EAST OF KONYA: ROUTES AND ENVIRONMENT SETTLEMENT PATTERNS, ANCIENT ROUTES AND ENVIRONMEN IN SOUTH CENTRAL ANATOLIA ANATOLIA DURING THE SECOND MILLENNIUM BCE (TURKEY), DURING THE HOLOCENE

Alvise Matessi, Ali Gürel, Catherine Kuzucuoğlu, d'Alfonso Lorenzo

East of Konya: Settlements, routes and environment in southern Cappadocia, and the political landscape of South Central Anatolia during the Second Millennium BCE

A. MATESSI (Università degli Studi di Pavia), A. GÜREL (Niğde Üniversitesi),
C. KUZUCUOĞLU (Laboratoire de Géographie Physique - CNRS) & Lorenzo D'ALFONSO[1]

Because of their shared landscape and climate, southern Cappadocia is often perceived and represented as the easternmost portion of the Konya plain in South Central Anatolia (hereafter: SCA). Here we will argue that, while many interconnections did indeed exist between these two regions, the Bor-Ereğli plain with its surrounding mountains shows proper, independent historical developments in many phases of its past, particularly in pre-classical times. This picture has emerged from ten years of research that our team has been conducting in the Bor plain[2]. In this article, devoted to the Late Bronze Age (LBA), we will present: 1) the main features of the climate and geology of this region and their fluctuations during the Bronze and Iron Ages (ca 3000-500 BCE); 2) the change in settlement pattern and land route networks in the 2nd millennium BCE; 3) the contribution of written sources of the 2nd millennium BCE to the geography of our region, particularly the account of the battle of *Tuwanuwa*; and 4) the contribution of some novel data from the ongoing excavations at Kınık Höyük that, preliminary though they are, suggest a different understanding of the periodization of our region than previously thought.

1. Geography and climate

1.1. Southern Cappadocia is an area approximately 20000 km^2 consisting of a central wide plain, the Bor plain, and the surrounding mountains. The Bor plain itself has a mean elevation of 1100 masl and covers an almost triangular area of 8000 km^2. The mountains encircling it can be divided into three main groups. The southern and eastern sides of the plain are defined

[1] This contribution is the result of years of collaborations, and most parts have been meditated and reviewed by the four authors. That said, Kuzucuoğlu, Gürel and Matessi are responsible for §1, Matessi for §2, d'Alfonso for §3, and d'Alfonso and Matessi for §4. The authors would like to thank N. Highcock for the help with the English text as well as the anonymous referee for the review. Responsibility for the content of the paper stay of course with us four.

[2] d'Alfonso 2010; d'Alfonso 2014; Highcock et al. 2015 and d'Alfonso et al. 2016, with references therein.

respectively by the Taurus Mountains and the crystalline system of the Niğde Massif. The northern side of the plain is defined by three mountain massifs belonging to the Cappadocian volcanic system, whose components are called from west to east: Hasandağ, Keçiboydurandağ, and the Melendizdağları. The eastern slopes of the Melendizdağları are divided from the Niğde massif by a 10 km wide valley-like corridor where today Niğde, the main city of the region, is located. Between the Keçiboydurandağ and the Melendizdağları a large open trough consisting of four ridges and narrow rocky stream valleys is home to wide summer pastures.

The northwestern end of the Bor-Ereğli plain is defined by the Karacadağ volcanic mountains of the districts of Emirgazi and Karapınar. While the aforementioned volcanic massifs have elevations ranging between 2500-3180 masl, the Karacadağ volcano has a lower summit, with the highest peak reaching 2000 masl. It extends around 50 km northeast to southwest between two large, low areas that form corridors connecting the Bor-Ereğli plain with the Konya plain. One corridor follows the northern slopes of Karacadağ, and its landscape comprises steppe and dry farming lands. The other corridor follows the southern slopes of Karacadağ, and is partly occupied by the Akgöl wetland, a resource-rich environment formed by backswamps and shallow open-water areas. This expansive wetland is positioned in the southwestern part of the Bor-Ereğli plain where it used to extend northeast. In this entire region, mountains are well watered by numerous gushing yearlong streams, and are densely forested. Elderly villagers remember years past when these forests were so dense that they could conceal big-game animals like deer.

The Bor plain is encircled by these mountains, and its general geomorphology (Fig. 1) can be illustrated as an area where a piedmont alluvial and colluvial fan encircles a core area of open steppe land corresponding to the floor of a Last Glacial Maximum lake dated around 26.5-17 ka ago[3].

1.2 As defined by the study of ancient climate conditions, the Bor plain appears as a steppe margin[4]. Here the environment transitions from dryness in the enclosed depressions (where lake floors form wide flats at ca 1000 masl in the Konya and Ereğli plains, and ca 1080 masl in the Bor plain) to wetness in the mountains up to 3000 m high. Between these two zones low, dry depressions meet well-watered mountain slopes and piedmont ecosystems (alluvial fans, marshes, and springs). These water-dependent resources are very sensitive to climatic changes[5]. In this region, the preliminary data presented in Gürel and Lermi (2010) have now been completed by new results obtained in the frame of the Kınık Höyük archaeological research program from open sections and cores studied at several spots in the Bor plain[6]. These test areas produced non-contiguous sediment sequences where different units have been ^{14}C dated from various organic samples (peat, organic clay, charcoal pieces, palaeosol). With dates punctuating the Holocene from around 11-12.5 ka cal BP to 2.4 ka cal BP, the results provide a solid basis for elaborating a preliminary overall view of the environmental developments at various locations in the Bor plain from the onset of the Holocene through to the Iron Age. Here we will discuss the new

[3] Roberts 1983; Naruse et al. 1997; Fontugne et al. 1999; Kuzucuoğlu et al. 1999.

[4] Cf. the definition in Geyer et al. 2004-2005.

[5] Kuzucuoğlu 2012.

[6] Kuzucuoğlu – Gürel 2016.

insights derived from these results concerning climatic phases between the mid-3rd to the mid-1st millennium BCE around the Bor plain, which are complemented by data from similar windows available in the plains of the Tuz Gölü and Konya-Ereğli. These can be compared with the Eski Acıgöl near Nevşehir in northern Cappadocia and other sites in the broad central Anatolia[7].

The "Konya Closed Basin" (KCB) corresponds to three closed sub-basins ("plains"): Konya, Tuz Gölü, and Bor (Fig. 1). The Konya plain itself is parted into two distinct smaller sub-basins: Konya in the west and Ereğli in the east. All three sub-basins are connected to one another, either through possible overflow during humid periods (from Bor to Ereğli plains), or through underground water flow (from Konya to Tuz Gölü plains).

In this contribution we focus on the environmental developments taking place during the 3rd to 1st millennium BCE. In central Anatolia the 3rd millennium BCE is first distinctly marked by a humid phase lasting approximately three hundred years, ca. 2800-2500 BCE. After 2500-2450 BCE, environmental data record a decline in humidity[8]. This drying trend culminates around 2250 BC with a first drought corresponding to the well-known "4.2 ka event"[9]. The situation in the following centuries (ca 2300/2250 to 1950 BCE) can be reconstructed from a variety of records showing the importance of the type of geomorphologic systems. These records are: (1) the construction of alluvial fans over the piedmonts skirting the mountains enclosing the plains[10]; (2) the presence of evaporation signals in the plain floors that eventually collect the run-off water from these piedmonts (accumulation of a black clay in possibly saline water bodies)[11]; and (3) strong wind activity mobilizing active dunes such as the dune field near Karapınar in the Konya plain[12].

Humidity rose again only after 1850 BCE when runoff concentrated in the alluvial fans, which subsequently suffered less from unstable discharges than during the previous semi-arid to arid climate phase (2260-1900 BCE). This change is marked by the development of soils (i.e. a permanent vegetation cover) on the fans in the Tuz Gölü plain[13]. In the Konya plain, soil developed over marshes has been dated to the mid-2nd millennium BC (Yarma core)[14]. This rise in humidity caused a significant increase of water levels in the basins, as is best recorded in closed, small depressions within the main plains where marshes appear and eventually develop into lakes (Yarma depression in the Konya plain; Bayat marshes in the eastern Bor plain). In approximately 1350 BCE, however, the climate changed again towards a semi-arid trend recorded in the renewal of alluvial fan constructions on the Tuz Gölü piedmont[15]. After 1300/1200 BCE, the watered lands dried out in the plains, and the scenario described for the 2300/2250 BCE

---

7 Cf. Kuzucuoğlu – Gürel 2016 (Bor plain); Naruse et al. 1997; Kashima 2002 (Tuz Gölü area); Fontugne et al. 1999; Kuzucuoğlu et al. 1999; Gürel – Lermi 2010 (Konya-Ereğli plain); Roberts et al. 2001 (northern Cappadocia); Kuzucuoğlu 2015 (Central Anatolia in general).

8 Kuzucuoğlu 2015.

9 For comments and references, see Weiss et al. 1993; Kuzucuoğlu et al. 2011; Roberts et al. 2011; Weiss 2012.

10 With a focus on the Tuz Gölü area: Naruse et al. 1997.

11 Kuzucuoğlu – Gürel 2016.

12 Kuzucuoğlu et al. 1998.

13 Naruse et al. 1997; Kashima, 2002.

14 Fontugne et al. 1999; Kuzucuoğlu et al. 1999.

15 Kashima 2002.

"dry event" seemed to reoccur[16]. An exception is that neither evaporative clay in the KCB nor the dunes renewal has been dated yet. The absence of dated records can point to the morphologic inactivity of an ecosystem, which is typical of "arid" climate. In records from the Bor plain, for example, a decrease in the water discharge of the Pınarbaşı-Bor spring forced the local body of water down to below the ground level, but sustained a water level still sufficient for vegetation growth. At the locations of the Bayat and Kayı marshes, sediment contents indicate human activities nearby (charcoals, baked clay pieces etc.) while, as in the Tuz Gölü plain, the Altunhisar torrential fan continued to be active well into to the mid-1st millennium BCE[17].

2. Settlement pattern and routes

In a political and economic perspective, the strategic importance of southern Cappadocia derives from its control of the main north-south pass of the Taurus Mountains connecting the Aegean and Central Anatolia to Cilicia, the Levant and Mesopotamia (Map A). This pass, positioned at the southeastern edge of the Bor-Ereğli plain, still today represents the most important route through the Taurus Mountains in Turkey (present-day Ankara-Adana highway), and it was known in Greeko-Roman sources as the Cilician Gates. In addition to the *Pylai*, a second pass connected Central Anatolia to Cilicia and the Mediterranean through the Göksu valley, accessible from the southern Konya plain. While the two passes represent crucial nodes on a trans-Anatolian scale, the full understanding of their role within the super-regional route network greatly depends upon their relationships with land routes and crossroads in SCA.

Preliminary reconstructions of the routes crossing southern Cappadocia in ancient times were mainly based on the written and epigraphic sources of the Greco-Roman and Byzantine periods[18]. The recent doctoral thesis of J. Turchetto (2014) adds to these sources the study of the Arabic and Ottoman historians and geographers, as well as the reports and diaries of European travelers in the modern era[19]. These studies demonstrate that throughout the past these two routes opened upon reaching the piedmont of the Taurus after passing through the Cilician Gates. One route skirted the northern slopes of the Taurus westwards and reached the southern Konya plain at *Kybistra Herakleia*[20]. The other moved north towards the central Anatolian Plateau and crossed the rich plain of *Tyana*, having *Tyana - Eusebeia ad Taurum* as a central node. North of *Tyana*, two branches opened towards the north: one is attested in the *Tabula Peutingeriana* and is thought to skirt the southern slopes of the Cappadocian volcanic region before crossing the corridor north of the Karacadağ to reach *Colonia Archelais*, modern Aksaray[21]. The other continued north-northeast and followed the Niğde corridor, as attested in the *Itinerarium Burdigalense* and in many other sources[22]. Other texts, particularly those of the Late Antique and Byzantine periods, record that some other offshoots of these routes headed towards the

16 For an overview on similar trends in the Eastern Mediterranean, see Knapp – Manning 2016, with further literature.

17 Compare, for example, Kashima 2002 and Kuzucuoğlu – Gürel 2016.

18 Ramsey 1903; Hild 1977; Hild – Restle 1981; Equini Schneider et al. 1997; Berges – Nollé 2000.

19 See also Turchetto 2017.

20 Kuzucuoğlu 1997; Maner 2017.

21 Equini Schneider et al. 1997.

22 Pfeifer 1957; Berges – Nollé 2000, 21; Turchetto 2014, 42-57.

center of Anatolia, passing through valleys and crossing the Cappadocian volcanoes. They thus connected *Lycaonia* (the Tüz Gölü region) and northern Cappadocia to southern Cappadocia through the intensively cultivated and densely inhabited valley of the Melendiz River and the wide, high plain of Çiftlik[23].

2.1. From 2006 to 2009 a team from Pavia University conducted an archaeological survey on the southern and eastern slopes of Keçiboydurandağ, the Melendizdağları, and the plain at their foot (Map B)[24]. Encompassing high mountains, valleys and pastures, piedmont and plain, and marked by torrents, marshlands, springs, and arid steppe, the 800 km^2 area covered by the survey are representative of all main landscape elements characterizing the region. We therefore tentatively consider that the dynamics in environmental change and settlement pattern evidenced for our survey area can be applied more generally to the whole micro-region.

Some problems originating from the quality of the survey finds must be mentioned here because they are relevant to our characterization of the settlement pattern of the 2nd millennium BCE. The diagnostic features of the surface material did not allow us to distinguish between the Early Bronze Age (EBA) III occupation and the Middle Bronze Age (MBA) occupation from the one side, and the MBA and LBA I occupation from the other. More specifically, the diagnostics that could date to the MBA are also attested in the EBA III. Some examples of this phenomenon include the case of a biconical spindle whorl with incised zig-zag motifs from Tavşantepe[25], which may well date between the EBA III and the MBA at Beycesultan[26], or the case of three red-slipped wheel-made carinated bowl fragments from the surface of Tepebağları, which can also date between the EBA III and the MBA[27]. Equally, the well-known continuity of ceramic wares, forms, and surface treatments between the MBA and the LBA I makes it very difficult for survey projects to distinguish between the two periods of occupation in areas where specific diagnostic forms or decorations are not attested (Schoop 2006). This situation prevented us from getting accurate information on the existence of centers and routes that would connect SCA with Syria and Mesopotamia (in particular, *Sippar* and Babylonia) from the second part of the 3rd millennium and in the early 2nd millennium, as suggested by many scholars from different angles[28].

