

Foreign Impact and Local Creativity. The Case of Late Bronze Age Seals from Aegean Anatolia

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ABSTRACT

Late Bronze Age seals and sealings from Aegean Anatolia (the western part of western Anatolia) are a very heterogeneous collection of finds. Especially widespread are seals belonging to the Aegean tradition, including earlier hard stone seals and later soft stone lentoids related to the Mycenaean Mainland Popular Group. Also represented are seals executed in the central Anatolian style, which, however, arrive later to the area of study. In both groups, imports as well as local production are attested, and some seals show individual features. The spread of these objects is related to various factors, such as commercial and cultural exchange, but also political and military impacts. Participation in long-distance trade networks is confirmed by the presence of seals coming from the eastern Mediterranean.

KEYWORDS

Seals; imports; local production; Aegean Anatolia; western Anatolia; Late Bronze Age.

INTRODUCTION

Aegean Anatolia is defined in this paper as the western part of a vast territory stretching between the Gulf of Antalya in the south and the east coast of the Marmara Sea in the north, which is usually referred to as 'western Anatolia'. The area comprises not only the sea coast but the entire region dominated by river valleys and lowlands, characterised by Mediterranean or sub-Mediterranean climatic conditions and vegetation (**Fig. 1**). This region had various connections with the Aegean world, in contrast to the eastern part of western Anatolia, where cultural relations with central Anatolia were clearly visible (GUNTER 2006; MAC SWEENEY 2010, 14-15). The term 'Aegean Anatolia' corresponds with Pavúk's 'Western Anatolia proper', comprising his coastal, southwestern, and northwestern pottery groups (PAVÚK 2015, 92-104, fig. 7-9; PAVÚK - HOREJS 2018, 474-476, fig. 15), as well as the Iron Age cultural landscapes of Caria, Lydia, Mysia, Ionia, Aeolia, and the Troad.

During the Late Bronze Age, western Anatolia's neighbours, the Hittite Empire and the Mycenaean palace-states, were strong organisations from a military, economic, and political point of view. Therefore, various activities conducted by these polities had serious implications for local western Anatolian cultures. This is true both in the case of the Aegean coast as well as the regions further to the east. However, western Anatolia during the Late Bronze Age also hosted ambitious political entities, as is known from archaeological and written sources. Unfortunately, most of the textual evidence (chronicles, letters, treaties) was composed in Hattusa (HAWKINS 1998; 2015; BECKMAN 1999), and therefore it is surely, to a certain degree, influenced by the official state propaganda. It was written from the imperial Hittite and not a local perspective and focused almost solely on military and political issues relevant to the Hittite state. Nevertheless, these sources give us priceless insights into western Anatolian history.



Fig. 1: Location of Aegean Anatolia.

One of the most significant research problems related to the archaeology of western Anatolia is the fact that its local material culture is still much less known than that of neighbouring areas. As a result, narratives about the region have a tendency to view things too much from the perspective of Hittite central Anatolia or the Minoan/Mycenaean Aegean. In the first case, the responsibility lies mainly with said written sources, especially the reports on conquests conducted by Mursili II towards the end of the 14th century and the following establishment of vassal states (HAWKINS 1998, 10–31; HAWKINS 2015; 2020; BECKMAN 1999). In the second case, the abundant presence of Aegean material culture such as Minoan or Mycenaean pottery, has always been decisive. This led to the repeated labelling of the western Anatolian coast as a ‘periphery’ of the Aegean world, as well as to a certain extrapolation of the ideas from later Iron Age colonisation into the Late Bronze Age context (MANGALOĞLU-VOTRUBA 2018, 60–62). This approach has frequently been criticised during the last two decades, and the necessity of a primary focus on the local culture, traditions and inventions has been highlighted (MAC SWEENEY 2010; STAMPOLIDIS *et al.* 2015; ROOSEVELT *et al.* forthcoming).

Equally misleading may be the understanding of Aegean Anatolia as a ‘contested territory’, as has been suggested in the case of Troy (CLINE 2008; ROSE 2008, 420). The Troad, as well as other western Anatolian regions, were, firstly, independent polities that followed their own political paths. They were indeed involved in interregional relations, and their external politics were ambitious and stretched between the Aegean, central Anatolia, and Egypt, as demonstrated by both archaeological finds and textual evidence. We should not reduce this entire area to the status of something marginal, something ‘in-between’, without its own identity and policies.

These aspects of the state of the research have obscured the contextualising of Aegean Anatolia within a Late Bronze Age Anatolian-eastern Mediterranean perspective. However, thanks to recent scholarly efforts, including new fieldwork and new publications, the sit-

uation has begun to change (e.g. STAMPOLIDIS *et al.* 2015; AYKURT – ERKANAL 2017; GÜNEL 2017; ERKANAL-ÖKTÜ 2018; ROOSEVELT *et al.* 2018; PIENIAŻEK *et al.* eds. 2020; SAZCI 2020; ROOSEVELT *et al.* forthcoming; PIENIAŻEK – PAVÚK forthcoming). Nevertheless, influences and imports also belong to the material culture of Aegean Anatolia. The exchange of objects, spread of fashions, and transfer of technologies shaped the local cultural milieu: it inspired both the elites, who were the sponsors, as well as the artisans responsible for the manufacture. This is the perspective from which we should look at the seals found in this area (**Fig. 2**). Both older and recent publications have referred to seals and sealings as being executed in Minoan, Mycenaean, Hittite or even more exotic styles, and they create a very interesting collection of objects of different affinities and implications (**Fig. 3**). Simultaneously, they reflect in the most obvious way the major research questions and problems defined for Late Bronze Age western Anatolia so far. This paper is a first step towards the systematisation and interpretation of the relevant evidence.

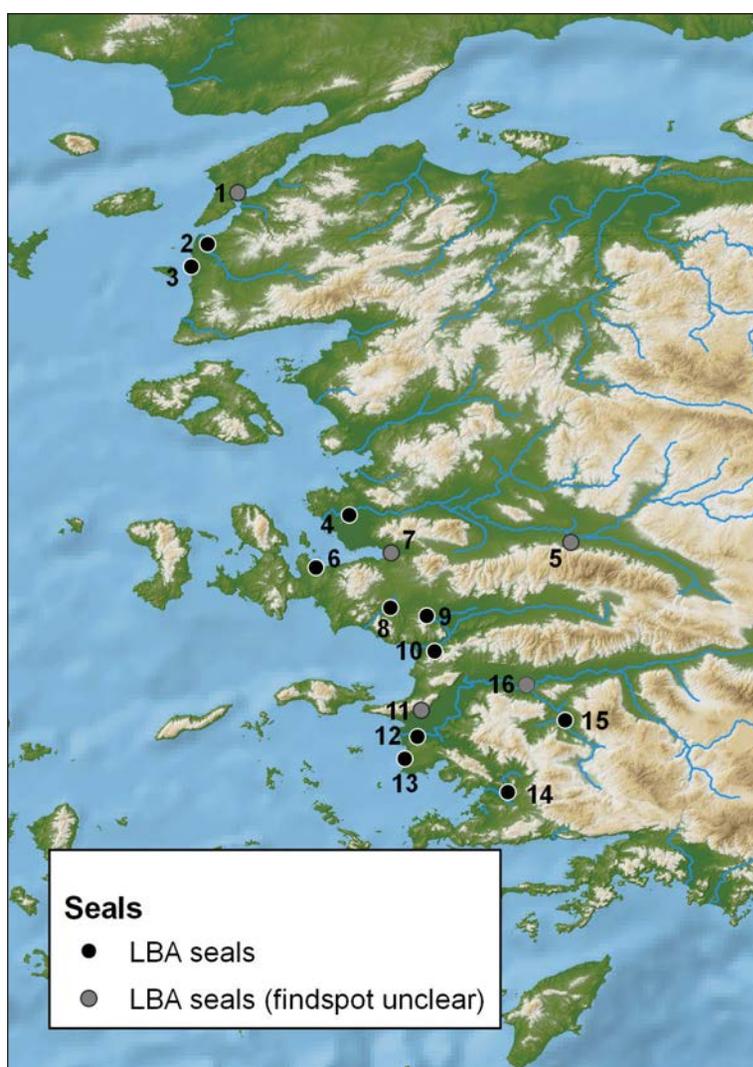


Fig. 2: Late Bronze Age seals in Aegean Anatolia. 1 - Kilia; 2 - Troy; 3 - Beşik-Tepe; 4 - Panaztepe; 5 - Sardis; 6 - Liman Tepe; 7 - İzmir; 8 - Bakla Tepe; 9 - Metropolis; 10 - Ephesos; 11 - Priene; 12 - Miletos; 13 - Tavşan Adası; 14 - Pilavtepe; 15 - Çine-Tepecik; 16 - Aydın. All maps made in QGIS by N. Finkel.

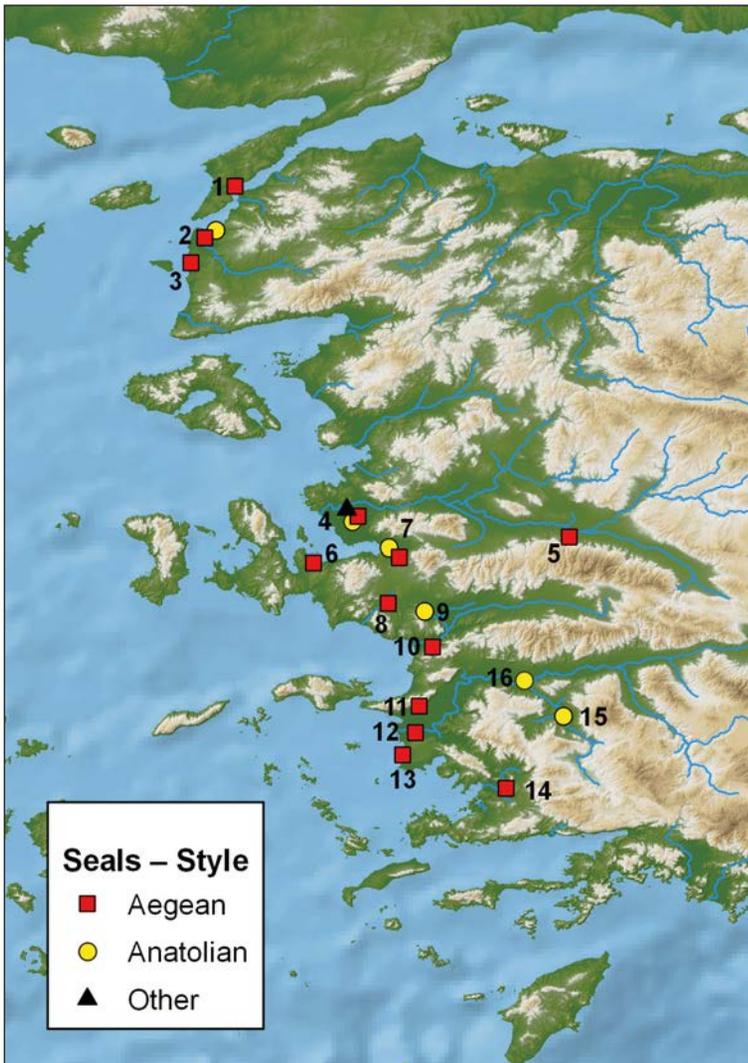


Fig. 3: Distribution of seals according to style.

WESTERN ANATOLIAN GLYPHTIC TRADITIONS

The use of seals in western Anatolia has a long tradition: the earliest examples are known from the Neolithic (ÇILINGIROĞLU 2009). During the 3rd millennium BC, stamp seals have been reported mainly from central-western Anatolia and the Aegean coast (KARATAŞ YÜKSEL 2019; MASSA – TUNA 2019; RAHMSTORF 2016; TÜRKTEKİ 2020; ZIDAROV 2020). Only a few Middle Bronze Age seals are known: on the Aegean coast, they are predominantly related to connections with the Minoan world (PINI 2004, 679–682, 687–688; NIEMEIER 2005, 3, 8, pl. 7–9, 19), however early links with central Anatolia are present, as well, as indicated by the hematite seal probably coming from the area of Aydın (cat. no. 1).

