



The fruits of migration: Understanding the ‘longue durée’ and the socio-economic relations of the Early Transcaucasian Culture



Stephen D. Batiuk

Computational Research in the Ancient Near East (CRANE) Project, The Archaeology Centre, Department of Anthropology, and Department of Near & Middle Eastern Civilizations, University of Toronto, 19 Russell Street, Toronto, ON M5S 2S2, Canada

ARTICLE INFO

Article history:

Received 13 February 2012

Revision received 25 April 2013

Keywords:

Near East

Early Bronze Age

Transcaucasia

Alcohol

Viticulture

Settlement patterns

Identity

Diaspora communities

ABSTRACT

The appearance of the Early Transcaucasian Culture (ETC) across large portions of the Near East in the 3rd millennium BC is commonly cited as one of the best archaeologically documented and broadly studied cases of a prehistoric migration. This study uses the ETC to develop a model of what happens when migrants move into regions that are already inhabited by emerging or complex societies. In particular, this study focuses on how immigrant populations can integrate themselves into indigenous communities in a physical, socio-political and economic sense, and how a migrant group's identity can be constructed and maintained alongside these indigenous communities.

Multiple lines of evidence, including settlement patterns, ceramic evidence and textual records, are used to postulate an economic niche for the ETC in viti- and viniculture, which has a long recorded history in Transcaucasia, commonly regarded as the place of origin of the ETC. The production of a consumable high status commodity such as wine by ETC immigrants provided them with the socioeconomic status that allowed them to maintain their social identity in an archaeologically visible manner in their new homelands for extended periods of time. Furthermore, the increased production of wine provided by the immigrants eventually changes the availability of this commodity and transforming its use and transforms its consumption in North Syrian societies.

© 2013 Elsevier Inc. All rights reserved.

Introduction

Mobility in one form or another has played an important role in human existence. From the movement of hominids out of Africa, to the spread of agriculture, and the development of long-distance trade, communities have negotiated great distances in our early history. Invoking these ‘movements’ as an explanatory mechanism for the spread of a historical or archaeological ‘culture’ is one of the oldest and most persistent themes in historical and archaeological reconstructions; yet, as ubiquitous as migrations are, the study of the role that they play in cultural change has a rather untidy history in archaeological studies. Early in the history of this discipline, cultural historical approaches generally understood the spatial translation of an archaeological ‘culture’ as a result of the movement of individual carriers having traversed from one region to the next. Unfortunately, such facile interpretations have been exploited on several occasions, sometimes with appalling consequences.¹ In reaction to these abuses, the use of migration as an

explanation of cultural change and popularity of has vacillated in archaeological and anthropological literature (Adams, 1978; Adams et al., 1978; Anthony, 1990, 1992, 1997; Chapman and Hamerow, 1997; Batiuk, 2005; Burmeister, 2000; Brettell, 2008; Brettell and Hollifield, 2008: 19–21). Underlying many of the debates, however, have been valid criticisms of the methodological approaches used to identify and understand migrations in the archaeological record (Todd, 1973; Adams et al., 1978; Chapman and Dolukhanov, 1992), many of which have only recently begun to be addressed. Building on studies by geographers and demographers, we have now begun to understand migrations as a patterned human behaviour or social strategy, and have made important advances in identifying potential methods for determining where changes in material culture are truly the result of ancient migrations, rather than the result of emulation, diffusion or trade (see Anthony, 1997; Burmeister, 2000; Brettell and Hollifield, 2008). These preliminary achievements aside, there are still fundamentally larger unaddressed questions in the examination of ancient migrations. While in some cases we have begun to understand the structure of migrations [the ‘how’ and perhaps even the ‘why’ a given migration might have occurred], we have yet to really address what happens to migrants *after* they have settled in a new region. More specifically, there has been minimal discussion of what happens when migrants move into regions that are already inhabited by emerging or complex societies (Greenberg and Goren,

E-mail address: stephen.batiuk@utoronto.ca

¹ The unabashed exploitation of Kossina's *Die Herkunft der Germanen* (1911) and *Die Deutsche Vorgeschichte* (1912) as the cornerstone of the Nazi ideology had a profound effect on the use of migration in theoretical discussions. Part of the retreat from migration theory in the following generation of scholars can be seen as an attempt by the field to insulate itself as far as possible from this politicized intellectual history.

2009; Paz, 2009; Yasur-Landau, 2010; van Dommelen, 2002), and in particular, how these immigrant populations are integrated into the indigenous communities, not merely in the physical sense, but also from a social, political and economic point of view as well. Although discussions on how migrant group identity is constructed and maintained is finally emerging (Paz, 2009; Bernardini, 2005 and to an extent Yasur-Landau, 2010), investigations into how cultural assimilation of migrant groups may or may not occur, is an important avenue of investigation that is generally taken for granted, and presently lacks sufficient discussion in archaeological literature (van Dommelen, 2005), even though it has been examined by sociologists and demographers for almost a hundred years (Thomas and Znaniecki, 1918; Gordon, 1964; Gans, 1992; Portes and Zhou, 1993; Portes et al., 2005; Waters and Jiménez, 2005). The distribution of the Early Transcaucasian Culture (henceforth ETC), is broadly accepted to be one of our best archaeologically documented, as well as one of the most studied cases of a prehistoric migration (Batiuk, 2005; Batiuk and Rothman, 2007; Greenberg and Goren, 2009; Kelly-Buccellati, 1979; Kohl, 2009; Kushnareva, 1997; Rothman, 2004; Sagona, 1984), and therefore provides an ideal venue in which to explore these processes.

Two main models have dominated any discussion of the economic activities of the ETC: pastoral nomadism and trade in metals, and these two models have formed the explanatory basis for the mechanics of the purported ETC migrations. Given the huge chronological and geographical expanse in which this 'culture' is found, imposing two overriding models on such a complex web of interactions is a highly simplistic approach. This is not to deny that pastoral-nomadism or trade in metals did not play a part in the movements of the people bearing the ETC culture in the Near East, only to suggest that it may not have played a part in the success and longevity of settlement of the ETC in their new 'homelands'. Groups can migrate for one reason, but can remain and be successful in an area for different reasons. The questions that must be pursued are: how would these new groups integrate into their new home lands not only socially, but economically? In a period which sees the development of regional state societies, and the growth of more integrated and monolithic material cultures, how would they be able to resist assimilation? It is with this general framework of examining the maintenance of group identities in their new migrant communities' *vis-à-vis* assimilation, that I re-examine the ETC population of southeastern Anatolia and northern Syria, in particular investigating the role their subsistence economy may have played, and come to a new understanding of the Early Transcaucasian Phenomenon. In this vein, I would propose, in the case of north-western Syria, that the ETC was involved in the production of wine, which provided it with a unique economic niche in which to integrate at a macro scale into the communities where they settled, while remaining economically but more importantly, culturally independent. *Viti-* and *vini-*culture (grape cultivation and wine production), which have a long history in the Caucasus, would have provided the migrants with a unique skill set and economic advantage through production of a high status commodity – wine – which would have been in demand among the local elites of the region at a critical point in the development of regional complex societies. Although wine production may not have been introduced into the migrant regions by the ETC, these groups may have played a role in its development as an industry and in increasing its demand, particularly among the emergent local elites, and eventually in the population at large in northwestern Syria in the Early Bronze Age.

The ETC phenomenon

The Early Bronze (EB) Age (c. 3400–2000 BC) is one of the most active and dynamic periods of social development in the history of

the Near East. During this period we witness the flowering of urbanism and elite social structures that shape socio-political institutions of the region for millennia to follow. At the same time, we see the appearance of the ETC, a unique and highly distinctive archaeological culture, which had developed out of the Neolithic and Chalcolithic cultures of Transcaucasia – more specifically the Kura and Araxes river basin located in the modern Republics of Georgia, Armenia and Azerbaijan (Sagona, 1984).² Its most recognizable material culture signature is a hand-made, heavily slipped and burnished pottery type. This pottery is decorated with ribbing or incision and is often, but not exclusively, fired to produce a striking red and black colour combination (Palumbi, 2003, 2008; Batiuk, 2005; Sagona, 1984). The ETC cultural horizon is also association with distinctive architectural features (rectangular and circular houses of both mudbrick and/or wattle and daub), along with portable or fixed hearths sometimes decorated with anthropomorphic features, arsenical bronze working, bone implements, bovine animal figurines, and obsidian-based chipped stone tool industries. This ETC material culture signature is found in a large arc within the Near East, spanning from Iran to the Republic of Georgia, through Eastern Anatolia and North Syria, into the southern Levant (Fig. 1).

Despite a broad geographical distribution, its "...high degree of regionalism should not be underestimated" (Sagona and Zimansky, 2010: 163). Consequently, the ETC material culture signature (Burney and Lang, 1971) has been 'discovered' numerous times and given an unwieldy number of regional names, including Kura-Araxes Culture in Transcaucasia, Yanik Culture in Iran, Karaz Culture in Eastern Anatolia, Red Black Burnished Ware Culture (RBBW) in north-western Syria, and Khirbet Kerak Ware Culture (KKW) in Israel/Palestine. Furthermore, where this material culture appears outside of the Caucasian "homeland", it tends to reside side-by-side with the indigenous cultures, in a pattern of co-residency, and maintains this pattern for a significant period of time with each retaining its own cultural distinctiveness (Batiuk, 2005; Batiuk and Rothman, 2007; Greenberg et al., 2006).

Early research on the ETC focused on how to explain both its presence and distribution (Amiran, 1951; Hood, 1951; Lamb, 1954; Burney, 1958; Hennessy, 1967; Todd, 1973). What did the extensive distribution of this archaeological phenomenon, best identified by a distinctive type of pottery, represent? Was it a culture in the Childean sense? Was it truly an example of 'Pots Equal People' (Kramer, 1977)? Interpretations of the ETC phenomenon have altered over time, keeping in tune with changes in archaeological theory. For example, Leonard Woolley saw the appearance of the ETC as evidence for "an outpouring of barbarians from the north ... armed invaders who massacred the old inhabitants" (1953: 31–37). With the appearance of Processual Archaeology, archaeologists explored individual causal mechanisms, such as contact through long-distance trade, cultural diffusion, or emulation of material culture traits (Todd, 1973). More recently,

² The chronology and locus of the development of the ETC is very much under scrutiny at present and must be acknowledged to be constructed on frustratingly little hard chronological data. Kuftin (1941) originally assigned the development of the ETC to the "Eneolithic" (Chalcolithic) period, however later scholars recalibrated its origins to the Late Chalcolithic/Early Bronze Age, beginning c. 3500 BCE. Based on his excavations at Sos Höyük, Sagona argued for the initial development of the ETC to be earlier in the Chalcolithic, and the locus of its development, originating in eastern Anatolia, and later diffusing eastward along the Kura River into the south Caucasus (Kiguradze and Sagona, 2003; Sagona, 2004). Palumbi, has vociferously argued for the larger and earlier role of Eastern and even Central Anatolia suggesting that the development of the ETC material cultural signature, in particular the red-black colour combination began in Central Anatolia and reached the Caucasus only by the end of the 4th Millennium (2003: 103–105; 2008: 43–44). Recent work by Marro at Ovçular Tepesi in Nakhchivan, Azerbaijan has identified ETC material, complete with red-black pottery, from a secure deposit radiocarbon dated to the 5th millennium, refuting Palumbi's and Sagona's reconstructions and redirecting the locus of development to Transcaucasia (2011: 66).

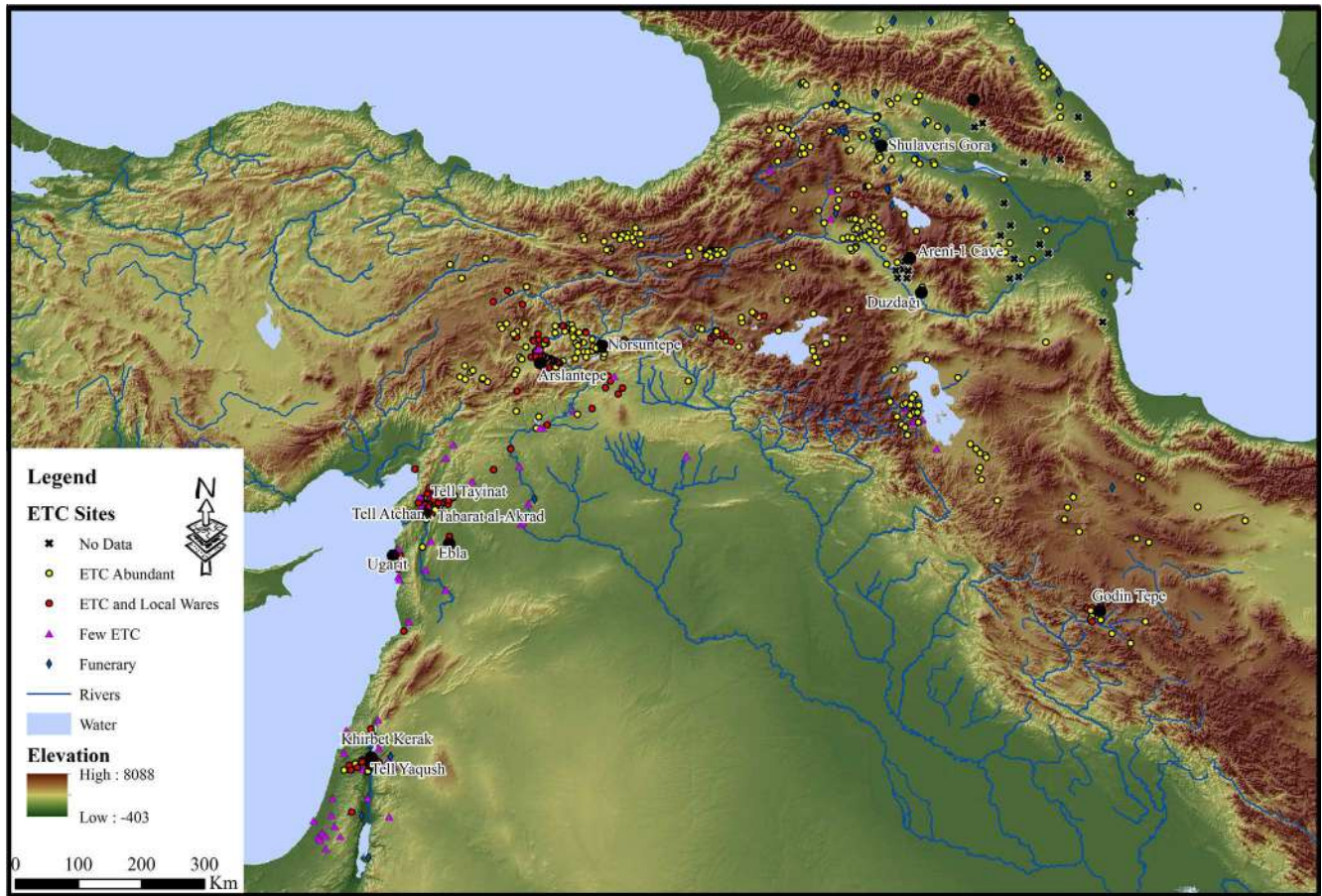


Fig. 1. Distributions of sites that produce ETC Wares in the Near East, and major sites discussed in text. For explanation of site classification see below.