Despite these issues, the results of the survey in terms of long-term settlement patterns are noteworthy[29]. First, they do provide evidence for a distinctive change from the EBA to the LBA, thus from the mid 3rd millennium to the first half of the 2nd millennium BCE. Along the southern slopes of Keçiboydurandağ and the Melendizdağları, the EBA I-II ceramic horizon is attested in the collections from eight sites, six of less than 2 ha, one between 3-6 ha, and one

---

[23] In fact, one wonders whether the route described in the *Tabula Peutingeriana* could connect *Colonia Archelais* to *Tyana* not by skirting the western arid slopes of Hasandağ, but rather referring to a path following the Aksaray fault line along the eastern slope of Hasandağ. In fact, though the western slopes of Hasandağ have not been surveyed by archaeologists, no mounds are reported for that area. The other path may look at first more tortuous, but it is much richer in water and game, and in the vicinity of two major sites such as Viranşehir-*Nora* and Avören (Equini-Schneider et al. 1997; d'Alfonso, Mora 2007).

[24] see d'Alfonso et al. 2010; d'Alfonso et al. 2011; d'Alfonso, forthcoming.

[25] D'Alfonso – Mora 2007, 826 and fig. 6.

[26] Mellaart 1962, 277.

[27] Goldman 1956, 136, n. 401; French 1965,184, Fig. 6.10.

[28] E.g. Yener 2007; Barjamovic 2011, 8-9; Marchesi 2013.

[29] d'Alfonso 2010; d'Alfonso et al. 2011.

more than 20 ha in surface area. The small sites have all been interpreted as small villages, and none has exhibited architectural traces or fortifications on the surface, as is the general trend in other regions of Asia Minor[30]. The other two large sites are multilayered, so their dimension may be also due to later superimpositions.

The data concerning the EBA III-MBA are scanty, but they testify to a profound reorganization of the settlement distribution in the region: strong decrease of occupation in the Bor plain, but EBA III-MBA occupation at Tavşantepe up in the Altunhisar valley, and at Bor-Tepebağları on the western slope of the Niğde valley.

At some point during the early 2nd millennium, a new settlement pattern was set in place. This new configuration counts only three sites in the piedmont area whereas eight sites were occupied in earlier periods. All three sites are at least 3-6 ha wide, while the small villages of the previous period are not present at all. This major change likely originates from the political developments characterizing Central Anatolia in the first half of the 2nd millennium, but it may also be associated with the major climatic change registered here as in the rest of the Ancient Near East between these two periods.

More surprising, however, is the continuity in settlement pattern from the LBA to the Iron Age (IA). Between these two periods in fact, there is no change in the number and dimension of sites. Our surface collections hint only at a shift between two sites located a few kilometers apart from one another, i.e. Eskiköy Höyük and Bor-Pınarbaşı. While the former was abandoned after the LBA occupation, the latter was (re)occupied in the IA. If not for this switch, the territorial organization defined in the LBA continues well into the Hellenistic period. It is only with the advent of the Roman period that some changes are observed. The abandonment of the citadel of Kınık Höyük dating to the late 1st century BCE should also be considered a major shift in the territorial organization of our region[31], possibly related to the troubled internal relations within the kingdom of Cappadocia and the impact of super-regional powers[32]. A more substantial change likely dates to the early 3nd century CE when *Tyana* became a Roman colony[33].

In conclusion, the settlement trends in southern Cappadocia may be summarized as follows. Significant changes in settlement pattern and territorial organization took place between the end of the 3rd and the first half of the 2nd millennium BCE. On the other hand, the major political and climatic instability of the late 13th to early 12th century BCE, and the other major changes of the early 1st millennium BCE registered in many neighboring regions of Anatolia, left the main developments of the territorial organization in southern Cappadocia almost unchanged.

2.2. A look into the Konya plain adds important clues for understanding the settlement trends in southern Cappadocia in their wider context to the north of the Taurus. In his work on the political geography of SCA, A. Matessi (2014: 146-190; 2016) collected and plotted together all survey-based and stratified archaeological data relating to the LBA period thus far

30 Düring 2011.

31 Highcock et al. 2015; d'Alfonso et al. 2016.

32 Berges – Nollé 2000, 480.

33 Berges – Nollé 2000, 505.

produced in the southern plateau[34]. Having been generated within the framework of several research projects, differing in both research objectives and methodologies throughout the last sixty years, these data have been compared and weighted in order to be used in cross-regional analyses. The results from such an approach are particularly useful when studying survey data on settlement distribution. In fact, it is always difficult to assess to which extent these reflect the ancient territorial organization or are skewed by the variety of intensity and methods as well as taphonomic issues implemented by survey projects[35]. However, results available for the Konya plain do allow us to outline general settlement trends during the LBA.

Map A, created with Quantum GIS, reproduces this settlement pattern. The region counts a large number of settlements dating to the LBA, but also a significant number of Hittite landscape monuments that represent claims of political control over the region[36].

The relatively high density of settlements in the west-central portion of the Konya plain is possibly related to its high agricultural productivity. This density prevents us from reconstructing specific routes across the plain, while a reconstruction of a rich network of crossroads and roads seems likely. This situation contrasts with the low density of LBA settlements characterizing the Konya plain south of the Tuz Gölü (Obruk plateau), likely due to the absence of water resources.

A few LBA sites, however, have been identified just south of this steppe at the northern foot of Karacadağ. This is a stretch of relatively fertile land lying along one of the main east-west orographic corridors crossing the Konya basin. Consistent with this scenario, the LBA settlements are aligned at a regular distance from each other, thus very likely marking the presence of an ancient road. Most significantly, the road passed close to the original find-spot of the Emirgazi altars dedicated by Tuthaliya IV to the mountain-god Sarpa, i.e. mount Arısama, facing the Karacadağ from behind Emirgazi[37]. This road continued eastward and reached the alluvial fans skirting the southern slopes of the Melendiz massif before ultimately connecting to the Cilician Gates route system. Least-cost path analysis (LCPA) performed with GRASS GIS on an ASTER Digital Elevation Model shows that the Niğde to Kınık Höyük system was probably connected to the Emirgazi road through Zengen Höyük, a site located some forty km east of Emirgazi and 25 km southwest of Kınık (Map A). In 2014, the KEYAR survey project led by Dr. Ç. Maner surveyed Zengen and its vicinities[38]. During the same year this area was independently explored also by a team of the Kınık Höyük Archaeological Project led by Dr. Matessi. Matessi and Maner are going to detail the results of these parallel investigations in a forthcoming joint paper. Here it will suffice to report that scatters of Iron Age and 2nd millennium BCE materials were observed on the surface of Zengen Höyük (ca 2 ha). Moreover, approximately 200 m west of the mound next to a pond fed by a natural spring, the base of a stela

---

34 See also Matessi – Tomassini Pieri 2017.

35 Alcock – Cherry 2004.

36 Seeher 2009a; Ullmann 2010; Glatz – Plourde 2011. For the inclusion of the Hartapus group in the LBA landscape monuments, see lastly d'Alfonso 2014, 228-233 (with previous literature). But cf. Oreshko 2017, that revives arguments for an EIA dating.

37 For the Emirgazi inscription, see Masson 1979; Hawkins 1995, 93. As to the localization of mount Sarpa, see Hawkins 2006, 57-58; and Börker-Klähn 2007, 97-100.

38 Maner 2015, 256-258.

and a series of artificial cup-marks carved in the bedrock were found. The combination of these features finds parallels in LBA and IA monumental contexts, many of which are also certainly associated with the presence of important communication routes[39].

In conclusion, the qualitative and quantitative analyses let us show that, besides the route skirting the Taurus in the southern edge of the Bor-Ereğli plain, a second northern route connected the Hasan and Melendiz piedmont area with the Konya plain via Emirgazi along Karacadağ.

2.3. The use of the Cilician Gates as a link between the Anatolian plateau and the Eastern Mediterranean during the Hittite period might be inferred from extant written sources[40]. Besides the Cilician Gates, the Göksu valley also functioned as a major passage towards the Mediterranean throughout history. In particular, various LBA historical sources describe the harbour of *Ura*, probably located in the environs of Silifke, as a vital medium for trade[41]. This second route – Konya-Göksu-Ugarit – likely gained momentum in the second half of the 14th century when all the main centers along the land-and-sea route came under the hegemony of the Hittite Empire (Matessi 2016).

While the Land of *Tuwanuwa* in southern Cappadocia controlled the Cilician Gates, the Göksu valley was likely controlled by *Hupisna* or other major centers of the south-central Konya plain. These two distinct Taurus passes – the Cilician Gates and the Göksu valley – were strongly interconnected. In some historical phases, they were both under the control of one and the same polity. This was the case during the Hittite Empire between the pacification of *Arzawa* under Mursili II and the formation of the kingdom of *Tarhuntassa* during the reign of Hattusili III[42]. However, when the southern Konya plain was under the control of *Arzawa*, or later under the control of *Tarhuntassa*, the two routes could belong to two independent systems, and even compete with one another. The presence of the two passes may then have favored the creation of a double, independent circulation to and from the Mediterranean within SCA[43].

2.4. No site dating to the 2nd millennium BCE has been identified in the center of the Bor-Ereğli plain, or even at a significant distance from the alluvial and colluvial fans along the slopes of the mountains. The reason is explained today by the results of the sedimentological investigations presented above (§1). In the first half of 2nd millennium BCE after the drought, the rapid rise in water from the torrents spurred the formation of a larger, water-rich alluvial fan and a new, freshwater lake in the northern Bor plain. The existence of this new phase of lakes in our region correlates to contemporary written evidence in the Hittite sources. CTH 719.1

---

39 Ussishkin 1975; Çınaroğlu 1989; Balza – Mora 2011, 220-222; Harmanşah 2014.

40 Forlanini 1988, 2013a and 2013b. However, Ünal (2014, 477–479; 2017) raises scepticism about the importance of the Cilician Gates as a corridor towards the Levant during the Hittite Empire period. As a matter of fact, other routes more directly connected Central Anatolia with the east, e.g. the Gezbel pass between the Kayseri province and Maraş. Significantly, the western entrance to this route is marked by Hittite landscape monuments: Fıraktın, representing Hattusili III and his wife Puduhepa (13th BCE), Taşcı, also linked with Hattusili III, İmamkulu, and Hanyeri (Ehringhaus 2005: 59–80).

41 Lemaire 1993; Casabonne 2005; Klengel 2007; Divon 2008.

42 Klengel 1999, 188-196, 258-259; Bryce 2005, 212-214, 268-271.

43 For likely alternations in the use of the Göksu valley and the Cilician Gates in prehistory, see Newhard et al. 2008 and Bikoulis 2012.

(KUB 20.1) is a large fragment of a two-columned cuneiform tablet describing a festival that took place in southern Cappadocia[44]. Paleography supports a dating of all preserved copies of the text to the 13th century BCE[45]. But one could very well imagine that the festival originated back in the early empire when many rituals and festivals from South Anatolia were integrated into the empire's religious program. While the beginning and the end of the text are missing, the last paragraph of column II informs us that at least one part of the festival was taking place in the city of *Tuwanuwa* (*I-NA* ^{URU}*Tu-wa-nu-wa*, ii '30), corresponding to classical *Tyana*, today's Kemerhisar, in the eastern Bor plain. The festival comprised the tour of, and offerings to, the cultic statues of the Storm-god (likely Tarhunza) *muwanu* (ii '5, '33), the god *Hutumana* (iii 2, 21, 23, 28), and the divinized lake ^{d}*Aruna* (ii '32; iii 5, 11, 16). In Hittite, the word *aruna-* designates a vast water surface and is used for the sea as well as for large lakes[46]. One more ritual text referring to the cults of *aruna-* is CTH 722, in which two *aruna-* are mentioned: the Great *aruna-*, possibly the Mediterranean Sea, and the *tarmanas aruna-*, literally "the lake/sea of the spring" (i.e. fed by spring)[47]. M. Popko (1987: 262), followed by Tischler (2001: 168), suggested that *tarmanas aruna-* may correspond to Lake Van. In fact, the mention of Halki, a corn-goddess worshipped in SCA, and the offering to mount *Amuna* (see below §3), rather support an identification of *tarmanas aruna-* with the ^{d}*Aruna* worshipped at *Tuwanuwa* if not exclusively, at least including it[48]. This textual evidence directly corroborates the results of the soil investigations (§1 above), which suggest that at least in the first half of the 2nd millennium BCE a system of marshes and shallow lakes possibly occupied the core. Other areas were directly fed by underground water outflowing from both (i) karstic springs along the Taurus piedmont in the southeastern part of the Bor-Ereğli plain and along the edges of the limestones overlain by volcanoes in the north of the plain, and (ii) the active front of the alluvial fans heading toward the plain from the Melendizdağları to the north and the Taurus to the south.

In the northern portion of the plain the existence of a small lake – evident from the carbon-dated coring sequence of Bor-Pınarbaşı (see §1.2 above, and Fig. 1) – well corresponds to the content of a passage of the deeds of Suppiluliuma, where a pond or a spring (Hittite *luli*) is mentioned. Since this passage offers indications useful for the identification of Hittite routes and sites in the region, it will be discussed in detail in the next section (§3). The references to a spring/pond in the northern part of the plain and to a vast, watered area in the southern part of the plain during the 2nd millennium represent a very important and novel result of our investigations, because it provides one more striking difference between southern Cappadocia and the Konya plain in historical times. In the 2nd millennium BCE, the west and central Konya plain was heavily settled, which has led scholars to interpret it as one of the richest and most

---

44 Börker – Klähn 2007, 99; Beckman 2015.

45 S. Koçak, hethiter.net/: hetkonkv. 1.91; Groddek 2004, 1; Beckman 2015, 16

46 Beckman (2015,15) recognizes that both the Black Sea and the Mediterranean Sea play a little role in Hittite religion so are scarcely mentioned in Hittite texts. Given the more southern position of *Tuwanuwa* towards the Mediterranean Sea, he tentatively suggests that the statue of ^{d}Aruna at Tuwanuwa embodies the cult of the Mediterranean.