The Late Bronze Age seals found in Aegean Anatolia are much more numerous (Fig. 4). This is a very diverse collection of objects with great interpretative potential, largely overlooked in previous research. One of the few who repeatedly drew attention to the importance of this group of finds is Armağan Erkanal-Öktü, who also excavated the cemeteries at Panaztepe, which has been the most productive findspot of seals within the study area (ERKANAL-ÖKTÜ

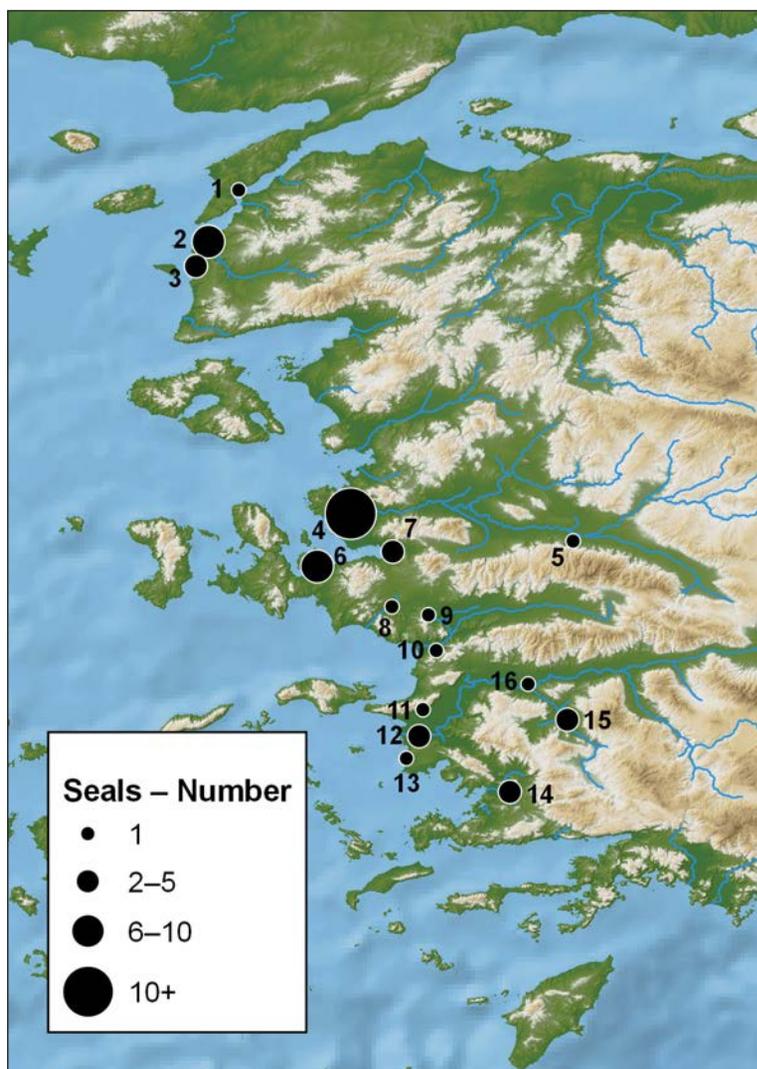


Fig. 4: Distribution of seals according to the number of finds at individual sites.

2000; ERKANAL-ÖKTÜ 2018, 127–131). A short overview of Aegean-style seals is also included by Bertemes – Hornung-Bertemes (2009) in their publication of the rock-crystal example from Tavşan Adası. Some of the seals and sealings have received particular attention in scholarly discussions, mainly due to their cultural-historical significance, like, for example, those from Troy (HAWKINS – EASTON 1996; JABLONKA 2007; PIENIAŻEK 2018; ZIDAROV 2020), sealings from Çine-Tepecik (GÜNEL – HERBERT 2010; 2014) or the silver ‘Trakansnawa/Tarkondemos seal’ from the area of Izmir (HAWKINS 1998; HAWKINS – MORPURGO-DAVIS 1998), but this topic has never received a comprehensive study. In the text that follows, I will first summarise basic information about western Anatolian glyptic traditions and then discuss their meaning and function within the local societies. Detailed descriptions of the seals are included in the catalogue below.

Altogether, 71 Late Bronze Age seals are reported from our area of study, almost half of which (at least 27 examples) were recovered in Panaztepe (**Fig. 4**). The findspots of eight seals (from ‘the area of Izmir’, Kilia, Sardis, and Priene) are not secure, since they are old finds coming from the antiquities trade. In the Bibliography, two further specimens are mentioned, but these

are especially problematic cases: a bronze seal ‘from Western Anatolia’ in the Perk collection (DINÇOL – DINÇOL 2010; ERKANAL-ÖKTÜ 2018, 125) and the sealing ‘from Karaburun’ (cat. no. 15; MORA 1987, 160, 168, 170, no. VIb: 3.1; ERKANAL-ÖKTÜ 2018, 130). This last one is very interesting, but since it was never properly published, it is difficult to contextualise the seal impression.

Most of the seals can be roughly described as belonging to an ‘Aegean’ stylistic tradition and only eight seals and two sealings to an ‘Anatolian’ one. However, these stylistic attributions are a complicated issue, as will be addressed in detail below. Furthermore, from Panaztepe come the scarabs and one scarab impression, one Levantine cylinder seal and one anchor seal, which also belongs to the eastern Mediterranean tradition.

Also very important is the fact that three sites show clear hints of local seal production: Liman Tepe, Panaztepe, and Troy, along with Beşik-Tepe. Most of the seals are made of stone (Fig. 5): hard stone prevails during the earlier stages, and soft stone such as steatite was the material of later seals. Bone/horn is also well represented, especially in the north (nine examples from Troy and Beşik-Tepe), while bronze, glass, and faience are represented by only a few examples. There is also one gold and one silver seal.

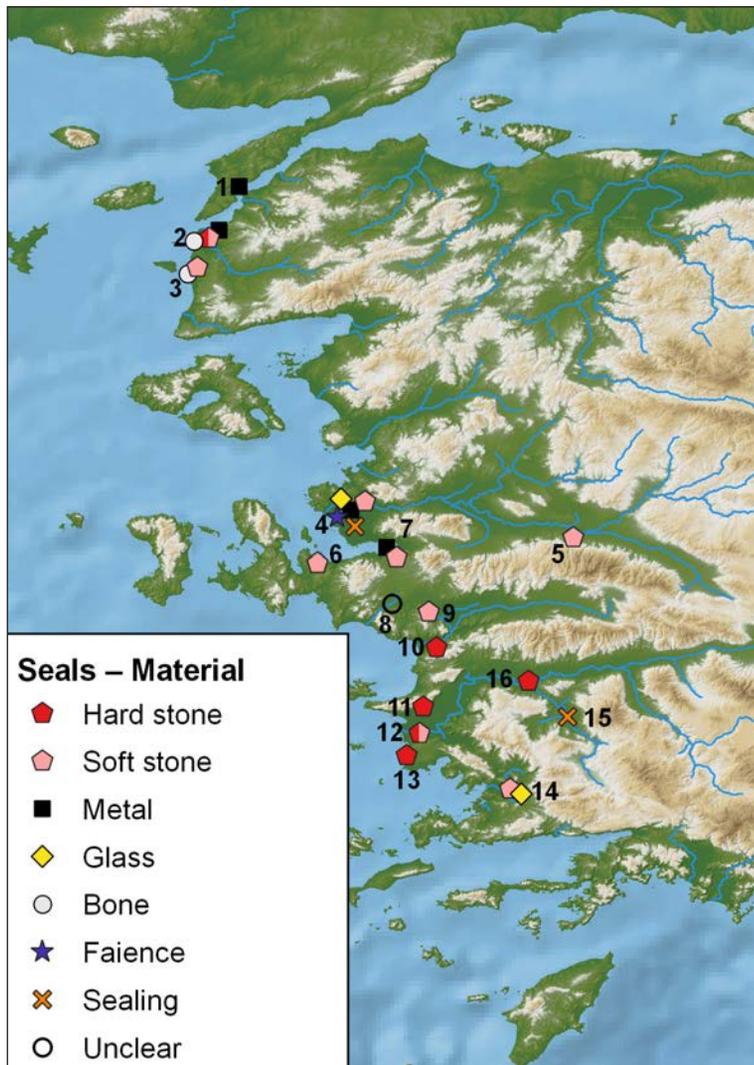


Fig. 5: Distribution of seals according to material of manufacture.

AEGEAN TRADITION

The majority of the seals which can be dated by context and/or based on stylistic features come from the later phases of the Late Bronze Age, and only a few belong to earlier stages: LM/LH I-II (roughly LB I, according to a local western Anatolian periodisation; correlation based on PAVÚK 2020). These are: an agate cushion seal probably from Priene (cat. no. 61, MM III/LM I), a rock crystal seal from Tavşan Adası (cat. no. 63, LM Ia), a gold seal ring from Kilia (cat. no. 16, LM I), a carnelian amygdaloid from Ephesus (cat. no. 10, LM I), a rose quartz lentoid from Miletos IVb/V (cat. no. 27, LM II/IIIa) and a carnelian amygdaloid from Troy (cat. no. 64).

Unfortunately, only a few older seals come from secure contexts. One of them is the rock crystal seal from Tavşan Adası which has been published in detail by Bertemes – Hornung-Bertemes (2009). The seal was found in mudbrick debris from the collapse of one of the houses of period TA 4; consequently, it belonged to the final stages of that period, LM Ia, which roughly conforms with the stylistic date of the seal. The seal is in perfect condition; it shows a ship with a set, wide sail under the wind. It belongs therefore to an exclusive group among the Aegean seals: a group with a picture of a sailing ship. Unfortunately, none of the other seals of this family comes from a secure context, but they date to the Neopalatial Period, based on stylistic features, and are said to come from Crete. The closest parallel is a carnelian lentoid from the C. N. Colville collection (CMS VIII.106; BERTEMES – HORNUNG-BERTEMES 2009, 176, fig. 4:14). Seals executed in a similar style are sometimes described as ‘*talismanic*’. Since almost all of them were found on Crete, and they are related to the early Neopalatial Minoan elite, the authors postulate that the seal is one piece of evidence of the Minoan character of Tavşan Adası at the beginning of the Late Bronze Age (BERTEMES – HORNUNG-BERTEMES 2009).

Another seal recovered in a relatively secure context is a rose quartz lentoid decorated with an image of a lion attacking a griffin (cat. no. 27). It comes from a layer dating to the transition between Miletos IVb and V, meaning LM II/IIIa (NIEMEIER 2005, 8, fig. 22; ZENZEN 2015; CMS/Arachne VS3.480). The findspot was in an area which had most likely been a sanctuary during Miletos IVa, though it is not clear if this was still the case during IVb. The seal is, in various respects, exceptional. The fight between the griffin and the lion is quite a common motif in Minoan glyptic, but in the majority of cases, it is the griffin which attacks the lion and not the other way around (ZENZEN 2015, 398). Zenzen postulated that this unusual iconography, together with a high technical quality, speaks to it belonging to a person of an outstanding social status (ZENZEN 2015, 400–402). I would like to add that the gemstone the seal was made of was also special: the CMS database shows only six other seals made of rose quartz. Interestingly, almost all of them were dated to the last stages of Minoan hard stone glyptic, based on stylistic traits: mainly LM II-IIIa. Zenzen and Niemeier propose a Minoan (strictly speaking, a Cretan) origin of the seal and possibly also of the seal owner. In any case, this was certainly a very valuable object, definitively the possession of a person of high social standing.

