razors come from site of Archontiki on Psara island with uncertain context. One unusual specimen was found in settlement context of Seyitömer Höyük. There is also one published example from Panaztepe .[521]

It was Weber who collected all the Aegean blades and typologically classified them.[522] He defined types with various subsequent variants. Author of this thesis already dealt with razor from Eastern Aegean and Western Anatolian coast in his Master thesis and two more papers.[523] Especially in his Master thesis, he typologically analysed types and further variants of dodecanesian razors, however for this dissertation he aims to endure to basic types, because they are completely sufficient for the cause. From all collected published pieces, it appears that specimens of five types of Webers typology are present in the area: Single-edged blade Type I, Type II, Type III, Type IV and double-edged blade Type III. All of them were further classified by him as only subvariants of those types.[524] One may suggest the possibility of variability in regional production.

7.7.1. Double-edged blade Type III

The double-edged blade in razors represented a considerably widespread type across the entire Aegean region from the early Bronze Age, and particularly during the late Bronze Age. It features a wide, curved, and large blade with rivet holes at the base. Some have a tang.[525] Many

[520] Roháček 2015; 2018; 2019a.

[521] Ersoy 1988, 71

[522] Weber 1996.

[523] Roháček 2015; 2018; 2019a.

[524] Weber 1996, pl. 58 – 62.

[525] Weber 1996, 51.

have three rivet holes, mostly arranged in a cross pattern, with one placed on an additional small tang. Many finds originate mainly from Crete and Achaea. In total Six razors. Four pieces from Ialysos withous context were discovered (example Cat. 624; fig. 26, 634).[526] Two more were excavated from Ialysos graves (example Cat. 621).[527]

Compare to single-edged group, the double-edged razors are minority group around Western Anatolian coast. The depicted representant of the group is from

7.7.2. Single-edged Type I

The single-edged blade of Type I represents a classical Aegean blade with a wide, curved edge that widens from a short tang.[528] Subvariants feature a straight or slightly upward-curved blade with a bent tang, typically with three rivet holes. Weber places the origin of this subvariant in Knossos, where most findings are from. From there, it spread to the Dodecanese, Argolis, and Boeotia.[529]

We know three specimens from designated area, all from Rhodes. Two come from funeral context in Ialysos, one of them cat. 627 is an interesting piece with incised lines going along the blunt edge.[530] Without context, there is another one from Apollakia, on Rhodes (cat. 20).[531]

7.7.3. Single-edged Type II

This type is characterized by a single edge on a curved wide blade without a spike, often with a hole at the end of the blade for attaching an organic handle. From a layman's perspective, most blades of this type resemble a cleaver. The dating is approximately during the LH IIIA-B period, with the majority of findings coming from central and eastern Crete and Achaea.[532] More than half (21) of collected razors are classified as this type.

[526] Furtwängler - Löschke 1886, pl. D I, č. 1; Weber 1996, 90, pl. 12, 145.

[527] Maiuri 1926, 200, fig. 124; Benzi 1992, 179, 330, pl. 180, a; Weber 1996, 82, pl. 10, 113.

[528] Weber 1996, 113.

[529] Weber 1996, 118–122.

[530] Maiuri 1923-1924, 100, 98, fig. 15:21; Weber 1996, 119, taf. 23, 227.

[531] Dietz 1984, 77, fig. 94; Weber 1996, 120, taf. 25, 239; Dietz et al. 2015, 34, no. 72; pl. XII.

[532] Weber 1996, 146–147.

They come almost exclusively from Dodecanese (Rhodos, Cos, Karpathos) and only one specimen (Cat. 52, fig. 26, 52) without context[533] from Archontiki on Psara island. Excepet one other example with unknown from Rhodes, Ialysos, all 19 razors come from rich LBA graves from Ialysos (Rhodes, 10 pieces), Eleona and Langada (Cos, 4 pieces, example Cat. 528)[534], Anemomiloi-Makeli (Karpathos, 1 piece, Cat. 8)[535] and Müsgebi (Bodrum, 4 pieces, ex. 867)[536], in many cases accompanied with other valuable finds.

7.7.4. Single-edged Type III

Webers Type III has an extended handle tang. It is much longer and characteristically curved like a tail.

There are only two specimens from the are of Western Anatolia and Eastern Aegean, but both seems to be unique and perhaps a local product, Considering the typological differences. There are two intriguing examples of single-edged razors. The first one[537] originates from Langada on Kos (Cat. 839, fig. 26) and boasts an unusually handle that resembles the shape of a tail, with a thin and round cross-section. It has been dated to the LH IIIB period. The second razor (cat. 659)[538] hails from Ialysos on Rhodes, featuring a standard full handle but sharing the same curvature as the handle of the razor from Langada. Additionally, the handle of the Ialysos razor displays a captivating design modification. Unfortunately, the precise date of this piece remains unknown.[539] The design of their handles appears to be unique and unparalleled elsewhere, hinting at the possibility of them being a local innovation. These two examples display only slight typological variations when compared to the numerous razors with diverse shapes that closely resemble other Aegean razors. This is a possible proof of local unique product on the coastline, or more precisely The East Aegean and Western Anatolian Interface.

[533] Deligiorgi 2006, 153.

[534] Morricone 1965-66, 67, fig. 38, 39; Weber 1996, 135, pl. 33, 286.

[535] Melas 1985, 330, 331, fig. 139, 140; Weber 1996, 146, pl. 38, 329.

[536] Akyurt 1998, 32, şek. 36, a.

[537] Morricone 1965-66, 212-214, fig. 226, 229; Weber 1996, 148, pl. 39, 332.

[538] Maiuri 1923-24, 153, fig. 76:15; Benzi 1992, 290, pl. 180:e; Weber 1996, 150, pl. 39:336.

[539] Weber 1996, 148, 150, pl. 39, fig. 332, 336.

7.7.5. Single-edged Type IV

Compared to the previous types, Weber's Type IV razor resembles a modern sickle. The curved blade is slimmer and has a slightly upward flat surface, forming an integrated handle. In the case of Variant IVa, the handle is not flat.[540] All specimens of Type IV from the interface represent Variant IVb, which differs with its flat handle, sometimes with raised edges. Their presence is primarily from the late LH IIIB-C period.[541] Eight specimens of this type come from the area. Six are known from burial context, mostly on Dodecanese (Ialysos, Eleona, Serraglio; one is from Archontiki on Psara), although there is one published exception from Panaztepe (Cat. 878).[542] There is one[543] interesting single-edged razor with a handle from Langada on Kos found in tomb 34, dated to LH IIIC (cat. 841; fig. 26, 841). This razor is decorated with a geometric incised decoration on the handle. The decoration is considered to come from Central Europe.[544] From a typological point of view, the Lower Interface generally appears to have a similar typology of razors to that of Crete. Yet, the number of razor variants found on Crete is much larger than in the Lower Interface. It should be mentioned that Crete also produces material that is typologically similar to Mainland Greece. But there are also forms of razors on Crete that do not occur in the area of the Lower Interface. These are, for example, a double-edged razor type with a handle, Weber's type IV with additional subvariants, which occur mostly on Crete, rarely on the Greek Mainland, but which are not known from the Dodecanese and surroundings.[545] It should be noted that in the case of razors, the Lower Interface shares the same influences as Crete. and its presence can be connected with tweezers and mirrors, which also occur in the Lower Interface.

The presence of razors can also offer insights into the distinct way of life in the Lower part of coast, where razors were evidently in common use. This practice or the use of razors likely did not originate in the Upper part. The possession of a razor appears to have been a prevalent custom in graves across Mainland Greece, with the southwestern Anatolia coast.

[540] Weber 1996, 151.

[541] Weber 1996, 152-155.

[542] Ersoy 1988, 58, fig. 3, 4.

[543] Morricone 1965-66, 164, 165, fig. 167, 168; Weber 1996, 153, pl. 40, 344.

[544] Ersoy 1988, 68–69.

[545] Weber 1996, pl. 60, A.

From a utilitarian point of view, the razor is a tool connected with personal appearance, hygiene, and shaving,[546]

7.8. Sickles

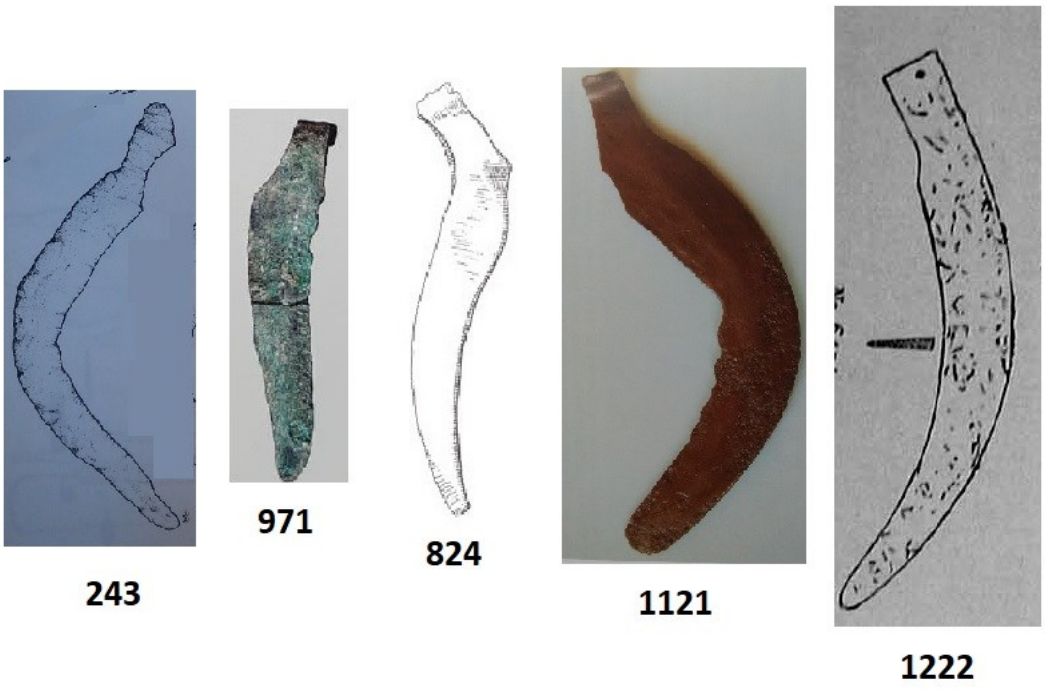

Fig. 27. Sickles.

Total amount of 10 sickles was found in area of Western Anatolia (map 15). All of them come from settlement context, mostly larger sites such as Beycesultan, Kusura, Seyitomer Hoyuk and Troy.

The design is usually a simple curved blade which sometimes has a tang (or a remain of a tang) to attach a handle (Cat. 1122; fig. 27, 1122).[547] Simple sickles come from Beycesultan

[546] Weber 1996, 20.

[547] Troy - Schmidt 1902, 256, Fig. 6454.

(Cat. 243; fig. 27, 243)[548] or Seyitömer Höyük (Cat. 1119)[549]. Only one slightly typollogically different example could be a the one from Kusura (Cat. 824; fig. 27, 824)[550] which seems to be more S-shaped. Intersting parallel would be typologically different group of sickles from the Sarköy depot. Their blades appear to be curved resembling the letter C, some have a remnant of a protrusion at one end.[551]

[548] Mellaart - Murray 1995, 132, 155, Fig. 0.5, 67

[549] Bilgen 2011, 318, 320, Fig. 319.

[550] Lamb 1936, 41, 42, fig. 19, 7.

[551] Harmankaya 1995, Pl. 7-11.