47 Popko 1987, 262.

48 For the goddes Halki and her connections with southern Cappadocia, see Taracha 2013 and Lanaro 2015. CTH 722 deserves an extensive study that goes beyond the scope of this contribution. Here it suffices to say that it is a ritual text originating from different rituals, so possibly treating together the cult of lakes and seas from different parts of the empire. More than one *tarmanas aruna-* could exist in Anatolia, and this composition could condense multiple rituals from different regions into one text.

productive regions of the Hittite Empire. More than that, the Konya plain has been understood as the granary of the empire, and the move of the capital towards the south by Muwatalli could be also connected to the high productivity of this region. On the other hand, southern Cappadocia in the 2nd millennium BCE was only cultivated on its fringes along the mountain slopes. The core was occupied by water: either ponds, marshlands, or shallow lakes fed mostly by springs (*tarmanas aruna*-). While offering an abundant resource for fishing and hunting, the presence of lakes and marshes did not make it possible to practice extensive agriculture in this region, as in the Konya plain. The presence of water in the midst of the Bor-Ereğli plain could also explain why the texts, which describe the extension of the Hittite province defined as the Lower Lands, did not apparently include *Tuwanuwa* nor the cities of southern Cappadocia[49]. The watered area separated the cities east of Karacadağ from the intensively occupied and cultivated plain to the west. These cities were also closely connected to Central Anatolia through the routes along the corridors and piedmonts of Niğde and Altunhisar, and to Cilicia through the *Pylae*.

One of the earliest maps of the region published by Kiepert (1853) shows the existence of a river running northeast to southwest across the whole Bor-Ereğli plain. Travelers report that this river was fed by many minor streams that served, at least seasonally, to irrigate the fields from Niğde to the core of the Bor-Ereğli plain[50]. The existence of such a riverine system is supported by the hydraulic survey of the region obtained by A. Trameri from the analysis of ASTER satellite images (Map B)[51]. This hydrologic pattern, however, likely refers to a very late phase in the environmental history of the region and not to the 2nd millennium BCE. In fact, it is very challenging to reconstruct the original geomorphology of the Bor Plain because the late riverine phase has modified the previous geomorphological situation. The maps which include a river in the center of the plain in the Hittite period, such as those by Garstang (1944) and Goetze (1957), should by now be disregarded.

Returning once more to the routes of southern Cappadocia, it now appears that the Bor-Ereğli plain was not a continuum of sites, and that the territory of southern Cappadocia should be better understood as a horseshoe, leaving its core almost deserted or even occupied by expansive watered areas.

2.5. Besides the reconstruction of the LBA settlement pattern, Matessi also mapped the settlement pattern in the large Konya basin during the IA (Matessi 2014: 294-295, Mappe 25-26). The results confirm that in southern Cappadocia the route system and settlement pattern existent in the LBA survived the fall of the empire with few minor changes (Map C). This is one more element in support of the continuity of territorial organization of SCA in this otherwise complex and climatically stressful historical phase[52]. Moreover, recent research shows that elements of continuity between the LBA and the IA were a hallmark of all Cappadocia. Allcock and Roberts (2014), using the data of the surveys of the BIAA, the Japanese Institute of Archaeology, and the TAY project, plotted in diachronic perspective the record concerning

[49] Based on the analysis of relevant textual evidence, Matessi 2014, 140-145 suggests that, contrary to what is generally assumed, *Tuwanuwa* and *Hupisna* were not included in the Lower Land. On the problem, cf. also Forlanini 2017, 239-240.

[50] Turchetto 2014, 11-12.

[51] We thank A. Trameri for giving us permission to publish his map.

[52] Mora – d'Alfonso 2012.

the settlement pattern for the provinces of Kırşehir, Nevşehir, Kayseri, Niğde, and Aksaray. They thus observed a number of settlement shifts taking place in the region at the transition between the LBA and the IA[53]. However, a qualitative evaluation of their results indicates a general stability in site-to-site habitation patterns. Considering the proportion between unabandoned versus abandoned sites in the transition, only five LBA sites out of thirty-one (ca. 1/6) were not (re)settled during the IA[54]. The data on the settlement pattern of the western Konya plain in the same transitional period reflect a different trend. While a considerable part of the total LBA sites here (109) were still occupied in the IA, the abandonment rate doubles to about one-third, with thirty-six sites not being (re)settled during the IA (Fig. 2). From a political perspective, this meaningful difference between the Konya plain and Cappadocia is also evident from another observation. Cappadocia – the region showing the most significant continuity in settlement pattern – is also the region in which 1st millennium Neo-Hittite landscape monuments deriving from the 2nd millennium artistic tradition (iconography and Hieroglyphic Luwian) are found. On the contrary, no such monument has been found in the neighboring Konya plain west of Karacadağ. In conclusion, the Konya plain and southern Cappadocia experienced different trajectories during the Hittite Empire, and these trajectories diverged even further in the post-Hittite period.

3. The battle around Tuwanuwa

Both 2nd and 1st millennium sources offer significant and diverse pieces of information on the ancient landscape and political geography of southern Cappadocia between 1500-700 BCE. Instead of a synthesis of interpretation for these sources[55], it seems more relevant for this study to analyze the most important source describing the political geography of the region, namely the passage dealing with the so-called "Battle of *Tuwanuwa*" in the Deeds of Suppiluliuma written by his son Mursili (CTH 40). The passage is well known and has been used by most scholars writing on the Hittite geography of SCA[56]. The transcription and translation of this passage is presented below, and its geographic information is discussed on the basis of our archaeological survey in the region.

CTH 40 II.3F (KUB 34.27+ [=KBo 14.3+]), integrated with CTH 40 II.3.G (KUB 19.18)[57]
Kol. IV
5.' [x x *A-NA A-*(*BU-YA*) x x x] *ú-te-er* ^{LÚ}KÚR-*wa* [(*ku-iš*)]
6'. [(*I-NA*^{URU}*a-ni-ša pa-ra-a pa-a-*)]*an-za e-eš-ta nu-wa-*[(*ra-aš*[58] *ŠA-PAL* ^{URU}*x-iš-ša*)]
7'. [(*nu-uš-ši A-BU-YA pa-it nu A-NA*)] *A-BU-YA* DINGIR^{MEŠ} *pí-*[(*ra-an hu-u-e-er*)]

[53] Allcock – Roberts 2014, Figs. 2-3 and 49-50.

[54] Unfortunately, in the quoted article Allcock and Roberts do not report absolute site counts for each habitation trend in each period. Therefore, our calculations in the present contribution are based on the derived proportions they presented in Figure 3 in the column relating to the IA. As a general rule for this graph, we count for each period/column both the positive trends, in terms of settlement continuity or renovation, and the abandonment trends, by including in the total on which to base proportions "the number of sites from the preceding period which do not continue as settlement localities during the period under analysis".

[55] For which we refer to Balatti – Balza 2012 and Balza 2013.

[56] Heinhold-Kramer 1977, 62-3; Del Monte – Tischler 1978, 448; Forlanini 1988; Bolker-Klähn 2007; Mora 2010, 14-15.

[57] Del Monte 2008, 30-37.

[58] KUB 19.18 i 3', has: *ki-nu-na-wa-ra-aš* ...

8’. [^{d}UTU (^{URU}*a-ri-in-na* ^{d}U ^{URU})]*ha-at-ti* ^{d}U [(KARAŠ) ^{d}GASAN LÍL(*-ya*)]
9’. [(*nu-kán u-ni pa*)]*-an-ku-un ŠU-TI* [(*ku-en-ta*)]
10’. *nu* ÉRIN$^{MEŠ\ LÚ}$KÚR [*pa-an-*(*ga-ri-i*)]*t* BA.ÚŠ

11’. *pa-ra-a-ma nam-ma* 6 *ŠU-*[(*TI I-N*]*A* ^{URU}*hu-wa-na-w*[*a* (*IK-ŠU-UD*)]
12’. *nu-kán*[59] *a-pu-un-na ku-*[(*en-ta nu* ÉRIN^{ME})]$^{Š\ LÚ}$KÚR [*pa-an-ga-ri-i*(*t* BA.ÚŠ)]
13’. *a-pu-un-na nam-ma* [(7 *ŠU-TI I-NA* ^{URU}*na*[60]*-hu-ri-ya*]
14’. *Ù I-NA* ^{URU}*ša-a*[(*p-pa-ra-an-da IK-Š*)]*U-U*[(*D na-an-kán ku-*)*en-ta*]
15’. *nu* ÉRIN$_2^{MEŠ\ LÚ}$KÚR *pa-an*[(*-ga-ri-it* BA.ÚŠ *a*)*-pa-*]*aš-ma*[61] [(*nam-ma*)]
16’. ^{LÚ}KÚR ^{URU}*ar-za-*[(*u-wa I-NA* KUR ^{URU}*tu-pa-z*)]*i-ya* [(*Ù I-NA* $^{HUR.SAG}$*a-mu-na*)]
17’. *pa-ra-a wa-*[*al-h*(*u-u-wa-an-zi e-eš-ta pí-*)]*ra-an h*[(*u-u-i-ya-tal-la-aš-ma*)]
18’. [(^{m}*an-n*)*a-aš pí-ra-a*(*n hu-u-i-ya-an-za e-eš-t*)]*a nu* $^{HUR.SAG}$[(*am-mu-na*)]
19’. [(KUR *Tu-pa-zi-ya* x x x x-*na*[?] *lu-li-*)]*in wa-al-*[(*ah-ta*)]
20’. [*na*(*-an a-aš-ša-u-wa-az QA-D*)]*U* [NAM.RA^{ME}(^{Š} GUD$^{HI.A}$ UDU$^{HI.A}$)] *pé-e har-ta*
21’. [(*ma-ah-ha-an-ma-aš* ^{UR})]^{U}*tu-wa-nu-wa a-*[(*ri nu ŠA-P*)]*AL* ^{URU}*t*(*u-wa-nu-wa da-a-i*)]
22’. [(*nu-za* ^{URU}*tu-u-wa-nu-wa-a*)]*n za-ah-hi-ya-wa-a*[(*n-zi*)] *e-ep-zi*
23’. [(*A-BU-YA-ma ma*[62])*-ah-ha-an I-NA*] ^{URU}*na-ah-hu-ri-ya* [(*Ù I-NA*^{URU}*ša-ap-pa-ra-an-da*)]
24’. [(^{LÚ}KÚR *hu-ul-l*)*i-ya*]*-at na-aš* EGIR-*pa* [*(I-NA* ^{URU}*ti-wa-an-za-na*)]
25’. [(*ša-ša-an*)*-na pa-a-*]*it nu A-BU-YA* [(*I-NA*^{URU}*ti-wa-an-za-na še-eš-ta*)]

26’. [*lu-uk-*]*kat-ti-ma-kán A-BU-YA* ^{URU}*ti-*[(*wa-an-za-na-za kat-ta*)]
27’. [(KUR-*e*)]*-kán an-da pé-en-na-i*[63] EGIR-*an-na-an* [($^{LÚ.MEŠ}$*KAR-TAP-PÍ-ŠU*)]
28’. 6 [(*SÍ*)]*-IM-DU*$_4$ ANŠE.KUR.RA^{MEŠ} *har-zi nu A-BU-YA* [(*ma-ah-ha-an*)]
29’. *na-*[(*an*)]*-na-i nu-kán e-da-ni pa-an-ga-u-i* [(^{LÚ}KÚR 1-*an-ki-pát*)]
30’. *an*[(*-da h*)]*a-an-da-iz-zi*[64] *na-an-za-an A-BU-YA* [(*za-ah-hi-ya-u-wa-an-zi-pát*)]
31’. *e-*[(*ep*)]*-zi nu A-NA A-BU-YA* DINGIR^{MEŠ} *pí-ra-an hu-u-i-e-er*
32’. ^{d}UT[(U ^{URU})]*a-ri-in-na* ^{d}U ^{URU}*ha-at-ti*[65] ^{d}U KARAŠ
33’. ^{d}*IŠ*$_8$+[*TÁR* LÍ]L*-ya nu u-ni-in*[66] ^{LÚ}KÚR *hu-ul-li-ya-at*
34’. ^{LÚ}KÚR *a-ru-um-ma ku-it mek-ki e-eš-ta nu* NAM.RA GUD.UDU
35’. *me-ek-ki da-a-er na-an ar-ha is-hu-wa-iš*
36’. *nu ma-*[(*ah-ha*)]*-an* ^{LÚ}KÚR *ša-ru-wa* [*ar-ha*] *iš-hu-wa-iš*

---

[59] KUB 19.18 i 7’, has: *nu-kán A-BU-YA a-pu-un-na …*

[60] Güterbock (1956), transcribed this signs at the edge of the gap in KUB 19.18 i 9’: ^{URU}*ni*[…; but a reading ^{URU}*n*[*a-*, is also possible and rather preferable after photo-collation (hethiter.net/: PhotArch BoFN00469).

[61] KUB 19.18 i 11’ has : *a-pu-u-uš-ma …*

[62] Güterbok (1956), transcribed the traces of the last sign of KUB 19.18 i 18’ before the first gap as URU[…; but URU here does not fit in the sentence (*I-NA* before URU would be required by the context). The reading MA of the traces on the edge of Bo2338 I ´18, and the consequent suggestion to integrate *ma*[*-ah-ha-an*], is suggested after photo-collation: hethiter.net/: PhotArch N12504.

[63] KUB 19.18 i 22’ has: *wa-a*[*r*[?]; integrated by Del Monte (2008): *warriessai*.