The only other early seal with good contextual information is a carnelian amygdaloid bearing the image of a wild goat from Troy (cat. no. 64; **Fig. 6**). However, it was deposited in a LH IIIB/IIIC context that postdates the manufacture by some 300 years, since the seal is executed in the ‘*cut-style*’, which dates to the beginning of the Late Bronze Age (LM Ib-II, KRZYSZKOWSKA 2005, 201–202; PIENIAŻEK – ASLAN 2016, 423–428, pls. 123–125d; PIENIAŻEK 2018, 122–123, fig. 2; PIENIAŻEK 2020). Unfortunately, it is not possible to reconstruct the ‘*biography*’ of this object, but some observations can be made. Microscopic analysis has demonstrated that the edge of the drilling channel of the seal is only slightly worn from use and does not show traces of abrading or flattening against another hard stone object (LUDVIK *et al.* 2015, 12). This supports the supposition that such seals were worn separately, for example on the



Fig. 6: Early LBA carnelian seal from Troy (cat. no. 64).

wrist (KRZYSZKOWSKA 2005, 21, fig. 1.1). It seems generally that the seal was not much used but rather curated and kept in a safe place in the time between production and deposition. The place where the seal was found in Troy is very special – it was lying together with six other valuable objects in the ruins: strictly speaking, in the stone debris of one of the walls of the South Room of the Terrace House. The Terrace House is a monumental building erected at the beginning of the 13th century directly outside the fortifications of the citadel, and the South Room was one of its rare chambers, which was most probably a shrine. The ruins sealed the second VIIa-phase of the shrine, and an altar and a bronze votive figurine were found on the burnt floor of that phase (local subphase 2a2: PIENIAŻEK 2020, 998–1004, pl. 7, 11). The interpretation of this context is not straightforward: the fact that the seal, glass beads, a knife, a violin-bow fibula, and bronze and silver rings (one of each) were found under and between the collapsed stones is confusing. Either these were votive gifts deliberately deposited in the ruins or they were kept somewhere at a higher elevation during the destruction. In either case, the finds must be related to the cultic function of the chamber.

Not much can be elaborated on about the seals made of carnelian and agate said to be found at Ephesos and Priene (cat. nos. 10 and 61) beyond the fact that they were classified as Neopalatial (CMS/Arachne VI, 181; 229; DIONISIO – JASINK – WEINGARTEN 2014, 75, cat. 186) based on stylistic features. However, the last of the early seals, a gold seal-ring from Kilia (cat. no. 16, also known as the ‘Berlin ring’), deserves more attention. This seal ring was originally a gift from Heinrich Schliemann to Frank Calvert and is now in the possession of the Antikensammlung in Berlin. According to Schliemann, it was found in the village of Killia, between Madytos and Sestos on the shores of the Dardanelles. Madytos is modern Eceabat – the site of the imposing Bronze Age tell settlement of Maydos-Kilisepe. With approximately half the dimensions of Troy, it is among the biggest sites in the Troad. Göksel Sazci has conducted excavations at the site since 2010 and discovered monumental architecture similar to that known from Troy VI, VIIa, and VIIb, including fortifications and solidly built houses with stone foundations on the top of the tell (e.g. SAZCI – MUTLU 2018; SAZCI 2020). The site has yielded very interesting material, such as Mycenaean pottery and small finds like, for example, a Minoan lid made of serpentine that is almost identical to one known from Lemnos (BOULOTIS 2009, 196, fig. 20a). The discovery of the gold ring on the shore of the Dardanelles, far from the Minoan/Mycenaean

world, always seemed suspect, and, in fact, it is still questionable, as are all old finds without a well-documented context. However, it must be added that this is not the only seal-ring known from the northeastern Aegean: in fact, they are attested in various periods. Some of the sealings discovered at Micro Vouni were executed with seal-rings most probably in local clay, like, for example, one nodule that bears three identical impressions of a sitting lion with a rolled tail (CMS/Arachne VSIB 321; MATSAS 1995, 242, pl. 34). These impressions have their closest parallels in MM II Phaistos. Furthermore, from Troy comes at least one mould for the production of seal-rings from a LH IIIB context (Troy VIIa: NESSEL 2014, 235–236, fig. 27–29). In summary: in light of new evidence, the seal-ring's provenance is perhaps more credible.

Later Late Bronze Age seals are much more numerous (Fig. 7). The majority is more or less closely related to the Mainland Popular Group (henceforth MPG) widespread in the southern Aegean. This stylistic group developed in LH IIIA and lasted until the beginning of LH IIIC, with a focus on phases IIIA2 and IIIB (KRZYSZKOWSKA 2005; EDER 2007; 2014). The group includes both imports and local imitations; altogether, there are 24 seals, with the greatest number from the cemetery in Panaztepe and considerable amounts at Beşik-Tepe and Liman Tepe. I will discuss them in geographical order, from north to south.

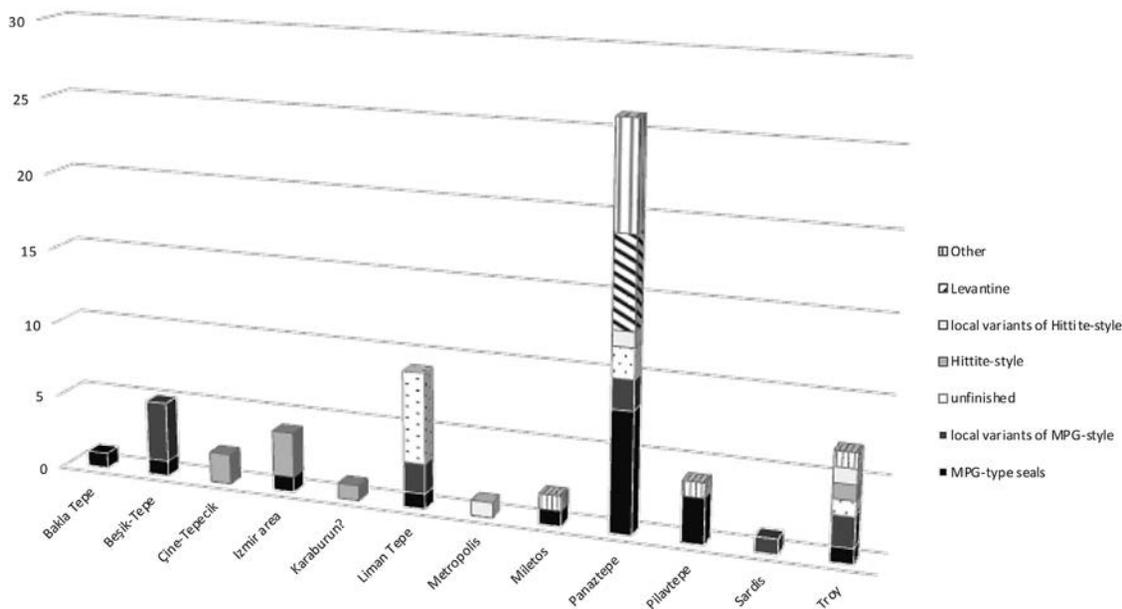


Fig. 7: Diagram showing details related to later LBA seals (ca. 14th–12th century BC). The division between ‘MPG-type seals’ and ‘local variants of the MPG-style’ is tentative. Seals defined as local include the most probable examples.

From Troy come two or three seals executed in a style corresponding with the Mainland Popular Group. Unfortunately, only one was recovered in a known context: a broken lentoid made of steatite (cat. no. 65; Fig. 8) found in a pit dug into the Central Room of the Terrace House with mixed material dating between LH IIIB and the Protogeometric. As already mentioned above, one chamber of this edifice functioned as a shrine: the South Room, where the carnelian amygdaloid was found. Whether the entire building had a religious function is not clear (PIENIAŻEK – ASLAN 2016; PIENIAŻEK 2020, 998–1005). The broken steatite seal was surely re-deposited, though. Another seal from Troy (cat. no. 66; Fig. 9) belongs in terms of both shape and decoration to the Mainland Popular Group but is made of very unusual material – bone,

specifically antler (after ZIDAROV 2020, 163). The decoration comprises four dotted circles – one of the commonest ornaments of late Mycenaean seals, also present on one of the seals from Beşik-Tepe (**Fig. 10**). Exactly the same combination of four circles is known from at least six late Mycenaean soft stone lentoids from various sites recorded in CMS-Arachne (for example IS 165 and VIII 028–029 of unknown origin, VS1A 025 from Aegina, I 397 from Athens, I 034 from Mycenae). Unfortunately, the seal from Troy is a chance find, and the circumstances of the discovery are very unclear: it is only known that it was found in the vicinity of the Late Bronze Age citadel wall. It is possible that an antler seal from the excavations of Frank Calvert (cat. no. 68) belongs to the same group (ZIDAROV 2020, 163). I would like to add another object to this collection, also made of horn or ivory: this is a broken faceted amygdaloidal bead from the lower town cemetery excavated by Blegen (cat. no. 67). Such beads were never made of osteological material; consequently, it was perhaps a semi-finished seal.

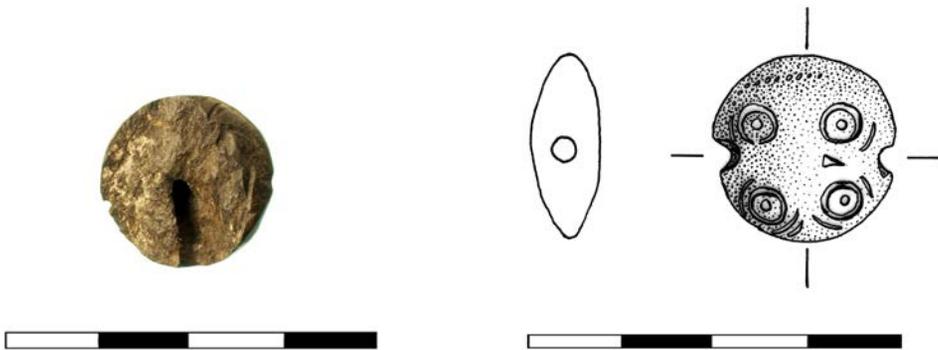


Fig. 8: Broken steatite seal of the MPG type from Troy (cat. no. 65).

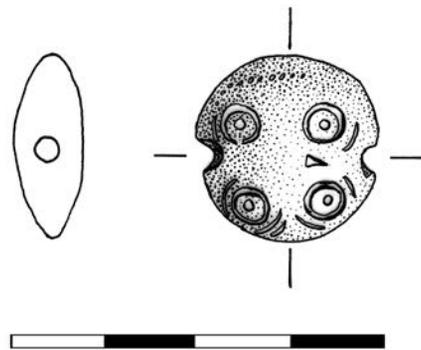


Fig. 9: Antler seal of the MPG type from Troy (cat. no. 66).



Fig. 10: Steatite seal of the MPG type from Beşik-Tepe (cat. no. 3).

The collection of seals from Beşik-Tepe is similar. In this case, we also have one steatite seal decorated with a 'mask' pattern (cat. no. 3; **Fig. 10**), as well as three local variants of the MPG made of horn or bone (cat. nos. 4–7; PINI 1992; PIENIAŹEK 2018, 124–129, fig. 3; **Fig. 11**). They are curved, with a very typical 'quadruped' motif, but one is a curiosity – rectangular, but lens-shaped in section, bearing decoration on both sides (cat. no. 6; **Fig. 12**). The fifth seal is either broken or unfinished.



Fig. 11: Bone seal of the MPG type from Beşik-Tepe (cat. no. 4).

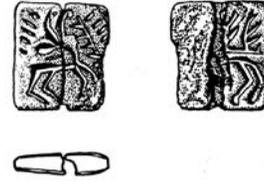


Fig. 12: Bone 'hybrid' seal of the MPG type from Beşik-Tepe (cat. no. 6).