7.9. Awls

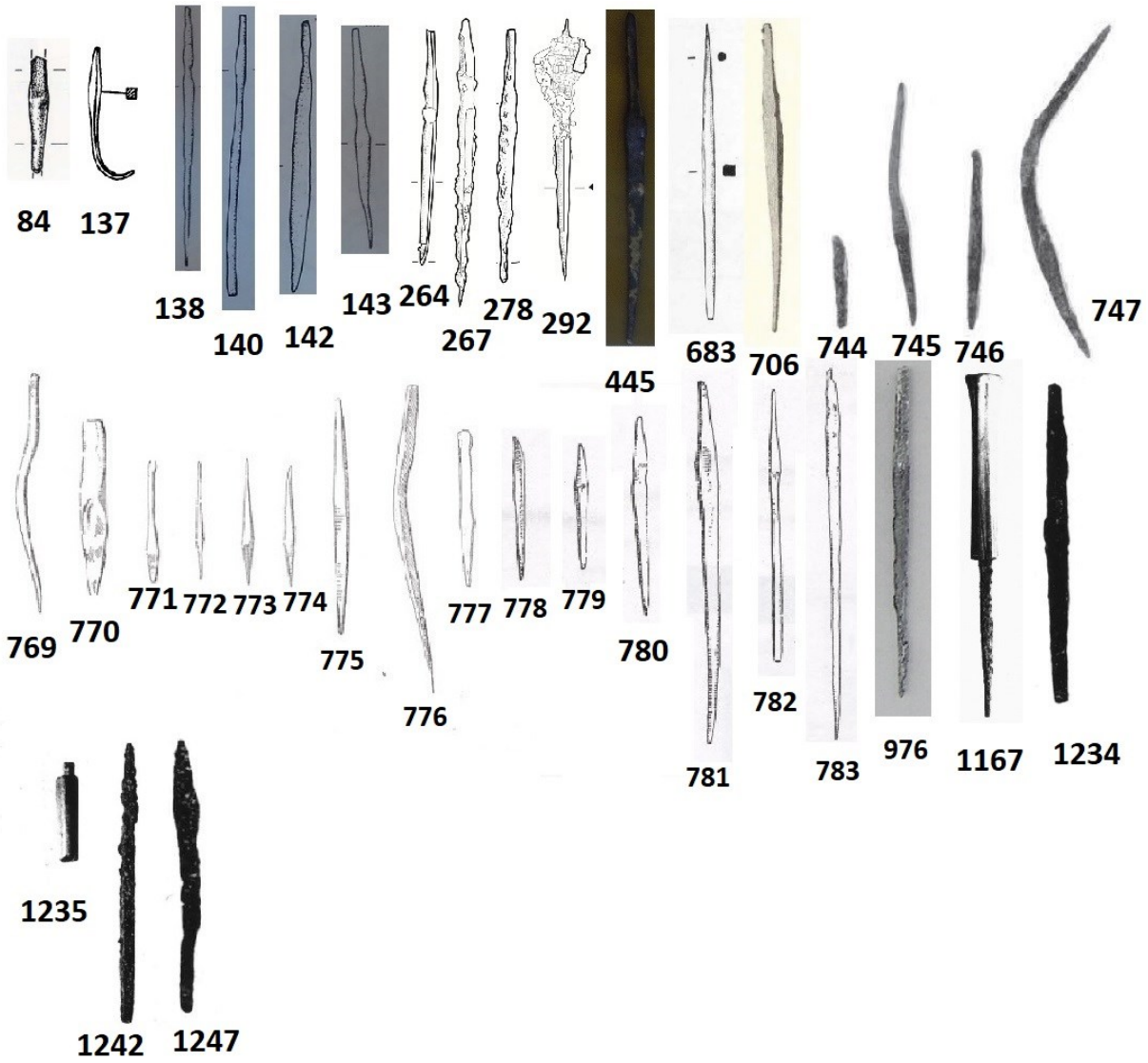

Fig. 28. Awls.

An awl is one of the most common metal items, usually found in settlement context (map 13). It is an esentiel tool for carpentry and masonry craftwork.[552] In total 38 pieces of awls from literature were collected from ten sites (Beşik Tepe, Beycesultan, Cine Tepecik, Ialysos, Kaymakçı, Kusura, Pilavtepe and Troy). It should be noted that interpretation might be difficult and item does not have to always correctly recognized as awl such as one piece which can also be a drill (Cat. 445; fig. 28, 445).[553] Three pieces are from burial environment,

[552] Lloyd – Blackwell 2020.

[553] Günel 2015a, 210, fig. 11.

from Beşik Tepe (cat. 84; fig. 28, 84)[554], Ialysos-Tomb 9 (cat. 706; fig. 28, 706)[555] and Pilavtepe (cat. 976; fig 28, 976).[556] Funeral context is rare. The majority of awls were found in settlement context as part of daily life of local population. In total 30 awls come from settlement. There are 9 pieces from Beycesultan (example Cat. 142; fig. 28, 142)[557], one from Cine Tepecik (cat. 445; fig. 28, 445)[558], four from Kaymakçı (ex. Cat. 745; fig. 28, 745).[559] Number of of finds from Kusura was 11 (example Cat. 773; fig. 28, 773)[560] and four from Troy (ex Cat 1167; fig. 28, 1167).[561] From unknown context one piece come from Ialysos (Cat. 683; fig. 28, 683), probably from funeral context (judging by a cemetery are in the vicinity) and five pieces from Kusura (example Cat. 778; fig. 28, 778)[562], although assumption of settlement context is logical.

[554] Basedow 2000, 124, pl. 97, fig. 2.

[555] Maiui 1923-1924, 113, fig.33:7; Benzi 1992, 245.

[556] Benter 2006, 357, 356, fig. 9.2. second from the bottom.

[557] Mellaart – Murray 1995, 132, 156, fig. 0.6, 73.

[558] Günela 2015, 210, fig. 11.

[559] Roosevelt, Luke and Ünlüsoy 2015, 263, fig. 4.

[560] Lamb 1936, 41, 40, fig. 18, 23.

[561] Blegen 1958, 199, fig. 254.

[562] Lamb 1937, 258, 259, fig. 21, 2.

7.10. Drills

Fig. 29. Drills.

Drills (map 13) are less recorded in literature. They are similar to awls their main difference is not only making a hole in a material, but also removing the material. There are 10 examples. Two secured drill were recognized from graves in Panaztepe (Cat. 895[563] and 896; fig. 29, 896).[564] Eight drills are reported from Seyitomer Hoyuk[565], although the interpretation may not be correct.

[563] Erkanal-Öktü 2018, 113. Tal. 21; 346.

[564] Erkanal-Öktü 2018, 113. Taf. 64.

[565] Bilgen 2011, 381-382, fig. 19.

7.11. Chisels

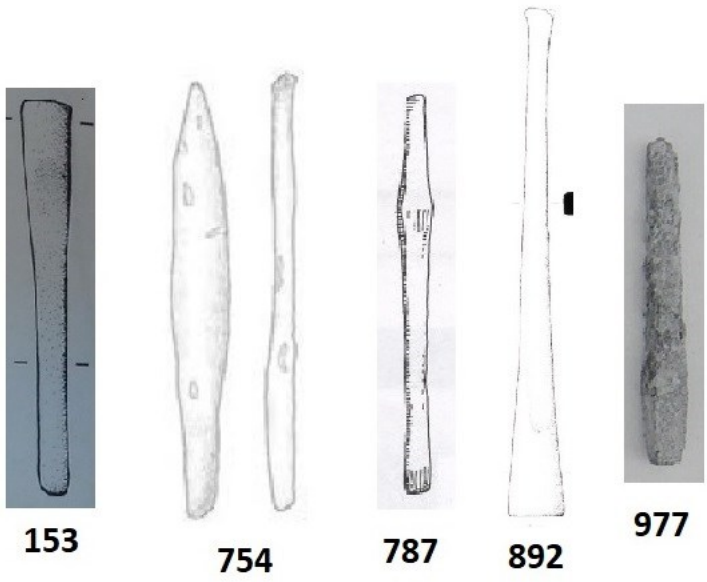

Fig. 30. Chisels.

Chisel is one of the most common metal items found in Western Anatolia (map 14). Majority of these artefacts were recovered from settlements, however chisels identified in graves comprise significant part of the entire group. In total there are 28 pieces. 8 pieces come from funeral context (Beşik Tepe, Ialysos, Langada, Panaztepe, Pilavtepe), 19 from settlements (Beycesultan, Demircihüyük, Kaymakçı, Küllüoba, Kusura, Troy). One with unknown context from Ialysos.

Good example is the chisel from Beycesultan (cat. 158).[566] It is a Pointed chisel with a diagonally square-shaped recess in the middle of the handle. Another piece of chisel worth mentioning is from Kusura. Its blade is wide and pointed (cat. 785).[567] Similar would be the chisel (cat. 453) from Demircihüyük.[568] It has blunt pointed head with narrowing.

[566] Mellaart – Murray 1995, 129, 151, fig. 0.1, 14.

[567] Lamb 1937, 258, 259, fig. 21, 10.

[568] Kull 1988, 187; pl. 34, 12.

7.12. Punches

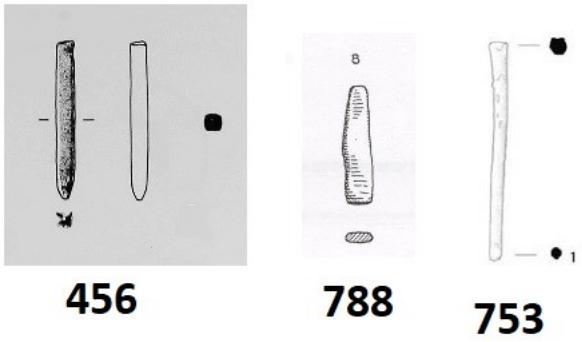

Fig. 31. Punches.

There are exactly three punches found in the area (map 17). Althought it has to be noted that interpretation of these might be difficult and the low number might be due to misinterpretation. This usually formed a tick body with blunt ends. The examples come Demircihüyük, Kaymakçı and Kusura, all from settlement context. Fitting example is the blunt from Kaymakçı (cat 735).[569]

[569] Kull 1988, 187; pl. 34, 12.

7.13. Spatula

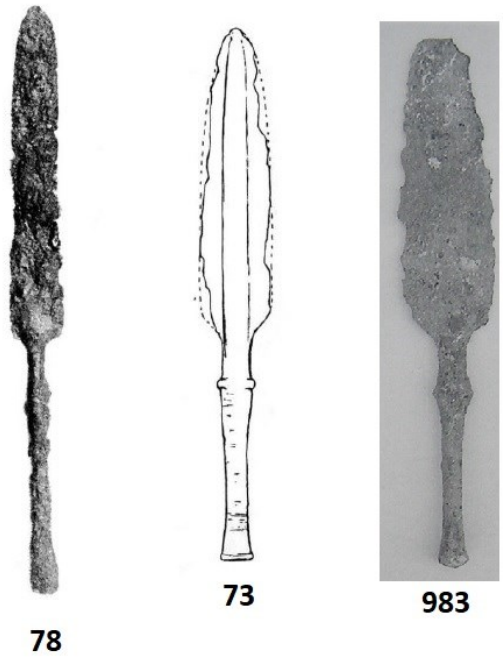

Fig. 32. Spatulae

Three example from Dodecanese and a tomb located in Pilavtepe on Turkish coast (map 20). This is item is of Aegean influence, all three were found on places with Mycenaean graves.

The example from Kos (cat. 73; fig. 32, 73)[570] comes from the Asclepiion site, found in the area east of Lapidaria in the context. It has a raised flattened midrib, and the blade is leaf-shaped. A long round tang serves as a handle, resembling a spear base. It is dated to LH I A. It is the same form as Spatula (cat. 78; fig. 32, 78) from grave in Aspropilia on Rhodes. It resembles the design of spearheads from Kültepe, which have fully functional bases and are more likely the actual spears. At the same time, they lack a central rib.[571] Not very far, outside of Dodecanese, there is last discussed piece from Pilavte (cat. 983; fig. 32, 983)[572] with a similar design close to previously mentioned ones.

[570] Morricone 1972-73, 258, 261 fig. 205, 208.

[571] Erkanal 1977, pl. 15, fig. 13,14

[572] Benter 2006, 357, 356, fig. 9.2. second from the top.