64 KUB 19.18 i 25’ has the plural form: *ha-an-da-a-an-zi*.

65 KUB 19.18 I 27’ has instead: URU KÙ.[BABBAR]

66 Instead of *u-ni-in*, KUB 19.18 i 28’ has: *A-BU-YA*.

37’. LÚ[KÚR? x x *pí*]*d-da-a-i nu-za-kán* HUR.[SA(G-*an* EGIR-*pa*)] *e-ep-zi*
38’. [x x x x x] *IŠ-TU* GIŠGAG.Ú.TAG.[GAHI.A] *wa-al-hi-ir*
39’. [x x x *ma*]*-ah-ha-an A-BU-YA wa-a*[*l-ah-h*]*u-wa-ar a-uš-zi*
40’. [*nu-kán I-NA*[67]] URU*tu-wa-nu-wa ša-r*[*a*]*-a pi-en-na-i*
41’. [x x x x x x]*-li-in iš-hi-ya-az-zi*
42’. [*nu ma-ah-ha-a*]*n A-BU-YA I-NA* URU*tu-wa-nu-wa še-er e-eš-ta*
43’. [x x x x x x x x] *a-pí-el* ERÍNMEŠ ANŠE.KUR.RAMEŠ *a-ar-aš*

Translation

[...] delivered the information to my father: “The enemy who was moving to the city of Anisa, he is now at (lit. under) [An?]isa”.(1’-6’) My father moved against it, and the gods run before my father: the Sun-goddess of Arinna, the Storm-god of Hattusa, the Storm-god of the army, the Lady of the steppe. He smashed every contingent, and the troops of the enemy died in multitudes.(7’-10’)

Afterwards he caught six contingents at the town of Huwana(wa); he smashed that (enemy), and the troops of the enemy died in multitudes. (11’-12’)

Next, he caught that (other enemy, consisting of) seven contingents, at the towns of Na[huriya] and Sapparanda; he smashed it, and the troops of the enemy died in multitudes. (13’-15’) Furthermore, that (one last) enemy of Arzawa was before the Land of Tupaziya and Mount Amuna (ready) to strike. As leader, Anna was guiding (it). It attacked Mount Amuna, the Land of Tupaziya, … the pond, and kept possession of that territory (lit. it), together with its goods, the deportees, the cattle and the sheep. (15’- 20’) When it arrives at Tuwanuwa, it camps under (outside) the town of Tuwanuwa, and starts to attack Tuwanuwa. A[s] my father had defeated the enemy in the towns of Nahuriya and Sapparanda, he then moved to camp at Tiwanzana, and he camped (passed the night) at Tiwanzana. (22’-25’)

It is dawn and my father moves out of Tiwanzana, into the Land; behind, he (only) has the six chariots of his *qartappu*s. As my father moves, he dispatches justice against that entire multitude of the enemy.(26’-30’) And there my father starts to fight it.

The gods run before my father: the Sun-goddess of Arinna, the Storm-god of Hattusa, the Storm-god of the army, Ištar of the steppe; and he defeated such an enemy.(30’-33’) For the fact that the enemy was extraordinarily big (in number), and they had taken deportees, cattle and sheep, they (lit. he, scil. the enemy) loosened them. As the enemy loosened its booty, it escapes and takes refuge in the mountain. … They attacked with arrows.(34’-38’)As my father sees the attack, he drives up in the town of Tuwanuwa, and closes/binds [the bo]lt? … When my father was in the citadel of Tuwanuwa, his infantry and chivalry arrived. …(39’-43’)

The passage is organized in two main sections. The first section (translated here in bold), describes some actions before the battle, while the second section narrates the battle itself. In

[67] Integration follows Del Monte 2008, 36.

this second section, in fact, the punctual, descriptive, annalistic style yields to a literary, epic passage with the adoption of the historic present verbal tense. The narration focuses on the heroic deed of Suppiluliuma who faces the whole *Arzawa* army with only six chariots in order to break the siege on *Tuwanuwa* and to save the town. This occurs while the entire Hittite army is still on the march and arrives only once the siege is already broken, and the enemy troops have retreated and reorganized in the surrounding mountains. While this second section is extremely interesting for the literary *topos* of the brave king, and immediately reminds us of the narration of Ramses II's deeds in the battle of Qadeš[68], the relevant section for this article is the first, which describes the move of the two armies towards *Tuwanuwa*.

A premise must be introduced here. In his edition of the Deeds, G. Del Monte (2008: 33[49]) interprets the first section of this passage as separated in time and space from the battle of *Tuwanuwa* narrated in the second section. The former would then rather describe some previous raids taking place in other regions located more towards the northeast in the Upper Land. A reconsideration of the toponyms attested in the first section, and in particular the toponym *Tupaziya*, offers some clues that the actions narrated actually took place in Cappadocia[69].

Even notwithstanding these clues, it is the structure of this passage of the Deeds that requires the actions narrated in the first section to take place next to *Tuwanuwa* and the main battle in both a spatial and chronological perspective. In the paragraphs before this passage, the old King Tuthaliya III sends his son Suppiluliuma to fight against *Kaska* troops led by the *Arzawa* enemy in the region of *Washaniya* in northern Cappadocia[70].

The first paragraph of our passage (iv 5'-10') narrates the first significant military confrontation and victory of Suppiluliuma against an army of *Arzawa* (and *Kaska*?) at *Anisa* (on which see fn. 12). This first victory is presented as particularly meaningful in the narrative of the text, since it is emphasized by the *topos* of the gods leading the military action. After the defeat, the

---

68 E.g. Liverani 2001, 119-121, with reference therein.

69 This interpretation depends on the fact that the most important toponym mentioned in the first section is a land named *Tupaziya*. Apart from the Deeds, *Tupaziya* occurs in only one more Hittite text found at Maşat Höyük. The text, HKM 96 (Alp 1991, 300-301; lastly Marizza 2009, 96-97), is a letter that also refers to military actions. Since the letter includes a list of lands – and the Upper Land is mentioned at the beginning and after the list – Del Monte suggests that the Land of *Tupaziya*, together with the other lands named in the list, should be part of the Upper Land, that is, between the Pontic region and the Upper Euphrates (in detail Gurney 2003). This interpretation of the place-names of HKM 96 is questionable. The presence of toponyms such as *Lahuwazantiya* and *Isuwa* surely do not fit in the Pontic region or even more generically in NCA: they belong to eastern and central Anatolia. Whether the list indicates all lands included in the Upper Land or, as we believe, only lands who are asked to send contingents to the army forming in the Upper Land, *Tupaziya* may very well be located in Cappadocia as Gurney indicates (2003, 123). One more clue in support of this latter hypothesis on the position of *Tupaziya* is the occurrence of a place name *Tubezi* in an Old-Assyrian text from Kültepe, since this toponym is likely linked to later *Tupaziya* (Barjamovic 2011, 234-235; Forlanini 2012, 294; and 2017, 240-241). The toponym refers to a town located somewhere in the region of *Kaneš*. This makes the hypothesis of its location in the region close to *Tuwanuwa* even more likely.

70 For *Washaniya*, see Barjamovic 2011, 317-326; and Michel 2016. One more city of northern Cappadocia, namely *Nenassa*, is not mentioned in the preserved portion of the Deeds, but is referred to in a later source – a decree issued by Hattusili III that has a historical prologue referring to the same events of the later years of the reign of King Tuthaliya III (Goetze 1940, 22; Heinhold-Kramer 1977, 40-41; lastly Stavi 2013, 133-134). Both texts indicate that Arzawa and Kaska jointly made raids in northern Cappadocia, today's provinces of Aksaray and Nevşehir. It seems therefore likely that the starting paragraphs of our passage refer to northern Cappadocia. Strong support for this geographic setting of the first confrontations with Suppiluliuma is the occurrence of *Anisa* in the first section. The identification of *Anisa* in this text with the site of Kültepe is still open (see the last overview by Barjamovic 2011, 231[863]). Nonetheless, it is very likely that the toponym is related to Old-Assyrian *Kaneš* and Hellenistic *Anisa*, both located in northern Cappadocia in the Kayseri region.

text describes the remaining army of the enemy divided into three blocks. One (*apun-na*, iv13') consists of six contingents that Suppiluliuma eventually defeats at the otherwise unknown site of *Huwana*(*wa?*). Another (*apun-na* iv13') consists of seven contingents that Suppiluliuma defeats at *Nahuriya* and *Sapparanda*. A third block of the enemy army ([*ap*]*as-ma* iv15'), led by a commander named *Anna,* reaches the mountain *Amuna*, the Land of *Tupaziya*, another place lost in a text gap, and a pond. Not finding any significant opposition, the enemy plunders this territory and acquires important booty consisting in manpower, cattle, sheep and goods (iv 15'-20'). Afterwards, the *Arzawa* army moves to *Tuwanuwa*, where they instigate the siege. In the narrative of the passage all this happens synchronically both to the victory of Suppiluliuma against the *Arzawa* contingents at *Nahuriya* and *Sapparanda*, and to the single night he spends at *Tiwanzana*, after which he sets off for the battle towards *Tuwanuwa*.

In this scenario it is necessary that after the battle of *Anisa*, both *Arzawa* and *Hatti* troops moved south from northern Cappadocia towards *Tuwanuwa*. Most of the enemy troops, led by their guide *Anna*, branched off. Looking at the LBA map obtained after our survey, they must have chosen a western route (Map D). Mount *Amuna* was identified by Forlanini already in 1988 with Hasandağ or even the Melendizdağları[71]. The city of *Tupaziya* at the center of the homonymous land would correspond to the major site in the northern part of the Bor plain, Kınık Höyük, and the pond connected to *Tupaziya* would correspond to the small lake fed by the spring today named Bor-Pınarbaşı, which was registered by the sections and coring studied by Dr. Kuzucuoğlu and Dr. Gürel (see §1). On the other hand, no mention of crossing mountains appears in the route taken by Suppiliuliuma. This could imply that he chose the Niğde corridor and suggests the identification of the compound towns of *Nahuryia* and *Sapparanda* with the citadel of Niğde and the site of Niğde-Tepebağları, only few kilometers southeast of Niğde. More specifically, Niğde-Tepebağları could be identified with *Sapparanda* and the citadel of Niğde with *Nahuriya*. *Nahuriya* may be a rhotacized form of the MIA toponym *Nahitiya* attested in the Hieroglyphic Luwian inscription of ANDAVAL[72]. This reconstruction is hypothetical, but nicely fits textual and archaeological data, and offers a coherent interpretation of the first major military confrontation with the Great *Arzawa*.

The event must have been extremely meaningful historically. It represents the first large battle in which Suppiluliuma defeated *Arzawa*, which was at that time the main power of Anatolia, as acknowledged by the correspondence with Pharaoh Amenophis III in Egypt[73].

For our research, the possible identification of Kınık Höyük with *Tupaziya* is noteworthy. Hittite *Tupaziya* would correspond to Hellenistic *Dratai*, early Roman *Tracias*, and Byzantine *Idrizion / Drizion*, which Hild and Restle (1981:172-173) followed by Equini Schneider and her team (1997) identify with Kınık Höyük. The citadel of Kınık does not present Roman and

---

71 Forlanini 1988.

72 For ANDAVAL, see lastly Balatti 2012, with literature. Early rhotacism is of course problematic. It is however noteworthy that the only secured case of early rhoticism also comes from Cappadocia: see Hawkins 2000, 442, and Melchert 2003, 173. The identification of *Nahuriya* with 1st millennium *Nahitiya*, modern Niğde is more than everything supported by the context. *Nahuriya* should be a town between the Kayseri region and *Tuwanuwa* at one day journey distance from *Tuwanuwa*. The alternation in coloring of the second vowel in /u/ instead of /i/ could be a local regional phenomenon, well paralleled by the neighboring spelling of the town *Hubisna* / *Hubusna*, but also in the first millennium by the attestation of *tara/i-sa* (statue) instead of the expected *taru-sa* (see the HL inscription of NİGDE 1).

73 Lastly, Stavi 2013, with literature therein.

Byzantine occupation phases, but those occupations could have been displaced elsewhere, for example, in the lower town or even more likely in the ruins of Kınık Öreni, 1 km north of the site, where Byzantine funerary stelae and a church reused as a caravanserai are visible[74].

4. The LBA-EIA transition at Kınık Höyük

The 2011-2014 campaigns of excavations at Kınık Höyük, 2.5 km south of the four-lane Bor-Altunhisar road in the Niğde province, focused on the later periods of occupation of the site. The excavation uncovered the remains of a poor Seljuk to early Ottoman village, and the more relevant remains of a prosperous town of the Hellenistic and Achaemenid periods. Besides that, however, Operations C and A, and in particular sectors A2 and A-walls along the northern slope of the mound, also reached earlier periods of occupation, namely the LBA and the IA[75]. The central architectural feature of this operation is the citadel fortification of Kınık Höyük (Fig. 3).

The citadel walls were first identified by means of a geo-physical campaign in 2010[76]. Today in operation A the remains of the walls are exposed for a length of around 40 m east to west and preserved for a visible height that varies between 4 to 5 m, depending on elevation.

Two construction phases of the walls have been reconstructed so far. The earlier phase belongs to Level A.8. Only its top has been exposed, while soil layers and accumulations associated with it are still unexplored. We have exposed a 4 m long portion of the outer face of the stone socle of these early walls and the remains of a bastion or, more likely, a tower projecting from the walls towards the north. The earlier walls exposed in Operation A are characterized by medium- to large-hued stones on the faces and a core of loose stones without mortar. As a construction technique, they look similar to the technique adopted for the Hittite fortifications of North Central Anatolia[77].

The later construction phase of the walls corresponds to Level A.7. This level can be dated by means of ceramic materials (Fig. 4) found in the accumulation above the Level A.7 outer surface A164 (=A15), associated with the walls and gently slanting downhill from them. This ceramic collection is homogeneous, and fragments can be dated to the EIA, thus offering a *terminus ante quem* for the construction of the walls. The dating of these fragments is today confirmed by a set of three ^{14}C samples from the same accumulation dated to the 11th - mid-9th century BCE[78]. One more ^{14}C dating comes from a timber sample from within the wall itself, pointing to the 15th century BCE cal. (1500-1396 cal. BCE at 68%, 1530-1288 cal. BCE at 95%). This is a *terminus post quem* for the construction of the citadel walls of Kınık Höyük[79].

---

74 d'Alfonso et al. 2014.