Probably mainly due to the asymmetric state of research, the next findspots of seals in Aegean Anatolia come from the area of Izmir. The largest concentration of examples belonging to the Mainland Popular Group is known from the cemeteries in Panaztepe (**Fig. 7**; cat. nos. 30–40). Ten seals represent typical soft stone lentoids, one is somewhat conical, a shape which is also represented in the Aegean, for example in central and northern Greece (KRZYSZKOWSKA 2005, 271; TSANGARAKI 2021). Three lentoids bear especially unusual decoration pointing towards local production: in one case, the motifs resemble pseudo-cuneiform signs (cat. no. 32, PIENIAŻEK 2018, 128, fig. 7), and in the second case (cat. no. 31), a singular unclear sign makes up the only motif in the centre of the seal. In the third case (cat. no. 34), the decoration includes a very schematic, if not crude, human representation, which is also very unusual. Furthermore, the material is very specific: it is pale blue soft stone, not precisely defined in the publication. One of the conical seals and one flat cylinder seal are unfinished (cat. no. 41–42); they probably represent pre-forms of lentoids. Additionally, one glass seal 'with one conical side' was mentioned (cat. no. 45; ERKANAL-ÖKTÜ – ÇINARDALI-KARAASLAN 2005, 28; ÇINARDALI-KARAASLAN 2012, 129, 136): one can only suspect that it belongs to the tradition of late Mycenaean seals especially widespread in the area of central Greece (EDER 2007, 38–39, pl. IXb).

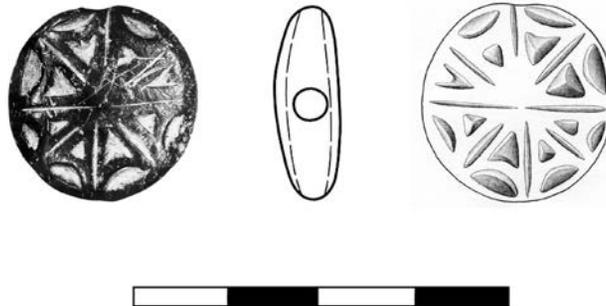


Fig. 13: Steatite seal of the MPG type from Panaztepe (cat. no. 33).

Very important is a collection of seals from the settlement Liman Tepe. As noticed by Mangaloğlu-Votruba (2012, 130–133) they have comparanda in central Greece. One of the seals is an MPG lentoid, decorated with a rosette (cat. no. 17). Such rosettes are known, for example,

from Elateia and Medeon (*CMS/Arachne VS2 088, V 408; MANGALOĞLU-VOTRUBA 2012, 130–131, no. 3289, pl. 139a*). The second low conical seal (cat. no. 18, *MANGALOĞLU-VOTRUBA 2012, 132, no. 33147/8, pl. 139b, 170b*) bears a clover motif, which is also common, especially in central Greece (e.g. in Atalanti or Medeon in Phtiotis: *CMS/Arachne VS3 050, VS1A 090*). One seal (cat. no. 19) seems to be a kind of hybrid creation with a decoration in the Aegean style, lentoid in section, but with a groove running around the edge. This last feature points towards an influence from Anatolian biconvex seals. However, the biggest value of the Liman Tepe seals lies in the fact that four low conical, as well as two cylindrical, examples are unfinished (cat. nos. 20–25), not only in terms of decoration but also production, since they are either not perforated or have unfinished perforations. In preliminary reports, some of them were published as coming from an area with Middle Bronze Age remains (*ERHANAL-ÖKTÜ 2000, 75*), but this date was corrected by Mangaloğlu-Votruba.

A very interesting seal comes from Bakla Tepe (cat. no. 2); it is decorated with a typical Aegean motif of a lion attacking a quadruped, but the material is unclear. It is published as ‘marble or burned quartz’ (*AYKURT – ERKANAL 2017, 120, fig. 82, pl. 25:5*), but I think it could also be glass, at least from the impression one gets from the published illustrations. Last but not least, two seals with unclear contexts need to be mentioned: one seal ‘from the area of Izmir’ also belonging probably to the MPG (cat. no. 11), as well as one seal said to be found in Sardis (cat. no. 62). The latter has a typical lentoid shape, but the decoration (a bird carrying a fish) and material (schist or chlorite) are rather rare.

To roughly the same period as the MPG can be attributed a lentoid from Miletos (cat. no. 28). The seal is quite exceptional in terms of material: it is made of a kind of limestone (alabaster?, described as ‘onyx-marble’). *CMS/Arachne* lists only 13 seals made of this stone: two from Agia Irini/Kea (*CMS/Arachne V 499–500*) and ones from Mycenae, Midea, and Phylakopi (*CMS/Arachne I 175; VS3 235; VSIB 040*) clearly represent the same style. These five seals, as well as the one from Miletos, belong to the ‘Island Sanctuaries Group’ (*YOUNGER 1981; NIEMEIER 2005, 12*). Indeed, many were found in cultic contexts (e.g. ones from Agia Irini and from Phylakopi).

The southernmost western Anatolian site yielding seals of the late Mycenaean style is the chamber tomb in Pilavtepe. All of them are lentoids, and one is quite typical, made of steatite and decorated with semicircles or schematic boucrania (cat. no. 57). Two made of glass (cat. no. 58–59) are unfortunately badly preserved, but in one case, the decoration in the shape of a quadruped is clearly recognisable. The third published lentoid (cat. no. 60) is not described in the publication, and it is not possible to say anything about its material or decoration.

All of these seals must date to LH III, mainly LH IIIA2 through the earlier stages of IIIC, based on stylistic comparisons with the Mainland Popular Group and other Mycenaean seals. However, only a few come from well-stratified contexts. The possible unfinished seal from the cemetery at Troy is from LH IIIA, and the one from the Central Room of the Terrace House is probably LH IIIB (or IIIC). The seals from Beşik-Tepe belong to LH IIIA2–B1. In the case of Liman Tepe, four seals come from better contexts, and three of them are well-dated to LH IIIA2. The tombs from Panaztepe can be dated only broadly, in most cases to LH IIIA–B (however, IIIC Early cannot be excluded); Pilavtepe is LH IIIA2–IIIC Early. In light of the available evidence, one can conclude that this kind of seal spread throughout central Aegean Anatolia over the course of the 14th century BC (probably LH IIIA2), and they were already being produced locally in Liman Tepe during this early stage. They arrived in the north during LH IIIB1 at the latest and remained in circulation throughout LH IIIB or even longer, until the earlier stages of LH IIIC in the 12th century BC.

ANATOLIAN TRADITION

Seals executed in the Anatolian tradition are much less numerous in comparison with ones belonging to the Aegean tradition. Beyond the seal of unclear provenance from Aydin (cat. no. 1), Anatolian, or 'Hittite' style, seals and sealings arrived in Aegean Anatolia relatively late. One fact stands out about this group: with one exception from Panaztepe (cat. no. 46), all well-documented examples were found in settlement contexts (**Fig. 14**).



Fig. 14: Distribution of seals according to find context.

The bronze seal-armlet (cat. no. 46) from Panaztepe showing affiliations with some central Anatolian seals was found in a grave likely dating to LH IIIA–B. The silver seal from the area of Izmir (cat. no. 12) belongs stylistically to the Empire Period, but since, based on the new reading of the hieroglyphs, it is associated with King Tarkasnawa known from the Hittite chronicles, as well as from the Karabel-inscription, it can be related precisely to the second half of the 13th century (HAWKINS 1998; HAWKINS – MORPURGO-DAVIS 1998). The bronze biconvex seal from Troy (cat. no. 70; **Fig. 15**) was found in a context belonging to the 12th century BC,

but it was probably produced in the 13th century, based on comparanda known from Anatolia (JABLONKA 2007). The seal from Karaburun published by Mora belongs to the 13th-12th century BC (cat. no. 15). The sealings from Çine-Tepecik (cat. nos. 8-9) were also found in a late context, LH IIIB₂-IIIC. Suzanne Herbordt defined them as impressions of Hittite hieroglyphic seals of the Empire Period, likely the 13th century BC, especially in the case of seal cat. no. 9 (GÜNEL - HERBORDT 2010, 5-6; GÜNEL - HERBORDT 2014, 8-10). The bone seal from Troy (cat. no. 71; **Fig. 16**) decorated with pseudo-cuneiform signs cannot be dated precisely, and the same is true in the case of two limestone seals from the area of Izmir, as well as the seal from Metropolis.

In summary, only the example from Panaztepe might be earlier than the 13th century, but the popularity of Anatolian-style seals definitely lies in the 13th century, lasting until the 12th century BC.



Fig. 15: Biconvex bronze seal with Luwian hieroglyphics from Troy (cat. no. 70).

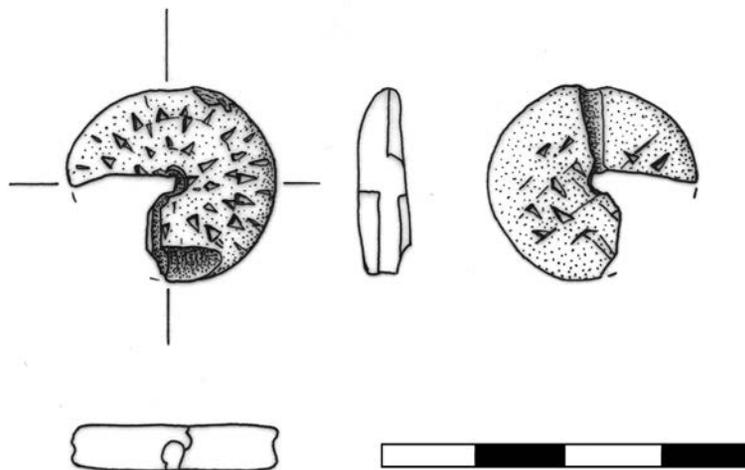


Fig. 16: Bone 'hybrid' seal with pseudo-cuneiform signs from Troy (cat. no. 71).

OTHER TRADITIONS

All Late Bronze Age seals and sealings belonging to other, more exotic traditions come solely from Panaztepe. These are three scarabs, one scarab impression and two Levantine-Egyptian seals (JAEGER – KRAUS 1990; ERKANAL-ÖKTÜ 2000; ERKANAL-ÖKTÜ 2018, 126–131). Two of the scarabs come from a tomb dating to LH IIIB–C (cat. nos. 47–48), but the cartouche on one of them is attributed to Amenhotep III. The third scarab and the impression are later (cat. nos. 49–50, LH IIIB/C–IIIC). The cylinder seal is a later Levantine-Egyptian example (cat. no. 51) executed in the so-called linear style and belonging to the ‘rudimentary class’ of this kind of seal (after COLLON 1987, 70) where the figures are quite schematic. A pyramidal seal (cat. no. 52) is a rarity and, as observed by Erkanal-Öktü (2008, 80, fig. 14a), it has parallels among Palestinian ‘anchor seals’ (KEEL 1994); however, the one from Panaztepe has a very specific feature – it bears the decoration not only on the bottom but also on its two side surfaces (two of them within a cartouche).

DISCUSSION

Before we move on to an analysis of the evidence, some comments on the state of research are necessary. Finds from the cemeteries and from the settlements must obviously be evaluated from different perspectives. That the biggest collection of seals comes from the cemetery in Panaztepe and also that the only Levantine seals are reported from there is meaningful. This is surely not only related to the fact that this is the largest excavated graveyard in Aegean Anatolia. Panaztepe today lies on the slopes of a hill, but during the Bronze Age, this was one of the islands in the Gulf of Izmir, situated in front of the delta of Hermos (ERKANAL-ÖKTÜ 2018, 3; TUNCEL *et al.* 2021); therefore, the site had one of the most favourable locations regarding contemporary routes of communication and transportation. The position of Beşik-Tepe or Pilavtepe is also convenient from this point of view. As expected, the number of seals coming from settlements is generally lower, but some of the finds are very significant. As already mentioned above, the evidence from Liman Tepe is exceptional – out of nine LBA seals found at the site, six were unfinished, which speaks to considerable local production. From the ‘harbour town’ in Panaztepe comes only a singular example, but it is very telling! This is an impression of a scarab on the handle of the local amphora. According to Erkanal-Öktü (2008, 80, 88) this amphora is local. It is tempting to see this as a hint of an exported vessel (with its contents, presumably) in the frame of the Levantine-Egyptian network. Therefore, this is a lone settlement find, but it is of great importance. In summation, the finds from the cemeteries and from the settlements must be evaluated from different perspectives, and they complement each other.