7.14. Hammers

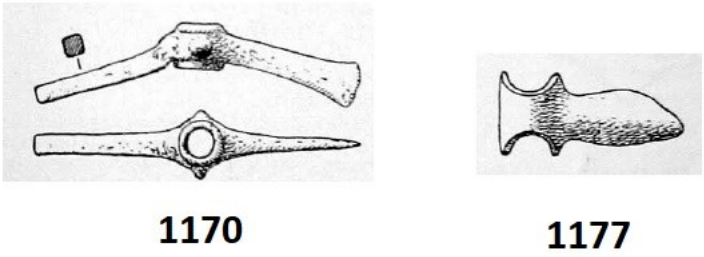

Fig. 33. Hammers

A solid find that can be identified as hammer is quite rare in Western Anatolia. All three known examples are from settlement context of Troy (map 17). There are two form. An example of the first form is (cat. 1170; fig. 33, 1170).[573] One side of the hammer is sharp blade. The other is flat like hammer. It the middle there is a shaft hole. It could be perhaps considered as an adze. The second form (cat. 1177; fig. 32, 1177) looks like a hammer with shaft hole and only one working part.[574] It a quite rare piece and perahaps the intepretation should be different. Cat. 1170 and cat. 1177 are both dated to LH IIIC.

[573] Schmidt 1902, 257, fig. 6479.

[574] Schmidt 1902, 257, fig. 6482.

7.15. Hooks

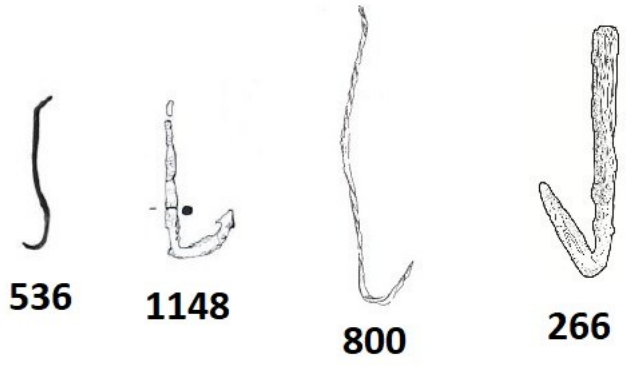

Fig. 34. Hooks.

11 hooks were collected in the catalog (map 17). Except for two examples from Ialysos which were found in burial context, all the hooks were recoverd from settlements.

Majortiy of shape of hook is a simple metal wire formed in a letter S (ex.: Cat. 536; fig. 34, 536).[575] The wire could be also twisted (Cat. 801).[576] Another possible variation is a barbed hook (Cat. 671).[577]

[575] Hood 1982, 661, 663-664, pl. 139.

[576] Lamb 1936, 43, 42, fig. 19, 11.

[577] Maiuri 1923-24, 175; Benzi 1992,182, pl. 181, m.

7.16. Horsebit

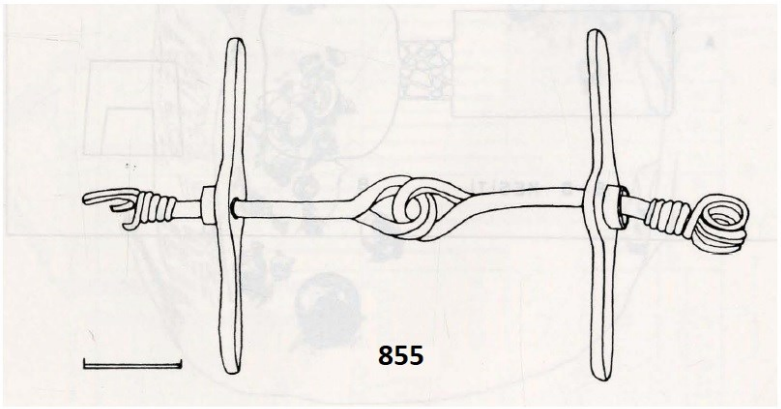

Fig. 35. Horse bit.

There is one published horse bit, said to come from Miletos (map 18). Author of this works' opinion considers this item rather originating from graves in Degirmentepe, along with Levantine swords but due the uncertanities this item is still places in Miletos in this dissertation. The shape consist of two bronze pieces looped together. Form is close to mycenean horse bits.[578]

[578] Akyurt 1998, 29, şek. 23, e.

7.17. Mace head

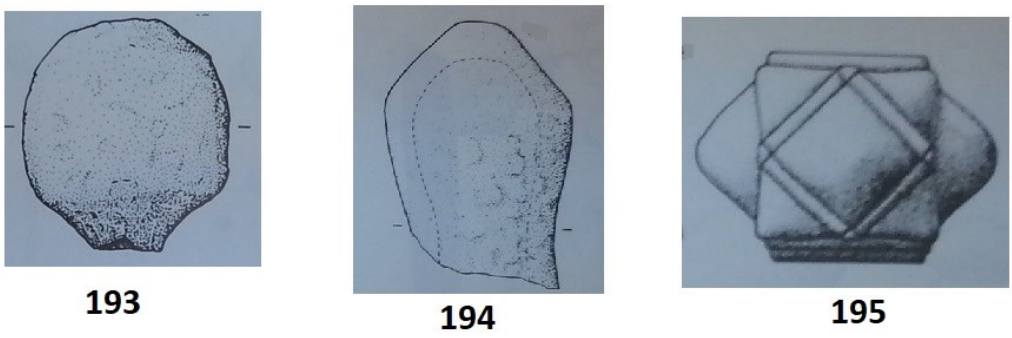

Fig. 36. Mace heads.

From Beycesultan settlement, three objects were interpreted as mace heads (map 17).

The (Cat. 193; fig. 36, 193)[579] is dated to MB2 and (Cat. 194; fig. 36, 194)[580] is dated to LB2. They both represent a blunt knob head with a socket. More elaborated example (cat. 195; fig 36, 195) was found in context of LBA3 dating. It has a Knobbed Squared Cubic head with pyramid shape spikes. This object is more likely a prestigious symbol than a weapond.[581]

[579] Mellaart – Murray 1995, 129, 152, fig. 0.2, 18.

[580] Mellaart – Murray 1995, 135, 159, fig. 0.9, 111.

[581] Mellaart – Murray 1995, 136, 161, fig. 0.11, 129. Pl. XI (b).

7.18. Mirrors

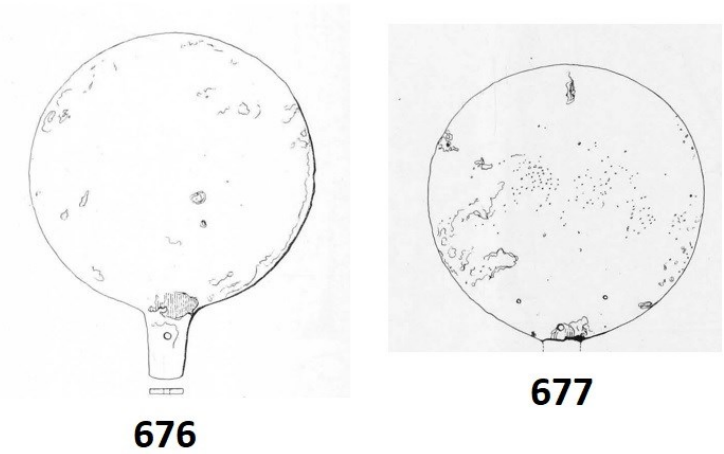

Fig. 37. Mirrors.

All two known mirrors from designated area come from rich graves on Rhodes . Benzi claims a strong eagean influence and there are parallels from Greek Mainland.[582] Cat. 676 (fig. 37, 676)[583] has a round shape with a tang with one rivet hole for a non-organic handle. The cat. 677 (fig. 37, 677)[584] is the quite identical, only the tang is missing.

[582] Benzi 1992, 182.

[583] Jacopi 1930-31, 262, fig. 4; Benzi 1992, 182, pl. 180, g.

[584] Jacopi 1930-31, 284, fig. 26; Benzi 1992, 182, pl. 180, h.

7.19. Needles

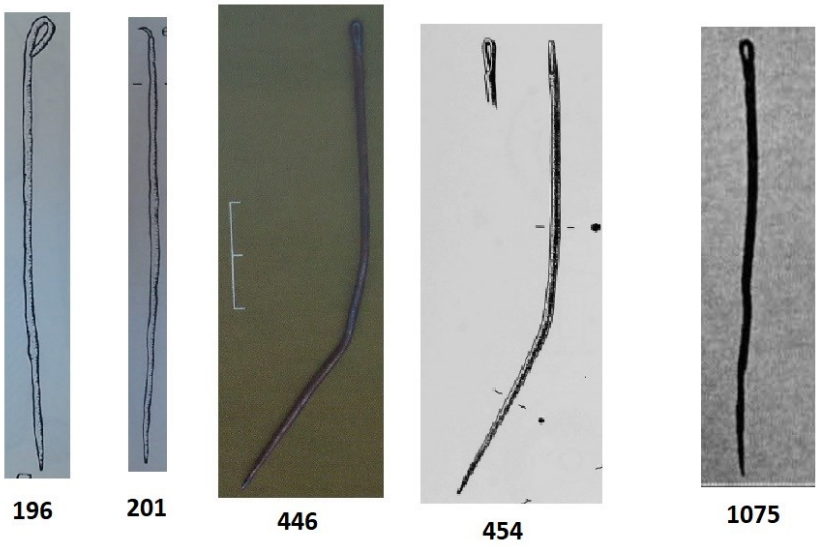

Fig. 38. Needles.

Needles represent one of the commonest metal items, counted 53 exemplars from Western Anatolia (map 16). They can often be mistaken for pins, especially if the needle is fragmental and missing diagnostic parts like head. All needles collected in the catalogue were found exclusively in the settlement context, except one specimen from Besik Tepe[585] (Cat. 105) and another one found under uncertain circumstances in Archontiki on Psara island (Cat. 45).[586]

Needles vary in size, length and shapes of all parts of the needle. There are those with short body (Cat. 201; fig. 38, 201)[587] or quite long, or with large head (Cat. 198)[588] and various other forms.

[585] Maiuri 1923-24, 175; Benzi 1992,182, pl. 181, m.

[586] Deligiorgi 2006, 159.

[587] Mellaart – Murray 1995, 132, 156, fig. 0.6, 69.

[588] Mellaart – Murray 1995, 130, 153, fig. 0.3, 27.

7.20. Seals

Fig. 39. Seals.

Four metal seals were found in Western Anatolia (map 19). There are two variantions.

First is a Stamp-like form. Three examples of this variation were published. Only one[589] ia known from settlement context, a corroded metal seal resembling a little button with a handle from Aphrodisias (Cat. 19; fig. 39, 19). From a grave in Demircihüyük Sariket, there is a corroded copper alloy stamp (Cat. 491).[590] Its handle has a knob at the end. There is a motive on the Stamp: central circle divided in four parts. Each part has a point in the corner and two lines. Central circle surrounded by extral circle with lines decoration. The third seal is from grave in Gordion (Cat. 601, fig. 39, 601).[591] It is a flat disc attached to vertical handle. At the end of the handle there is a pierced knob. The design on stamp is a central circle with several other circles around it.

Rather exquisite find and the second form is the seal found in a Grave Ğ in Panaztepe (Cat. 915; fig. 38, 915). [592] The seal itself is placed on top of an armband or a bracelet. The seal is designed by two circles with incised motifs.

[589] Joukowsky 1986, 613, 620, fig. 446, 40.

[590] Seeher 2000, 210, fig. 64, G.196, b.

[591] Mellink 1956, 42, pl. 23k-l.

[592] Erkanal-Öktü 2018, 124, Taf. 19; Taf. 365.

7.21. Tweezers

Fig. 40. Tweezers.

The tweezers appear in 7 examples in the territories with a strong Aegean influence (map 19). All seven pieces were found in burial context, except for two specimens from Archontiki on Psara with uncertain context. The rest of copper alloy tweezers were found in graves from Rhodes and Cos.