researchers have focused on modeling the sources, timing, and modes of migration and theoretical approaches to the creation and maintenance of cultural boundaries (Anthony, 1997; Burmeister, 2000; Philip, 1999; for a more complete summary of the debate see Batiuk, 2005). As a result, investigations now take a multifactor approach to the ETC Phenomenon, identifying its presence not solely on the appearance of the ceramics, but a material cultural signature based on a combination of elements; including patterns in intra-site and regional settlement, patterns in ceramic production, as well as ceramic morphology, architecture, and small finds (see Batiuk, 2005). We now view its larger distribution as the result of a complex combination of migration, trade and emulation (Abay, 2005; Batiuk, 2005; Greenberg and Goren, 2009; Rothman, 2003, 2004). Given the broad distribution of the ETC cultural signature in tandem with localised variability, this more nuanced approach should not come as much of a surprise. As Greenberg notes:

The Kura-Araxes phenomenon, encasing as it does the entire northern and western margin of the Fertile Crescent, remains a most remarkable example of cultural connectivity across geographical and social boundaries. This connectivity falls into no known models: it is neither colonial nor trade-based, it appears to have no political organization and it is certainly not uniform in all its expressions. Yet it maintains an unmistakable distinctiveness that cannot be ignored. With so much new data and the interpretive methods that can be brought to bear upon it, the discussion of KKW is far from being a closed case; in fact, in some ways it seems hardly to have begun. (Greenberg and Goren, 2009: 132).

The nature of the data

Given the paucity of excavated ETC sites, settlement pattern analysis lies at the heart of any discussion of the ETC, although its relevance is frequently not fully realized. Over the years, as researchers began identifying more sites belonging to this culture, starting with Munchaev (1971), Sagona (1984), and finally Batiuk (2005), they plotted simple maps, which identified particular patterns – gaps and clusters in the distribution of the ware (see Fig. 1). These patterns did not fit with the standard “wave advance model” invoked by early archaeological models of migration (cf. Childe, 1925, 1950), nor could they be the result of survey coverage or methodological issues (Batiuk, 2005: 77). Most of these basic maps represent a simple presence or absence of ETC wares, identifying sites with even a single sherd found in surveys or excavations – a measure that can significantly skew the meaning of distributions maps. In his study of the distribution of ETC wares of the Southern Levant, Esse (1991) classified sites not only according to the presence or absence of ceramics, but according to their entire ceramic assemblage. While some sites contained the full ETC assemblage, some had a portion of it, and some were restricted to only one or two forms, usually consisting of small drinking bowls. By classifying sites according to their overall assemblage, Esse was able to differentiate between what he called the core area of ETC settlement in Palestine, and those regions where vessels were traded to or its vessels were being copied or emulated.

Building on Esse’s idea, we can further explore the nature and spread of ETC assemblages with use of a GIS database that includes 682 ETC sites (see Batiuk, 2005: Appendix A for original 652 sites).

The GIS database is based on initial work by [Sagona \(1984\)](#) but has been updated by the author, and spatially corrected by the use of GPS coordinates collected by various individuals, smaller scale maps (Russian topographic maps, in particular), and satellite visualization in Google Earth where sites could be identified. Every effort was made to reduce spatial error. Unfortunately, accuracy varies within the dataset, ranging from a few tens of meters in most cases, to a few kilometers in rare examples. By combining 474 one-degree tiles of NASA's Shuttle Radar Topographic Mission (SRTM) data,³ a 90 m resolution topographic map of the entire Near East was constructed to facilitate the completion of a detailed spatial analysis of settlement patterns ([Batiuk, 2005](#), see below). A hydrological layer was constructed by tracing rivers in Landsat satellite imagery and hydrological modeling using Arc Hydro Tools. Layers of additional data, such as land-use, rainfall, soils, and geology, were added by scanning and digitizing maps for each country available in the University of Toronto's extensive map library. Site classification was based on published description of a site's material culture and separated into four groups. Class 1 represents sites where ETC wares predominate. Class 2 represents sites that produced ETC wares in significant quantities, but alongside 'local' or indigenous ware traditions. Class 3 represents sites that produced predominantly local/indigenous wares, with only minor or trace amounts of ETC wares, while Class 4 represents ETC wares found in funerary contexts. Similar to [Esse's](#) analysis, I suggest that Class 3 sites represent examples of exchange or limited interaction with the ETC groups, while Classes 1 and 2 represent settlements that were producers and consumers of ETC wares.⁴ In both Class 3 and 4 sites, the range of forms is extremely limited, usually consisting of small open bowls or kraters, suggesting that these specific vessels, or perhaps the activities associated with them, were in demand and used by non-ETC groups.

Further examination of settlement patterns reveal that Class 1 and 2 sites, create tight clusters with a concentration of sites in prime agricultural territories with similar hydrological and Plant Hardiness Zone characteristics (see below). This pattern suggests that a particular geographical and political landscape configuration was targeted for settlement by groups with agriculturally-focused subsistence strategies ([Rothman, 2004](#)).

At a regional level, we also see a repeated pattern within each of the 'clusters'. Initially, ETC ceramics appear in limited numbers, usually at major economic centers, followed by a dramatic increase during the following periods. This increase over time in ETC ceramics corresponds with a dramatic shift in settlement from relatively larger central sites of the earlier period to a proliferation of smaller settlements along its outskirts, frequently at the confluence of streams. These smaller settlements (e.g., Tabara al-Akrad in the Amuq, Tell Yaqush in the south Jordan Valley) yield almost exclusively ETC wares, while at the larger economic centers (Arslantepe in Malatya, Norşuntepe in Elazığ, Tell Tayinat in the Amuq, Khirbet Kerak/Beth Yerah in Israel, Godin Tepe in Iran) excavators find a mixture of local pottery and handmade ETC wares. This pattern probably indicates multiple migrations—first, pastoralists and/or traders who made initial contact in the region, followed by farmers establishing themselves on the outskirts of an indigenous settlement system, drawn in or pushed by some social, political or economic need. Over time, we see the local and "foreign" ceramic

assemblages hybridize, with each taking forms from each other into their respective ceramic repertoires ([Batiuk, 2005](#); [Nigro, 2009](#)). However, the ETC appears never to fully integrate or assimilate into their new homelands, or at least not for a significant period of time. In effect, for most of the periods in question, we see multiple localized settings for co-residence between groups or enclaves of migrants within the larger indigenous culture. In the excavations of some more economically and politically developed centers (like Norşuntepe or Khirbet Kerak), we can also observe distinct 'pockets' of ETC cultural assemblages where ETC migrants did not integrate fully into the settlements, but rather congregated into 'neighborhoods', usually in areas (or in the case of smaller settlements, entire sites) that had been abandoned, perhaps due to some internal crisis ([Greenberg, 2007](#); [Novacek, 2007](#); [Marro et al., 2011](#)). These patterns are expected in Diaspora communities according to migration theories ([Anthony, 1997](#); [Burmeister, 2000](#)), and are examples of segmented assimilation ([Portes and Zhou, 1993](#)).

Economic subsistence is an important feature of a culture that is frequently not investigated; rather, it is taken for granted. One could argue that there may have been sufficient resources (be it agricultural land, water, mineral rights, control of trade routes) for these ETC migrants to settle and not to come into conflict over resources with indigenous groups; however, given the duration of the ETC (see below), this becomes less and less likely as population growth would eventually create new pressures that could lead to conflict. Yet somehow these groups are able to coexist with local populations and even thrive, forming a symbiotic relationship within social and economic systems of their new targeted homelands.

Understanding the ETC phenomenon within the 'longue durée'

The acceptance of migration as playing a significant role in the appearance of the ETC in the different regions of the Near East is by no means universally accepted (cf. [Philip, 1999](#); [Palumbi, 2008](#)). These debates notwithstanding, the question has been explored in detail by the author ([Batiuk, 2005](#)) and numerous scholars ([Rothman, 2004](#); [Greenberg and Goren, 2009](#); [Iserlis et al., 2010](#)) and further treatment is outside the immediate purview of the present investigation. Proceeding from this theoretical framework with migration as a primary (but not sole, see [Batiuk, 2005](#)) mechanism for the spread of the ETC in the Near East, there are some fundamental issues left to be resolved. Of primary concern is the duration of this cultural phenomenon. It spans approximately 1500 years in eastern Anatolia, close to 1000 years in the North Orontes Valley, and perhaps 400 years in the Northern Jordan Valley. These are incredibly long stretches of time for an immigrant culture to be able to maintain a separate identity and resist assimilation, yet this is exactly what the ETC stubbornly appears to have done. Understanding how this co-habitation was achieved physically, culturally, and economically and how it was sustained for such significant periods without cultural assimilation is an issue of fundamental importance to our ability to understand other migrations in the archaeological record, and perhaps more significantly, what effect these migratory groups might have had on the indigenous cultures they came into contact with and visa-versa. How can this be investigated?

Many of the modern methods and theories used to assess immigrant assimilation are derived from the Chicago School of Sociology and were based on immigrant assimilation experiences in Chicago at the start of the 20th century ([Bulmer, 1984](#)). Later, Gordon's book, *Assimilation in American Life* (1964), identified an important pattern he branded as "generational change" for an index to measure cultural changes in immigrants that were the result of

³ <http://www2.jpl.nasa.gov/srtm/> Many tiles contained data voids – the result of regions of no-data, specifically over water bodies (lakes and rivers), or where there was insufficient textural detail to produce three-dimensional elevation data. These tiles were individually filled using the standalone program called SRTM Fill Utility to insure that any topographic analysis would not be biased by null readings.

⁴ Provenience studies of ceramics from almost the entire ETC distribution zone by numerous independent researchers have all identified the similar pattern local production of ETC ware, even individual to each site (cf. [Matson in Braidwood 1960: 36](#); [Chazan, and McGovern, 1984](#); [Esse and Hopke, 1986: 332](#); [Greenberg and Porat, 1996](#); [Mason and Cooper, 1999](#); [Greenberg, 2000](#); [Mazar et al., 2000](#); [Batiuk, 2000, 2005](#); [Schwartz et al., 2009](#); [Iserlis, 2009](#); [Iserlis et al., 2010](#); [Kibaroglu et al., 2011](#)).

assimilation into the host (in this case, American) society over a period of three generations. He argues that “[t]he first generation (the foreign-born) were less assimilated and less exposed to American life than were their American-born children (the second generation), and their grandchildren (the third generation) were in turn more like the core American mainstream than their parents” (Waters and Jiménez, 2005: 107–108). Although these models are based on modern societies, and the social, political, economic and technological forces that initiated and propagated migrations in the ancient world in all reality would have been significantly different, they serve to highlight inherent patterns in human behaviour that can be used to help understand patterns in the archaeological data.

The standard measures of immigrant assimilation identified by sociologists include: (a) socioeconomic status (SES), defined by occupational specialization, economic equality in earnings, and the level of education attained; (b) spatial concentration and segmentation; (c) language assimilation and loss of mother tongue; and (d) intermarriage (Waters and Jiménez, 2005: 106). Given the paucity of detailed historical records for early periods, the third and fourth measures are impossible to determine when examining most ancient migrations. However, spatial concentration and segmentation of ETC sites can readily be identified by settlement data. Socioeconomic status can be inferred (see below), which suggests that the ETC migrants resist assimilation into their host communities, resulting in a pattern of co-habitation, as Paz has persuasively argued for the southern Levant as a Diaspora community (Paz, 2009).

According to Clifford (1994: 310), diasporas are created through practical and, at times principled, tension between migrant and indigenous identities and thus do not fall into the same categories as standard immigrant community in Gordon's scheme (1964 – see above). Diaspora communities tend to live on their own, separate from the general population, frequently under special laws and restrictions, tend follow specific economic patterns, fill economic niches, and often are *involved directly in transmitting innovative economic techniques* (Armstrong, 1976, italics mine). As a result, these groups tend to be particularly resistive to assimilation and are on the whole distinctive archaeologically.