When we look at the distribution maps, we see an uneven picture and two areas with glyptic finds: 1) southern/central Aegean Anatolia, 2) smaller concentration in the Troad and an empty area in-between. This is true in the case of older (LM I–II) and younger (LH III) seals, both for the Anatolian- and Aegean-style objects. I believe this is largely, but not solely, due to the state of research, since between Panaztepe and Beşik-Tepe there are very few excavated sites with layers from the 2nd Millennium BC. The same is true in the case of inland Aegean Anatolia – but finds from Çine Tepecik and Sardis confirm that seals reached this zone as well, at least during the later stages of the Late Bronze Age. The absence of seals at Kaymakçı may be disappointing on first impression, but the site’s heyday was during the earlier phases of the LBA (ROOSEVELT forthcoming). Nevertheless, some stray finds in ‘empty’ spaces indicate

that there must also have been important central places in these regions of Aegean Anatolia that were integrated into exchange networks (e.g. Mycenaean pottery or swords from Pergamon or Balıkesir: WIJNGARDEN 2002, 17–21, map 12; KELDER 2006; YALÇIKLI 2006; SANDARS 1963, 140–142, 153, pl. 27:52). On the other hand, we have to consider the possibility that the areas to the north of Panaztepe and to the south of Troy might have been a kind of ‘backwater’; at least in light of the most comprehensible reconstructions of the political geography (HAWKINS 1998; 2015), they were not at the centre of political action, and consequently also interregional relations and trade. Similar conclusions were suggested by Pavúk and Horejs (2018, 477–478) in evaluating the results of the survey in the valley of Kaikos, which is located in the centre of the ‘seal-less’ area. In any case, only more fieldwork may bring clarification relating to these issues.

In discussing the western Anatolian Late Bronze Age seals, the following topics come to the fore: trade and other kinds of exchange, sphragistic use and other functions, as well as local production and meaning within western Anatolian societies.

We can assume that later Minoan and early Mycenaean hard stone seals arrived in southern Aegean Anatolia within the frame of cultural exchange, already flourishing during the Middle Bronze Age. This is clearly visible in Miletos, where not only Minoan seals but also sealings were recovered (e.g. CMS VS3 476–479, 482–283). The importance of maritime communication is aptly demonstrated by the motif of the seal from Tavşan Adası – a ship sailing under the wind – and is confirmed by the presence of other goods from Crete and the Greek mainland, such as pottery or stone vessels (NIEMEIER 2005; NIEMEIER – NIEMEIER 1997; BERTEMES – HORNUNG-BERTEMES 2009). These early hard stone seals were surely objects of high prestige and testify to strong connections with late Minoan Crete, however not necessarily in terms of colonisation but rather of natural cultural spread due to factors such as geographic proximity, progress in sea-shipping, traditions of exchange in place since the Neolithic and shared values and priorities in a socio-political or economic sense.

The case of the carnelian lentoid from Troy is special because of the fact that it was deposited ca. 300 years after its manufacture. It is difficult to say how and when it arrived in the north of Aegean Anatolia. One possibility would be sometime during the LH Ib period via Samothrace or Lemnos in the course of intensive contacts between these islands and Minoan Crete in the Neopalatial period (BOULOTIS 2009; PIENIAŻEK 2018; PIENIAŻEK *et al.* 2018, 385–386). It could also have arrived via southern Greece together with the earliest Mycenaean pottery reaching Troy in LH II (MOUNTJOY 2020). Alternatively, it could have been kept somewhere far from Troy and arrived at Troy any time during the Late Bronze Age. Long circulation of seals is a well-known phenomenon within the Late Bronze Age Aegean (KRZYSZKOWSKA 2005, 274–310), and two other Late Bronze Age hard stone seals from the northern Aegean come from much later contexts: one carnelian seal found in a Hellenistic layer in Dion (CMS/Arachne VS3 no. 165) and an agate seal in an Early Iron Age grave in Hephaisteia on Lemnos (CMS/Arachne VS1B no. 34). We can suspect that the value of such objects grew parallel to the distance from the place of manufacture. The high value of the seal from Troy is highlighted by the fact that it was deposited as a votive gift together with jewellery and other precious objects.

In the case of later seals, such as those executed in the style of the Mainland Popular Group, it is striking that the greatest amounts are known from cemeteries with tombs that otherwise contain numerous imports, such as Panaztepe and, to a lesser degree, Beşik-Tepe and Pilavtepe (Figs. 7 and 14). MPG seals are one of the most characteristic features of late Mycenaean culture and were even considered one of the identifying markers of ‘Mycenaeans’ (envoys or officers) on the Uluburun shipwreck and elsewhere outside Greece (EDER 2007, 40;

PULAK 2005; PULAK 2008, 300–303, cat. no. 241). Generally, it seems that MPG seals were not trade goods, since only very few have ever been found in the eastern Mediterranean (DICKERS 2001, 228; KRZYSZKOWSKA 2005, 307–308; EDER 2007, 40). One of the exceptions is known from Alalakh (WOOLLEY 1955, 268, no. 171; **Fig. 17**); however, although this seal is quite typical in terms of material (steatite) and shape (lentoid/gabled), its decoration, composed of four geometric signs, is not.

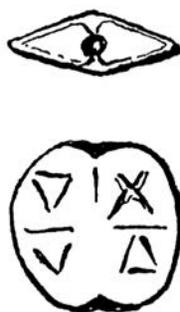


Fig. 17: Steatite seal of the MPG type from Alalakh (after WOOLLEY 1955).

A similar interpretation has been put forward for groups of objects bearing specific Mycenaean symbolism, such as relief beads or clay figurines (FRENCH 1971, 175; HUGHES-BROCK 1999, 291; BENZI 1999; PULAK 2005, 303–305; EDER 2014). Since these items were rarely found outside the core area of the Mycenaean world (for example, they very seldom accompanied Mycenaean pottery in the eastern Mediterranean), it has been suggested that they were not the focus of interregional trade. But figurines, relief beads, and seals have been found in Aegean Anatolia, the last two in considerable quantities (for glass beads, see ÇINARDLAI-KARAASLAN 2012); we obviously need to question these interpretations, especially since the seals were also produced locally (PIENIAŻEK forthcoming). The understanding of the role of MPG seals within western Anatolian society is further complicated by the fact that their function is generally not clear, since only a few sealings can be associated with them, so that their sphragistic use is not obvious (DICKERS 2001, 115; KRZYSZKOWSKA 2005, 275, 296; EDER 2007, 38). Additionally, they were made of less valuable material, such as soft stone steatite, and distributed in broader social circles in comparison to hard stone seals. Eder (2007, 94–95) suggested that they could be marks of distinction for palace officials or officers responsible for regional transactions. The fact that imported late Mycenaean seals, as well as locally made Mycenaeanising ones, have been found predominantly in tombs rich in exotic goods (BASEDOW 2000, 28, pl. 42; PIENIAŻEK *et al.* 2018, 406; ERKANAL-ÖKTÜ 2018) indeed speaks to their use in the context of trade and foreign relations but may also suggest that they were status markers. The same is true in the case of local production, which is attested in Troy/Beşik-Tepe, Panaztepe, and Limantepe. The case of Limantepe may not look so obvious at first sight, since no richly equipped tombs are known from there, but it was surely an important centre in political terms. Its involvement in exchange networks is testified not only by its location on the Urla peninsula but also by the presence of Mycenaean pottery, figurines and other goods with nonlocal affinities (GÜNEL 1998). However, comparing the function and distribution of MPG seals in Aegean Anatolia and Mycenaean Greece, one has to consider that nowhere in the east were soft stone seals found together with the hard stone ones, not even in Panaztepe.

Having the well-known phenomenon in mind that the value of an object can increase in proportion to a growing distance from the place of origin (PIENIAŹEK 2018 with bibliography), it is reasonable to assume that the relative value of MPG and related seals within local societies in Aegean Anatolia was higher than within Mycenaean Greece.

In the case of the indigenous production of LH III Mycenaeanising seals (**Fig. 7**), we observe three phenomena: 1) It seems that in the north, in Troy/Beşik-Tepe, such seals were produced in local material: bone or horn, not used in mainland Greece. 2) In the central area, in Panaztepe and Liman Tepe, the seals were made of soft stone, mainly steatite, but they incorporated non-Mycenaean ornamental designs, such as pseudo-cuneiform signs or a groove along the edge of the lentoid seal – both surely inspired by central Anatolian glyptic. 3) Finally, we also observe hybrid examples, such as the biconvex rectangular bone seal from Troy or the seal-armring from Panaztepe. I think what we see here is a search for a local glyptic style, be it a deliberate choice or simply an outcome of the entanglement of different traditions. Local differences can be related to both indigenous traditions and the availability of material – in Troy, bone and horn seals were known since the Early Bronze Age (ZIDAROV 2020), and steatite was known in the central part of Aegean Anatolia (e.g. Arachne/CMS VS3 457 from Liman Tepe). Whether this production was centrally sponsored cannot be proven, but it is conceivable. For example, in Liman Tepe, the semi-finished seals were found in the workshop area, where other types of production are also attested, such as the manufacturing of pottery, as proved by the presence of pottery kilns (MANGALOĞLU-VOTRUBA 2015). It is possible that the elites of local polities, such as Arzawa, Wilusa, the Seha River Land or Mira, could have promoted the development of local seal production, since it was important from the point of view of commercial or cultural exchange across the Aegean. We know from the written sources that Arzawa was often in alliance with Ahhijawa, which most probably means Mycenaean Greece, until the Hittite conquest and that these contacts continued also later (HAWKINS 1998; 2015; BECKMAN *et al.* 2011). Surely such political relations promoted trade, as well as the spread of strategies and fashions.

The presence of late Mycenaean-style glass seals in Pilavtepe and probably in Panaztepe is also very telling – it is tempting to see this distribution as a result of contacts with central Greece, where this kind of seal was predominantly produced (EDER 2007). From the perspective of trans-Aegean exchange, this connection – between central-western Anatolia and central Greece via Psara and Urla – must have been at least as significant as the communication routes across the southern Aegean. The importance of maritime paths along the coast of the Urla peninsula is best exemplified by the finds from Panaztepe, Liman Tepe or Bakla Tepe. The case of Psara is less known, however the astonishingly rich cemetery in Archontiki (ARCHONTIDOU-ARGIRI 2006) clearly indicates the significance of the island in connection with the central Aegean (PIENIAŹEK forthcoming). The finds of exotic seals at Panaztepe – the scarabs and Levantine seals – and the fact that this is the only findspot of these seals in Aegean Anatolia, confirm the great importance of this site in networks stretching not only throughout the Aegean but also between the eastern Mediterranean and the northern Aegean. The existence of this network is well known based on the distribution of pottery: Anatolian Grey Ware (AGW) in Cyprus and the Levant (MOMMSEN – PAVÚK 2007; PIENIAŹEK *et al.* 2018, 391–402, fig. 2). Only the absence of Cypriot pottery in Panaztepe is surprising, but this can be related to burial rituals, since Beşik-Tepe also lacks this kind of pottery, and all Cypriot sherds found at Troy come from settlement layers. Nevertheless, the pottery testifies to the beginning of this exchange in the 15th century BC and its end in the 12th century BC (the youngest examples of AGW in the eastern Mediterranean come from LH IIIC early-middle contexts); the exotic seals from Panaztepe seem to fit in the period of the 14th–12th century BC.