The first of the examples of tweezers, comes from Ialysos in Rhodes (Grave no. 32). It represents a single piece of thick wire forming a loop and two grapping levers (Cat. 654). It is noticeably convex towards the outer sides and it is dated to LH IIIC.[593] Other tweezer come from Cos. Cat. 849 from grave no. 11 is rather similar to the previous one. The dating spans to LH IIIB–C.[594] Those are the example with a loop at the end of the tool. The from of two tweezers (cat. 68) and (cat. 69; fig. 40, 69) from Archontiki on Psara lacks the loop at the end.[595]

[593] Maiuri 1926, 181, fig. 106; Benzi 1992,182, pl. 181, e.

[594] Morricone 1965-66, 112, fig. 93.

[595] Deligiorgi 2006, 153.

7.22. Vessels

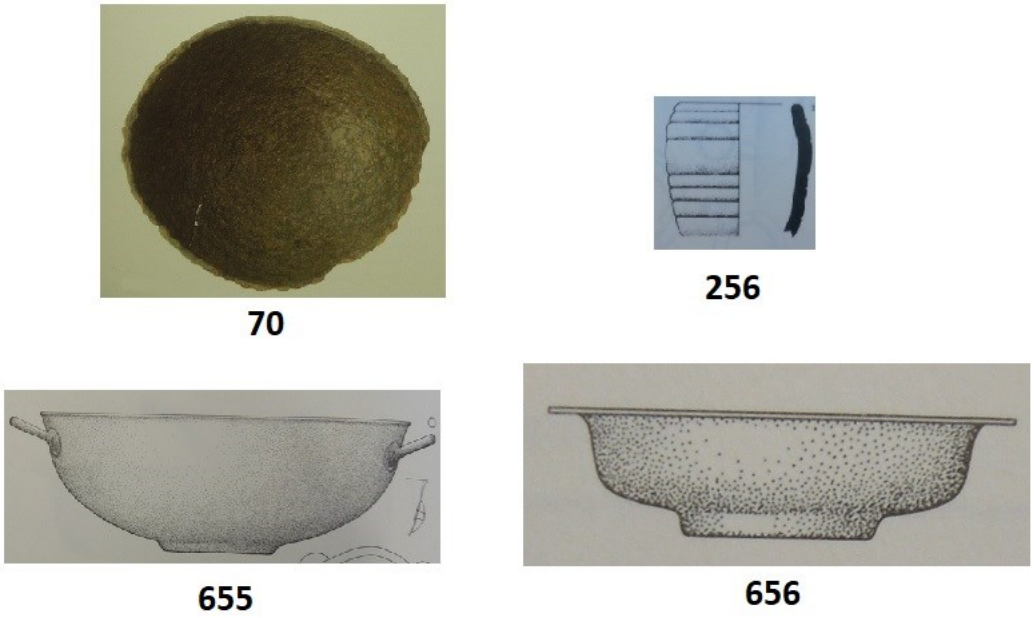

Fig. 41. Vessels.

Among prestigious metal objects, several vessels appear. Total of 8 metal vessels come from Western Anatolia (map 20). The fragmental bowl from Archontiki has an uncertain context (cat. 70; fig. 41, 70).[596] Two more were recovered from graves in Ialysos, Rhodes. An exemple (cat. 655; fig. 41, 655)[597] has from of bowl with attached handles to both sides. Four more vessel were excavated from graves in Panaztepe (example cat. 882).[598] Only one specimen known from settlemnt context is the one fragmental vessel from Beycesultan (cat. 256; fig. 41, 256).[599]

[596] Deligiorgi 2006, 157.

[597] Furtwängler – Löschke 16; Matthäus 1980b, 289, pl. 51, 441.

[598] Erkanal-Öktü 2018, 106, taf. 17, Ğ 3, 250-251, taf. 344, Ğ 3.

[599] Mellaart – Murray 1995, 135, 160, fig. 0.10, 123.

7.23. “Hayfork”

Fig. 42. „Hayfork“.

The damaged metal hayforks were found in Seyitömer Höyük (cat. 1131; fig. 42, 1131)[600] and (cat. 1133; fig. 42, 1133).[601] They both look like a socket two-pointed hayfork with long spikes which are now bent. The socket is also long.

They have very long spikes and so far a similar find have not been found anywhere else in Western Anatolia. Parallels come from earlier times, for example from Mesopotamia, or later from Boğazköy.[602] For distribution see map 18.

[600] Bilgen 2011, 381-382, Fig. 19

[601] Bilgen 2015, 103, Fig. 116.

[602] Boehmer 1972, pl. XLV, fig. 1268.

7.24. Fibulae

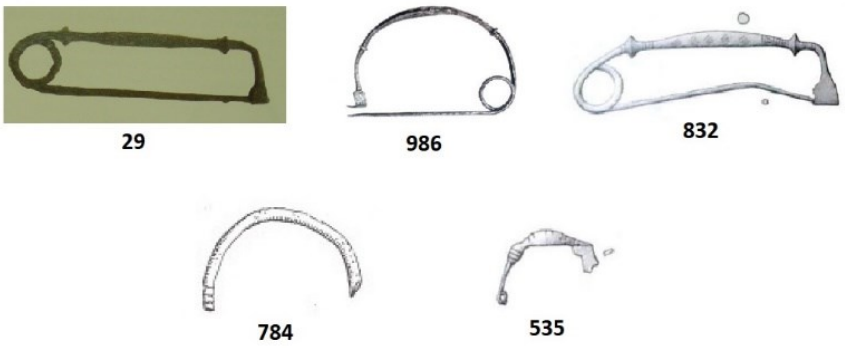

Fig. 43. Fibulae.

From post LH IIIB period metal fibulae began to appear in Western Anatolia (map 19). Up to 13 pieces were found. In four case they were recovered from grave (Dodecanese, Psara) and the rest belong to settlement. All found fibulae are variations of the Violin type. A good example would be cat. 832 (fig. 43, 832) with a decorated body by ingraved lines. It comes from a grave in Langada.[603] Assumed dating a LH IIB-C.

[603] Morricone 1965-66, 103, fig. 84; Sapouna-Sakellarakis 1978, 36, pl. 1, 6.

7.25. Figurines

Fig. 44. Figurines.

Interesting group is the category of metal figurines (in total 8 pieces, map 20). Several of them were found in settlement context of Trianda on Ialysos, dated to LM IA, as an example of Aegean woman figurine (cat. 1152; fig. 44, 1152).[604] Also an Aegean male figurine was recovered (cat. 1154).[605] Similar to cat. 1152, a one metal figurine of Aegean woman was found on Kalymnos island from a cave context in Vathy Cave (cat. 1256).[606] Two other figurines were recover from inland Western Anatolia in settlemnt context (cat. 738; fig. 44, 738)[607] from Kadıkalesi and (cat. 1047; fig. 44, 1047)[608] from Seyitömer Höyük. Their shape is come connected to figurines found in Anatolia and Near East. According to Akdeniz, the cat. 738 is Resembling Hittite metal figurines representing the Storm God.[609]

[604] Marketou 1998b, 59, fig. 7.

[605] Marketou 1998b, 61, fig. 9.

[606] Marketou 1998b, 63, 64 fig. 12.

[607] Akdeniz 2006, 30, Fig. 17.

[608] Bilgen 2011, 193, 195, fig. 283; Bilgen 2015, 107, fig. 121.

[609] Akdeniz 2006, 30.

7.26. Armour

Fig. 45. Armor.

Three thin metal sheets were found in Troy (map 18). Although not recognized as pieces of armour by Blegen[610], they could in fact be a pieces of scale armour. An example (cat. 1254; fig. 45, 1254)[611] is resembling a plaquette with central midrib. Little holes to attach it to nonmetal material are placed around the plaquette. Although it is not definite, these artefacts could be be a part of battle defensive equipment.

[610] Blegen 1953, 297-298.

[611] Blegen 1953, 297, fig. 297.

7.27. Jewellery

This group represent almost one quarter of all collected finds. Up to total of 363 pieces were distibuted all around Western Anatolia, especially from burial context (278) and settlement context (83) with a highest density of jewellery in inland Western Anatolia (map 22). The finds of this category are often made of preciosu metals such as silver and gold. This category can be further divided into subcategories such as rings, aerrings, pendants, ornaments, bracelets, beads and many more. For distributin see map 22.

7.27.1. Rings

Fig. 46. Rings.

There are 185 recorved metal rings from Western Anatolia (map 22). They were widely found in settlement and burial context. From burial context there are 126 pieces, they occur cemeteries along the coast (Beşik Tepe, Ialysos, Panaztepe, Pilavtepe) and equally from inland funeral sites (Afyokarahisar, Çavlum, Demircihüyük Sariket, Gordion, Yanarlar). 58 rings were discovered in settlement environment (Aprodisias, Beycesultan, Demircihüyük, Kaymakci, Kusura, Seyitömer Höyük and Troy). Only one known specimen with uncertain context come from Archontiki on Psara.[612]

[612] Deligiorgi 2006, 157.

The ring in various form has been very widespread decorative item in 2nd Millennium B.C.. It has been used throughout all Anatolia and in the Middle East. In addition to copper and alloys, lead was often used as a material for making rings. Rings made out of precious metals (gold, silver) are not uncommon as well, they only occur in low numbers. The ring is often made by simply coiled metal wire of different thickness, the ends are joined or they are touching each other (as in the example from Kusura[613], Cat. 794), or not (an example[614] from Demircihüyük Sariket, Cat. 497). Furthermore, the ends of the wires may also overlap, and even the ring itself may be coiled in several layers (example from Yanarlar[615], Cat. 1259). In Demircihüyük Sariket, we have the example of ring decorated with other elements, such a other smaller circles with beads or pearls attached to it (examples of cat. 458[616] and 459[617]). From Seyitömer Höyük we also have documents of golden rings, whether from thin coiled wire (cat. 1068; fig. 46, 1068)[618] or hollow metal (cat. 1070).[619]

[613] Lamb 1937, 258, 259, fig. 21, 26.

[614] Seeher 2000, 211, Fig. 65, G.236, d.

[615] Emre 1978, 108; fig. 127, pl. XLI, 1b.

[616] Seeher 1991, 116, 118, fig. 12, 2; Seeher 2000, 208, fig. 62, G.128, b.

[617] Seeher 1991, 116, 118, fig. 12, 3; Seeher 2000, 208, fig. 62, G.128, a.

[618] Bilgen 2011, 193, 195, fig. 284; Bilgen 2015, 108, fig. 122, up left.

[619] Bilgen 2015, 108, Fig. 122.