75 For a synthesis, see Highcock et al. 2015.

76 d'Alfonso – Mora 2011.

77 Naumann 1971; Seeher 2009b; Schachner 2011, 154-164.

78 D'Alfonso et al. 2016.

79 Cinieri et al. 2014.

After that, Level A.7 walls were erected and remained continually in use until Level A.3, which likely dates to the Achaemenid Period (KH-Period III). It was during the Hellenistic Level A.2 that a trench was excavated into the walls in order to reach their stone socle, which was then used as a quarry for the new buildings on top of the citadel[80]. Extremely significant here is the continuity in orientation and dimension of the walls, lasting from the LBA into the Achaemenid period. This result again would encourage quite a different interpretation of the major phases of crises in the history of this region.

While the end of the LBA is a truly disruptive phase in the socio-political history of North-Central Anatolia, excavations in SCA seem to indicate that the major event calling for the building of new walls for the citadel must date after the beginning of 15th BCE. If one considers that the destruction of the walls of Porsuk-Zeyve Höyük date to the middle of the second millennium BCE, and not to the end of the LBA, it is possible that a disruptive political phase in this region happened early during the Hittite empire and not necessarily after its end[81]. But the most important fact emerging from the excavations at Kınık Höyük is the continuity of citadel walls from the LBA to the LIA II. This clue, together with others, strongly supports the reconstruction of a significant continuity in territorial organization and political administration of SCA in the transition from the Hittite Empire to the post-Hittite period[82].

Our understanding of the written and archaeological sources today seems to indicate that when the Hittite central power collapsed, and the northern part of the plateau rapidly and starkly changed its form of socio-political organization, the region corresponding to today's Cappadocia conserved, at least partially, its previous territorial and administrative structure. This is why the legacy of the Hittite Empire, so visible in this region through many landscape monuments, survived. The local administrative structure of the empire survived as the backbone of the territorial administration, and then served as the foundation for future historical developments, mainly the transformation into the Neo-Hittite kingdoms of Anatolia. Cappadocia and the easternmost part of the Konya plain then became no more a periphery, but the core of this new phase of the political history of post-Hittite Anatolia.

[80] D'Alfonso et al. 2015.

[81] For an update on the Porsuk chronology, see Beyer 2010 and 2015.

[82] See also Mora 2010; Mora – d'Alfonso 2012 and d'Alfonso et al. 2016.

East of Konya: Settlements, Routes and Environment in Southern Cappadocia, and the Political Landscape of South Central Anatolia During the Second Millennium BCE

East of the Konya plain, Southern Cappadocia presents in its pre-classical history evidence of interconnection with the Konya plain and the other neighboring regions, but it is characterized by its own peculiar, independent socio-political development. The paper aims at presenting novel researches on the change of the ancient climate and landscape and on the settlement pattern of this region, and confronting them with the evidence from written source and the new archaeological data from the site of Kınık Höyük for the 2nd and the 1st millennium BC. Strong clues emerge for identifying the midst of the 2nd millennium as the strongest period of socio-political change in the region, while the end of the Hittite empire would be absorbed here in a less traumatic way than in other regions of Anatolia.

Konya'nın Doğusunda: M.Ö. 2. Binde Güney Kapadokya'da Yerleşimler, Yollar ve Çevre ve Güney İç Anadolu'da Siyasi Peyzaj

Konya Ovası'nın doğusuna tekabül eden Güney Kapadokya tarih öncesi dönemlerde Konya Ovası ve diğer komşu bölgelerle bağlantı halinde olsa bile kendine özgü bağımsız sosyo-politik yapısı ile öne çıkmaktadır. Bu çalışmada, Kınık Höyük'ten elde edilen M.Ö. 2. ve 1. Binyıllara ait yazılı belgeler ile yeni arkeolojik veriler ışında antik dönemde bölgenin değişen iklim, peyzaj ve yerleşim düzeni üzerine yapılan önceki araştırmalara karşı çıkılmaktadır. Bölgedeki sosyo-politik değişimlerin en çok olduğu M.Ö. 2. Binyıl'ın tanımlanmasına dair sağlam fikirlerin oluşmasının yanı sıra, Hitit İmparatorluğu'nun yıkılışının Anadolu'nun diğer bölgelerine nazaran bu bölgede daha az sarsıcı bir biçimde olduğu görüşü de benimsenmektedir.

Bibliography

Alcock – Cherry 2004 — S. Alcock – J. Cherry (eds.), Side-by-Side Survey. Comparative Regional Studies in the Mediterranean World (Oxford 2004)

Allcock – Roberts 2014 — S. L. Allcock – N. Roberts, Changes in Regional Settlement Patterns in Cappadocia (Central Turkey) Since the Neolithic: A Combined Site Survey Perspective, AnSt 64, 2014, 33-57

Alley 2004 — R.B. Alley, GISP2 Ice Core Temperature and Accumulation Data. IGBP PAGES/World Data Center for Paleoclimatology Data Contribution Series 2004-013. NOAA/NGDC Paleoclimatology Program (Boulder CO, USA, 2004)

Alp 1991 — S. Alp, Maşat-Höyük'te Bulunan Çivi Yazılı Hitit Tabletleri / Hethitische Keilschrifttafeln aus Maşat-Höyük (Ankara 1991)

Bahar – Koçak 2004 — H. Bahar – Ö. Koçak, Eskiçağ Konya Araştırmaları 2. Neolitik Çağ'dan Roma Dönemi Sonuna Kadar (Konya 2004)

Balatti 2012 — S. Balatti, Some Remarks on the Dating of the Andaval Stela. Palaeographic and Iconographic Analysis, Anatolica 38, 2012, 149-168

Balatti – Balza 2012 — S. Balatti – M. E. Balza, Kınık-Höyük and Southern Cappadocia (Turkey): Geo-Archaeological Activities, Landscapes and Social Spaces, in: R. Hofmann – F. K. Moetz – J. Müller (eds.), Tells: Social and Environmental Space, Volume 3 (Bonn 2012) 93-104

Balza 2013 — M. E. Balza, Horses and Horse Husbandry in Central Anatolia During Hittite and Post-Hittite Periods, Res Antiquae 10, 2013, 1-14

Balza – Mora 2011 — M.E. Balza – C. Mora, 'And I built this Everlasting Peak for him'. The Two Scribal Traditions of the Hittites and the ^{NA}4hekur SAG.US, AoF 28, 2011, 213-225

Balza – Mora 2015 — M.E. Balza – C. Mora, Memory and Tradition of the Hittite Empire in the Post-Hittite Period, in A. Archi (ed.), Tradition and Innovation in the Ancient Near East. Proceedings of the 57th RAI (Winona Lake 2015) 427-437

Barjamovic 2011 — G. Barjamovic, A Historical Geography of Anatolia in the Old Assyrian Colony Period, (Copenhagen 2011)

Beckman 2015 — G. Beckman, The Sea! The Sea! A Rite from the South of Anatolia (CTH 719), in: A. Müller-Karpe – E. Rieken – W. Sommerfeld (eds), Saeculum - Gedenkschrift für Heinrich Otten anlässlich seines 100. Geburtstags (Wiesbaden 2015) 15-30

Berges – Nollé 2000 — D. Berges – J. Nollé: Tyana. Archäologisch-historische Untersuchungen zum südwestlichen Kappadokien (Bonn 2000)

Beyer 2010 — D. Beyer, From the Bronze Age to the Iron Age at Zeyve Höyük/Porsuk: a Temporary Review, in: L. d'Alfonso – M.E. Balza – C. Mora (eds.), Geo-Archaeological Activities in Southern Cappadocia, Turkey (Pavia 2010) 97-109

Beyer 2015 — D. Beyer, Quelques nouvelles données sur la chronologie des phases anciennes de Porsuk, du Bronze Moyen à la réoccupation du Fer, in D. Beyer – O. Henry – A. Tibet (eds.), La Cappadoce meridionale de la préhistoire à la periode byzantine (Istanbul 2015) 101-110

Bikoulis 2012 — P. Bikoulis, Revisiting Prehistoric Sites in the Göksu Valley: A GIS and Social Network Approach, AnSt 62, 2012, 35-59

Bolker-Klähn 2007 — J. Bolker-Klähn, Die Schlacht um Tuwanuwa als „Atlante Storico", in: D. Groddek – M. Zorman (eds.), Tabularia Hethaeorum. Hethitologische Beiträge Silvin Koshak zum 65. Geburtstag (Wiesbaden 2007) 91-118

Boyer et al. 2006 — P. Boyer – N. Roberts – D. Baird, Holocene Environment and Settlement on the Çarşamba Alluvial Fan, South-Central Turkey: Integrating Geoarchaeology and Archaeological Field Survey, Geoarchaeology 21, 2006, 675-698

Bryce 2005 — T. Bryce, The Kingdom of the Hittites (Oxford 2005)

Casabonne 2005 — O. Casabonne, Quelques remarques et hypothèses sur Ura et la Cilicie Trachée, Colloquium Anatolicum 4, 2005, 67-81

Çinaroğlu 1989 — A. Çinaroğlu, New Iron Age Discoveries around Niğde (Ankara 1989)

Cinieri et al. 2014 — V. Cinieri – L. d'Alfonso – M. Morandotti, Building Techniques of Fortified Structures at Kınık Höyük in Southern Cappadocia (Turkey), in E. Peña – M. Chávez (eds.), Proceedings of the 9th International Confderence on Structural Analysis of Historical Constructions (Mexico City 2014) 1-14

d'Alfonso, 2010 — L. d'Alfonso, Geo-archaeological Survey in Northern Tyanitis and the Ancient History of Southern Cappadocia, in: L. d'Alfonso –M. E. Balza – C. Mora (eds.), Geo-archaeological Activities in Southern Cappadocia (Turkey) (Pavia 2010) 27-52

d'Alfonso 2014 — L. d'Alfonso, The Kingdom of Tarhuntassa: A Reassessment of its Timeline and Political Significance, in: P. Taracha – M. Kapeluś (eds.), Proceedings of the 8th International Congerss of Hittitology, Warsaw 2011 (Warsaw 2014) 216-235

d'Alfonso, forthcoming — L. d'Alfonso, A Crossroad on the Plateau. Archaeological Survey in Southern Cappadocia (Chicago, forthcoming)

d'Alfonso et al. 2014 — L. d'Alfonso – M. E. Gorrini – C. Mora, Archaeological Excavations at Kınık Höyük. Preliminary Report of the third Campaign (2013), Athenaeum 102/2, 2014, 565-285

d'Alfonso et al. 2015 — L. d'Alfonso – M. E. Gorrini – C. Mora, Archaeological Excavations at Kınık Höyük, Niğde. Preliminary Report of the Fourth Campaign (2014), Athenaeum 103/2, 2015, 611-632

d'Alfonso et al. 2016 — L. d'Alfonso – M. Gorrini – C. Mora, The Early Iron Age and the Hellenistic Period at Kınık Höyük, South Central Anatolia. Report of the 5th Campaign (2015), Athenaeum 104/2, 2016, 598-612

d'Alfonso – Mora 2007 — L. d'Alfonso – C. Mora, «Viaggi anatolici» dell'Università di Pavia. Rapporto preliminare della prima campagna di ricognizione archeologica nella Tyanide settentrionale, Athenaeum 95, 2007, 819-836

d'Alfonso – Mora 2011 — L. d'Alfonso – C. Mora, Missione archeologica in Cappadocia meridionale, 2010, Athenaeum 99, 2011, 549-598

Del Monte 2008 — G.F. Del Monte, L'opera storiografica di Mursili II re di Hattusa, Vol. I: Le gesta di Suppiluliuma, (Pisa 2008)

Del Monte – Tischler 1978 — G.F. del Monte − J. Tischler, Die Orts- und Gewässernamen der hethitischen Texte (Wiesbaden 1978)

Divon 2008 — Sh. Divon, A Survey of the Textual Evidence for "Food Shortage" from the Late Hittite Empire, in: L. d'Alfonso – Y. Cohen – D. Sürenhagen (ed.), The City of Emar among the Late Bronze Age Empires – History, Landscape, and Society, (Münster 2006), 101-109

Düring 2011 — B. Düring, The Prehistory of Asia Minor: From Complex Hunter-Gatherers to Early Urban Societies (Cambridge 2011)

Ehringhaus 2005 — H. Ehringhaus, Götter, Herrscher, Inschriften. Die Felsreliefs der hethitischen Großreichszeit in der Türkei (Mainz am Rhein 2005)

Equini Schneider et al. 1997 — E. Equini Schneider – C. Morselli – M. Spanu – C. Vismara, Varia Cappadocica, Archeologia Classica 49, 1997, 101-238

Forlanini 1988 — M. Forlanini, La regione del Tauro nei testi ittiti, VicOr 7, 1988, 129-169

Forlanini 2012 — M. Forlanini, Review of Barjamovic 2011, BiOr 69, 2012, 209-219

Forlanini 2013a — M. Forlanini, How to Infer Ancient Roads from Heterogeneous Hittite Texts: The Case of the Cilician Road System, Kaskal 10, 2013, 1-34

Forlanini 2013b — M. Forlanini, La survie des toponymes de l'âge du bronze dans le Pont et en Cappadoce. Continuité ethnique, linguistique et survie des traditions de l'époque hittite impériale pendant les siècles "obscurs" jusqu'au début de l'âge classique ?, in H. Bru – G. Labarre (eds.), L'Anatolie des peuples, des cités et des cultures (IIe millénaire av. J.-C. – Ve siècle ap. J.-C.) (Paris 2013) 69-84

Forlanini 2017 — M. Forlanini, South-Central: The Lower Land and Tarhuntašša, in M. Weeden – L.Z. Ullmann, Hittite Landscape and Geography (Leiden 2017) 239-252