The ETC has frequently been viewed as the product of nomadic or semi-nomadic pastoralists (Connor and Sagona, 2007) and small-scale farmers who engaged in inter-regional trade and, sometimes, metal production (Rothman, 2004; Sagona, 1984, 2004). This economic profile is based largely on the form and function of ETC architecture, dominated by free-standing rectilinear or circular houses as well as use of portable hearths which are reminiscent of temporary nomadic tent settlements for the pastoral model, and the comparatively high number of technologically advanced arsenical bronzes for the metallurgical model (Kiguradze and Sagona, 2003; Sagona, 2004; Takaoğlu, 2000; Shimelmitz, 2003; Smogorzewska, 2004). According to Sagona and Zimansky (2010: 190) the Early Bronze Age of eastern Anatolia can be characterized as “... a landscape settled largely by nomadic stockbreeders or at the very least communities who practiced some form of transhumance”. I have argued elsewhere (Batiuk, 2005; Batiuk and Rothman, 2007) that this pastoral element of the ETC, albeit an important component, has been overemphasized at the expense of the agricultural element of ETC society. The vast majority of ETC settlements represent stable, long-term agricultural (and often sizeable) villages who additionally partook in pastoral production.⁵ Even Cribb (1991: 220) does not readily identify the ETC as a pastoral

nomadic society, but rather a culture with a significant number of pastoral nomads. In either case, both the pastoral and agricultural models share the same inherent problem: in many of the regions, the indigenous populations would have already had self-sustaining agricultural and pastoral industries prior to the arrival of the ETC. Assuming a degree of social equilibrium, what need or economic niche, might these new immigrants have filled in these occupied territories?

The site of Arslantepe presently sits at the center of many of the discussions of the nature of ETC contact, settlement and economic activity. The site is a small sized mound (c. 3.2 ha) but 30 m high, located in the center of the Malatya plain. Meticulous excavations by the Italians over the past thirty years have uncovered a long stratigraphic sequence for the Chalcolithic and Early Bronze Age which revealed a slow introduction of the ETC Culture amongst a local, southern Mesopotamian (Late Uruk Culture) influenced culture which has been published in detail (Frangipane and Palmieri, 1983; Frangipane and Palumbi 2007; Frangipane, 1993a, 2000, 2001a,b; Palumbi, 2008).⁶ The general stratigraphic sequence is divided into eight main periods (I–VIII): the Late Chalcolithic (Period VII, 3800–3500 BCE) and Early Bronze Age levels with four sub-periods covering the period of approximately 3350–2000 BCE (Period VI A–D). These periods see the significant changes of the settlement; from large public building made of mudbrick (VIA), to simple wattle and daub huts (VIB1), to a well-planned village with mudbrick architecture, surrounding a citadel of undetermined nature (VIB2–D). ETC wares first make their appearance in the later part of the preceding Period VII, but only in limited quantities, and are isolated to storage areas within public buildings (Frangipane, 2000: 443–444). The VIA period (3350–3000 BCE) sees the construction of complex of public building (or Temples) connected to an administratively controlled economy, controlled by members of a powerful elite (Palumbi, 2008: 75). During this period, the volumes of ETC wares increase but are unique, and not fully representative of the ETC culture in the region as they appear to represent a hybridization of ETC and Central Anatolian elements. Given the site's position on important routes leading from central Anatolia across eastern Anatolia to the Caucasus, such a hybridization should not be surprising, and should even be expected. The occurrence of the ETC wares are attributed to pastoralists who are living in the environs of the site identified in survey work, interacting with the inhabitants of Arslantepe (Frangipane, 2000).⁷ VIA is destroyed, and replaced by two sub-phases of a small wattle and daub village (Level VIB1, 3000–2900 BCE).⁸ The ceramic assemblage is almost exclusively ETC wares, and both the pottery and architecture are traditionally Transcaucasian in shape and decoration (Palumbi, 2008: 223–225). The VIB1 village is in turn burnt, and replaced after approximately a hundred years by another ETC village of similar shape and size (VIB2, 2900–2800 BCE), with the exception of more permanent mudbrick architecture, established outside a citadel wall. The architecture is once again Transcaucasian in nature in shape and included features, while the pottery is now more dominated by the wheel made local Plain Simple and Late Reserved Slip Wares (70% of the excavated material). ETC wares are also found (27%), alongside a number forms that seem to be more

⁶ Excavations at Arslantepe are ongoing – especially of the Early Bronze levels, and therefore caution must be exercised when interpreting the data from the site as every season has the potential to dramatically change our understanding of the site.

⁷ Grapes were found in Room 340, in Temple B, which appears to have been a room for distribution of foodstuffs, as it contained a small number of sealings, and a large number of coarse bowls (Helwing, 2003). The seeds uncovered, therefore, might represent the dissemination of fruit rather than wine. As some of the pips show evidence of domestication, it is suggestive of the practice of viticulture somewhere within the greater region.

⁸ Additionally, in the secondary subphase, there is an enigmatic mudbrick structure consisting of four rooms approximately 20 m long found in the south end of the village. The nature of this structure is unknown, but hints that VIB1 may be more complex than initially understood.

⁵ New examinations of faunal remains from ETC sites by Piro (2009) further this suggestion. The faunal data show a pattern of settled agro-pastoralism with an unspecialized, risk-avoiding strategy and an emphasis on a wide and stable subsistence base, rather than one of a strictly pastoral economy.

central Anatolian in nature (3%), suggesting a re-establishment of the VIA patterns of inter-regional contact. The ceramic distributions provide an interesting reversal of the pots vs. people argument. With the VIB2 village we are confronted with what appears to be an ETC settlement, based on the architectural forms and features, however, one that has limited ETC wares. This highlights the need to incorporate a variety of avenues of evidence, including the nature of the settlement itself, which is less straightforward than many would suggest. To characterize this as a village is perhaps somewhat premature, and a more likely designation is more of a neighborhood, or perhaps an outer-town, as it sits *outside* a citadel wall. One whose interior has yet to be explored, and which has a potential to re-write much of our understandings of the social, political, and economic organization of the settlement and the relationship between the ETC people *vis-à-vis* the original inhabitants of the region. The VIB2 village is destroyed in a violent conflagration, followed by an ephemeral settlement, reminiscent of VIB1 village, with wattle and daub structure and at least one of the mudbrick houses reutilized. The ceramics are now once again almost exclusively ETC wares, which again highlights the problematic nature of our understandings of the cultural relations of the earlier VIB2 village.

Fitting somewhere between the VIB1 and VIB2 villages was the construction of a monumental tomb that once again throws interesting light on the subject of inter-group interaction. This cist tomb, whose antecedents can be found in the Caucasus, previews what will become the common elite burial form of the entire Euphrates region in the Early Bronze. It was extremely rich, containing numerous objects of precious metals, including jewelry, weapons and vessels, ceramics of both Local Late Chalcolithic Plain Simple Wares and ETC Wares, in addition to the sacrifice of four human attendants. Much has been written about the tomb and what it represents (Frangipane, 2001a,b; Palumbi, 2004, 2008), and it is best understood as a breathtaking example of the collision of two worlds; the articulation of the complex negotiation of two different communities in a region. Established in a period between an ephemeral ETC village, and a larger settlement of mixed cultural connections, set up outside the locus of power (the citadel), on a prominent point, close to the old loci of power (the VI Public Buildings). Whatever its meaning, it highlights the complex interactions between the different groups in the region at the beginning of the Early Bronze Age that we are only now beginning to untangle.

The role of the ETC in the trade in metals is another contentious issue, and the site of Arslantepe once again lies at the center of the debate. It has long been noted that the cultures of the Caucasus produce some of the earliest examples of advanced copper metalwork. Although arsenical bronze working has been noted with ETC sites, its inventory, especially for that of the earliest phases of the ETC sequence, is relatively poor when compared to the contemporary Maikop Culture, and the later Kurgan Cultures (Kavtaradze, 2004). Despite the number of copper ores sources in the Caucasus (see Fig. 2), specific evidence directly linking metallurgy to the ETC is, in reality minimal, and additionally, somewhat problematical.

Only a few small arsenical bronze objects uncovered at sites like Kültepe I and Tekhut have been analyzed, and appear to be made from local Caucasian sources. They also appear to contain a higher than natural percentage of arsenic, and therefore are assumed to be artificial alloys, which could theoretically link the ETC to metalworking (Marro et al., 2011: 70, footnote 19). Additionally, a number of stone hammers have been identified at Kültepe I, which have been attributed to ore processing, but as Marro rightly points out, are similar to the hammers identified at Duzdağı (see below), and therefore their attributed use can be called into question (Marro et al., 2011: 70). Perhaps our best evidence comes from the VIB2 village at Arslantepe where a number of pits were revealed in the north end of the settlement that appear to have been exposed to prolonged burning, along with fragments of slags and mineral

ores (Frangipane, 1993b: 79–80). Although it could be associated with ETC groups, given the ambiguous nature of the ceramic data, we should be cautious in this interpretation. Additionally, in the Amuq Valley, surveys of site AS 105 – Tutlu Höyük, revealed almost exclusively ETC wares, and revealed significant amounts of ash, charcoal and slag fragments suggestive of pyrotechnical activities, but again, uncovered no direct evidence of metallurgical activities (Harrison, 1999).

No Chalcolithic or Early Bronze mining site yet uncovered has produced any direct link between the ETC Culture and copper production. Duzdağı, the Chalcolithic salt mine excavated by the French team in Nakhchivan, has identified hundreds of ETC sherds alongside stone hammers within the vicinity of the mines which “has shown that the art of mining had been mastered in the South Caucasus by the end of the 5th millennium”. (Marro et al., 2011:69, Marro et al., 2010). The gold mine at Sakdrissi, in Georgia, does at least show some link between metals mining and the ETC, but not copper extraction (Stöllner et al., 2010). Examining the larger settlement patterns of the ETC in relation to the location of ore deposits (Fig. 2) shows little correlation between the two. The famed Ergani Maden copper mine, the only source local to Arslantepe understood to be exploited in antiquity, produces no ETC material, and the closest settlement which does produce abundant ETC, Sarsap Mevkii, is some 20 km away as the crow flies, but in reality is farther as it is situated on the other side of the mountain range.⁹ One could see Yener’s proposed two tier process in metal production (2000); with initial settlements found near the sources mining the ore and transporting it to the second tier settlements where the smelting, alloying and casting occur, as explaining the spatial discrepancies between the mining sites and any purported ETC metal production settlements. However, analyses of the material from Arslantepe, and sites in the Elazığ region show a distinctive shift in the use of ore sources – specifically away from polymetallic copper oxides ores from the Ergani Maden sources used in Arslantepe phase VII, to VIB1¹⁰ (Yener, 2000: 67–70). Rather copper/iron sulfide sources of Pontic or south Transcaucasian origin are used in Levels VIB2 (Palumbi, 2008; Yener, 2000), which are naturally low in arsenic, and the high levels of arsenic identified in the objects suggest it was intentionally added, signifying changes in “the magnitude of production organization and style of technological choices in level VIB2 (Yener, 2000: 54). This would suggest rather strongly that the ETC were not involved in local extraction of ores in the Malatay-Elazığ region, although they may be involved in the procurement and transport of different ores, in addition to perhaps their processing into finished products, although the actual evidence of their involvement is far from definitive. The fact that the patterns of ore use in Arslantepe VIC revert to the patterns observed in Phase VII-VIB1 suggest that whatever role the ETC may have played in economies of metal production in the region, it was not significant enough to last longer than the 100 years of the VIB2 settlement, yet the culture endures in the region for almost seven hundred years more.

While pastoral nomadism and metallurgical production played a role in the economy of the ETC, given the size and extent of the distribution of the ETC, one activity may have played a larger role than the other at different times. This does not however preclude other economic pursuits, particularly ones that could account for the longevity of settlement in the host regions. A model must be developed that can account for an immigrant population that ap-

⁹ It should be noted that the closest settlement to Ergani Maden that produces a few sherds of ETC wares is Çayanü (Level III), some 15 km, down slope from the mine. It additionally produces evidence of ore processing on the southern slope, the two, however, cannot explicitly be linked.

¹⁰ It should also be noted that the few examples metals analyzed from Level VIB1, the ETC village showed the continued use of poly-metallic copper oxides like those used in Phases VII to VIA.