7.27.2. Pins

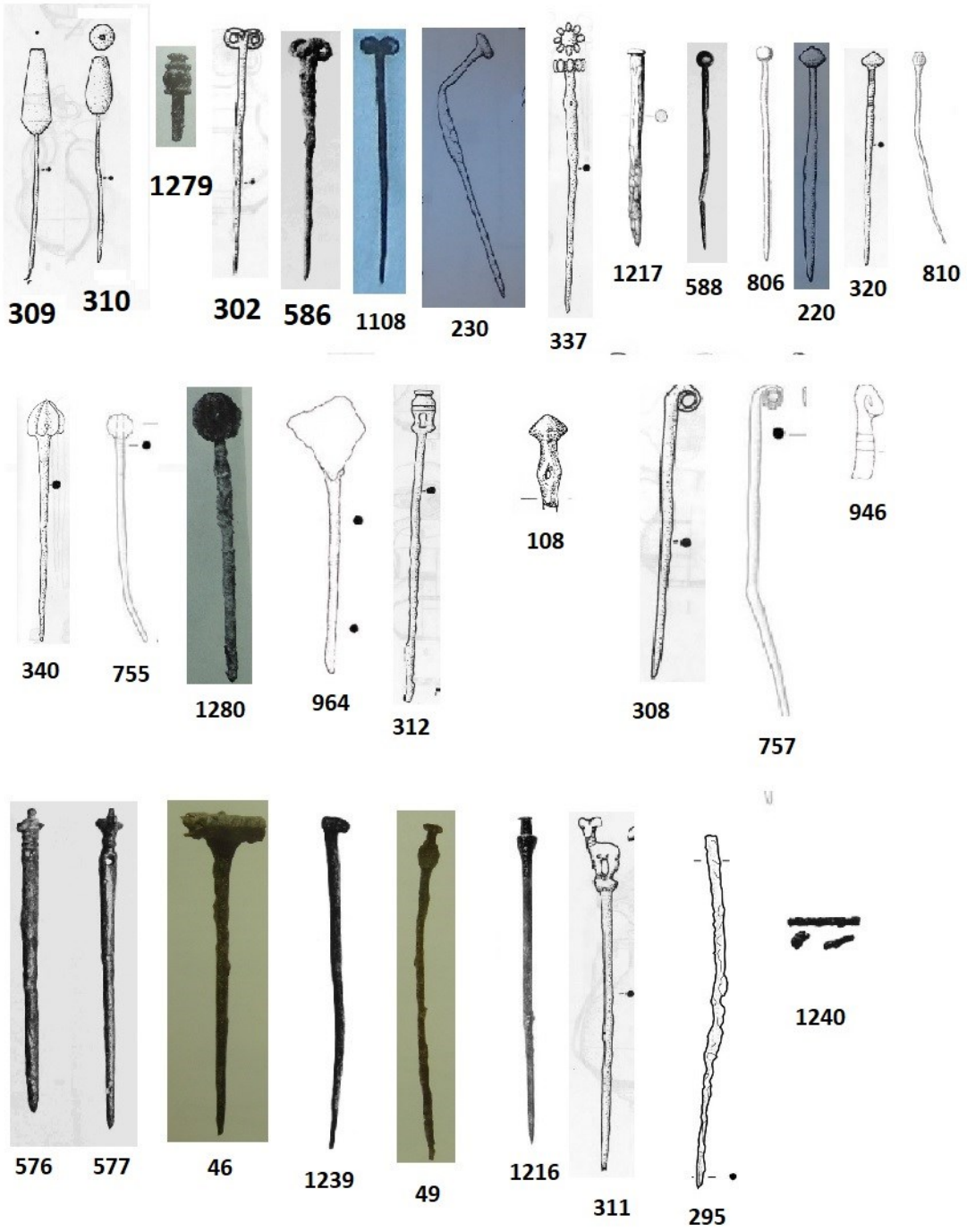

Fig. 47. Pins.

The pin is one of the most common metal find in Western Anatolia (map 21). In second Millennium B.C. they are widely distributed in all of Anatolia and the Middle East such as in 3rd millennium B.C.. They also occur in the Aegean region, but not in so many numbers, which can be evidenced by the different perceptions of aesthetics, as well as the different

clothing habits. The variety of form of all collected pins is large. The types of pins can be sorted by a design of a head. There are many forms of a head. Another significant element for typological classification is when the body of the pin under the head can be pierced (so-called Toggle Pin, example from Gordion (cat. 574).[620]

The most common types are Loop-head Pins when the head is twisted sideways forming a spiral or a loop. There are examples of a single loop-head Pins (cat. 221)[621] from Beycesultan, cat. 581[622] from Gordion (burial) and Çavlum (cat. 308, fig. 47, 308; also burial)[623] . Next to single-loope pin stands another version: a Double Spiral-Headed Pin (cat. 814)[624] from Kusura and (cat. 1114).[625]

Furthermore, one of the most common types is Knob Head Pin, which is found in almost all of the included sites except the coast (not for Beşik Tepe). It is simply a rounded head of various sizes which can be differently shaped by narrowing of flattening (examples from grave in Yanarlar (cat. 1272)[626] and Beycesultan (cat. 214).[627] Some rounded heads can be also divided into so-called Globular Head Pin (Gordion, cat. 592)[628] or Melon Head Pin (Cat. 1282).[629] These types also occur in Çavlum, Seyitömer Höyük and Beycesultan. Furthermore, there are others example of pins with a round head but it is shaped into a form of a flower or a star (cat. 810; fig. 47, 810).[630] Also there are Biconical Head pin, where the head is round but rather biconical (such is known only from Gordion (cat. 598)[631] or Pyramidal Head Pin (from Besik Tepe, cat. 108).[632] Furthermore, the so-called Tubular Head pin with a hollow head is known from Kusura (Cat. 818)[633], the parallel is from the Greek island of

[620] Mellink 1956, 31, pl. 17, h.

[621] Mellaart – Murray 1995, 130, 153, fig. 0.3, 33.

[622] Mellink 1956, 31, pl. 17, o.

[623] Bilgen 2005, 119, pl. XLI, 3; pl. LXXVIII, 6.

[624] LAMB 1936, 41, 40, Fig. 18, 14

[625] Bilgen 2011, 193, 195, fig. 281; Bilgen 2015, 106, fig. 120, third from left.

[626] Emre 1978, 106; fig. 110, pl. XL, 2b.

[627] Mellaart – Murray 1995, 128, 151, fig. 0.1, 2.

[628] Mellink 1956, 32, pl. 18, j.

[629] Emre 1978, 107; fig. 120, pl. XL, 5a.

[630] LAMB 1936, 39, 40, Fig. 18, 10.

[631] Mellink 1956, 33, pl. 18, p.

[632] BASEDOW 2000, 129, pl. 97, Fig. 1.

[633] Lamb 1936, 41, 40, fig. 18, 18.

Psara near Chios island (cat. 46; fig. 47, 46).[634] Less common subtypes include Vase Head Pin, when the head resembles a vase. There is one example from Troy (cat. 1216; fig. 47, 1216).[635] An interesting feature found only in Gordion (cat. 576; fig. 47, 576)[636] is the so-called Studded Head Pin, the head is formed by cross-shaped projections. Quite unique is a find of a pin from Çavlum cemetery whos head resembles a vase type but with a hole inside it (Cat. 312).[637] The author of the publication rather names it it Poppy Head, because according to him the head resembles to a shape of poppy. Çavlum cemetery also revealed other rare finds such as a unique pin with zoomoprphic head of a ram (cat. 311; fig. 47, 311)[638] and two pins with a metal body of a pin and a head is represented by agate stone put on top of the body: cat. 309[639] (fig. 47, 309) and cat. 310 (fig. 47, 310).[640]

Pins represent one of the most common metal find in studied territory and their distribution go widely into East and West. There are varieties of types and form. Similar types also occur in 3RD Millennium B.C.. Many pins from Western Anatolia in the 2nd Millennium can be compared to those from Hattusa.[641]

[634] Deligiorgi 2006, 154.

[635] Korfmann 2003, 9, fig. 8.

[636] Mellink 1956, 31, pl. 17, j.

[637] Bilgen 2005, 120, pl. XXXIX, 5a,b; pl. LXXVIII, 10 a,b.

[638] Bilgen 2005, 120, pl. XXXIX, 2a-c; pl. LXXVIII, 11a-d.

[639] Bilgen 2005, 119, pl. XXXIX, 4; pl. LXXVIII, 8.

[640] Bilgen 2005, 119, pl. XXXIX, 3; pl. LXXVIII, 9.

[641] See for example Boehmer 1972.

7.27.3. Earrings

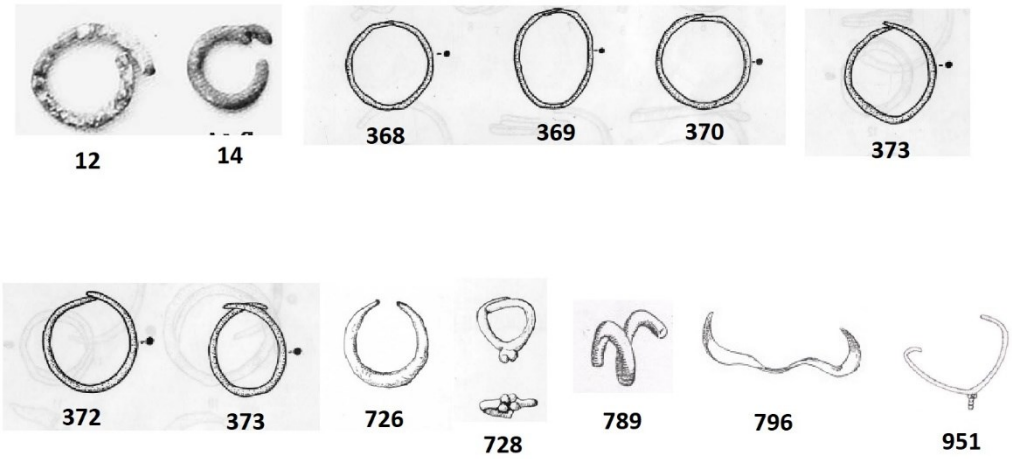

Fig. 48. Earrings.

Another quite common find is an earring. In total 70 earrings were recoverd from Western Anatolia. 65 come from burial context (Gordion, Cavlum, Panaztepe, Ialysos) and 5 from settlement (Aphrodisias, Beycesultan, Kusura). The shape of earring is in most cases a simple looped ring such as example cat. 368 (fig. 48, 368) from Çavlum when the ends are touching or overlapping.[642] In other case the end are not touching or they are not close to each other (cat. 726; fig. 48, 726; from Ialysos, silver).[643] More elaborated example come also from Ialysos, the simple ring disposes of “ring stone” on top of it (cat. 728, fig. 48).[644] Another example of more aestetically sophisticated earring is cat. 796 (fig. 48, 796) with a "Horns-shaped" form from a thick wire. It was found in Kusura and it is made of gold.[645]

[642] Bilgen 2005, 130, pl. XLIV, 10a; pl. LXXXIII, 11.

[643] Maiui 1923-1924, 138, fig. 61; Benzi 1992, 274, pl. 118:d, pl. 184:f.

[644] Maiui 1923-1924, 138, fig. 61; Benzi 1992, 274, pl. 118:d, pl. 184:g.

[645] Lamb 1937, 258, 259, fig. 21, 12.

7.27.4. Braceletes

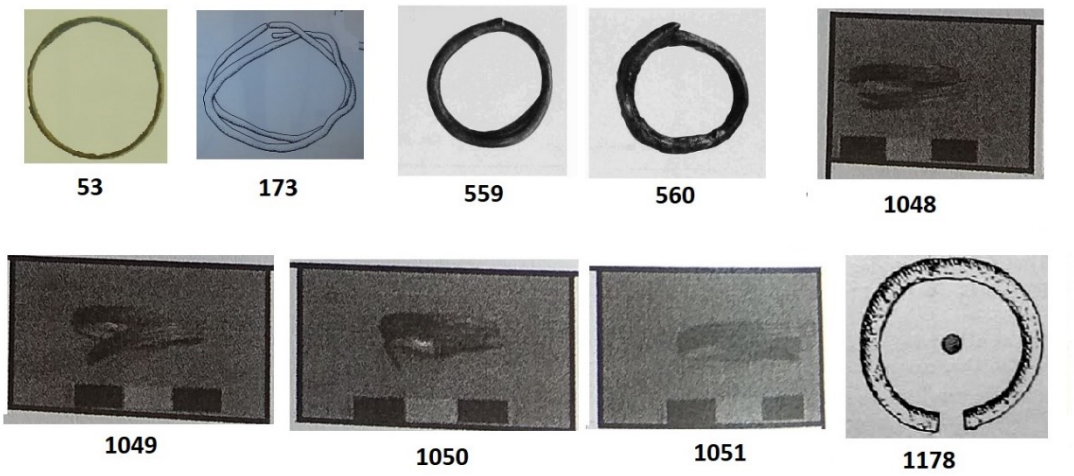

Fig. 49. Bracelets.

Another wuite frequent piece of jewellery is a bracelet. In total 22 bracelets were put in the catalogue. 7 of them come from graves (Archontiki, Gordion, Ialysos), 12 from settlements (Beycesultan, Seyitömer Höyük, Troy) and 3 with uncertain context from Archontiki on Psara. The bracelets mostly strongly resemble ring, only the size is added. Thefefore their form is usually a thick metal wire looped into looped simple ring (cat. 35, fig. 49, 53; from Archontiki) or looped several times to form a circular shape (cat. 559; fig. 49 559; from Gordion).[646] Specific finds of bracelets are made of gold such as the group of bracelets from Seyitömer Höyük (example cat. 1050; fig. 49, 1050).[647]

[646] Mellink 1956, 37, pl. 21, c.