Fortugne et al. 1999	M. Fontugne – C. Kuzucuoğlu – M. Karabıyıkoğlu – C. Hatté – J.-F. Pastre, From Pleniglacial to Holocene: A 14C Chronostratigraphy of Environmental Changes in the Konya Plain, Turkey. Quaternary Sciences Reviews 18/2, 1999, 573-591
French 1965	D.H. French, Prehistoric Sites in the Göksu Valley, AnSt 15, 1965, 177-201
Gargstang 1944	J. Garstang, The Hulaya River Land and Dadassas. A Crucial Problem in Hittite Geography, JNES 3, 1944, 14-37
Geyer et al. 2004-05	B. Geyer – M.O. Rousset – M. Al-Dbiyat – N. Awad – O. Barge – J. Besançon – Y. Calvet – P.-L. Gatier – R. Jaubert, Les marges arides de la Syrie du nord: Première synthèse d'une prospection géoarchéologique, AAS 47-48, 2004-05, 7-34
Glatz – Plourde 2011	C. Glatz – A. M. Plourde, Landscape Monuments and Political Competition in Late Bronze Age Anatolia. An Investigation of Costly Signalling Theory, BASOR 361, 2011, 47-65
Goldman et al. 1956	H. Goldman, − M.J. Mellink − I.J. Gelb − F.R. Matson, Excavations at Gözlü Kule, Tarsus 2 From the Neolithic through the Bronze Age (Princeton 1956)
Goetze 1940	A. Goetze, Kizzuwatna and the Problem of Hittite Geography (New Haven 1940)
Goetze 1957	A. Goetze, The Roads of Northern Cappadocia in Hittite Times, RHA 15/61, 1957, 91-103
Groddek 2004	D. Groddek, Hethitische Texte in Traskription. KUB 20 (Dresden 2004)
Gürel – Lermi 2010	A. Gürel – A. Lermi, Pleistocene-Holocene fills of the Bor-Ereğli Plain (central Anatolia): recent geo-arcaheological contributions. Geoarchaeological Activities in Southern Cappadocia – Turkey, in: L. d'Alfonso – L., M.E. Balza – C.. Mora (eds.), Geo-archaeological activities in southern Capadocia, Turkey (Pavia 2010) 55-70
Gurney 2003	O. Gurney, The Upper Land, mätum elītum, in: G.M. Beckman – R.H. Beal – G. McMahon (eds.), Hittite Studies in Honor of Harry A. Hoffner Jr. on the Occasion of His 65th Birthday (Winona Lake 2003) 119-126
Güneri 1987	S. Güneri, Orta Anadolu Höyükleri, AST 4, 1987, 207-225
Güterbock 1956	H.G. Güterbock, The Deeds of Suppiluliuma as Told by His Son, Mursili II, JCS 10, 1956, 41-68, 75-98, 107-130
Harmanşah 2014	Ö. Harmanşah, Event, Place, Performance: Rock Reliefs and Spring Monuments in Anatolia, in: Ö. Harmanşah (ed.), Of Rocks and Water: Towards an Archaeology of Place (Oxford-Philadelphia 2014) 140-168
Hawkins 1995	J.D. Hawkins, The Hieroglyphic Inscription of the Sacred Pool Complex at Hattusa (Wiesbaden 1995)
Hawkins 2000	J.D. Hawkins, Corpus of Hieroglyphic Luwian Inscriptions, Vol 1: Inscriptions of the Iron Age, Berlin
Heinhold-Kramer 1977	S. Heinhold-Krahmer, Arzawa. Untersuchungen zu seiner Geschichte nach den hethitischen Quellen (Heidelberg 1977)
Highcock et al. 2015	N. Highcock – P. Crabtree – D.V. Campana – M. Capardoni – A. Lanaro – A. Matessi – N.F. Miller – Ph. Stroshal – A. Trameri – L. d'Alfonso, Kınık Höyük Niğde: A New Archaeological Project in Southern Cappadocia, in Sh. R. Steadman – G. McMahon (eds.), The Archaeology of Anatolia: Recent Discoveries (2011-14) (Newcastle 2015) 98-127
Hild 1977	F. Hild, Das Byzantnische Strassensystem in Kappadokien (Wien 1977)
Hild – Restle 1981	F. Hild – M. Restle, Tabula Imperii Byzantini: 2. Kappadokien (Wien 1981)
Kashima 2002	K. Kashima, Environmental and Climatic Changes During the Last 20000 Years at Lake Tuz, Central Turkey, Catena 48, 2002, 3-20
Kiepert 1857	H. Kiepert, Über die persische Königstrasse durch Vorderasien nach Herodotos, Monatsberichte der Königlichen Preussischen Akademie der Wissenschaften zu Berlin, 1857, 123-140
Klengel 1999	H. Klengel, Geschichte des hethitischen Reiches (Leiden-Boston-Köln 1999)
Klengel 2007	H. Klengel, Ura, Ugarit und der hethitische Mittelmeerhandel, in M. Alparslan – M. Doğan-Alparslan – H. Peker (eds.), VITA. Belkıs Dinçol ve Ali Dinçol'a Armağan Festschrift in Honor of Belkıs and Ali Dinçol (Istanbul 2007) 383-388

Knapp – Manning 2016	A.B. Knapp – S.W. Manning, Crisis in Context: The End of the Late Bronze Age in the Eastern Mediterranean, AJA 120, 2016, 99-149
Košak 2002-	S. Košak, Konkordanz der hethitischen Keilschrifttafeln, hethiter.net/: hetkonk v. 1.91
Kuzucuoğlu 1997	C. Kuzucuoğlu, Le site de Porsuk: Contexte géomorphologique local e régional, Anatolia Antiqua 5, 1997, 19-34
Kuzucuoğlu 2007	C. Kuzucuoğlu, Le dernier glaciaire et l'Holocène en Anatolie centrale : apports de la géomorphologie et de la sédimentologie, in M.F. André – S. Etienne – Y. Lageat – C. Le Cœur – D. Mercier (eds.), Du continent au bassin versant. Théories et pratiques en géographie physique (Hommage au Professeur Alain Godard) (Clermont-Ferrand 2007) 495-505
Kuzucuoğlu 2012	C. Kuzucuoğlu, Dimensions territoriales des changements climatiques et des grandes ruptures culturelles de l'Age du Bronze en Méditerranée orientale et au Proche-Orient, in Actes du Colloque « Fonder les sciences du territoire » (Paris 2012) 159-169
Kuzucuoğlu 2015	C. Kuzucuoğlu, The Rise and Fall of the Hittite State in Central Anatolia: How, When, Where, Did Climate Intervene?, in D. Beyer – O. Henry – A. Tibet (eds.), La Cappadoce meridionale de la préhistoire à la period byzantine (Istanbul 2015) 17-41
Kuzucuoğlu – Gürel 2016	C. Kuzucuoğlu – A. Gürel, What Local Scaled Approaches Teach us about Regional Records of Rapid Climatic Changes During the Holocene. Examples from the Large Plains in Central Anatolia (Konya, Bor, Tuz), in: A. Çiner – M. A. Sarıkaya – C. Yıldırım (eds.), Turqua Meeting Abstracts (Istanbul 2016) 18
Kuzucuoğlu et al. 1998	C. Kuzucuoğlu – R. Parish – M. Karabıyıkoğlu, The Dune Systems of the Konya Plain (Turkey). Their Relation to the Environmental Changes in Central Anatolia During the Late Pleistocene and Holocene, Geomorphology 23, 1998, 257-271
Kuzucuoğlu et al. 1999	C. Kuzucuoğlu – J. Bertaux – S. Black – M. Denèfle – M. Fontugne – M. Karabıyıkoğlu – K. Kashima – N. Limondin-Lozouet – D. Mouralis – P. Orth, Reconstruction of Climatic Changes During the Late Pleistocene, Based on Sediment Records from the Konya Basin (Central Anatolia, Turkey), Geology Journal, Special Issue on Turkish Geology, 34, 1999, 175-198
Kuzucuoğlu et al. 2011	C. Kuzucuoğlu – W. Dörfler – S. Kunesch – F. Goupille, Mid-Holocene Climate Change in Central Turkey: the Tecer Lake Record, The Holocene 21/1, 2011, 173-188
Lanaro 2015	A. Lanaro, A Goddess Among Storm-Gods. The stele of Tavşantepe and the Landscape Monuments of southern Cappadocia, AnSt 65, 2015, 79-96
Lemaire 1993	A. Lemaire, Ougarit, Oura et la Cilicie vers la fin du XIIIe s. av. J.-C., UF 25, 1993, 227-236
Liverani 2001	M. Liverani, International Relations in the Ancient Near East 1600-1100 BC, (third edition, New York 2001)
Lloyd – Mellaart 1962	S. Lloyd – J. Mellaart, Beycesultan. Volume 1: The Chalcolithic and Early Bronze Age Levels (London 1962)
Maner 2014	Ç. Maner, Preliminary Report on the First Season of the Konya-Ereğli (KEYAR) Survey (2013), Anatolia Antiqua 22, 2014, 343-360
Maner 2015	Ç. Maner, Preliminary Report on the Second Season of the Konya-Ereğli Survey (KEYAR) 2014, Anatolia Antiqua 23, 2015, 249-273
Maner 2017	Ç. Maner, Searching for Ḫupišna: Hittite Remains in Ereğli Kara Höyük and Tont Kalesi, in: M. Alparslan (ed.), Places and Spaces in Hittite Anatolia I: Hatti and the East. Proceedings of an International Workshop on Hittite Historical Geography in Istanbul, 25th-26th October 2013 (Istanbul 2017) 101-114
Marchesi 2013	G. Marchesi, Tilmen Höyük: An Inscribed Bulla from 1962 Campaign, Gaziantep Regional Project Occasional Paper, www.orientlab.net/pubs, 2013/7, 1-6
Marizza 2009	M. Marizza, Lettere ittite di re e dignitari (Brescia 2009)
Masson 1979	E. Masson Les inscriptions louvites hiéroglyphiques d'Emirgazi, Journal des Savants 1979, 3-52
Matessi 2014	A. Matessi, "Il mare è il suo confine". Geografia politica dell'Anatolia centro-meridionale durante il regno ittita, unpublished Ph.D. dissertation (University of Pavia 2014)

Matessi 2016 A. Matessi, The Making of Hittite Imperial Landscapes: Territoriality and Balance of Power in South-Central Anatolia during the Late Bronze Age, JANEH 3, 2016, 117-162

Matessi – Tomassini Pieri 2017 A. Matessi – B.M. Tomassini Pieri, South-Central: Archaeology, in L. Ullmann – M. Weeden (eds.), Hittite Landscape and Geography (Leiden 2017) 89-105

Melchert 2003 H.C. Melchert, Language, in: H.C. Melchert (ed.), The Luwians (Leiden – Boston 2003) 170-210

Mellaart 1958 J. Mellaart, Second Millennium Pottery from the Konya Plain and Neighbourhood, Belleten 26, 1958, 311-345

Michel 2016 C. Michel, Washaniya, in RlA 15.1-2, 2016, 4-5

Mora 2010 C. Mora, Studies on ancient Anatolia at Pavia University, and the Hittite Lower Land, in: L. d'Alfonso – M.E. Balza – C. Mora (eds.), Geo-Archaeological Activities in Southern Capadocia, Turkey (Pavia 2010) 13-25

Mora – d'Alfonso 2012 C. Mora – L. d'Alfonso, Anatolia After the End of the Hittite Empire. New Evidence from Southern Cappadocia, Origini 34, 2012, 385-98.

Mouralis et al. in press D. Mouralis – E. Aydar – C. Kuzucuoğlu – A. Türkecan, Volcanic Landscapes and Prehistorian Sites in Southern Cappadocia: Göllüdağ, Acıgöl and Hasandağ, in: C. Kuzucuoğlu – A. Ciner – N. Kazancı (eds.), Geomorphological Landscapes of Turkey (Berlin)

Naruse et al. 1997 T. Naruse – H. Kitagawa – M. Hisashi, Lake Level Changes and Development of Alluvial Fans in Lake Tuz and the Konya Basin During the Last 24000 years on the Anatolian Plateau, Turkey, Japan Review 8, 1997, 65-84

Naumann 1971 R. Naumann, Architektur Kleinasiens^{2} (Tübingen 1971)

Newhard et al. 2008 J.M.L. Newhard – N. Levine – A. Rutherford, Least Cost Pathway Analysis and Inter-regional Interactions in the Göksu Valley, Turkey, AnSt 58, 2008, 87-102

Oreshko 2017 R. Oreshko, Hartapu and the Land of Masa, AoF 44, 2017, 47-67

Pfeifer 1957 W. Pfeifer, Die Paßlandschaft von Niğde. Ein Beitrag zur Siedlungs- und Wirtschaftsgeographie von Inneranatolien (Gießen 1957)

Popko 1987 M. Popko, Hethitische Ritual für das Große Meer und das Tarmana-Meer, AoF 14, 1987, 252-262

Ramsey 1903 W.M. Ramsay, Cilicia, Tarsus, and the Great Taurus Pass, The Geographical Journal 22, 1903, 357-410

Roberts 1983 N. Roberts, Age, Palaeoenvironments and Climatic Significance of Late Pleistocene Konya Lake, Turkey, Quaternary Research 19, 1983, 54-171

Roberts et al. 2001 N. Roberts – J. M. Reed – M. J. Leng – C. Kuzucuoğlu – M. Fontugne – J. Bertaux et al., The Tempo of Holocene Climatic Change in the Eastern Mediterranean Region: New High-Resolution Crater Lake Sediment Data from Central Turkey, The Holocene 11, 6, 2001, 721–736

Roberts et al. 2011 N. Roberts – W. Eastwood – C. Kuzucuoğlu G. Fiorentino – V. Caracuta, Climatic, Vegetation and Cultural Change in the Eastern Mediterranean During the Mid-Holocene Environmental Transition, The Holocene 21/1, 2011, 147-162

Schachner 2011 A. Schachner, Hattuscha. Auf der Suche nach der sagenhaften Großreich der Hethiter (München 2011)

Schoop 2006 U.D. Schoop, Dating the Hittites with statistics: Ten Pottery Assemblages from Boğazköy-Hattuša, in: D.P. Mielke – U.D. Schoop – J. Seeher (eds.), Strukturierung und Datierung in der hethitischen Archäologie: Voraussetzungen, Probleme, Neue Ansätze/ Structuring and Dating in Hittite Archaeology: Requirements, Problems, New Approaches, Byzas 4 (Istanbul 2006) 214-239