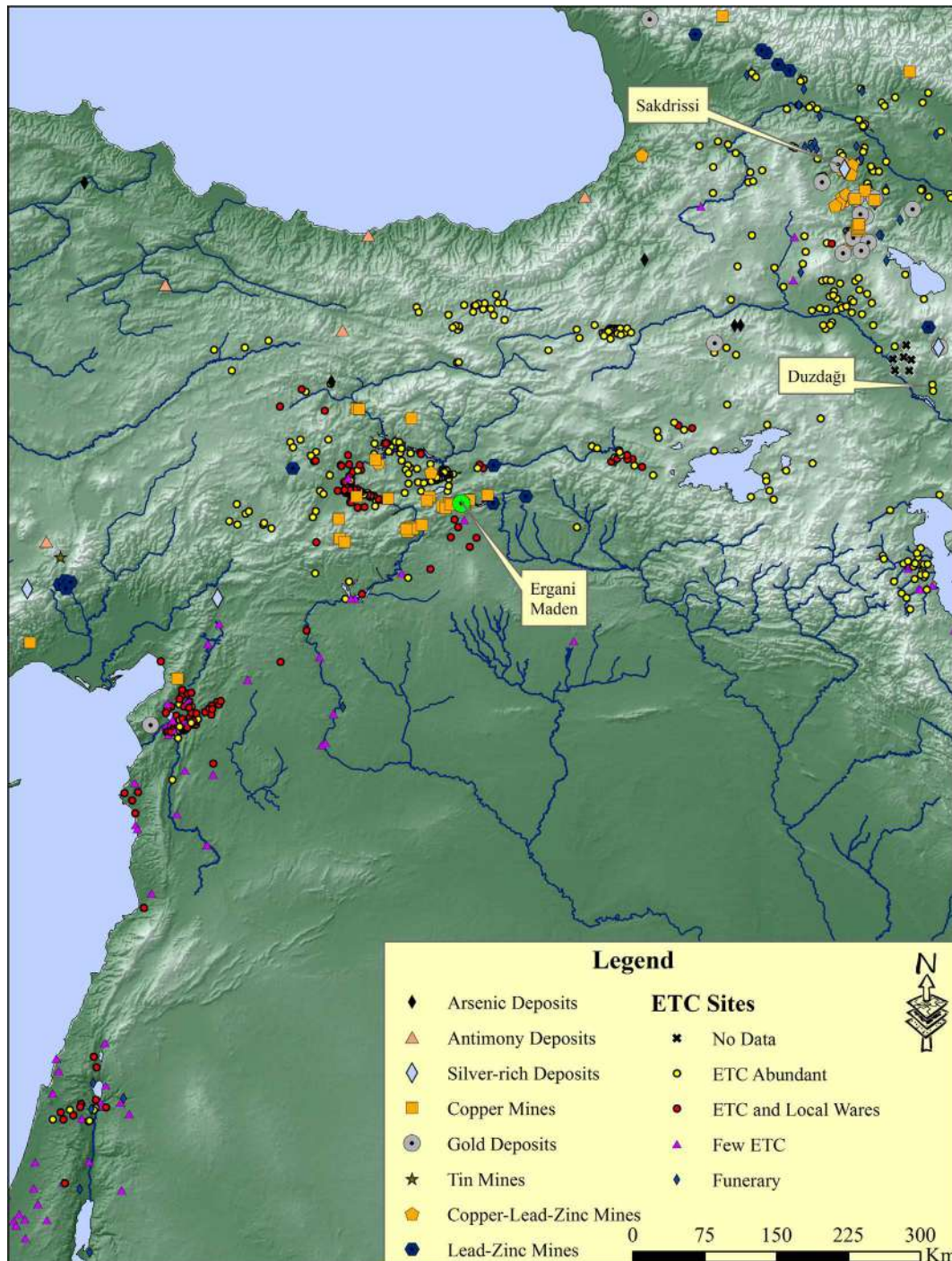


Fig. 2. Distribution of classified ETC sites in relation to known mineral deposits.

pears to have cohabitated with existing indigenous communities without disturbing their social and economic equilibrium, and was able to sustain this pattern for periods of time that are significantly longer than the standard three generation model proposed by the Chicago School.

Pre-adaptations and the ETC

Ethnohistoric studies have shown that, with rare exceptions, most migrating groups move into new territories to which they are pre-adapted. The degree of fit to a particular set of environmental conditions can limit or open up potential new migratory routes

(Rothman, 2004). The degree of fit is inherently linked to the subsistence patterns of the groups involved, as they are moving into familiar environments with agricultural potential similar to their homelands. With that in mind, can we detect any observable pre-adaptations with the ETC migrants? What are the possible subsistence strategies of the populations involved?

Food production and general subsistence behavior are naturally the most critical elements in the social strategy of migratory groups. Plants in general are fairly well adapted to surviving and even thriving in a variety of climatic conditions, but each has its own natural range of tolerance. Growing exotic species outside their natural habitat is frequently a difficult prospect.

Given the vast geographical distribution of ETC wares in the Near East, one would expect significant environmental variation, for example, between Transcaucasia and the Levant, to impact the subsistence strategies of migrants. However, when one actually examines the overall environmental conditions of the Near East, and where the ETC settle, some interesting and somewhat counter-intuitive patterns do emerge. ETC site location data actually show remarkable consistency within a variety of environmental conditions. Class 1 and Class 2 settlements are almost exclusively found in regions that receive between 400–600 mm of rain annually. This amount of rain suggests a variety of crop possibilities. In regards to land use, 71% of all sites are found in farmable land as opposed to 17% that are found in pasture or rough grazing land.¹¹ Plant Hardiness Zones (PHZ) measurements, developed by the USDA,¹² are important measurements for “introducing new species into different regions or increasing the use of a native species outside of their natural distribution areas” (Yilmaz and Tolunay, 2012). Moreover, unlike land use patterns, these zones probably would not have altered significantly since the Early Bronze Age. Distribution of Class 1 and 2 (Fig. 3) sites are overwhelmingly (57% of recorded sites) found in PH Zones 7–9, or areas with mean monthly extreme minimum temperatures of -1.2 to -17.8 °C. Twenty-five percent alone are found in PHZ 8 (-1 to -12.3 °C). Surprisingly, there is even remarkable similarities in plant hardiness zones between the North Jordan Valley and Georgia as the Sea of Galilee creates a microclimate (Fig. 3 inset) that interestingly forms the heartland of ETC settlement in the southern Levant (see Batiuk, 2005; Miroshedji, 2000). Essentially, within the wider ETC distribution zone: from the Transcaucasus to the Malatya-Elazığ region, the North Orontes and North Jordan Valley, all represent rich agricultural areas, each with varied crop choices and subsistence options for residents of each region – but not necessarily varied in crop and subsistence potential. The general degree of fit of ETC settlement signifies a significant level of pre-adaptation to the new regions suggesting they were moving into ecological niches suited culturally or technologically to their existing economic activities. The paramount question is: What is the crop the ETC are pre-adapted to?

The ETC and wine production

The wild grape vine (*Vitis vinifera sylvestris*) has a large indigenous distribution in the Near East. It is found in a wide variety of environmental zones, including the intermountain valleys of the Caucasus, highland plateaus of central Anatolia, the steppes of northern Syria, and the Mediterranean and Black Sea coasts. However, grapes are not uniformly distributed over these areas, but rather are concentrated in particular habitats. When one overlays the modern distribution of wild grape vine with that of ETC sites (Fig. 4), a startling correlation in the two distributions emerges. The distribution of ETC sites matches surprisingly well with the modern ecological niches that have the best potential for wild grapes. Given the hypothesized climatic variations and changes in the natural environment that occurred in the Near East, particularly during the Early Bronze Age (see Kuzucuoğlu, 2007), a one-to-one correlation between the ancient and modern distribution of *Vitis v. s.* cannot naturally be assumed. However, given

the diverse climatic regions where *Vitis v. s.* is found today, it denotes a degree of climatic (but not necessarily environmental) flexibility in its habitat – it can grow in a number of different PHZ's. This would suggest that the ancient distribution of *Vitis v. s.* was in all probability similar, if not perhaps more extensive, than the modern distribution. As a result, one could propose that the aforementioned pre-adaptation of the ETC in question could be viticulture – the growing of grapes, presumably for *viniculture* – wine production.

Horticultural pursuits require a more varied skill set than regular cereal agriculture, in that they can require significantly more human intervention not only toward propagation, but also in the selection of desirable traits of the fruit involved (i.e., size, taste, sweetness) (McGovern, 2003: 14). Nursing these desired traits is labor intensive, involving cuttings and rooting of the plant, and requires significant knowledge of the plant. Viticulture can be set apart from other horticultural pursuits regarding the special skills needed to regularly produce and maintain a successful crop. Unlike olive cultivation that requires pruning only every other year, viticulture requires an even more intensive horticultural regime with pruning and trimming of the vines multiple times per year. Additionally, year-round maintenance is essential to ensure that the vines are protected against various pests, such as mites, lice, fungi, and bacteria that could destroy the crop all together (McGovern, 2003: 14). More importantly, viticulture requires intensive education as the markers of disease or pests are difficult to discern, and the full skill set is often handed down by familial relations or through some sort of apprenticeship, a pattern seen in diaspora cultures. Pliny, in his *Historia Naturalis*, stressed the importance of adequate training for the viticulturalist for improving both the quality and quantity of the product (XIV.5).

Viticulture is a year-round profession and must be actively pursued to produce a grape crop of a large enough size, and with large flavorful grapes. Although the product of each crop could vary, from edible fresh or dried fruit, a grape syrup or verjus (vinegar like liquid), these can easily be obtained from the collection of the wild variant of the grape. The benefits of the domestic grape, which requires significant expenditure of time and energy, can be found in a high-value wine in demand from the elites of the developing urban centers. I suggest that this was the economic niche that the ETC (who originated in a region with a long tradition of viticulture, see below) filled in many of the regions to which they migrated. Occupying this economic niche allowed the ETC to share some resources with the indigenous inhabitants without coming into conflict, while using the available land to produce a crop complementary to traditional local subsistence economies. Moreover, the product found a niche in the emerging complex economies of the region in the fourth and third millennia.

Wine in Early Bronze Age society

The earliest evidence for the domestication of *Vitis vinifera* and the production of wine in the ancient world can be found in Transcaucasia – specifically the Neolithic sites of Shulaveris-Gora and Shomu Tepe in Georgia (Ramishvili, 1983; Zohary, 1995; McGovern, 2003). These Caucasian cultures had a long history with *viti-* and *viniculture*. However, the domestication and exploitation of the grape inevitably occurred in several places at different times. Paleobotanical evidence from Tell esh-Shuneh in the north Jordan Valley suggests that the grape vine was already domesticated by the Late Chalcolithic period. Whether or not wine was being produced with these grapes is indeterminable; however, McGovern posits that the numerous cups, goblets and cornets that characterize the Chalcolithic ceramic assemblages is suggestive of an early

¹¹ These numbers should be taken with some reservation as they are based on modern land classifications, and changes in land use over five thousand years would have been legion, in addition to the fact that arable land can also be used for animal grazing as well.

¹² These measurements illustrate the extreme minimum temperatures under which plants can survive and grow, and are constructed from the mean monthly extreme minimum temperatures of a region, measured from various meteorological stations over several decades.

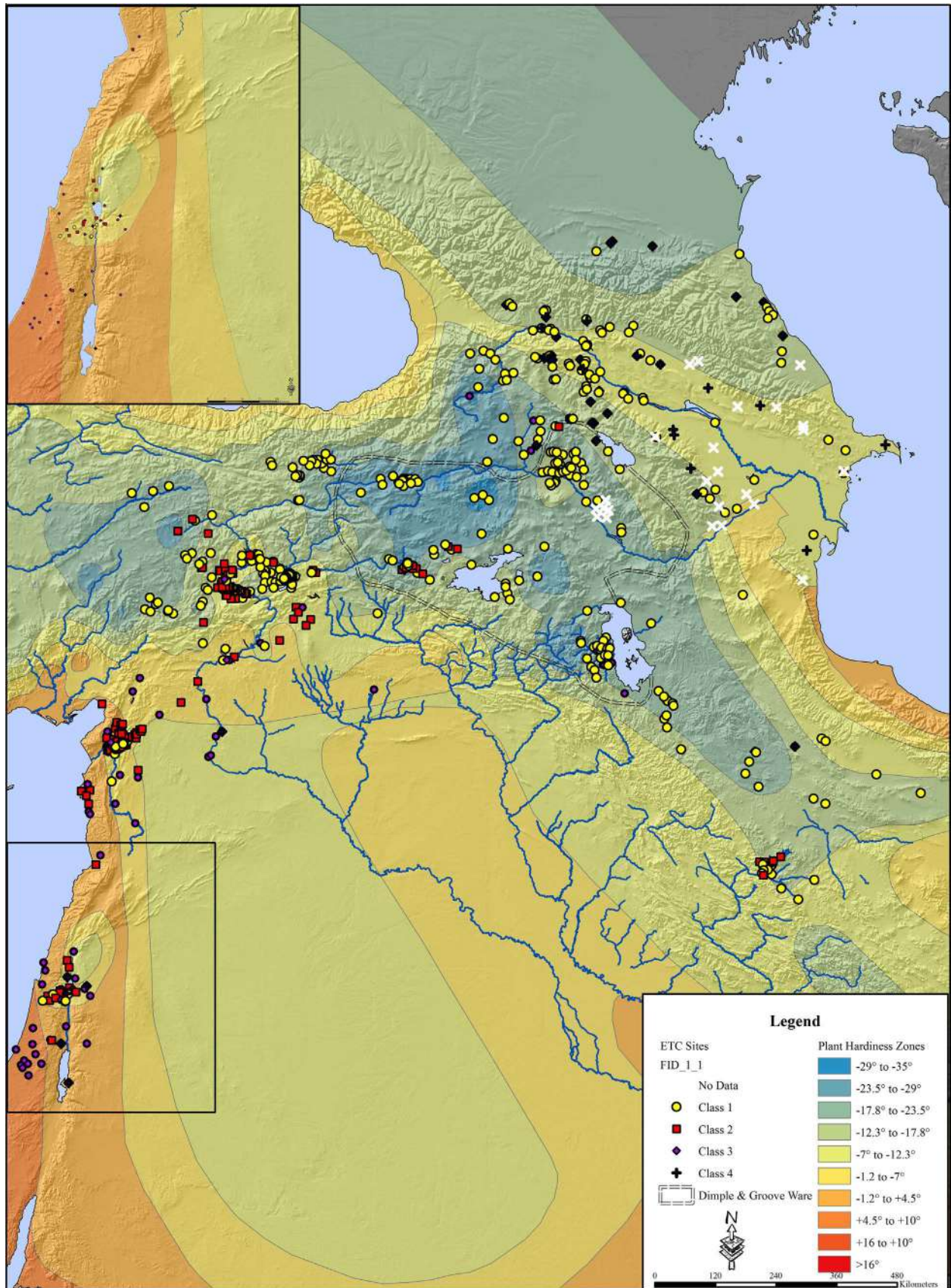


Fig. 3. Distribution of classified settlements with ETC wares according to Plant Hardiness Zones.