[647] Bilgen 2011, 183, fig. 245, second from up right.

7.27.5. Beads

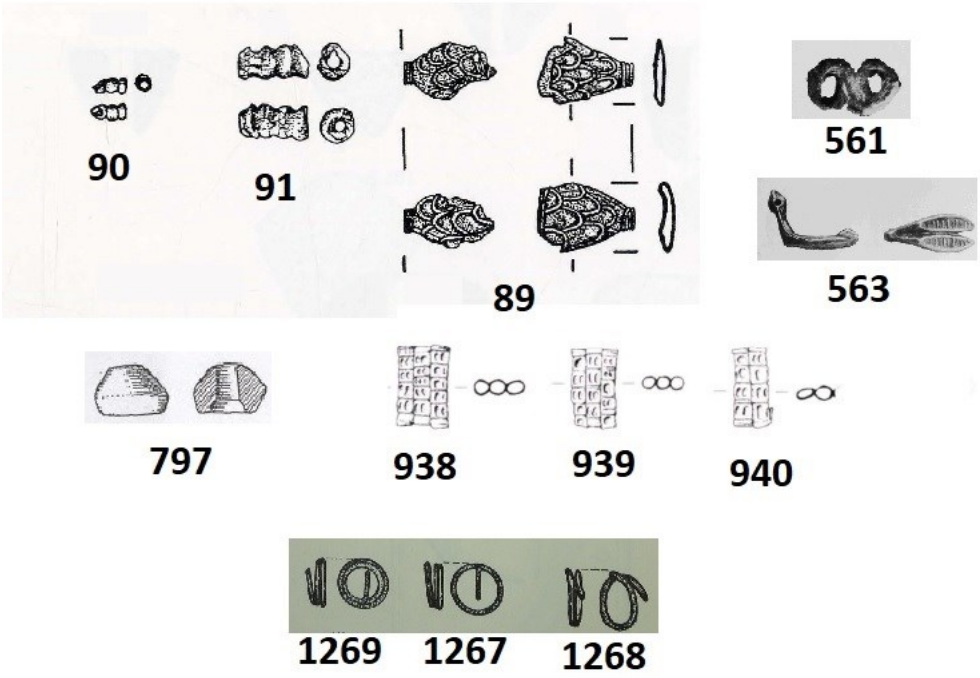

Fig. 50 Beads.

In total 27 beads were found. Except for one example from settlement in Kusura[648] (Cat. 797;, fig. 797), all the beads were part of personal adornments from buried individuals. Beside Panaztepe and Besik tepe which are close to the coast, mostly inland cemeteries show the evidence of metal beads. It should be noted that evidence of non-metal beads is much more significant that metal one. An Interesting pieces is a lead bead shaped like spindle whorls (Cat. 797; fig. 50, 797).[649] Beads occur in various types including knobs or button (example cat. 89; fig. 50, 89; Besik Tepe)[650], simple spiral rings (cat. 1269; fig. 50, 1269; Kusura)[651], hollow tubes joint together with decoration (cat. 938; fig. 50, 938; Panaztepe)[652], figure-of-

[648] Lamb 1937, 258, 259, fig. 21, 15.

[649] Lamb 1937, 258, 259, fig. 21, 15.

[650] Basedow 2000, 122, pl. 89, fig. 5, c; pl. 119, fig. 2.

[651] Emre 1978, 108; fig. 135, pl. XLI, 3a-b.

[652] Erkanal-Öktü 2018, 145, Taf. 32, Taf. 375.

eight shape (cat. 561; fig. 50, 561; Gordion)[653] or a shoe-shaped form (cat. 563; fig. 50, 563).[654]

7.27.6. Pendants

Fig. 51. Pendants.

21 artefacts recognized as pendants were found in Western Anatolia. 20 specimens come from burial context (Gordion, Ialysos, Panaztepe) and 1 from settlement Aphrodisias (Cat. 15; fig. 51, 15).[655] The most typical shape is a button with geometric decorations and a "tang" with a hole in it (example cat. 564; fig. 51, 564).[656] Other variations known are (cat. 953; fig. 51, 953, gold): a mushroom-alike shaped hollow pendant or a flower like shape (cat. 955; fig. 51, 955) or rossete (cat. 692; fig. 51, 692). These decorative items represent a local fashion in jewellery such as other finds from this category.

[653] Mellink 1956, 39, pl. 21, u.

[654] Mellink 1956, 40, pl. 23a-d.

[655] Mellink 1956, 40, pl. 23a-d.

[656] Mellink 1956, 41, pl. 23h.

7.27.7. Coiled sheets

Fig. 52. Coiles Sheets.

The subcategory of coiled sheet is an interesting group of rings from Cavlum cemetery. The form of the ring is a thin sheet and wire bent together to form a ring like object with additional decorative features. There are 13 of them from several graves. A coiled sheet from grave n.13 (cat. 420)[657] is a good example of combination of metal wire and thin sheet. The wire is colied into a ring. Over the wire there is a bent thin lead sheet.

[657] Bilgen 2005, 139, pl. LXXXIV.15.

7.27.8. Hair rings

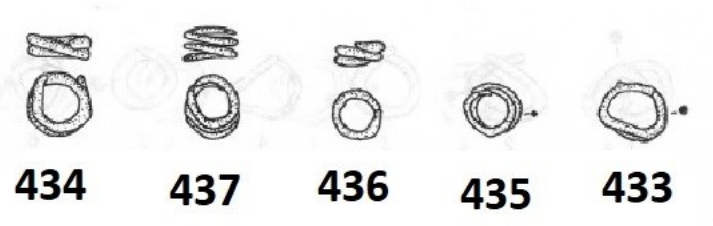

Fig. 53. Hair rings.

Another subcategory of rings. The group of metal spirals formed into a ring shape were recognized by Bilgen in Cavlum cemetery. They were placed around the head of a buried individual.[658] Twelve pieces from several graves. An example is a ring formed by multiply looped wire into a spiral form (cat. 437; fig. 53, 437).[659]

[658] Bilgen 2005, 141-143.

[659] Bilgen 2005, 142, pl LXXXIV.2.

7.27.9. Ornaments, rossete, tutulus

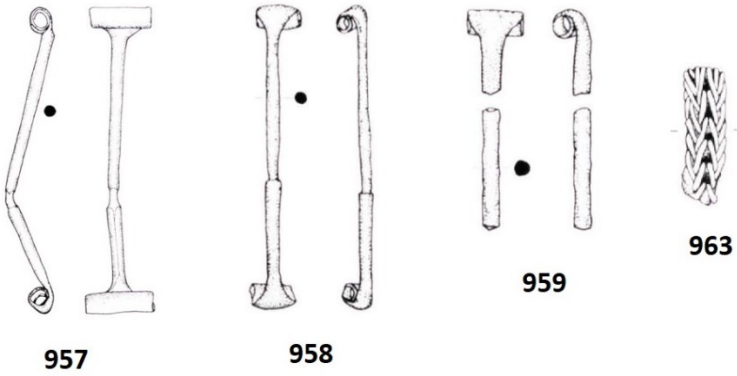

Fig. 54. Ornaments.

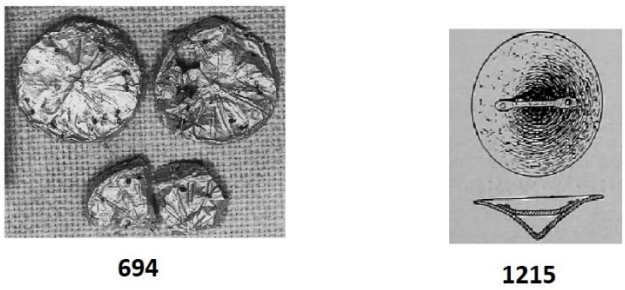

Fig. 55. Rossete, tutulus.

7 unidentified pieces of decorative metal objects from Ialysos, Panaztepe and Troy. Except one case, they all come from burial context. The only Tutulus come from Troy (cat. 1215; fig. 55, 1215). It is dated to LH IIIB-C.[660] In Panaztepe, from burial context, three pieces of ornament were found. Their structure is a tube formed by rolled metal sheet on both ends of a thin pin-alike body (example cat. 957; fig 54, 957).[661] Another significatn ornament origins from Panaztepe as well. It is a loop-in-loop wire, Interpreted as perhaps a piece of chain (cat.

[660] Schmidt 1902, 258, fig. 6487.

[661] Erkanal-Öktü 2018, 149. taf. 5, taf. 378.

963; fig. 54, 963).[662] Jewellery of form of rosettes were found in Western Anatolia as well. A handsome example was recoverd in Ialysos, from Old Tomb 4, and it was made of gold (cat. 694; fig. 55, 694).[663]

7.27.10. **Foot Muff**

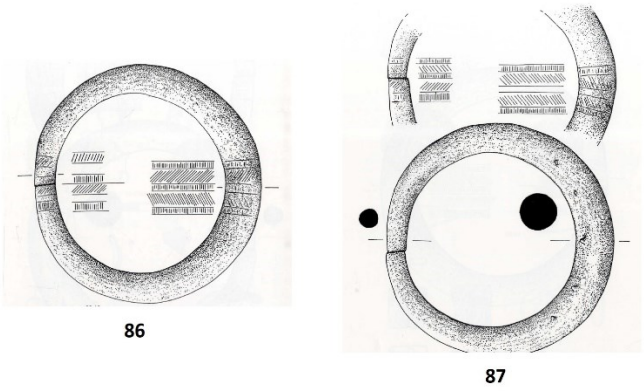

Fig. 56. Foot Muff

Two added metal rings were found in a grave in Besik Tepe (cat. 86; fig. 56, 86)[664] and (cat. 87; fig. 56, 86).[665] Both are decorated by incised lines.

[662] Erkanal-Öktü 2018, 151, taf. 27, taf. 376.

[663] Maiuri 1923-1924, 99, 101, fig. 17; Benzi 1992, 238, pl. 116:b.

[664] Basedow 2000, 125, pl. 93, fig. 1; pl. 120, 1.

[665] Basedow 2000, 125, pl. 94, fig. 1; pl. 120, 1, 2.