Seeher 2007 J. Seeher, A Mudbrick City Wall at Hattuša (Istanbul 2007)

Seeher 2009a J. Seeher, Der Landschaft sein Siegel aufdrücken: hethitische Felsbilder und Hieroglypheninschriften als Ausdruck der herrscherlichen Macht- und Territorialanspruchs, AoF 36, 2009, 119-139

Seeher 2009b	J. Seeher, Die Techniken der Steinbearbeitung in der hethitischen Architektur des 2. Jahrtausend v. Chr. M. Bachman (ed.), Bautechnik im antiken und vorantiken Kleinasien, Byzas 9 (Istanbul, 2009) 119-156
Stavi, 2013	B. Stavi, The Last Years of the Reign of Tuthaliya III Reconsidered, in: S. De Martino – J. Miller (eds.), New Results and New Questions on the Reign of Suppiluliuma I (Florence 2013) 133-163
Taracha 2013	P. Taracha, How Many Grain-Deities Halki/Nisaba, in M. Mazoyer – S. Hervé Aufrère (eds.), De Hattusa à Memphis. Jaques Freu in honorem (Paris 2013) 119-29
Tischler 2001	J. Tischler, Hethitisches Handwörterbuch: Mit dem Wortschatz der Nachbarsprachen, (Innsbruck 2001)
Turchetto 2014	J. Turchetto, Cappadocia centro-meridionale (Turchia). Un sistema della viabilità antica in una terra di frontiera, unpublished Ph.D. dissertation (University of Padua 2014)
Turchetto 2017	J. Turchetto, Moving Landscape. I califfi, i vulcani e i cambiamenti climatici della Cappadocia tra VII e X secolo, in J. Turchetto – M. Asolati (eds.), Paesaggi in movimento: Ricerche dedicate a Guido Rosada, (Padova, 2017) 317-328
Ullmann 2010	L.Z. Ullmann, Movement and the Making of Place in the Hittite Landscape, unpublished Ph.D. dissertation (Columbia University, New York 2010)
Ünal 2014	A. Ünal, Fraudolent Premises of Anatolian Istoriography and Early Hittite Involvement in and Direct Control of Cilicia-Kizzuwatna, in N. Çınardalı-Karaaslan et al. (eds.) Anadolu Kültürlerine Bır Bakış Armağan Erkanal'a Armağan/ Some Observations on Anatolian Cultures Compiled in Honor of Armağan Erkanal (Ankara 2014) 469-500
Ünal 2017	A. Ünal, Cilicia Between Empires, in M. Alparslan (ed.), Places and Spaces in Hittite Anatolia I: Hatti and the East. Proceedings of an International Workshop on Hittite Historical Geography in Istanbul, 25th-26th October 2013 (Istanbul 2017) 209-230
Ussishkin 1975	D. Ussishkin, Hollows, 'Cup-marks' and Hittite Stone Monuments, AnSt 25, 1975, 85-103
Weiss 2012	H. Weiss (Ed.), Seven Generations Since the Fall of Akkad (Wiesbaden 2012)
Weiss et al. 1993	H. Weiss – M. A. Courty – M. Wetterstrom – F. Guichard – L. Senior – R. Meadow – A. Curnow, The Genesis and Collapse of Third Millennium North Mesopotamian Civilization, Science, 261, 1993, 995-1004
Yener 2007	A. Yener, The Anatolian Middle Bronze Age Kingdoms: Mukish, Kanesh and Trade, AnSt 57, 2007, 151-160

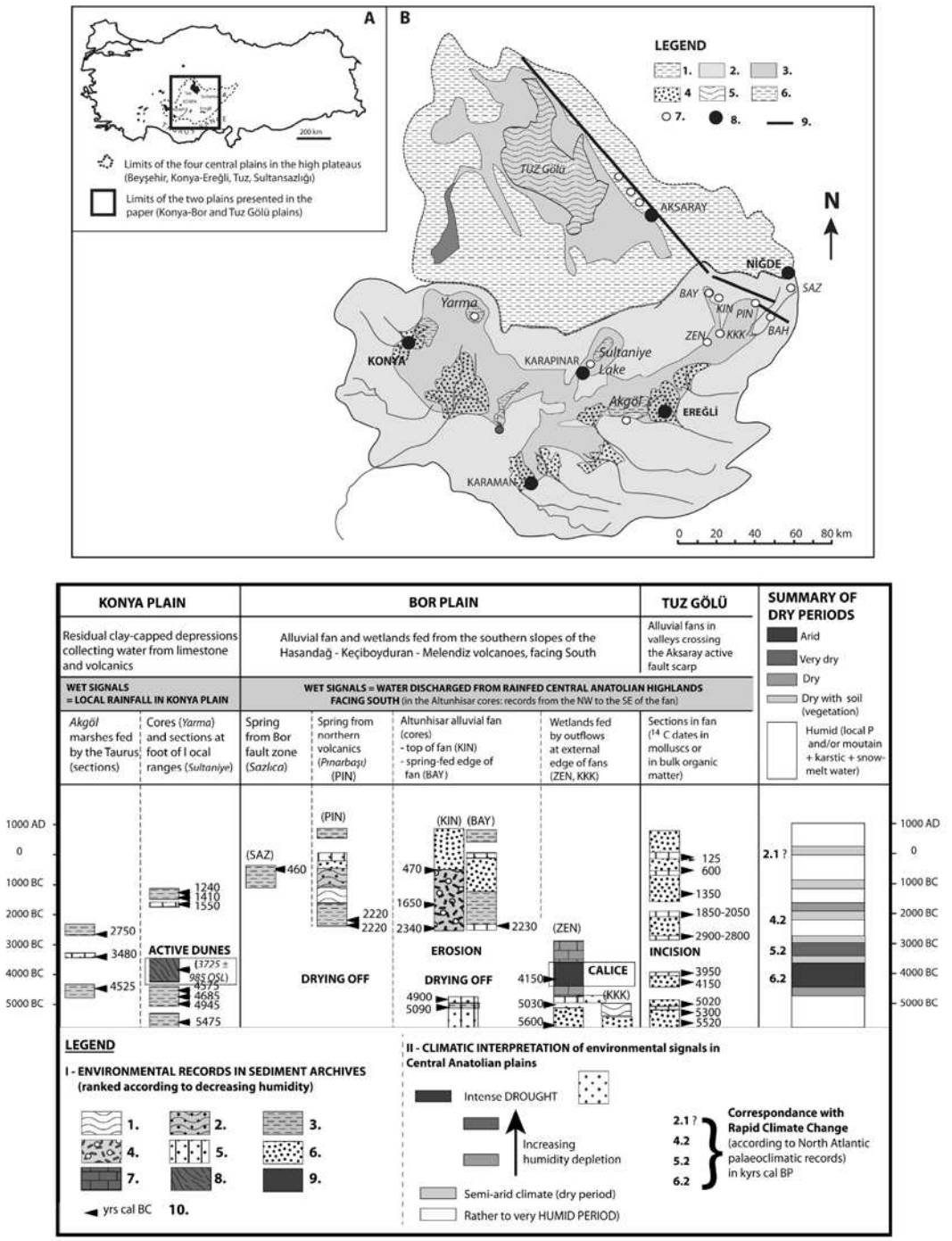


Fig. 1 Top: Geological plan of the focused region, with location of studied sections and cores. Legend: 1. Drainage basin of the Tuz Gölü Plain; 2. Drainage Basin of the Konya Plain; 3.LGM palaeolakes of Konya and Tuz Gölü; 4.Alluvial fans; 5. Lakes; 6. Wetlands (more or less dried today); 7. Studied sections and cores; 8. Town; 9. Fault.

Bottom: Environmental and climatic records from Bor, Tuz Gölü and Konya plains. Legend: 1. Deep lake; 2. Shallow lake; 3. Marshes, backswamps and peat; 4. Low level water body in dry (?) conditions with many debris of human activity; 5.Soil (vegetation cover in stable conditions); 6. Alluvial fan (semi-arid climate); 7.Calice (dry seasonal climate); 8. Active sand dune field (arid climate); 9.Arid phase. Sources: Kuzucuoglu, et al., 1997, 1998, 1999,;Fontugne et al., 1999 ;Naruse et al., 1997 ; Kashima, 2002. Graphics by Catherine Kuzucuoğlu.

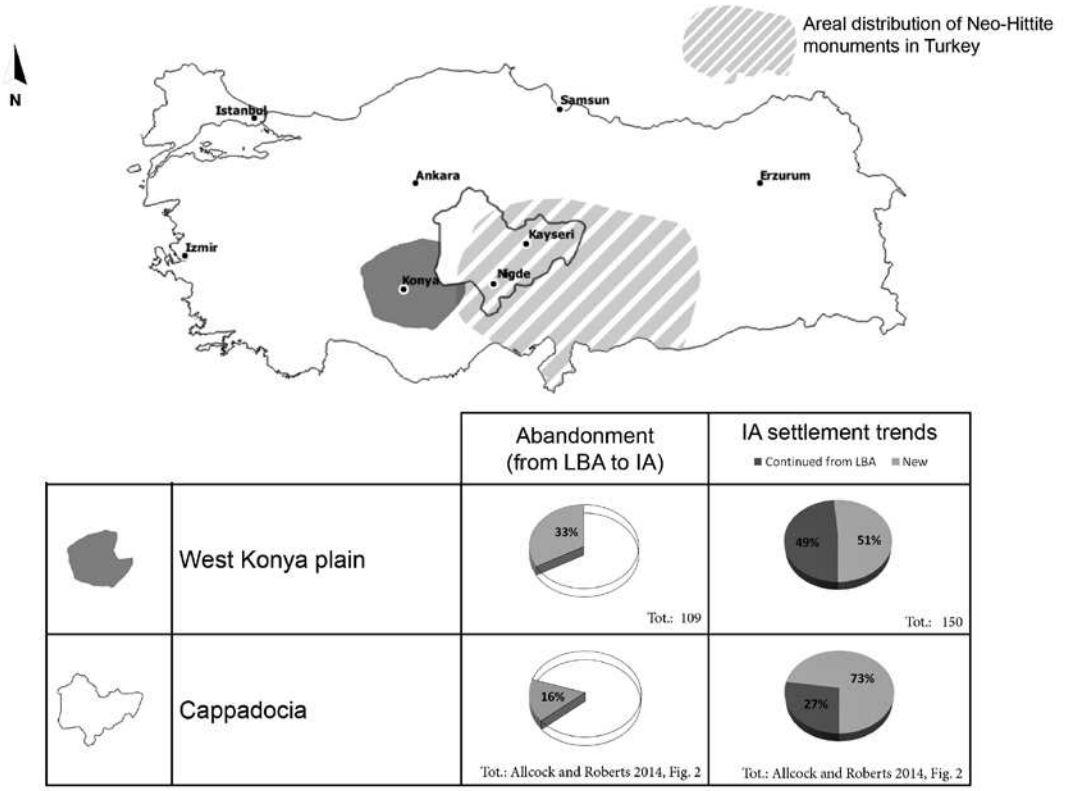


Fig. 2 The LBA-to-IA transition in the West Konya plain and Cappadocia. Graphics by Alvise Matessi.

Fig. 3 Citadel wall, rampart and related stratigraphy at Kınık Höyük.