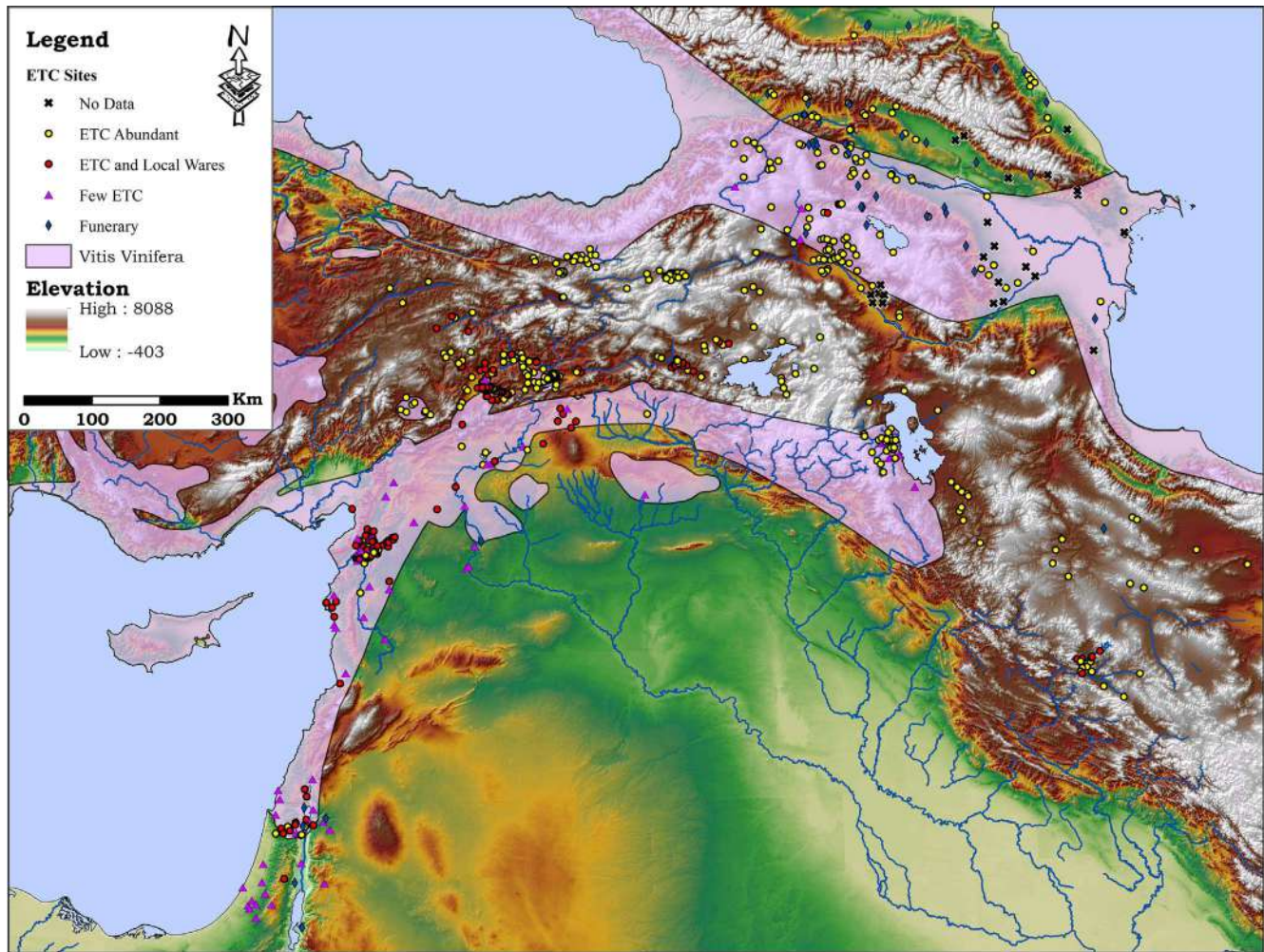


Fig. 4. Distribution of classified ETC sites in relation to the modern distribution of *Vitis vinifera sylvestris*.

'wine culture' (2003: 219, 302–5), although evidence for extensive viticulture and wine production for this period is, at present, not definitive.

Grapes begin to appear in ever-increasing quantities in the archaeobotanical record of the Near East in the 4th and 3rd millennia BC. In the Southern Levant, by EB I there is evidence for viticulture found over a significant portion of the Palestine, and in some of the most harsh and arid regions, suggesting that the plants must have been deliberately planted and grown in these areas. Furthermore, we have come to understand that wine is being produced for the growing elites of Egypt, as evidenced by the 700 jars of locally produced Syro-Palestinian EB I Line Group Painted Ware vessels that produced botanical and chemical evidence of 4500 liters of resinated wine in the Dynasty 0 tomb U-j of King Scorpion at Abydos (ca. 3150 BCE) (McGovern, 2003: 391–94). Settlement data suggests a dramatic increase in small 2 ha sites in the hill country, a region which in antiquity produced most of the wine in the region, perhaps suggesting that demand from Egypt was also encouraging the establishment of villages specializing in viticulture (Finkelstein and Gophna, 1993: 12). By EB II, a sophisticated wine industry having developed in the Nile Delta under the auspices of the king, begins supplying a significant amount of wine to markets in Egypt (McGovern, 2003: 86–88). There is also a shift in Egyptian focus to the north as maritime trade with Lebanon emerges. Palestinian wine is still imported, but in significantly lower levels, resulting in the collapse of the nascent Palestinian wine industry,

further evidenced by the abandonment of the earlier EB I hill country settlements.

In Mesopotamia, cuneiform sources confirm this date with the Sumerian for wine (*GEŠTIN*) emerging in tablets dated to the Late Uruk period of the 4th millennium (Green, 1989: 44). References to wine and other grape products increase in frequency over the latter part of the 3rd millennium (Powell, 1995). The archives of Mari in southeastern Syria provide a telling clue as to when wine changes from a rare, exotic item to a more widely circulated and prestige commodity. Archives from the site dating to the 3rd millennium suggest beer was commonly rationed out as payment for service to the king, while the import, export and redistribution of wine was heavily controlled by the palace (see below; Milano, 1989: 219–230). This, however, changed in the 2nd millennium, when Mari is known to be an important importer and distributor of wine for southern Mesopotamia and wine appears to have been rationed out more than beer (Milano, 1989). Wine production appears to reach its peak in the 1st millennium, when Assyrian sources record the daily distribution of wine rations to both men and women in the service of the king, suggesting that by this period, production had already increased to the point where it was no longer an high status item (Kinner Wilson, 1972). It is therefore sometime in the third millennium that wine production as an industry seems to have taken root in the Near East, and moreover it undergoes the change from an rare and exotic, prestige item to an available, but high status commodity.

The production and consumption of alcohol and the roles they played in social, political, and economic realms of a society, is a topic that has recently begun to receive a great deal of attention in archaeological literature (Heath, 1987a,b; Dietler, 1990, 2006; Heath, 1995; Joffe, 1998; Helwing, 2003). Moreover, even though some of the earliest discussions about the role of alcoholic beverages in the rise of complex societies involved Near Eastern cultures (Braidwood et al., 1953), its position as a focus of investigation has been comparatively limited. These earlier Near Eastern studies also focused primarily on beer and its roles in health and nutrition, ritualistic functions, and creating and reinforcing social identity (Joffe, 1998).

For most of human history, alcohol has been among the most highly accessible psychoactive agents, and therefore has been an important social, economic and political variable in the development of culture, although its role may have varied over time and space (Dietler, 2006: 232). With respect to the emergence of complex societies, alcoholic beverages regularly form an important part of the development of hierarchical social structures. Specifically, they tend to be an important “mechanism for reorganizing agricultural production for intra- and inter-societal exchange, labor mobilization and centralized distribution and as elite symbols” (Joffe, 1998: 297).

Many scholars investigating the development of alcoholic beverages such as beer and wine would argue that they are an accidental outgrowth from the storage of agricultural surplus (Dietler, 1990). However, in many respects the two beverages form opposite ends of an economic and symbolic spectrum. Beer in the ancient world was significantly different from the modern beverage of the same name. It was generally lower in alcohol, less inebriating, and used more as a source of protein and a beverage free of parasites, which would be of considerable importance in the ancient world (McGovern, 2003). Beer can be brewed from almost any grain in household storage, and as a result can be made any time of the year as a common domestic activity. It does not, however, store well, spoiling within a few days of production, and must be consumed immediately. Furthermore, given the fermentation process, the volume of beer produced was generally significant. Producing large amounts of a drink that spoils quickly also meant that consumption was usually spatially and temporally tied to production (Dietler, 2006). As a result, beer required large groups for consumption and, therefore, was an ideal medium for organizing labor forces. Accordingly, beer is a form of alcohol that had a low commoditization factor.

Wine, on the other hand, is a commodity that can only be created once a year when the grapes are ripe and harvested. It is not the result of household production, but of a highly skilled workforce, requiring specific facilities. With proper stabilizing agents, such as terebinth resin, which was used as far back as the fourth millennium (McGovern et al., 1995; McGovern, 2003), wine can be preserved for a much longer period of time and is eminently more storable than beer. Wine could be accumulated in large quantities, and traded over significant distances and, therefore, had a greater potential to become a circulating commodity (Dietler, 2006). By its limited seasonal production and the fact that it is a consumable good, by its very nature, wine is, in a way finite, and therefore has the potential for a higher economic and symbolic value – a product which could generate meaning related to social identity and/or the status of the user. As a commodity of high value, political actors within societies could use wine as a prestige good as they compete for political and economic power and advancement (Dietler, 2006). When locally produced, it served as a renewable prestige good with an important role in networks of exchange and redistribution, as stores could be replenished every year. The developing elites in regions of northwestern Syria acquired such items of high symbolic value through elite-sponsored

production, essentially a wealth-finance system (cf. D’Altroy and Earle, 1985; Brumfield and Earle, 1987; D’Altroy and Hastorf, 2001). In such a system, which more generally characterized northwestern Syria in the Early Bronze Age, high prestige objects would be used to define an individual’s social and economic standing and would be amassed by the individuals of higher status and redistributed to their followers (Akkermans and Schwartz, 2001: 232).¹³ As a product with a potentially highly symbolic value in a wealth-finance system, wine played a role in the social construction of competition, corporate identification, power, status and gender in urban areas such in Western Syria, as well as the southern Levant and Egypt (Joffe, 1998: 298).

If we are to link the ETC to viticulture and wine production for developing elites, we would expect ETC sites to be found in regions with ideal conditions for the growth of grapes (i.e., where they could grow naturally) and the social, political and economic demand for the product. Furthermore, they would have to be in cultural and political landscapes where the high symbolic potentiality of wine would be translated into a high symbolic value, which would be used as a means to further or reinforce an individual’s social or political standing. The ETC, with their long history of viticulture and viniculture skills, would have been in the ideal position to migrate into these politically dynamic environs once the social and political landscape was ripe and fill a potential economic niche. Later, at the end of the third millennium when we see changes in the socio-political systems, the control and distribution of wine becomes more cemented under the individual of the highest social standing – the king (Akkermans and Schwartz, 2001).

Therefore, it is in the formative periods of the Early Bronze Age, the period in which the ETC expands into Eastern Anatolia and northwestern Syria, which we would expect to see the expansion of horticultural practices and their products, specifically wine. Moreover, we would also expect to see evidence for the increasing demand for wine in the archaeological record.

The archaeology of the ETC and evidence for *viti-* and *viniculture*

The earliest evidence for viticulture and viniculture in the ancient world is found in Transcaucasia – the homeland of the ETC (McGovern, 2003). One could infer then that these local groups would have had significant experience with the cultivation of the vine, and would have had a long tradition of viticultural skills, including the skills necessary to adapt it to or, more importantly, expand production into new regions.

Evidence specifically linking the ETC and *viti-* and *viniculture* can perhaps best be seen at the Areni-1 cave site in Armenia, where the earliest wine press has now been excavated dated to the 4th millennium (Hans et al., 2011; Wilkinson et al., 2012; Areshian et al., 2012) and may be associated with ETC material culture.¹⁴ As the discovery is recent, and excavations are ongoing, details are presently sparse, but have the potential to shed significant light on the relationship between the ETC and wine production.

The site of Arslantepe further corroborates the link, showing that the local domestication of the grape coincides with the intro-

¹³ Although we cannot say with absolute certainty that we understand the socioeconomic organization of northwest Syria in the Early Bronze, the appearance of numerous high status metal objects in burials at the beginning of the EB is generally used as evidence for a wealth financed system (see Frangipane, 2007; Peltenburg, 2007; Philip, 2007).

¹⁴ The attribution of the Areni-1 Cave complex would appear to be under debate amongst the excavation team. Hans et al. (2011) is vague as to which cultural assemblage is to be associated with the wine press, but would appear to suggest the ETC. Wilkinson et al. (2012) directly associates the wine complex with the ETC, while Areshian et al. (2012) is quite emphatic about its association with the contemporaneous Maikop culture occupation at the site. We will have to await further excavation and processing of the material for resolution to these conflicting views.

duction of the ETC culture in the region. The excavations of the VIB2 settlement (see above) produced concentrations of grape pips in a vessel in one of the houses of the ETC village (Belisario et al., 1994). Morphological analysis of the seeds shows a mixture of wild and domesticated traits and some with shared characteristics. This pattern of mixed domestication has been suggested as indicating that the vine was introduced to the area (Belisario et al., 1994: 81). Although both wild and domesticated seeds had been found in the previous VIA levels (Balossi Restelli et al., 2010), but in limited quantities, the evidence suggests the domestication of the vine at Arslantepe coincides with large-scale occupation of the region by ETC groups, who are producing wine in a domestic context on the outskirts of the citadel where the elites would likely have resided.

Perhaps the most dramatic evidence linking the ETC to wine is found within the ETC ceramic corpus itself, which is dominated by vessels interpreted as common forms for the storage, serving and drinking of wine – a “Wine Culture” corpus (McGovern, 2003). As a prestige item, consumption would initially be primarily limited to the elite members of society, and as a result a ‘Wine Culture’ corpus would be concentrated in elite contexts. However, as access to wine becomes more common in society through perhaps an increase in volume, it becomes more widely embedded in the culture, spreading from the elite to common people. This is particularly visible in the archaeological record through widespread use of a special kit or groups of vessels produced specifically for the storage, preparation and serving of wine. The best examples of these can be seen in well known Classical Greek vessel forms such as amphorae for storage, *kraters* for mixing, *oinochos* for serving, and *kylixes* for drinking. Furthermore, these ‘wine kits’ are among the first vessel forms to be transferred from one culture to another with the introduction of wine, spreading from the elites over time. The transfer of a ‘wine kit’ from one group to another is best documented by Dietler’s (1990) study of Greek and Etruscan contact with the peoples of Iron Age southern France.