8. Regional, contextual and chronological distribution

8.1. Regional distribution

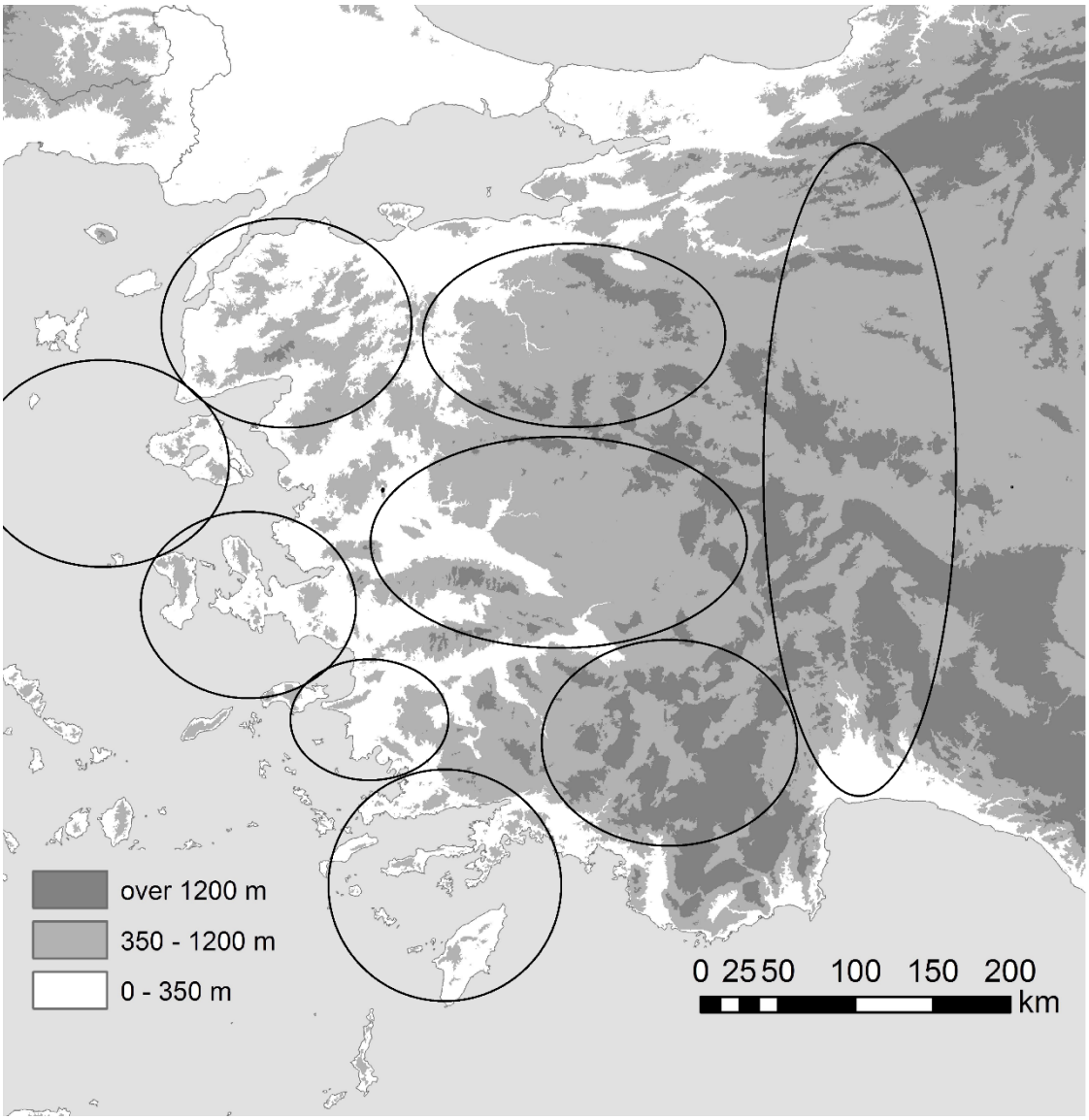

Fig. 57. Map of regions in Western Anatolia in the Snd Millennium B.C.

In recent years, based on pottery finds, Peter Pavúk has divided Western Anatolia into several regional groups.[666] Following a similar aim with metal finds, the author of this work points to distinguish difference in regions. However, the typological division of regions is still ambiguous.

[666] Pavúk 2015, 95, fig. 9

The Western Anatolia can be divided into coast and inland. The coast can be roughly further divided into upper part and lower part. There is a difference between uppert part and lower part of the coast. The inland Western Anatolia can be further divided into several regions.

Troy and surroundings may seem to be a region on its own, metals are showing strong but also local Anatolian fashion. Other influences such as Aegean or even Balkan can be observed here as well.

Izmir bay is interesting, the metal finds are showing Anatolian and Aegean influences and there are some unique metal items that are made in typologically mixed design (Panaztepe). Good connection to sea could suggest local participating on international maritime trade and a high probability of interaction of different material and social cultures.

Moving south along the we meet site such as Panaztepe, Kolophon, Değirmentepe, they showing both Aegean and Anatolian influences and some special traits (the Siana group, the presence of Levantine swords).

By the south, the Aegean influence seem to be strong, especially close to Dodecanese islands. Mycenaean-like material seems to be broadly used. Yet Anatolian-like metals are not rare here either and unique typologically mixed ones are present as well.

In Northern part of inland western Anatolia, there are great settlements and cemeteries. The most promising is the large settlement of Seyitömer Höyük, unfortunately only known for MBA. The quite high number of metals from all this area are showing Anatolian typology with several unique or rare finds. The richness of metal sources in this area suggests possible strong local metallurgical production, such as in EBA. Metalworking in MBA was detected as well. In addition, in the northwestern inland anatolia, important cemetery Çavlum with rich is located.

In mid and south inland western Anatolia, we one may suggest larger settlements were local metal producers. For example, Beycesultan is a good example. The forms of metal finds are in Anatolian style, yet some local fashion could appear there. Beycesultan represent a quite rich site in terms of metal objects, compare to other sites and is seem to be an important center site at that time. Demircihüyük and Aphrodisias seem to have similar types of metals like other sites around. The same could be the case for Kaymakçı with a lot of potential into future study. In the most eastern part of western anatolia, Gordion and Yanaralar seems to be more typologically more connected to Hittite influence, also according to pottery and burial rite.

In term of studying the metal finds from regions, the swords are concentrated along the coast with a peak on Dodecanese. Panaztepe, Müsgebi, Bodrum (and the Greek islands of Rhodes and Kos). On the other hand, the presence of Beşik Tepe with the remnant of the hilt

swords and the findings of sword pommels that were part of the hilt in Troy[667] suggest swords were even more distributed.

The Siana Swords are a truly unique group. The group appears almost exclusively around Western Anatolian coastline, especially close to the Dodecanese. In fact, core evidence of the swords come from Rhodes and Kos. Their design can be distinguished as a combination of a horned Aegean type C sword design and a handle ended by a tang to hold a pommel of Levantine-type sword, such as those from Degirmentepe. There are opinions that this sword could relate to Hittites as well. One may connect the occurrence of this sword at coast with Hittite military expansions in the west recorded in Hittite written sources. However, the very presence of these weapons does not prove the military campaign. Siana group includes knives with the same design as the swords - a handle ended by a tang to hold a pommel.

Additionally, along the coast, a group of swords has been identified standing between Mycenaean and Anatolian design, named the Interface swords. They appear as a synthesis of Aegean and Anatolian elements in swords (e.g., Sandars Type B-C, Bogazköy sword).

The author of this work would like to point out to an interesting observation of collection of short metal dagger or swords from Seyitömer Höyük dated to 18th century B.C.. They seem to be typologically similar to Mycenaean type B swords (characterised by a flanged guard and a tang). Those come mostly from shaft graves in Mycenae and are dated to MH III and LH I. There are other pieces in Argolis but not many. However, Seyitömer Höyük group is dated earlier. Maybe it is only a coincidence, and it does not mean anything, but one may suggest if there was connection between Mycenaean and west Anatolian weapons. The daggers from Seyitömer Höyük can continue in longer local tradition. Daggers with tangs appear in Western Anatolian since 3rd Millennium B.C. and their general design is similar to Aegean type B sword, whether EBA daggers in Aegean were mostly tang-less. Therefore, one may even suggest if the invention of Mycenaean type B sword is not influenced by Anatolia, or there were some interactions. The same can be true for the a sword from Balikesir (cat. 83), which unfortunately without context. One cannot be sure about secure dating of this piece and whether it is current with type B swords.

The same case could be with spearheads. Those from shaft graves in Mycenae have big, socked leaf-shaped head. Similar but not identical pieces were found in Seyitömer Höyük and they could be again predecessor or inspiration for Mycenaean spearheads. The larger

[667] Pavúk - Pieniążek 2016, 13.

spears found at Seyitömer Höyük or Panaztepe bear a striking resemblance to Avila's Type II, which is representative of the large spears found in Mycenaean shaft graves. Despite its resemblance to Type II, it is categorized as Avila Type IV. However, it's important to note that they are distinct and not identical. The parallel comes from Kultepe as well. The general situation with spearheads is less clear. Basically, the spearsheads located in the southwest coast of Anatolia are more in Aegean fashion. Type Group C of spearheads might show local production. The spearsheads from inland Western Anatolia show little difference is appearance, however they can still be classified together with spearheads from islands The group of "spikes" such as narrow spearhead from Kusura which has a similar parallel in Seyitömer Höyük.

The arrowheads on the coast mix typologically with Aegean triangular types and Anatolian barbed arrowheads. In inland Western Anatolian barbed arrowheads are more common. For pins it can be noted that the further away from the coast, the more pins appear. The pin is the most common metal find in Western Anatolia. In typological point of view, there are varieties of head shapes but not enough sensitive for studying regional variation. Pins are very common finds in inland Western Anatolia (Kusura, Seyitömer Höyük, Cavlum, Gordion). Pin were common in all Anatolia, in Boğazköy in Central Anatolia were found in large numbers and various types. Many can be compared with those in Western Anatolia. However, pins so occur in Aegean as well. Beycesultan can be defined as an important site of its own, but when we compare the pins collection found in Kaymakci, for example, and the old and new Beycesultan findings, the types and forms of metals are not so different. Similar pins appear in Seyitömer Höyük, Çavlum, Gordion, Kusura, Yanarlar, Demircihüyük and Aphrodisias. Demircihüyük has only three known pins, which have a flattened head, but similar, not the same, in Beycesultan. Aphrodisias has very common pin types that are no different from other sites. Only few sites show a unique find that was nowhere else to find in Western Anatolia. For example, in Gordion an example of Studded Head pins and the pin with a ram-shaped head and agate stones in Çavlum. Pins with zoomorphic head exist in the early Bronze Age, they are known from Alaca Höyük, Thermi[668] on Lesbos or Amorgos[669]. From Amorgos island come the closest parallel from EC II, a silver pin with a ram-shaped head, the only difference is the postion of a head (the Amorgos one is looking straight, the

[668] Lamb 1936, pl. XXV, fig. 31.19, 31.18.

[669] Exhibited in National Archaeological Museum in Athens.

Çavlum ram has its head turned to the side (the Amorg specimen is displayed at the National Museum in Athens).

In case of tools. Daily life equipment such as awls, chisel, neddles, drills, punches, hooks and other have been found in high numbers, in most cases from settlement. It is an evidence of crafts and production on a site. Their occurrence in burial context is less common and appears more likely on the coast. One should point out the unique presence of “hayfor”, only known in two pieces from the Seyitömer Höyük. Perhaps it was a religious object and one cannot exlude the fact that the “hayfork” could also be found elsewhere in Western Anatolia. Same case could be three pieces of armor from Troy.

It can be stated with certainty that the south-west coast of Anatolia is more connected with the Aegean region and the Greek islands of Rhodes and Kos. The great presence of Aegean weapons like swords and spears, along with the Mycenaean type of tombs, is one of the elements supporting this claim. On the other hand, the north-west coast (Troad) is more connected with Anatolia. We also detected influences from Balkan in this area (some metal finds in Troy, Besik Tepe). Metal finds are more abundant and densely concentrated in coastal areas, especially in the south, and are predominantly found in burial contexts. There is a strong Aegean influence. Based on metal finds from entire coastal area from north to south could fit into Mountjoy's theory of the East-East and West-Anatolia interfaces. This whole territory is fundamentally different from inland locations, mixing influences from both sides and creating a unique types of finds (Siana group).

On the other hand, in the inland regions, there are fewer burials and more finds from settlements, particularly from larger settlements where evidence of secondary metallurgy has been identified.

Regarding the overall inland western Anatolia, the forms of metal finds from the western inland are design-like in the Anatolian style, as compared to other regions in Anatolia (Bogazköy, Kültepe) – showing affinity, but also indicating a certain local "regional fashion." The relatively high number of metals from this entire area demonstrates an Anatolian typology with several unique or rare finds. Nevertheless, the inland areas are still relatively underexplored and under-researched. Nonetheless, these initial investigations suggest that the entire western Anatolia has a long tradition of metalworking.