In this context, one may ask why the Levantine seals were not found further to the north, for example in Troy or Beşik-Tepe, whereas other exotic objects from the eastern Mediterranean are known from there. This might be a simple coincidence, since Panaztepe is definitively the richest known cemetery of Aegean Anatolia. Furthermore, Beşik-Tepe was surely only an interstation and Troy's agent on the coast of the Aegean Sea. The goods found in this cemetery include some exotic objects, but it is Troy where the most spectacular Levantine items from the northern part of Aegean Anatolia come from, such as Canaanite amphorae, Egyptian pottery or ostrich egg shells (PIENIAŹEK *et al.* 2018 with further Bibliography), but scarabs or other Late Bronze Age seals are missing. Only the tombs of the Trojan elite from the 14–13th century BC would be able to shed more light on this issue, but they have not yet been found.

As mentioned above, the distribution of Anatolian-style seals shows a different pattern. With only one exception (cat. no. 47), they are confined to the 13–12th century BC. The spread of these seals and sealings must be considered not only within the context of exchange but also of political relations, especially the Hittite conquest known from written sources. The timing speaks to the second option being a decisive factor. Very important in this case is the silver seal of Tarkasnawa, a king of Mira who was also the sponsor of the rock inscription at Karabel (HAWKINS – MORPURGO-DAVIS 1998). It seems that, at least during his rulership in the second half of the 13th century, Mira might have profited from connections with the Hittites. Not only was the central Anatolian glyptic style locally appropriated, but Tarkasnawa also maintained diplomatic relations with the Hittites, as demonstrated by the impressions of two seals of this king found at Boğazköy-Hattusa (one impression of one seal and four impressions of the second; HAWKINS 1998, 8–9). In my opinion, the local appropriation of central Anatolian sealing praxis is equally conceivable in the case of Çine-Tepecik. Though it is possible that the sealings travelled to Çine with commodities or that they were impressed at Çine by a Hittite officer deployed there, we cannot rule out the possibility that seals were manufactured in western Anatolia in the Hittite style, as in the case of the seals of Tarkasnawa of Mira. If Hittite sealing praxis was adopted in the area of Izmir, it could also be the case in Çine-Tepecik, especially considering that it probably belonged to the polity of Mira (HAWKINS 1998, 9–31; GÜNEL – HERBORDT 2010, 7–8). We can view the bronze biconvex seal from Troy from a similar perspective – as a hint of relations with the Hittites or, alternatively, with central western Anatolia. The adoption of sealing praxis does not imply the implementation of this administrative technique only in political and economic relations with the Hittites: once 'domesticated', it could have been used according to local needs, both in regional and interregional transactions. Also, other seals executed in the Anatolian style, such as local hybrid imitations from Troy (cat. no. 71) or from Metropolis (cat. no. 27), must be related to the spread of central Anatolian glyptic traditions.

CONCLUSIONS

Late Bronze Age seals found in Aegean Anatolia are a very heterogeneous but also fascinating collection of finds. Exotic seals are testament to far-reaching exchange connections, even as far as to Egypt. The spread of late Mycenaean seals of the Mainland Popular Group can, on the contrary, be seen as one of the signs of the participation of Aegean Anatolia in shared cultural traditions linking mainland Greece and western Anatolia, most probably related to intensive cultural and commercial exchange. The concentration of LH III seals as well as their local production in Troy/Beşik-Tepe and Liman Tepe accentuates the importance of these sites as centres of local polities. The role of Panaztepe, where the biggest collection of

seals was found, is not so straightforward, due to the fact that, though the excavated ‘harbour town’ was relatively well preserved, the location and character of the centre of the settlement remains unclear. This is mainly due to the fact that the LBA layers in the potential location of this centre – the later acropolis, meaning the top of the hill – are eroded (TUNÇEL *et al.* 2021). However, due to the special location of the Panaztepe island – the mouth of the Hermos, the second biggest river of Aegean Anatolia – it is conceivable that the island was not a major political centre itself but maybe an agent of another centre. But this is another story and will be discussed elsewhere.

Simultaneously, exchange within the Aegean, over the course of the 13th century BC, diffused central Anatolian styles within Aegean Anatolia, as well, possibly as a consequence of the Hittite conquest and the treaties between the empire and western Anatolian polities. It seems that during the second half of the 13th century at the latest, sealing praxis was locally adopted and actively used in diplomatic relations with Hattusa and maybe also in the management of goods. Furthermore, one can observe the beginning of the development of local styles, especially within the Aegean-style group, but this was only the first stage of this process and did not result in the emergence of a coherent local glyptic, perhaps due to the Hittite impact, either peaceful or oppressive.

ACKNOWLEDGEMENTS

This article was composed within the framework of the DFG Project 3901366721 ‘Western Anatolia in the 2nd Millennium: Local Culture and Foreign Contacts’. For assistance in the preparation, I would like to thank Nina Finkel BA (QGIS mappings) and Kathleen Schaupp BA (catalogue) for their assistance, as well as Dr. Tara Ingman, who undertook the linguistic editing. Furthermore, I am indebted to prof. Suzanne Herbordt, who gave advice regarding seal no. 71 from Troy (A05/06.0014). I am also grateful to two anonymous reviewers, whose comments contributed in a very positive way to the quality of the article.

CATALOGUE

Aydin

1. Anatolian-style stamp seal, made of hematite. Said to be found in Aydin. Hogarth took a new photo of the base (Louvre AO 1180). Decoration: Hittite hieroglyphic inscription. Stylistic date: Similar to ‘Tyszkiewicz seal’, later, MBA/early Old Hittite period? Bibliography: HOGARTH 1920, 75, fig. 79; MORA 1987, 18, 32–44, no. Ia:1.2; COLLON 1987, 57, no. 234; ERKANAL-ÖKTÜ 2018, 129–130.

Bakla Tepe

2. Aegean-style lentoid seal, material identified as white stone (AYKURT – ERKANAL 2017, 120: ‘marble or burned quartz’, but according to Pieniążek it could also be glass). Context: Chamber Tomb (no. T 207/19110). Decoration: A lion attacking a quadruped, probably a cow. Contextual date: LBA (most probably LH III). Stylistic date: LH II–LH IIIA1. Bibliography: CMS/Arachne VS3 456; ERKANAL-ÖKTÜ 2000, 76–77, fig. 7; BERTEMES – HORNUNG-BERTEMES 2009, 179; ERKANAL-ÖKTÜ – ERKANAL 2015, 199, fig. 35; KOZAL 2017, cat. 314; AYKURT – ERKANAL 2017, 120, pl. 25.5, fig. 82.

Beşik-Tepe

3. Aegean-style lentoid seal (Mainland Popular Group – MPG), made of steatite (**Fig. 10**). Context: Cemetery, pithos 15-Ost (no. 15-Ost.7). Decoration: A mask – two double-circles with a dot in the middle separated by a triangle, below a ‘boukranion’. Contextual date: LH IIIA2–B1. Stylistic date: LH IIIA–B. Bibliography: *CMS/Arachne V S1B 474*; PINI 1992; *BASEDOW 2000*, 132–133, pl. 92:1, 121:1; PIENIAŹEK 2018, 124–129, fig. 3.
4. Aegean-style lentoid seal (MPG), made of bone/horn (**Fig. 11**). Context: Cemetery, pithos 58 (no. 58.11). Decoration: A quadruped. Contextual date: LH IIIA2–B1. Stylistic date: LH IIIA–B. Bibliography: *CMS/Arachne V S1B Nr. 475*; PINI 1992; *BASEDOW 2000*, 133, pl. 92:1, 121:3; PIENIAŹEK 2018, 124–129, fig. 4.
5. Aegean-style lentoid seal (MPG), made of bone/horn. Context: Cemetery, pithos 58 (no. 58.14). Decoration: A schematic quadruped, badly preserved. Contextual date: LH IIIA2–B1. Stylistic date: LH IIIA–B. Bibliography: *CMS/Arachne V S1B 476*; PINI 1992; *BASEDOW 2000*, 133, pl. 92:1, 121:3.
6. Aegean-style (?) rectangular seal with lens-shaped section, made of bone/horn (**Fig. 12**). Context: Cemetery, pithos 58 (no. 58.10). Decoration: Side A, quadruped with horns (a goat?); side B: also a quadruped but only partly preserved. Contextual date: LH IIIA2–B1. Stylistic date: LH IIIA–B. Bibliography: *CMS/Arachne VS1B 477*; PINI 1992; *BASEDOW 2000*, 133, pl. 92:1, 121:2.
7. Lentoid seal, unfinished or damaged, made of bone/horn. Context: Cemetery, pithos 88 (no. 88.10). No decoration. Contextual date: LH IIIA2–B1. Bibliography: *CMS/Arachne V S1B 478*; PINI 1992; *BASEDOW 2000*, 133, pl. 92:1, 121:3.

Çine-Tepecik

8. Central Anatolian-style sealing (‘Tonbulle’). Context: Magazine-room with numerous pot fragments, including storage vessels and containers, many of Mycenaean provenance. Decoration: Hieroglyphic-Luwian inscription, the reading not absolutely clear but includes probably one or two names, including [*Tark*]asnapiya or [*Tark*]asnaya. Contextual date: LH IIIB2–IIIC middle. Stylistic date: Hittite Empire Period. Bibliography: GÜNEL – HERBORDT 2010, 2, 5–6, fig. 4–6; GÜNEL – HERBORDT 2014, 8–9; GÜNEL 2015, 638–639.
9. Central Anatolian-style sealing (‘Tonbulle’). Context: Magazine-room with numerous pot fragments, including storage vessels and containers, many of Mycenaean provenance. Decoration: A man with a bow over his shoulder (warrior?), surrounded by hieroglyphs reading ‘Tamipiya, prince’. On the back side, impressions of leather and wood. Contextual date: LH IIIB2–IIIC middle. Stylistic date: Hittite Empire Period, probably 13th century BC. Bibliography: GÜNEL – HERBORDT 2014, 8–11, fig. 8–10; GÜNEL 2015, 638–639.

Ephesos

10. Aegean-style amygdaloid seal, made of carnelian. Context: Unclear, probably from Ephesos. Decoration: Two wider grooves cut by semicircles – unfinished? partly recut? Stylistic date: LM I. Bibliography: *CMS/Arachne VI 229*.

Izmir?

11. Aegean-style lentoid seal, made of serpentine or schist. Context: Old find from the area of Izmir. Decoration: Two females. Stylistic date: LH III. Bibliography: *CMS/Arachne VI 291*.
12. Anatolian-style seal, made of silver. Context: Antiquities trade. Decoration: Walking figure in royal dress and inscription in Luwian hieroglyphics in the middle, surrounded by a cuneiform inscription reading *Tarkasnawa*. Stylistic date: Hittite Empire Period, most

probably the second half of the 13th century BC (the rulership of Tarkasnawa of Mira). Bibliography: HAWKINS – MORPURGO-DAVIS 1998, 243–244, fig. 1; HAWKINS 1998, 2–4; HAWKINS 1999, 9, fig. C; <https://art.thewalters.org/detail/5130/seal-of-tarkummuwa-king-of-mera/> (visited 21/06/2022).

13. Anatolian-style (?) ‘knob’ seal, made of limestone. Context: Antiquities trade, purchased in Smyrna (modern Izmir). Decoration: figural. Bibliography: HOGARTH 1920, 38, no. 392; ERKANAL-ÖKTÜ 2018, 128–130.
14. Anatolian-style biconvex seal, made of limestone. Context: Antiquities trade, purchased in Smyrna (modern Izmir). Decoration: Hieroglyphics. Bibliography: HOGARTH 1920, 47, no. 322; ERKANAL-ÖKTÜ 2018, 129–130.

Karaburun?