The late 7th century BC sees the first contact between the Iron Age cultures of southern France and Etruscan wine traders, evidenced by the overwhelming volume of ceramics used for the transport and consumption of wine found in the region. By 600 BC, the Greek colony of Massalia (modern Marseilles) is founded by Phocaeans who traded locally produced wine and Athenian fine wares, consisting of almost exclusively of drinking cups, with the indigenous inhabitants. Of particular interest here is the element of cultural borrowing that resulted from this direct contact between Mediterranean cultures and the indigenous groups of southern France, namely the imitation and hybridization of wine drinking and serving vessels (Dietler, 1990: 353–355).

The difficulty of this analogy is trying to determine if similar ‘wine kits’ are detectable in other cultures less well documented than the Greeks. Although it is undeniable that vessel form is linked to its function (Rice, 1987: 210–212), one cannot easily determine the function(s) of a vessel; let alone what it had contained, by form alone. Some, like Matson (1965: 204), would go so far as to suggest “it will never be possible to assign specific functions to individual vessels”. As theoretically valid as this might be, it is not helpful in attempting reconstructions of the past. Essentially, we need a starting point with which to build and test models to understand the data. Even though the function of vessels identified as goblets are based on analogy with modern drinking vessels, and is technically ‘not demonstrable’ (Mazzoni, 1994: 249), at some point common sense must prevail over theoretical idealism. In determining the possible function of ETC vessels there are some significant characteristics in form, fabric and finish that set it apart from other ceramic industries in the regions in which it is found. First, although most are moderately to poorly fired, and formed of coarse, porous clay, the burnished finish – which forms an effective

sealant – predominates on the corpus, making them ideal for containing liquids, irrespective of construction material and firing. Second, the most distinctive and, in many cases, most popular form throughout the entire ETC distribution zone, is the *cyma-recta* (or S-shaped) bowls, cups and moderately-sized jars (Fig. 5). These shapes, along with discoid lids, are most frequently heavily burnished and exhibit some form of decoration, be it the red-black color combination, incision, or plastic decoration that can be seen as suggestive of a special function or use (Batiuk, 2005).

Pithoi for liquid storage are well known from a wide variety of Near Eastern and Eastern Mediterranean contexts. Most ETC jars are rather wide-mouthed in nature – not the ideal shape for the transport of liquid, but acceptable for storage. Within the ETC corpus there is a group of *cyma-recta* or s-shaped store jars that are particularly abundant. Like the *cyma-recta* cups, the s-shaped store jars are heavily burnished and decorated, suggestive of a usage different from the remainder of the assemblage. They also have thick walls and are often accompanied by a narrow base that probably would have sat in a hole to increase stability. These vessels bear remarkable resemblance to Georgian *kvervi* or Armenian *dergis*, the traditional vessels in which wine has been made and stored for centuries in the Caucasus. Today these wide mouths of these jars are covered with a disk-shaped lid – another form that is also abundant in the ETC repertoire. The narrow base allows for the sediments of the wine to collect, while the wine is served through the wide opening at the top. The disk-shaped lids are also heavily decorated suggesting a more specialized use than for plain cooking pots (Batiuk, 2005).

Restricted necked bottles are curiously rare in ETC assemblages, and the lack of amphorae-like storage vessels for wine at first seems troublesome. From a conventional standpoint, liquid storage transport vessels should have a narrow mouth with restricted access as the narrower opening reduces spillage during movement, and additionally they are easier to cork. This vessel form is best typified by the amphora – an ideal vessel for transporting liquids. This however belies a Mediterranean (specifically Greco-Roman) prejudice that did not apply to a majority of cultures in the Near East, especially in pre-Classical periods.¹⁵ Although traditionally, transport could and, in all probability, did occur in rather bulky and breakable ceramic vessels, wine may have been transported and stored in wine skins (as it frequently was in Georgia prior to the 20th century) (Chilashvili, 2004). Skins for the storage and transport of liquids, known in Sumerian as *KUŠ.UMUD* (Akkadian *Maškū*), have a long use in the history of the Near East, attested to in the Sumerian period of the 3rd millennium. Neo-Assyrian reliefs illustrate the function of skins in a variety of situations, including the transportation of wine. More significantly, the bronze bands from the famed Balawat Gates of Anshurnasirpal II (884–859 BC), now in the British Museum, show men from the land of Unki, the Iron Age name for the Amuq Plain (see below) delivering skins of wine to the Assyrian king as tribute. Wine appears to have been particularly abundant in Unki in the period and was second largest supplier of wine after Gilzanu (perhaps the southern Lake Van area in modern Turkey) during the reign of Shalmaneser III (859–824 BCE). Later still, Herodotus in his *Histories* even describes the shipment of wine by south Caucasian Armenian traders down the Euphrates River to Babylon in wine skins (Book I: 193). Therefore, even though the ETC ceramic repertoire directly omits some traditionally distinctive

¹⁵ Greco-Roman trade was heavily dependent on sea transport trade, and the amphora was specifically designed to be able stack in the cargo hold of a ship. The weight of the transport medium was not as important as its durability. With the exception of the Levantine coast, where liquids were shipped in amphora-like Canaanite store jars, trade in the rest of the Near East for much of its history was conducted by overland caravan trade. Weight of the transport medium would be of tremendous concern as more weight results in fewer products and less profit.

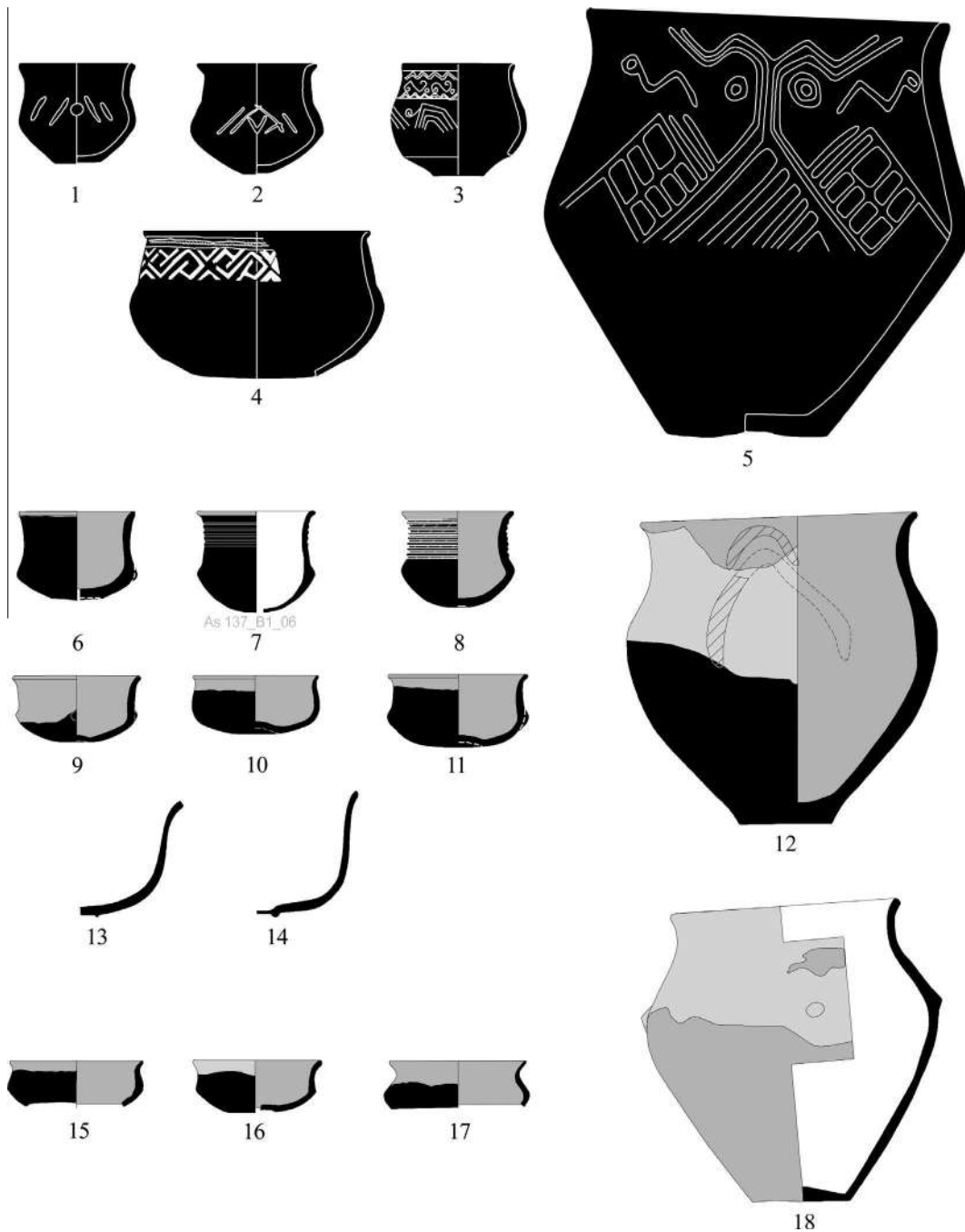


Fig. 5. The ETC Wine Kit: Cyma-recta vessels from north-eastern Anatolia/Georgia, the Amuq and Palestine, scale 1:4. Drawings 1–2 from Karaz, adapted from [Palumbi, 2008](#) 6.3:2, 4; No. 3 from Khizinant Gora; No. 4 from Shengavit, adapted from [Sardarian, 1967](#) Fig. LXII. No. 6–12 from the Amuq Valley Survey (various sites) by author; 13–4 adapted from [Braidwood & Braidwood, 1960](#) Fig. 269:9, 10; No. 15–17 from Khirbet Kerak, adapted from [Greenberg et al., 2006](#): Fig. 3.46: 12, 13, 11; 3.26:10.

vessels forms tied to the more traditional Mediterranean 'Wine Culture', by combining the ETC corpus of ceramic vessels and local ethnographic and Near Eastern parallels, one can safely reconstruct such a culture within the ETC

ETC distributions, pastoralism and Dimple and Groove Ware

When examining the distribution of the ETC with regards to the distribution of *Vitis vinifera* (Fig. 4), it rapidly becomes evident that a portion of eastern Anatolia/Armenia (in particular, the Muş-Van Region) and Central Western Iran (with significant concentrations of Class 1 and 2 settlements) are not home to the wild varieties of modern *Vitis vinifera*. The discovery of a Late Chalcolithic wine jar

and grape wood at Godin Tepe Period VI:1 (formerly Period V, approximately 3200–3000 BC) in Kangavar ([McGovern, 2003](#)), combined with the shared geographical and ecological characteristics of the Kangavar Valley with the Georgian homeland, could be indicative that grapes had grown in these regions in the past. One could even argue that the environment around Godin was different enough in the past that wild grape vines naturally grew there in antiquity, or perhaps was introduced and grown with human intervention. Historical sources also illustrate how parts of eastern Anatolia, as well as the Khabur region, were wine producers in the Iron Age (in the Urartian and Neo-Assyrian Empires), but only with significant intervention at the state level through the production of irrigation works (cf. [Ur, 2005](#)). A simpler explanation,

however, might be that another ecological niche was being exploited by the ETC in these regions. Rothman has identified a particular subset of ETC wares that he has called ‘Dimple and Groove Wares’ (2003). Looking at the distribution of Dimple and Groove Ware, Rothman notes that these vessels are confined to regions that are agriculturally marginal but contain the largest amount of pasture useful for sheep and goat herding (Rothman, 2003). Accepting that pastoralism was an important segment in ETC culture (cf. Cribb, 1991), albeit not the dominant economic strategy as previously assumed, it is possible that some sub-set within the ETC were primarily pastoralists. Rothman suggests that these ‘Dimple and Groove’ ceramics may represent this particular subset of the ETC population that was more reliant on pastoralism than farming (2003: 214). Interestingly, the distribution of this Dimple and Groove Ware fits almost perfectly within the gap in the distribution *Vitis vinifera* in eastern Anatolia that produces a significant number of ETC sites (Fig. 6).

The lack of *Vitis vinifera* in the Khabur and central Anatolia – two areas that also lack ETC sites but are known historically to have been important wine production regions – is worthy of further consideration. Both regions had large Early Bronze urban centers that would have been prime markets for a prestige item like wine. And both regions were major producers and consumers of wine later in the Middle Bronze Age (ca. 2000–1600 BCE). An explanation for the difference between a region like the Khabur where the ETC is rare and, for example, northwestern Syria where

the ETC thrive, may be more the result of the political and economic organization of the areas than environmental factors. In their staple finance economies, wine did not play as important a social role as it did in wealth finance economies of Western Syria, in elite identity construction and organization of power (see above).

The evidence indicates that specific ecological and economic niches were being pursued by the ETC, and these niches are heavily tied to the distribution of *Vitis vinifera*. Acknowledging the limitations of a direct correlation of the modern distribution of the modern wild vine and the ancient ETC settlement patterns, is there a more definable ecological niche within the settlement clusters that can be associated with viticulture that can solidify a link between the ETC and wine production?