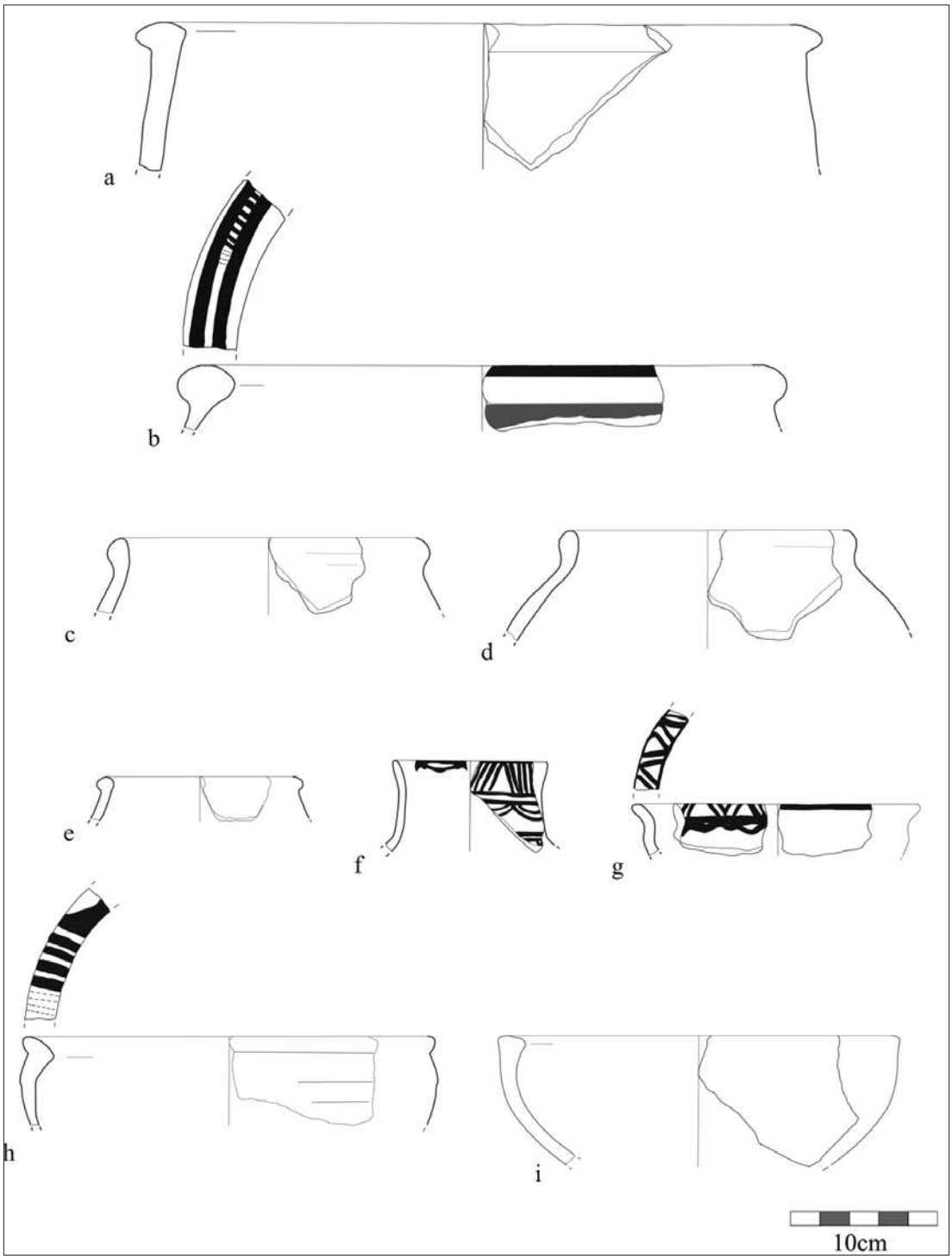
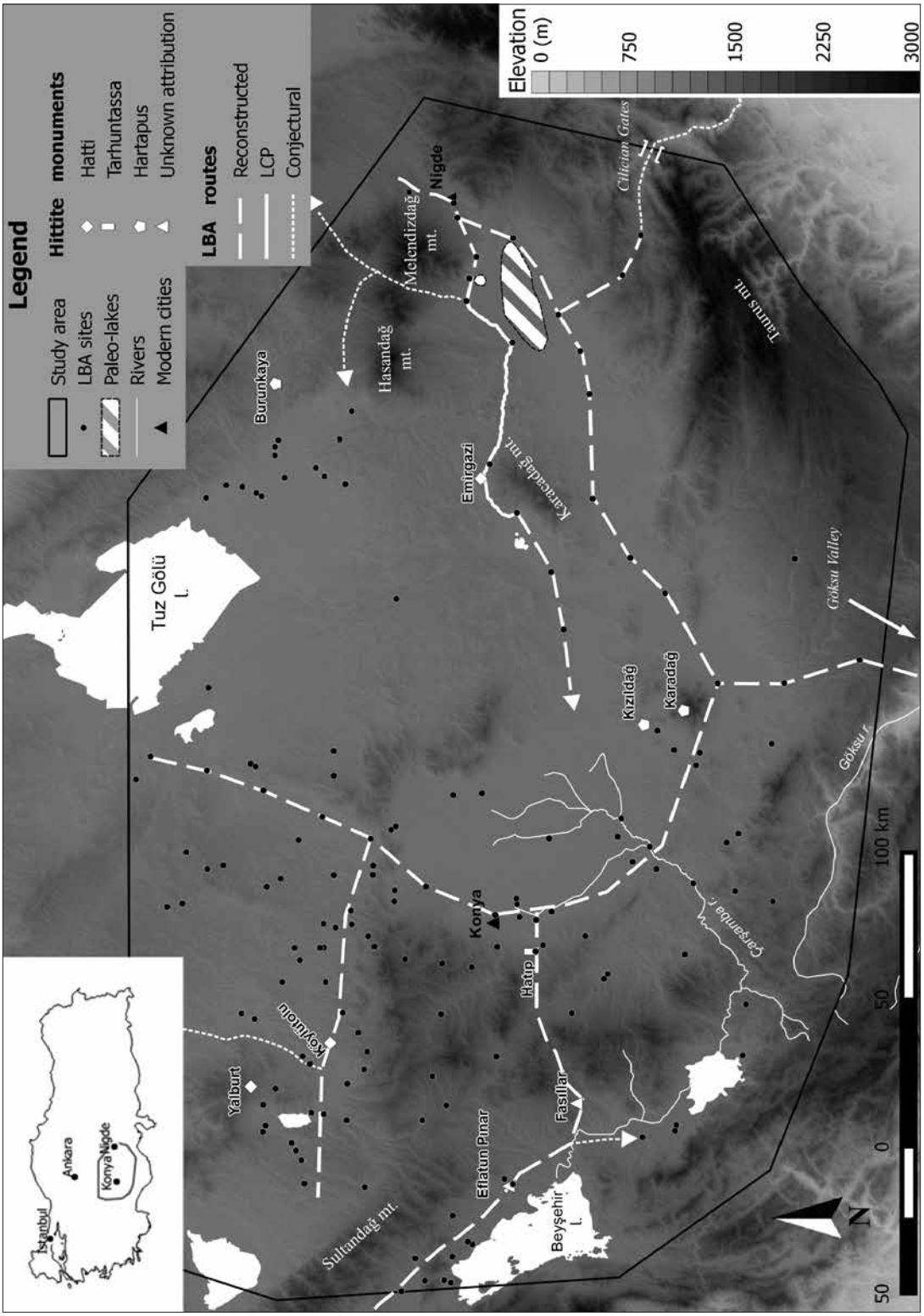
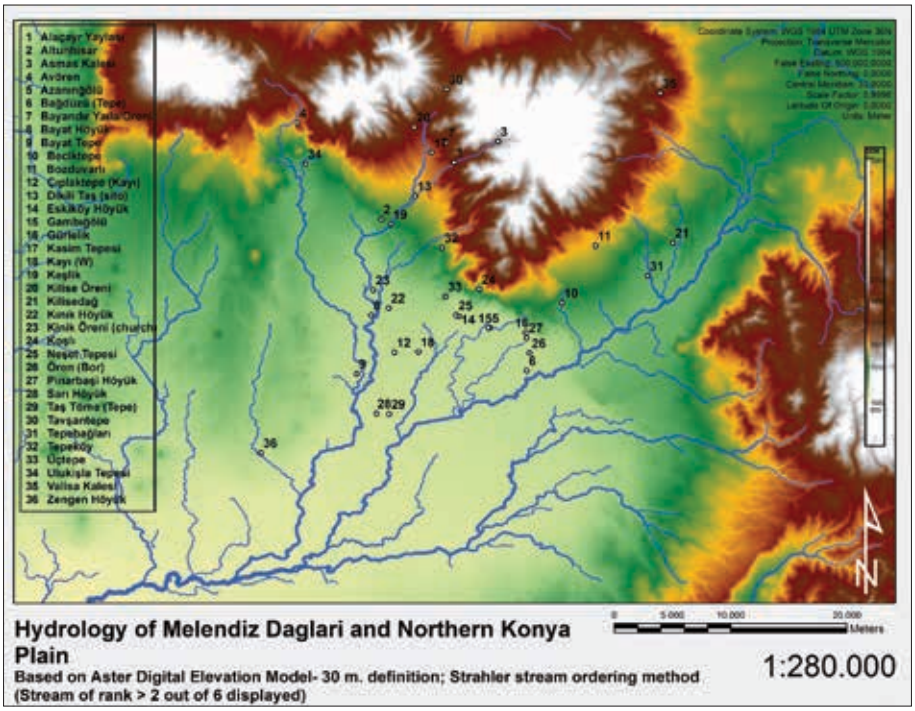


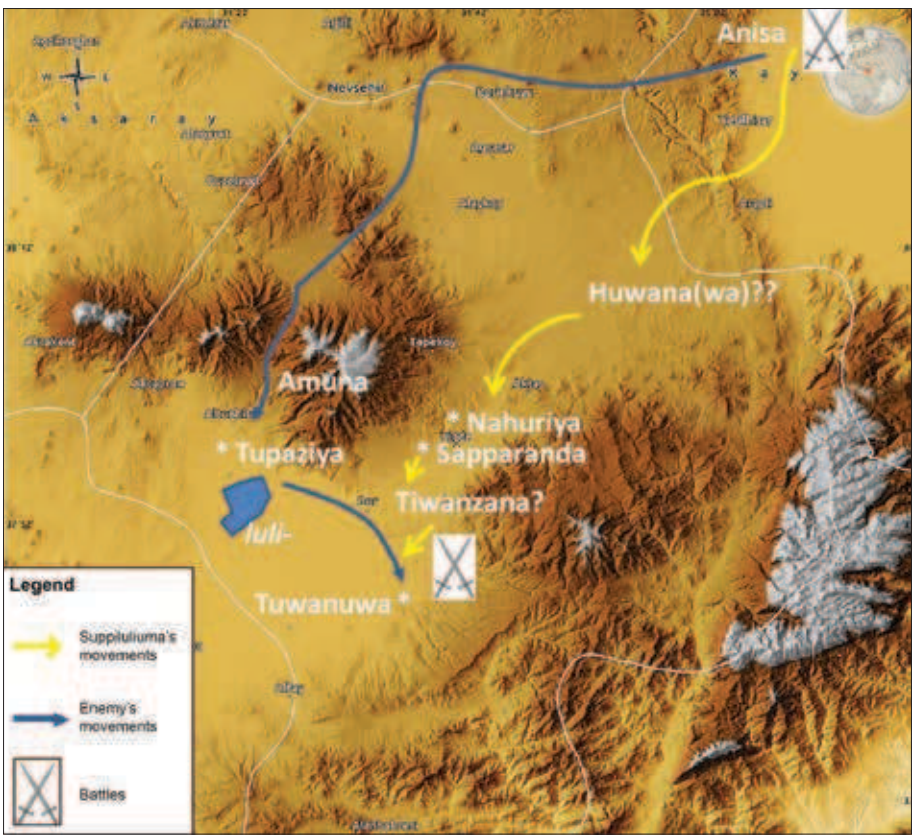
Fig. 4 Ceramic finds from above the outer surface A164 (Level A7) at Kınık Höyük.
Drawings and inks by Paola Vertuani.



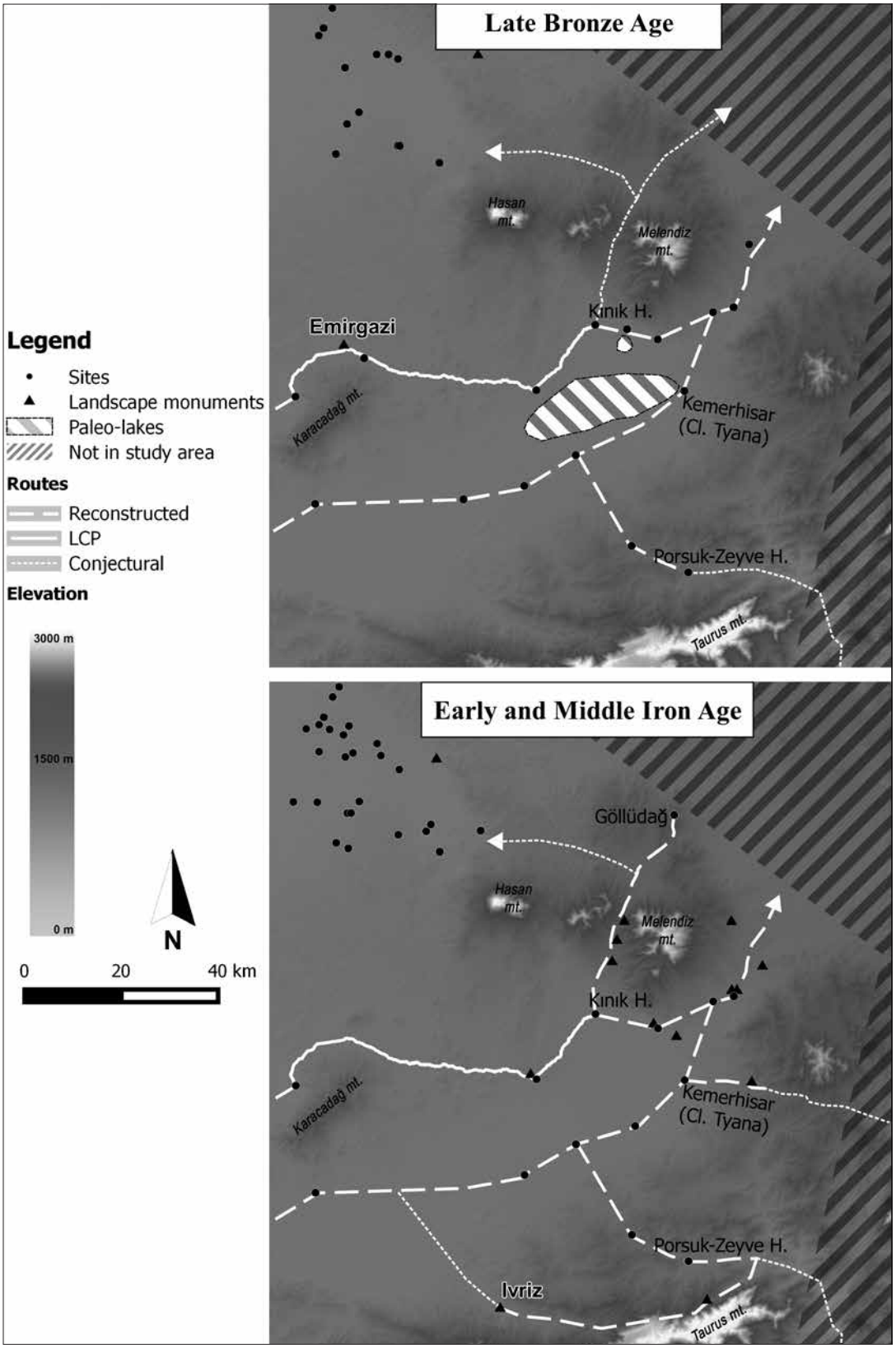
Map A The LBA archaeological landscape in the Konya plain and Southern Cappadocia. "Reconstructed" are those routes actually inferred from the distribution of settlements and landscape monuments, while "conjectural" routes are those whose existence is assumed mainly on the basis of historical interpretation. The least-cost pathway (LCP) has been calculated on GRASS GIS (functions: r.walk and r.drain) by choosing Kınık Höyük as starting point and the LBA-IA site of Kıçıkışla, in the Emirgazi area, as destination point. Map and graphics by Alvise Matessi.



Map B Hydraulic survey of the Bor-Ereğli plain (by Andrea Trameri).



Map D Geographical reconstruction of the events narrated in the so-called "Battle of Tuwanuwa" (Deeds of Suppiluliuma, CTH 40 II.3F). Map and graphics by Lorenzo d'Alfonso.



Map C Comparison between the LBA and EIA-MIA route network in Southern Cappadocia. See the caption to Map A for the routes classification. Maps and graphics by Alvise Matessi.