15. Anatolian-style (?) sealing. Context: Allegedly from the area of Karaburun. Decoration: Hieroglyphics. Stylistic date: 13th–12th (?) century BC (Mora). Bibliography: MORA 1987, 160, 168, 170, no. VIb: 3.1; ERKANAL-ÖKTÜ 2018, 130.

Kilia

16. Aegean-style seal ring, gold. Purchased by H. Schliemann and given as a gift to F. Calvert; from the area of Kilia on the Gallipoli peninsula, according to Schliemann. Decoration: Female and male figure in front of a building. Stylistic date: LM I. Bibliography: CMS/Arachne XI.028 – 167241; NILSSON 1927, 228–229, fig. 31A; ZAHN 1932, 78, no. 26; PINI 1988, 41, no. 28.

Liman Tepe

17. Aegean-style lentoid seal (MPG), made of steatite. Context: A well with LH IIIA pottery (Limantepe II.3) (no. 3289). Decoration: A kind of simplified rosette with a dot in the centre surrounded with petals and a circle of V-shaped signs on the edge. Contextual date: LH IIIA2. Stylistic date: LH III (MPG). Bibliography: CMS/Arachne VS3 460; ERKANAL-ÖKTÜ 2000, 75, fig. 2g; BERTEMES – HORNING-BERTEMES 2009, 179; MANGALOĞLU-VOTRUBA 2012, 130–131, pl. 139a.
18. Aegean-style low conical seal, local variant of the MPG, made of light brown soft stone, probably steatite. Context: Mixed (Limantepe II?) (no. 33147/8). Decoration: In the centre is a motif reminiscent of a four-leaf clover, surrounded by a circle. Contextual date: Settlement layer with LBA pottery mixed with younger material. Stylistic date: probably LH III. Bibliography: MANGALOĞLU-VOTRUBA 2012, 132, pl. 139b, 170b.
19. Local lentoid seal with a groove around the edge, made of dark grey-reddish stone, probably steatite. Context: Mudbrick debris (Limantepe II.1) (no. 40040/1). Decoration: A dot in the centre surrounded with stemmed dots. Contextual date: LH IIIC. Stylistic date: LH III? Bibliography: MANGALOĞLU-VOTRUBA 2012, 133, pl. 139g, 170a.
20. Unfinished low conical seal, made of black soft stone, probably steatite. Context: A ditch with LBA pottery, both local and Mycenaean (Liman Tepe II?) (no. 1058). Finished perforation on one side, incipient on the other. Bibliography: MANGALOĞLU-VOTRUBA 2012, 31, 131, pl. 139c.
21. Unfinished low conical seal, made of greenish soft stone, probably steatite. Context: A settlement layer with pottery of Limantepe II.1, mixed with other material (no. 33171/1). Not decorated, not perforated. Contextual date: Limantepe II? Bibliography: ERKANAL-ÖKTÜ 2000, 75, fig. 6a (there as Middle Bronze Age); MANGALOĞLU-VOTRUBA 2012, 131, pl. 139d, 170d.

22. Unfinished low conical seal, made of dark grey soft stone, probably steatite. Context: Mixed layer with, MBA, LBA, and IA pottery (no. 35003/1). Not decorated, not perforated. Bibliography: MANGALOĞLU-VOTRUBA 2012, 131, pl. 139e, 170c.
23. Unfinished low conical (or, strictly speaking, dome-shaped) seal, made of dark stone, probably steatite. Context: Settlement layer (Limantepe II.3) (no. 33200/3). Not decorated, not perforated. Contextual date: LH IIIA. Bibliography: MANGALOĞLU-VOTRUBA 2012, 133, pl. 139i.
24. Unfinished flat, cylindrical seal, made of black, soft stone, probably steatite. Context: A well with LH IIIA pottery (Limantepe II.3) (no. 3278). Decoration: Unclear – a dot and three incised lines, possibly representing a schematic human figure or a kind of sign? Incipient perforation on both sides. Contextual date: LH IIIA2 (Limantepe II.3). Bibliography: MANGALOĞLU-VOTRUBA 2012, 132, pl. 139f.
25. Unfinished flat cylindrical seal, made of black soft stone, probably steatite. Context: Unknown (no. 13011). Decoration: Lines crossing in an irregular way – unclear if intentional decoration or simply tool marks. Incipient perforations on both sides. Bibliography: CMS/Arachne VS3 458 (there as Middle Bronze Age); ERKANAL-ÖKTÜ 2000, 75, fig. 6b (there as Middle Bronze Age); BERTEMES – HORNING-BERTEMES 2009, 179; MANGALOĞLU-VOTRUBA 2012, 132, pl. 139h.

Metropolis

26. Anatolian-style cylindrical seal, made of black-grey soft stone, probably steatite. Context: Byzantine layer on the Acropolis. Decoration: Around the vertical perforation on the top runs a zigzag pattern, and the main decoration at the bottom shows 10 engraved signs; their reading is, however, unclear. Stylistic date: LBA? Bibliography: SCHACHNER – MERIC 2000, fig. 3a–e, 6a–c.

Miletos

27. Aegean-style lentoid seal, made of rose quartz, partly broken. Context: In the area of the sanctuary on the border of the layers of Period IVb and V (no. AT 99.292.1). Decoration: Winged griffin attacked by a lion. Contextual date: LM II/IIIa. Stylistic date: LM I–II. Bibliography: Arachne/CMS VS3 480; 2005, 8, fig. 22; BERTEMES – HORNING-BERTEMES 2009, 180; ZENZEN 2015, fig. 1–2.
28. Aegean-style lentoid seal, made of material described as ‘onyx-marble’ (in reality neither marble nor onyx but banded soft stone, probably some kind of limestone). Context: Debris of the old excavations (no. AT 99.4.1). Decoration: A quadruped. Stylistic date: LH IIIA–B. Bibliography: CMS/Arachne VS3 481; NIEMEIER 2005, 12, fig. 31; NIEMEIER 2007, 15, fig. 5:4; BERTEMES – HORNING-BERTEMES 2009, 180.
29. ‘Mycenaean amygdaloid with a fish motif’. Bibliography: ZENZEN 2015, 389–390.

Panaztepe

30. Aegean-style lentoid seal (MPG), made of steatite. Context: West cemetery, tholos A (no. A 11). Decoration: Rough cross of three parallel incised lines. Contextual date: LH IIIA–B. Stylistic date: LH IIIA–B. Bibliography: BERTEMES – HORNING-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 121–122, pl. 3, 361; CMS/Arachne VS3 462.
31. Aegean-style lentoid seal (MPG), made of steatite. Context: West cemetery, tholos A (no. A 12). Decoration: A singular sign, meaning unknown. Contextual date: LH IIIA–B. Stylistic date: LH IIIA–B. Bibliography: ERKANAL-ÖKTÜ 2000, 69, fig. 2d; ERKANAL-ÖKTÜ 2018, 10, 121, 215, pl. 3, 361; exhibited in the Archaeological Museum in Izmir.

32. Aegean-style lentoid seal (MPG), made of steatite. Context: West cemetery, tholos A (no. A 10). Decoration: Pseudo-cuneiform signs composing a kind of rosette-pattern. Contextual date: LH IIIA-B. Stylistic date: LH IIIA-B. Bibliography: BERTEMES –HORNUNG-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 121, pl. 3, 362; PIENIAŻEK 2018, 128, fig. 7; CMS/Arachne VS3 461; exhibited in the Archaeological Museum in Izmir.
33. Aegean-style lentoid seal (MPG), made of steatite (**Fig. 13**). Context: West cemetery, tholos B (no. B 14). Decoration: Radially arranged stemmed dots. Contextual date: LH IIIA-B. Stylistic date: LH IIIA-B. Bibliography: BERTEMES – HORNUNG-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 212, pl. 8, 361; CMS/Arachne VS3 463; exhibited in the Archaeological Museum in Izmir.
34. Aegean-style lentoid seal (MPG?), made of soft blue stone. Context: West cemetery, tholos BJ (no. BJ 13). Decoration: Very schematic – a human figure on the left side and a quadruped on the right. Contextual date: ca. LH IIIA-B. Stylistic date: LH IIIA-B. Bibliography: ERKANAL-ÖKTÜ 2000, 69, fig. 2f; BERTEMES – HORNUNG-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 27, 122, pl. 45, 362, 373; CMS/Arachne VS3 467; exhibited in the Archaeological Museum in Izmir.
35. Aegean-style lentoid seal (MPG), made of steatite. Context: West cemetery, pithos S (no. S 7). Decoration: A 'spider' – two circles surrounded by V- and bow motifs. Contextual date: ca. LH IIIA-B. Stylistic date: LH IIIA-B. Bibliography: ERKANAL-ÖKTÜ 2000, 71, fig. 2e; BERTEMES – HORNUNG-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 34, 121, pl. 63, 362; CMS/Arachne VS3 468.
36. Aegean-style lentoid seal (MPG), made of steatite. Context: West cemetery, pithos S (no. S 8). Decoration: Symmetrical parallel bow-motifs. Contextual date: ca. LH IIIA-B. Stylistic date: LH IIIA-B. Bibliography: BERTEMES – HORNUNG-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 121, pl. 63, 364; CMS/Arachne VS3 469; exhibited in the Archaeological Museum in Izmir.
37. Aegean-style lentoid seal (MPG), made of serpentine. Context: West cemetery, pithos Ö? (attribution unsure) (no. X 34). Decoration: Rosette. Contextual date: ca. LH III. Stylistic date: LH IIIA-B. Bibliography: ERKANAL-ÖKTÜ 2018, 123, 503, pl. 113, 363, exhibited in the Archaeological Museum in Izmir.
38. Aegean-style lentoid seal (MPG), made of serpentine. Context: West cemetery, cist grave H (no. H 1). Decoration: Geometric – a kind of star indicated by incised parallel lines. Contextual date: ca. LH IIIB. Stylistic date: LH IIIA-B. Bibliography: ERKANAL-ÖKTÜ 2018, 122, pl. 95, 363; BERTEMES – HORNUNG-BERTEMES 2009, 179; CMS/Arachne VS3 470; exhibited in the Archaeological Museum in Izmir.
39. Aegean-style lentoid seal (MPG), made of steatite. Context: North cemetery, tholos AA (no. AA 4). Decoration: In the centre there are three parallel lines and on both sides of them, unclear smaller signs. Contextual date: LH IIB-III A1. Stylistic date: LH IIIA-B. Bibliography: ERKANAL-ÖKTÜ 2000, 69 fig. 2a; BERTEMES – HORNUNG-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 121, pl. 118, 361; CMS/Arachne VS3 464.
40. Aegean-style flat conical seal (MPG?), made of steatite. Context: West cemetery, tholos İ (no. İ 9). Decoration: Geometric with a cross dividing the surface into four sectors filled with triangles. Contextual date: ca. LH IIIA-B. Stylistic date: LH IIIA-B. Bibliography: ERKANAL-ÖKTÜ 2000, 69, fig. 2c; BERTEMES – HORNUNG-BERTEMES 2009, 179, n. 29; ERKANAL-ÖKTÜ 2018, 122, pl. 27, 362; CMS/Arachne VS3 465; exhibited in the Archaeological Museum in Izmir.
41. Aegean-style flat conical seal (MPG?), unfinished, made of soft stone. Context: West cemetery, tholos AY (no. AY 7). No decoration. Contextual date: ca. LH IIIA-B. Bibliography: ERKANAL-ÖKTÜ 2018, 123, pl. 38.