ETC settlement patterns, “terroires” and “bodegas”

‘Terroire’ is term used in viticulture to represent the sum effects of geography and ecology on the quality of wine. In general, vines prefer well-drained soils, with volcanic or calcareous soils being the most productive environments (McGovern, 2003). Plant variety, soils, drainage, weather conditions, aspect, and slope all play an important role in the character of the resultant wine. Quantification of these characteristics is difficult and controversial but has a long history. Pliny the Elder, the 1st century AD Roman writer, appears to be the first explicitly to develop the concept of the

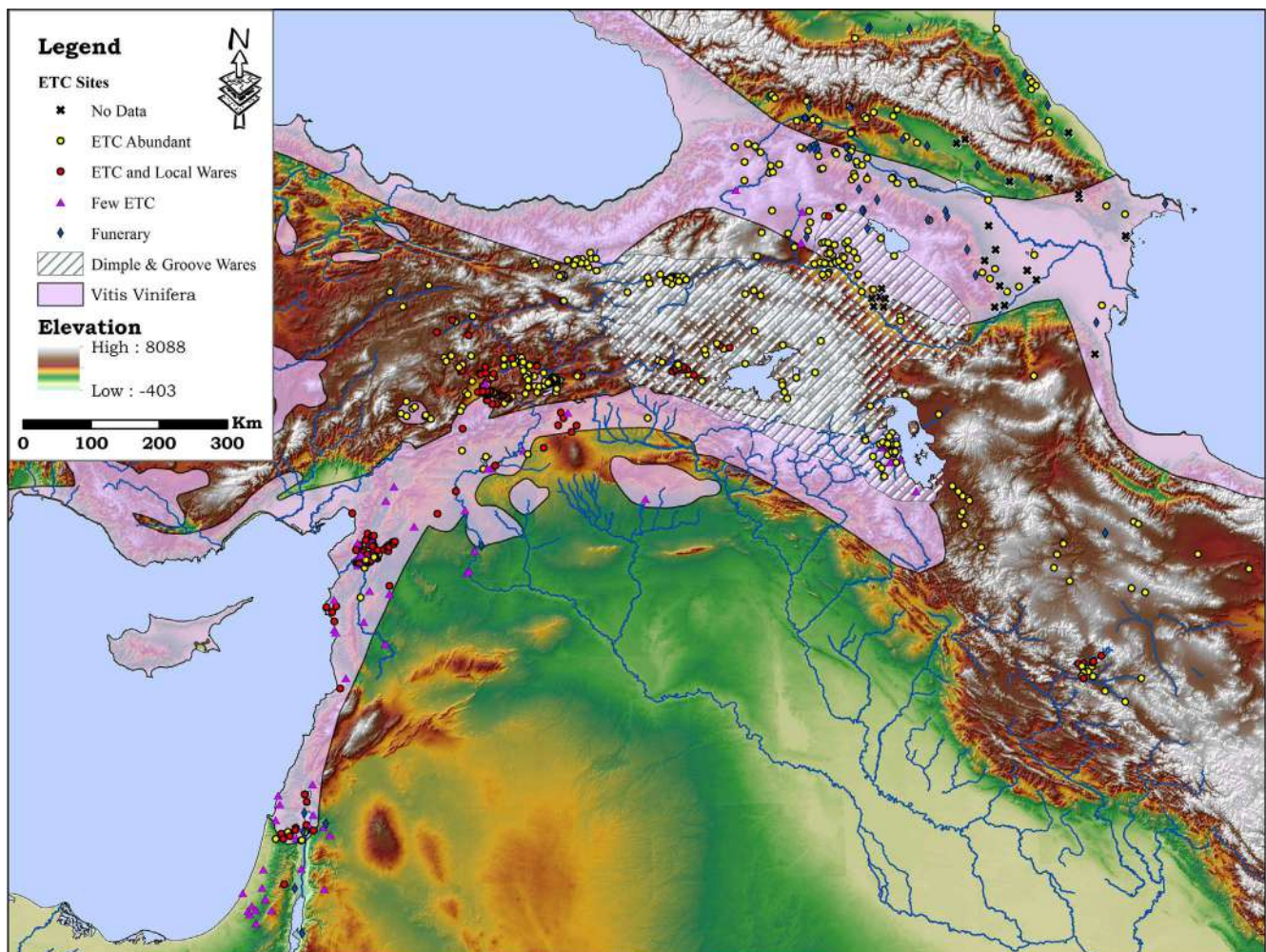


Fig. 6. Distribution of classified ETC sites in relation to the modern distribution of *Vitis vinifera sylvestris* and Dimple and Groove ETC Wares. After Rothman, 2003.

'terroire' noting that the best Roman wines come from mid slopes (i.e., 10–20°) and have southern exposure to maximize exposure to sunlight (*Historia Naturalis* XVII.2.3). However, many who look at the history of *viti-* and *viniculture* fail to realize that it has a recorded history beyond the oenophilic Greek and Roman cultures. Already in the Late Bronze Age, texts from the North Syrian site of Ugarit (some 9 km north of the modern city of Latakia on the

Syrian coast) categorized wine as 'Good' or 'Not Good' based on which farms they came from (Liverani, 1989). It is interesting to note that, although we are not provided with details for the qualifications of good or bad, we can at least rule out these designations being based on spoilage, as those are specifically noted as 'destroyed' in the texts (Liverani, 1989). In New Kingdom Egypt, wine jars recorded not only the year of production, but also the region, vineyard and quality of the wine (Lesko, 1995); suggesting similar attention was paid to the link between vineyard location and the quality of the final product. Given some of these basic characteristics, is there evidence of a specific 'terroire' being exploited by the ETC in their settlement patterns?

Looking at the distribution of ETC sites, it is clear that a large number of them (46%) are found on slopes with gradients of less than 2° (Figs. 7 and 8). The second largest grouping (29%) are found on 2–5° slopes. Interestingly, only 10 sites (1.5%) are found on slopes over 20°, slopes that are generally considered better suited for pastoral activities. However, not all vines are found on slopes of 10–20°. Rather we find here only those identified as producing 'superior' wines by Pliny's standards. In fact, Pliny is not entirely consistent with the primacy of mid-slope situations. He actually identifies three different slopes where grapes are grown: *Caucinian*, vineyards on high mountain slopes; *Faustian* from mid-slopes; and *Falarian* from the low slopes, with *Falarian* being the most popular among the patrician class (Hornsey, 2007: 38). Not surprisingly,

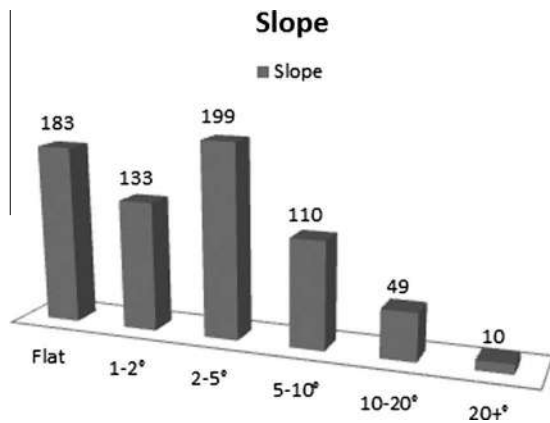


Fig. 7. Graph of ETC sites organized by slope.

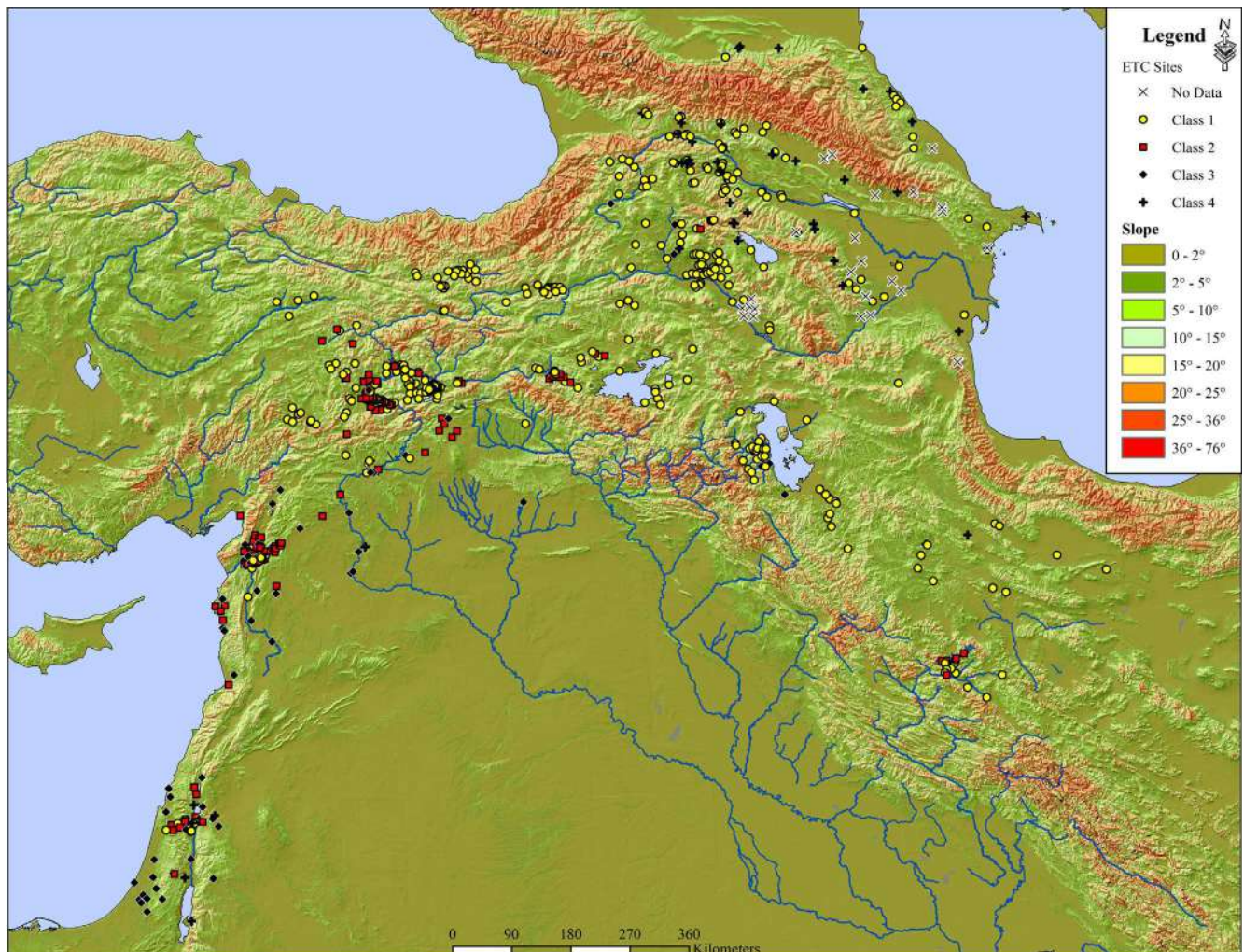


Fig. 8. Distribution of classified settlements with ETC wares according to slope of topography.

what makes a 'superior' wine is somewhat culturally biased. For example, the ancient Greeks considered anyone who did not dilute their wines uncivilized barbarians, whereas the act of watering down a bottle of Châteauneuf-du-Pape would be considered particularly uncivilized by today's standards. Additionally, wines prized today in the Caucasus (and Russia) are significantly sweeter than those admired by most western palates.

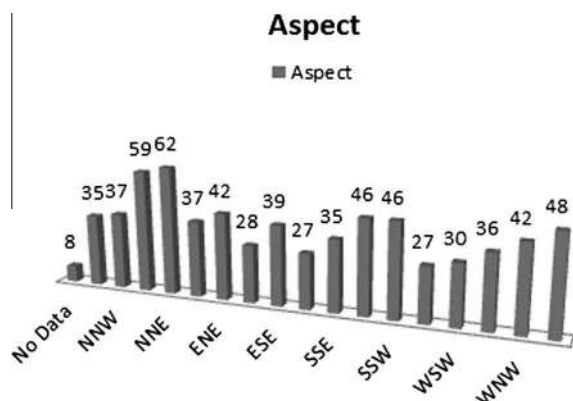


Fig. 9. Graph of ETC sites organized by aspect.

Contrary to Pliny, modern wine producing vines are often grown on slopes of less than 10–20°, or even on flat plains all over the world. For example, Rice's (1996: 190) examination of 16th century Spanish wine producing *Bodegas* of Moquegua valley in southern Peru (see below) highlighted that vine cultivation generally took place on flat valley floors frequently near confluences of the Moquegua River and its tributaries.