8.2. Contextual distribution

Another approach to analyze metal finds is the context of the discovery. The context of metals could be divided into a funeral context, a settlement context, and unknown context. The most significant difference of the funeral context is between the coast and the inland. On the coast, we often encounter burial equipment such as swords, knives, lances and arrowheads (Müsgebi, Panaztepe, Değirmentepe, Kolophon, Pilavtepe). This style is similar to the Aegean region where so-called warrior graves ere found. Whether it be true warriors or not, the topic is beyond this work. The archaeological evidence speaks of graves with weapons. Moreover, tombs in coastal locations are often in Mycenaean style (Kolophon, Müsgebi). On the coast, however, we lack settlement sites with the exception of Troy. Metal finds from Troy are numerous and they meet similar criteria as the inland settlement. Due its location and great importance, find from Troy show Aegean, Anatolian and Balken influences. Inland sites with graves are Demircihüyük, Afyokarahisar, Gordion and Yanarlar and their fashion is approached differently compared to graves from coast. The equipment of graves in inland is different and limited to simple jewellery and ornaments (pins, simple beads or rings, earrings or hair rings). As it is typical in inland locations, there is a great variety of pin types (the most common are various Knob Head Pins or Loop Head Pins). The good example of a coastal site that contains similar findings that are found in both the Aegean and inland areas is Panaztepe which contains various metal finds mixing Aegean and Anatolian inlfluences. Lesser but similar case could be Beşik Tepe. There are weapons (remnants of swords, knives), as well as standard Anatolian ornaments.

There are significantly more settlement sites; it concerns Aphrodisias, Beycesultan, Çavlum, Çine Tepecik, Demircihüyük, Kaymakçı, Kilisetepe, Küllüoba, Kusura, Seyitömer Höyük, and Troy. There is a greater variability of findings. In particular, common find are smaller work tools such as awls, chisels, punches, drills, axes. Also, weapons are among the most common finds, mostly arrows, spearsheads, daggers, knives, and in the case of Seyitömer Höyük, also swords/daggers. The similar equipment found in inland graves was recover also from the settlements, the jewellery: pins, earrings, all kind of rings. Typologically, in most cases there are the same types found in graves and settlement. Findings from settlements reflect our everyday life on the site and artefacts from graves tell us about the perception of the deceased and what equipment will the dead get to the other world. The settlements of Western Anatolia show evidence of objects of daily use. The graves on coast dispose of various rich tombs with multiple prestigious metal objects in Aegean fashion,

the known burial context from inland show different approach. This suggests a different self-presentation of people on the coast and inland. On the coast, however, we lack settlement sites with the exception of Troy, which meets similar criteria as the inland settlements.

8.3. Chronological distribution

Individual subjects are dated according to Pavúk's chronology on the MBA (2000-1700 B.C.), LB1 (1700-1400 B.C.) and LB2 (1400-1200 B.C.). We cannot safely date metal objects from all sites to a certain chronological phase. Troy, Seyitömer Höyük, Aphrodisias, Beycesultan and Çavlum are being the best reliable. Layers of Çavlum and Seyitömer Höyük are dated to MBA. Eastern sites like Gordion or Yanarlar span between MBA-LBA1. For others, dating is more approximate.

The oldest dated site is Küllüoba, which is at the beginning of the MBA, and especially with the dagger find and an uncertain type of spearhead, it is still very closely connected with the early Bronze Age. In Çavlum, MBA (18th century), the found rings and pins are not much different from those from LB, the exception of the ram-shaped pin probably follows the tradition of the early Bronze Age. The most notable seems to be Seyitömer Höyük, where numbers of metal finds of variable types were found (including swords, spearheads, pins, metal tools) . However the finds findings, are not significantly different from chronologically different metal objects from other regions. This case also applies to MB layers of Troy and Beycesultan. Needles and ornaments in the MBA, tools, and kvives are not much different from those in LBA. Between MBA-LBA1 are dated the Eastern sites like Gordion or Yanarlar. There are only metal rings and needles, which, with the exception of Gordon's Studded Head Pin, are the same as elsewhere and in other periods. Already safely classifiable to LB1 are the respective layers of Beycesultan, Aphrodisias, Demircihüyük (i Sariket), and Troy. Unfortunately, as in the previous case, the subjects do not show a significant typological difference. There are a number of pins of different shapes that are the same as in other locations, ordinary ornamental rings, small tools, knives and axes, or arrows. In LB2, Beşik Tepe is unique in the form of foot muffs, otherwise the range of finds is similar to that of elsewhere. Again, Beycesultan has many traditional pins and ornaments, but also, for example, Avil type 2f arrowheads, which appear to be typical of this period and are also known from the coastal area. Objects from Çine Tepecik are not typologically significant. When moving to the coast we get to more sensitive knowledge. Troy VII revealed several

tools such as a socketed hammer or hammer-axe that are uniquely unique in Western Anatolia.

The distinctive element is the group Siana swords and knives dated in the Aegean chronology to the LH IIIA2-B(C). This group concentrates mostly close to coast and it is most likely the local product (Kolophon.Değirmendere, Pergamon, Troy, Rhodes, Cos, Psara, Kolophon, Panaztepe, Pergamon, Müsgebi and Bodrum). This includes findings from the Şarköy depot with some sword pieces and their possible relation. Similarly, the unique occurrence of Levantine swords from Değirmentepe. Similarly, a group of typological divergent Aegean swords (between type B-C) named Interface swords by the author of this work. Their appearance would give an idea this group is a local product. Except for Beycesultan and Çine Tepecik, most LB2 findings come from coast. For LB3 (LH IIIC and beyond), there are several common objects from Beycesultan (also uninvolved) or Troy. Only the fibulae of LH IIIC can be highlighted in Troy, as well as one of Kusura. Further, a metal seal with Luwian inscription was found in Troy. The nature of the other findings remains the same as in the rest of the 2nd Millennium B.C.. The last exception is the Naue II sword from Bodrum from LH IIIC. Unfortunately, the finds from Kusura (except for the aforementioned fibulae), it is not possible to date more precisely than LB. However, they are not typologically different either. General dating to LBA includes metals from Kaymakci with a unique aclass 4 knife.

In general, with some exceptions, metal finds from West Anatolia during the 2nd th. B.C. have a typologically similar character and have been used and manufactured for a long time. From what do we known, several unique finds occurred at different places during the history.

8.4. Discussion on Workshops and metalworking

The evidence of potential local metal production is primarily found on islands, while on the mainland, it is more commonly associated with larger settlements (see map 2 for sites with metal finds and metalworking evidence). However, there are not many such findings, and not all of them provide clear evidence. More definitive evidence of workshops is still lacking. Nevertheless, it is highly likely that major centers such as Troy, Beycesultan, Seyitomer Hoyuk, Trianda, and Kaymakci served as local production centers due to their significant size. The presence of numerous molds and corresponding utensils supports this assumption. This may also indicate a good access to metal resources, trade connections, and other factors. Unfortunately, apart from the island find on Lemnos, no workshop has been discovered in the researched area from the coastal region to western Anatolia. If such a discovery were made, its location within the settlement would undoubtedly contribute to understanding the organization of production within the settlement. How metalworking generally took place in western Anatolia and the associated organizational and social dynamics remain open questions. Regarding workshops, we have parallels from Anatolia, such as Kultepe in the MBA period, where there were nine workshops outside the main acropolis.[670] Conversely, workshops and production activities at Hattusa appear to be associated with the palace, based on written sources and archaeological finds, it seems that among the Hittites, metal production was more closely connected to the state institution.[671] Trade was also essential. In Crete during the LM period, metalworking residues appear to be more closely associated with the palace, although at Gournia, it could have been within the settlement.[672] Unfortunately, no Mycenaean metalworking workshop has been discovered so far. The organization and process of metalworking in settlements in western Anatolia have little evidence available. Lehner believes that metalworking in Bronze Age Anatolia must have been under the supervision of the elites to some extent. The fact that there is currently no evidence of primary metalworking may indicate that processed ingots were already brought into the settlements, where secondary metalworking took place. Alternatively, if local resources were scarce, there may have been good trade connections for sourcing, whether by sea or land. Let us not forget Uluburun, which demonstrates the extent of metal trade. Thus, even though there is currently limited

[670] Müller-Karpe 1994, 49.

[671] Lehner 2015.

[672] Hawes 1908.

evidence of production from the researched region in the 2nd millennium B.C., it appears that metal production was widespread. However, much remains unknown about primary metallurgy in the area during the 2nd millennium B.C..

In terms of metallurgy vidence for primary production – such as smelting activities – have not yet been detected with certainty. Slags seem to be less known among the finds, but this might be reflective of excavation strategies as opposed to a true trend. No finds of metallurgical kilns or furnace have been reported, except for a possible example from Lesbos. Secondary production – the transformation of raw metal from ingots or scraps into fully shaped final product[673] are more common and include not only finished metal products, but also moulds, crucibles, tools, hearths, and kilns. Finished products represent the most commonly attested traces of metallurgical activity. The resulting pattern clearly indicates that our knowledge of metalworking and metal finds are of unequal territorial distribution. The Dodecanese and the western Anatolian coast with the adjacent eastern Aegean islands have been documented quite well. Especially Troy have been studied in recent years and the focus was also on metalworking activities and distribution of common and precious metals in the settlement.[674] Our knowledge of northwestern Anatolian metalwork results from research on sites such as Seyitömer Höyük and Demirci Höyük, while that of southwestern Anatolia mainly from Beycesultan. In Eastern inland western Anatolia, sites such as Gordion, Yanarlar and Kusura provide the core of evidence, but unfortunaly only in form of metal products.

In terms of context, evidence principally comes from settlement context and funerary sites. In the Dodecanese and along the coast up to the Bay of Izmir, there is less evidence from settlement, and funerary evidence is more common in eastern Anatolia as well. Archaeological evidence for metal working implements is less abundant. In most cases, they represent moulds and crucibles.

9. Conclusion

The coastline has been fairly well-researched, especially the Dodecanese and Troy, which were undoubtedly important centers in their time. In summary, the further south we go, the stronger the cultural connections to the Minoan and Mycenaean world, and moving north, the connections are more Anatolian in nature. As we will see later, the coastline and its immediate

[673] Lehner 2015, 26.

[674] Pienazek 2020.

surroundings also have their own unique forms of certain metal objects, with their distribution almost exclusively limited to the coastal area. It is worth mentioning that the coastline is also part of the theory of the eastern Aegean and western Anatolian interface proposed by Penelope Mountjoy, which was addressed in a previous thesis that examined metals, attempting to characterize them typologically and identify any differences from other regions, such as the mainland. It appears that there is regional diversity and unique local types of metal objects.

Culturally, the forms of metal finds in inland Anatolia are close to parallels found throughout Anatolia. However, the region is less explored, and there are not many well-known or published sites across a large area. The northwestern inland Anatolian region has great potential for metallurgy, especially considering the research on the period preceding the MBA. For our period, particularly the MBA, SH plays a significant role with a large number of finds and evidence of casting. The connection to rich deposits in the surrounding area directly contributes to the flourishing of this region. Other sites, including burial grounds and settlements other than SH, provide fewer pieces of evidence. Beycesultan is genuinely significant for the southwestern inland region, as the quantity of metals and evidence of production indicate. However, other sites in the region have only a few metal finds or are not fully published. The same applies to Kaymakci. The eastern area is more associated with Hittite influence. If we were to generally classify the inland western Anatolia as a whole, despite its regional differences, we can note that, in its own way, the entire western Anatolia has a distinctive character with local peculiarities regarding metal finds, which sets it apart from, for example, central Anatolia and the Aegean region.

To conclude, the metal finds and metallurgy evidence from Western Anatolia suggest that the entire territory of Western Anatolia in 2nd Millennium B.C. is showing evidence of abundant metal finds and local metallurgical production. The region is large therefore it can be divided into several locally specific areas. It can be stated with certainty that the south-west coast of Anatolia is more connected with the Aegean region and Dodecanese and the north-west coast with an example of Troy is more connected with Anatolia. The coast is different from inland, then inland is specific and can be further divided, and finally sites in Eastern most part of the region are more connected with Central Anatolia. General typological analysis can point to out a strong Anatolian character of metals, yet Western Anatolia can be separated from neighboring regions like Aegean, Central Anatolia or further East, and acts on its own.

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List of abbreviations:

EBA	Early Bronze Age
MBA, MB	Middle Bronze Age
LBA, LB	Late Bronze Age
EM	Early Minoan –
MM	Middle Minoan
LM	Late Minoan
MH	Middle Helladic
LH	Late Helladic
Cat.	Catalogue

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Author: Miloš Roháček.

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