42. Flat cylindrical seal made of steatite, unfinished. Context: West cemetery, pithos S (no. S 9). Decoration: Multiple crossing lines, but these could simply be tool marks. Contextual date: ca. LH IIIB–C early. Stylistic date: LH IIIA–B. Bibliography: ERKANAL-ÖKTÜ 2018, 122–123, pl. 63, 363.
43. Cuboid seal decorated on both sides, made of steatite. Context: West cemetery, tholos İ (no. İ 8). Decoration: Side A, geometric motifs – triangles and bows; side B, a cross dividing the surface into four sectors filled with triangles. Contextual date: ca. LH IIIB. Bibliography: ERKANAL-ÖKTÜ 2000, 69, fig. 2b; BERTEMES – HORNING-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 123–124, pl. 27, 364; CMS/Arachne VS3 466; exhibited in the Archaeological Museum in Izmir.
44. Cuboid seal decorated on both sides, made of steatite. Context: West cemetery, cist grave V (no. V 2). Decoration: The same geometric motif on both sides of a cross dividing the surface into four sectors filled with triangles. Contextual date: ca. LH IIIB. Bibliography: BERTEMES – HORNING-BERTEMES 2009, 179; ERKANAL-ÖKTÜ 2018, 123–124, pl. 97, 364; CMS/Arachne VS3 471a–b.
45. Aegean-style (?) seal made of glass. Context: Cemetery, cist grave DA ('four seals and various beads were discovered inside the chest cavity of a boy aged five or six, who was found in one of the cist graves. Although heavily damaged, the glass seal with its one conical side is striking': CINARDALI-KARAASLAN 2012, 136). Contextual date: LH III? Bibliography: ERKANAL-ÖKTÜ – ÇINARDALI-KARAASLAN 2005, 28; CINARDALI-KARAASLAN 2012, 129, 136 (not included in ERKANAL-ÖKTÜ 2018).
46. Anatolian-style (?) seal-armlet made of bronze, composed of a hemispherical seal attached to an armlet. Context: West cemetery, tholos Ğ (no. Ğ 27). Decoration: Central field empty and surrounded by pseudo-cuneiform signs and spiral motifs. Contextual date: ca. LH IIIA–B. Stylistic date: LBA. Bibliography: ERKANAL-ÖKTÜ 2000, 71–73, fig. 3; ERKANAL-ÖKTÜ – ERKANAL 2015, 197, fig. 28; ERKANAL-ÖKTÜ 2018, 124–126, pl. 19, 365.
47. Scarab made of faience. Context: West cemetery, pithos I (no. I 4). Decoration: Inscription *Jmn-R'* (=Amon-Re). Contextual date: LH IIIB–C, dating of cartouche after JAEGER – KRAUSS 1990: Amenhotep III (14th century BC). Bibliography: ERKANAL-ÖKTÜ 2000, 74, fig. 5b; ERKANAL-ÖKTÜ – ERKANAL 2015, 198; KOZAL 2017, cat. 311; ERKANAL-ÖKTÜ 2018, 126–127, 422, pl. 50, 366.
48. Scarab made of faience. Context: West cemetery, pithos L (no. L 7). Decoration: Inscription *Nb-m', 't-R', h'(w) nfr(w)* (= the name of Amenhotep III). Contextual date: LH IIIB–C, dating of cartouche after JAEGER – KRAUSS 1990: Amenhotep III (14th century BC). Bibliography: ERKANAL-ÖKTÜ 2000, 74, fig. 5a; ERKANAL-ÖKTÜ – ERKANAL 2015, 198; KOZAL 2017, cat. 310; ERKANAL-ÖKTÜ 2018, 126–127, 431, pl. 57, 366.
49. Fragment of a scarab. Context: West cemetery, tholos CO. Decoration: 'Reed-leaf' pattern. Contextual date: LH IIIC. Stylistic date: ca. 12th century BC (by C. Mlinar, in ERKANAL-ÖKTÜ 2008, 74). No illustration. Bibliography: ERKANAL-ÖKTÜ 2008, 74; ERKANAL-ÖKTÜ 2018, 126.
50. Handle of a local reddish-brown amphora with the impression of the scarab. Context: 'harbour town', Level V1/2. Decoration: Inscription, after G. Hölbe: 'Oh, Ptah, Lord of Ma-at'. Contextual date: LH IIIB/C. Bibliography: ERKANAL-ÖKTÜ 2008, 80, 88, fig. 14b:1–2; ERKANAL-ÖKTÜ – ERKANAL 2015, 195; ERKANAL-ÖKTÜ 2018, 126.
51. Levantine-Egyptian cylinder seal, made of green serpentine. Context: West cemetery, tholos AV; the seal was lying on the left arm of the skeleton (no. AV 1). Decoration: A figure and a sphinx facing an altar, bordered with a papyrus-motif (not all details are visible on the illustrations). Contextual date: LH IIIA–B. Stylistic date: 14th–13th century BC (based

on COLLON 1987, 70). Bibliography: ERKANAL-ÖKTÜ 2000, 73, fig. 4; ERKANAL-ÖKTÜ – ERKANAL 2015, 197; ERKANAL-ÖKTÜ 2018, 20, 127, 343, pl. 34, 367.

52. Pyramidal seal ('anchor seal'), made of stone. Context: The area of the West cemetery, pithos CD. Decoration: Badly preserved incised motifs on two surfaces and at the base. On one of the long side surfaces, there is an incised motif situated in a cartouche, a stylised human figure (?) which is probably holding a fish (?). On the base are geometric motifs in a circle. Contextual date: LH IIIB–C. Stylistic date: 12–10th century BC. Bibliography: ERKANAL-ÖKTÜ 2008, 80, fig. 14a:1–2.
53. Another pyramidal seal is exhibited in the Archaeological Museum in Izmir, made of black stone, probably steatite or serpentine. Context: 'LBA Panaztepe'. Decoration: On the base is an incised cross with V-shaped signs between the cross arms. Bibliography: Unpublished.
- 54.–56. Three other seals were found together with the glass seal mentioned above. Context: Cist grave DA, chest cavity of a five–six year old child. No further details available (cat. no. 45). Bibliography: ERKANAL-ÖKTÜ – ÇINARDALI-KARAASLAN 2005, 28; ÇINARDALI-KARAASLAN 2012, 136 (not included in ERKANAL-ÖKTÜ 2018).

Pilavtepe

57. Aegean-style lentoid seal (MPG), made of steatite. Context: Chamber Tomb. Decoration: Four symmetric semicircles and dots, maybe two simplified bucrania. Contextual date: LH IIIA2–IIIC early. Stylistic date: LH IIIA–B. Bibliography: BENTER 2009, 354, fig. 9:3 right; BENTER 2010, 348–349, fig. 9:3 right.
58. Aegean-style lentoid seal, most probably made of glass. According to Benter (2009, 354), 'material is steatite, but melted into a glass paste and formed into a mould seal'. Decoration: A quadruped. Contextual date: LH IIIA2–IIIC early. Stylistic date: LH IIIA–B. Bibliography: BENTER 2009, 354, fig. 9:3 middle; BENTER 2010, 348–349, fig. 9:3 middle.
59. Aegean-style lentoid seal, badly preserved, made of glass. Contextual date: LH IIIA2–IIIC early. Stylistic date: LH IIIA–B. Bibliography: BENTER 2009, 354–357, fig. 9:3 left; BENTER 2010, 348–349, fig. 9:3 left.
60. Aegean-style lentoid seal, made of stone (?). Contextual date: LH IIIA2–IIIC early. Stylistic date: LH IIIA–B. Bibliography: BENTER 2009, 358, fig. 10:6 lower left, there as a bead; BENTER 2010, fig. 10:6 lower row, right.

Priene?

61. Aegean-style cushion seal, made of agate. Context: Said to come from Priene (but purchased in Smyrna). Decoration: Bull-leaping scene. Stylistic date: MM III–LM I (LM IA?). Bibliography: CMS/Arachne VI 181; KRZYSZKOWSKA 2005, 307 (n. 143, there as Nr. 206); DIONISIO – JASINK – WEINGARTEN 2014, 75.

Sardis

62. Aegean-style (?) lentoid seal, made of soft stone (schist or chlorite). Context: From the area of Sardis. Decoration: A bird holding a fish in the beak. Stylistic date: LBA? Bibliography: CMS/Arachne VI 479; KENNA 1960, 66, pl. 15:396; SPIER 1983, 22, n. 15.

Tavşan Adası

63. Aegean-style amygdaloid seal, made of rock crystal. Context: Found in front of one of the houses. Decoration: A sailing ship with a wide sail. Contextual date: LM Ia. Stylistic date: MM III/LM Ia. Bibliography: BERTEMES – HORNING-BERTEMES 2009.

Troy

64. Aegean-style amygdaloid seal, made of carnelian (**Fig. 6**). Context: Stone debris in the area of the shrine (South Room) in the Terrace House (no. A07.0694). Decoration: Wild goat (agrimi). Contextual date: LH IIIB/C (Troy VIIa/VIIb1). Stylistic date: LM IB-II ('cut style'). Bibliography: CMS/Arachne VS3 455; KORFMANN 1996, 34–36, pl. 2:2; PIENIAŻEK 2018, 122–123, fig. 2; PIENIAŻEK 2020, 885–887, pl. 23:6, 34:1.
65. Aegean-style lentoid seal (MPG), made of steatite (**Fig. 8**). Context: A pit in the Central Room of the Terrace House (no. z07.0707). Decoration: Unclear, because the surface is damaged. Contextual date: LH IIIB-PG (Troy VIIa-PG). Stylistic date: LH IIIA-B. Bibliography: PIENIAŻEK 2020, 885–887, pl. 23:7, 34:2.
66. Aegean-style lentoid seal (MPG), made of antler (**Fig. 9**). Context: Unclear, found in the vicinity of the citadel wall of Troy VI Late/VIIa (no. A0.0558). Decoration: Four circles with a dot in the middle. Stylistic date: LH IIIA-B. Bibliography: PIENIAŻEK 2018, 125–126; ZIDAROV 2020, 163, fig. 2:11.
67. Almond-shaped unfinished seal (?), made of ivory/horn. Context: Lower town cemetery, burial urn 14 (no. 34-473f). No decoration. Contextual date: LH IIIA (Troy VI Late). Bibliography: BLEGEN – CASKEY – RAWSON 1953, 373, no. 34-473f, fig. 346.
68. Almond-shaped seal, made of antler. Context: Unclear, the excavations of Frank Calvert in Troy. Decoration: Two antithetical wild goats. Stylistic date: LBA? Available illustration does not allow secure attribution. Bibliography: THIERSCH 1902; ZIDAROV 2020, 163, fig. 2:1.
69. Short cylinder seal, made of fallow deer horn. Context: Street in the area of the citadel (no. 37-761). Decoration: Highly stylized zoomorphic and floral motifs, very difficult to interpret. Side A, rosette or animal surrounded by animals; side B, two antithetical birds (eagles?). Contextual date: LH IIIA (VI Late, eventually VIIa). Bibliography: BLEGEN – CASKEY – RAWSON 1953, 218–219, no. 37–761, fig. 301.
70. Biconvex Hittite-style seal, made of bronze (**Fig. 15**). Context: VIIb house in the area of the citadel (no. E09.0573). Decoration: Luwian hieroglyphics surrounded by pseudo-cuneiform signs. Contextual date: 12th century BC (late VIIb1/early VIIb2). Stylistic dating: 13th–12th century BC. Bibliography: HAWKINS – EASTON 1996; KORFMANN 1996, 27–30, fig. 23; ALP 2001; JABLONKA 2007; HNILA 2012, 93–95; PIENIAŻEK 2018, 127, fig. 6; PIENIAŻEK 2020, 618–621, pl. 11:1, 22:5.
71. Short cylinder seal with a groove surrounding the edge, made of bone (**Fig. 16**). Context: Surface (cleaning of the area between VI Late Megaron A and Megaron B) (no. A05/06.0014). Decoration: Pseudo-cuneiform signs on both sides, on side A arranged in concentric circles, on side B in lines. Bibliography: KORFMANN 2001, 10, fig. 10; PIENIAŻEK 2018, 126–127, fig. 5; ZIDAROV 2020, 163, fig. 2:7.

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