With regard to slope aspect (direction), although there is a slight tendency among the ETC sites towards northern exposure (Figs. 9 and 10), overall there is no real dominant aspect. Southern aspect is generally more desirable in cooler climates to maximize exposure to sunlight; in warmer climates, the more shady northern aspect is preferred to protect the vines from overexposure (Hornsey, 2007). Given the vast distribution, this is perhaps what is being reflected in the settlement patterns. 180 Class 1 and 2 sites, or 26% are found to have a southern aspect, and of those, only 7 (3.8%) Class 1 and 20 (11%) Class 2 sites are in the hottest PH Zones 10–12. All of the Class 1 and 2 sites in the southern Levant are found almost exclusively in the northern part southern Levant, in the cooler PHZ 8–9, 50% of which have northern exposure. With regards to northern aspect, 215 sites, or 32% would appear to have a northern exposure, and all but 37 of those sites are found in the PHZ 7 to 9. Of those 37 sites, all are situated in some of the coldest PH Zones (4 and 5), but are all exclusively found within Rothman's Dimple and Groove Ware region, and in theory be settled by the

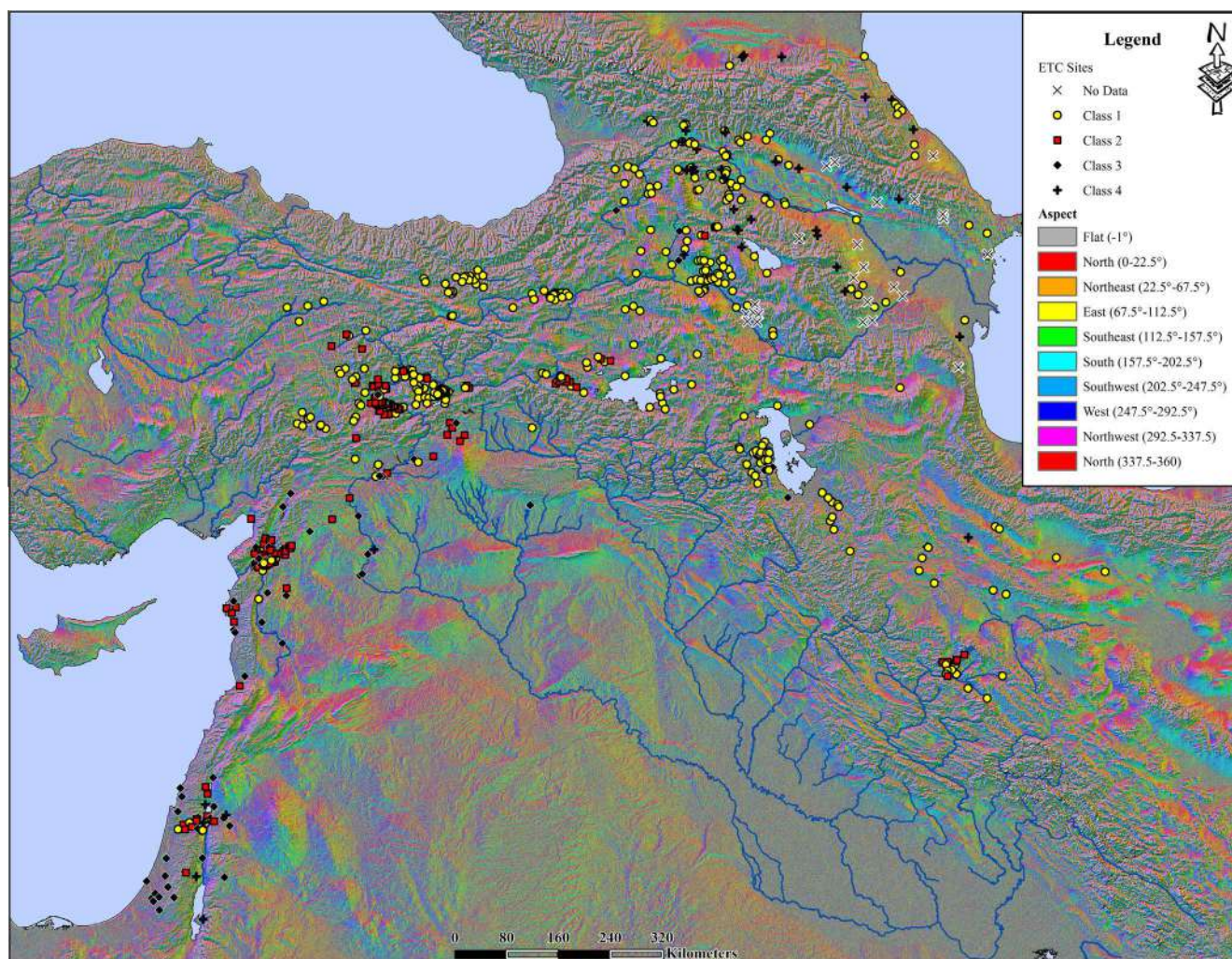


Fig. 10. Distribution of classified settlements with ETC wares according to aspect of topography.

sub-set within the ETC who were primarily pastoralists (see above).

At a regional level, the settlement data are the source of an even more powerful comparative model. In the Moquegua Valley, Rice identified numerous *bodegas* or wine production farms that dominated the landscape (1996). They consisted of small settlements situated on the valley floor alongside the margins of the valley (as opposed to the hill slopes). According to Rice (1996: 187–190), the establishment of the *bodegas* near the vineyards would decrease chances of grape spoilage during collecting and processing. There is also clear patterning in the distribution of sites, a tri-modal distribution with sites spaced approximately 0.22 km, 0.43 km and 0.6 km apart. In the upper valley and wider section of the valley, sites tend to be spaced the greatest distance apart and situated either near the confluence of streams, or along the valley fringes. In the middle valley, where it is its most narrow, and the river abuts the west side, sites are generally spaced more tightly, and are established on the east side, maximizing the available land. In the lower valley, *bodegas* are found on both sides of the basin, and are more moderately spaced apart, equidistant from the river.

The settlements, were generally small (c. 3 ha in size) and self-sufficient, combining both residential, agricultural, and industrial elements that allowed their inhabitants to perform all activities related to wine production, including such industrial activities as ceramic production, lime production, metal working, livestock management, and horticulture. Although Rice does identify some remains specially oriented towards wine production (i.e., wine presses and settling tanks), they are not as widespread as one might expect for a viticulture-based economy. She also notes that early 20th-century documents describe grapes collected in the Moquegua Valley as being crushed in wooden screens placed atop large wooden vats, suggesting that much equipment for wine production could be made of organic material not preserved in the archaeological record.

The Amuq Plain and the ETC

The Amuq Plain (Fig. 11) is situated on the modern border between Turkey and Syria. It consists of a roughly triangular alluvial plain 30 by 30 km in size, surrounded by the Amanus Mountains on the west, the Kurt Dağ to the east and the Jebel al-Aqra and al-Ala Mountains to the south. Snow is limited in winter, but its fertile soils are fed by many streams, rivers, and springs, providing rich agricultural potential along with pastureland in the surrounding foothills and mountains. The plain forms the northern extension of the Orontes river valley, and is fed by three major rivers, the Kara Su from the north, the Afrin from the east, and the Orontes River flowing from the south. Where the latter river enters the plain, it veers abruptly west across the southern portion of the valley and drains into the Mediterranean Sea. The Amuq is where the Levantine coast, the Anatolian Highlands, and northern Mesopotamia intersect and, as a result, this region has been a nexus of inter-regional contact since the Neolithic period. Occupation in the region is dominated by tell based settlements in the Chalcolithic, Bronze, and Iron Ages, with clearly defined settlement hierarchies.

Our current understanding of the archaeology of the region stems from the seminal work of Robert and Linda Braidwood in the 1930s (Braidwood and Braidwood, 1960), as well as renewed work by the University of Chicago in the 1990s (Yener et al., 1996, 2000; Yener, 2005; Batiuk and Harrison, 2000). The Amuq surveys have identified at last count 396 sites spanning the Neolithic to the Islamic periods, preserving some of the richest archaeological remains in the Near East. Furthermore, it provides an incredible database with which to examine changes in settlement patterns over time (Casana, 2003; Casana and Wilkinson, 2005;

Batiuk, 2005). The Amuq sequence spans the Neolithic to Islamic periods (Phase A–V). The chronological sequence, developed originally in the 1930s, has remained remarkably stable, serving as the cultural and chronological backbone for the archaeology of the Bronze Age of North Syria and southeastern Anatolia. In particular, the early periods Phase A–J (representing the Neolithic to the end of the 3rd millennium), have seen few corrections even in light of the recent investigations in the region.

In the Late Chalcolithic (Amuq Phase G, mid 4th to early 3rd millennium), the site of Imar al-Sharqi becomes the dominant settlement in the plain, surrounded by other small villages and hamlets. In the terminal part of Phase G (c. 3200–2750 BCE), the first ETC ceramics appear at a number of sites, followed by a dramatic increase of ETC wares alongside local wares during the following Phases H (EB II–III, c. 2750–2450 BCE) and I (EB IVa, c. 2450–2250 BCE). This increase in ETC ceramics corresponds with a dramatic increase and shift in settlement location from a few large sites in the center of the plain during the earlier Phase G period to a proliferation of small sites (1–2 ha) on the outskirts in the later periods. This shift in settlement has traditionally been attributed to Phase H based solely on the identification of ETC ceramics which have been used as the chronological marker of the period (Batiuk, 2005; Harrison and Batiuk, 2001). However, more recent careful re-investigations of the EB survey collections of the Amuq Survey are now identifying that the majority of this shift occurs in Phase I, based on the identification of local Phase I Simple Wares found alongside the ETC wares. Interestingly, this same pattern of the establishment of small settlements consisting of almost entirely ETC wares, frequently on the outskirts of the plain in prime agricultural territory is found in almost every region into which the ETC groups migrated such as the Malatya-Elazığ regions of Eastern Turkey, the Kangavar Valley in central western Iran, and the North Jordan Valley in Israel/ Palestine (Batiuk, 2005; Batiuk and Rothman, 2007).

The increase in settlements in the Amuq sees a rise in number from 24 sites in Phase G to 71 sites in Phase H/I. Additionally, there is as well a perhaps less distinctive regularity in site placement than seen in the Moquegua Valley, with again a trimodal distribution of sites of 0.65 km, 1.5 km, and 2.75 km, although it should be noted that given the geomorphological activity in the region, many settlements may be buried under alluvial deposits, hindering our ability to fully reconstruct the ancient settlement patterns (Casana and Wilkinson, 2005). Moreover, the aforementioned small sites (e.g., Tabara al-Akrad and Tutlu Höyük) yielded almost exclusively ETC ceramics,¹⁶ while the larger mounds like Tell Tayinat (c. 20 ha in size); the regional capital of the Amuq in the Early Bronze Age, yielded a more complex mixture of local wheel-made pottery and handmade ETC wares. In Phase J, the final phase of the Early Bronze (c. 2250–2000 BCE), it has long been suggested that we see the eventual disappearance of ETC wares in the region (Braidwood and Braidwood, 1960; Tadmor, 1964), and the apparent abandonment of the smaller ETC settlements on the valley fringes. However, the renewed University of Toronto excavations at Tell Tayinat show that contrary to Braidwood's initial understanding, traditional ETC wares are still found in Phase J, falling from 35–40% in Phase I to 5–4% in Phase J, preserved in a hybridized fashion in the Phase J coarse wares (Wellton et al., 2011).

Petrographic analysis of the ETC wares reveals that the production of ceramics is not only made locally within the Amuq Valley, but probably locally to each individual site (Batiuk, 2005). In addition, one site in particular – Tutlu Höyük, has produced significant evidence of metallurgical activities (Batiuk and Harrison, 2000). Taken together, these data suggest that the small sites, dominated

¹⁶ Interestingly, the majority of the local wheel-made wares found at these smaller sites consist of storage vessels, particularly for liquids.

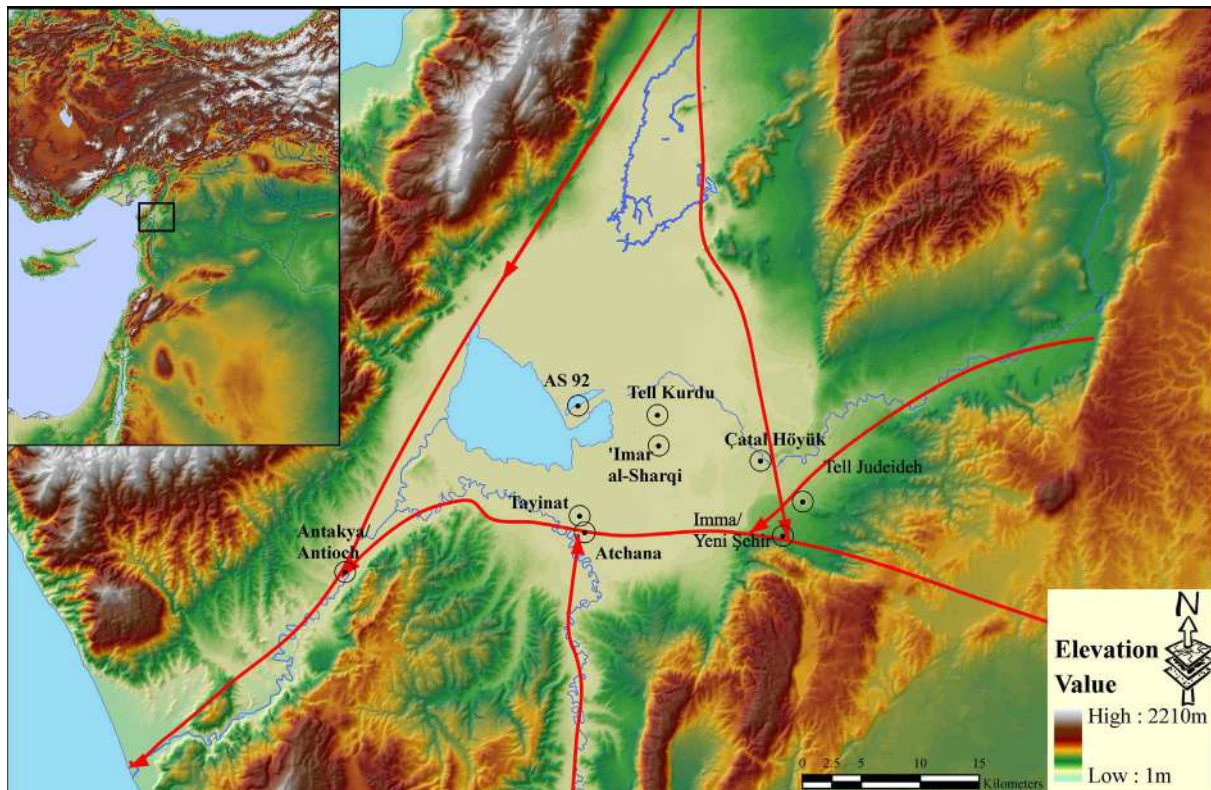


Fig. 11. The Amuq Valley, major archaeological sites and principle trade routes.

by ETC wares were themselves relatively self-sufficient, and undertaking multiple economic activities, much like the *bodegas* of the Moquegua valley.

Comparing the spatial data of the Moquegua viticultural landscape and the ETC settlement and ceramic data, particularly that of the Amuq Valley, considerable similarities suggest that wine production was the economic niche filled by ETC groups, at least in northwestern Syria. Across this same region, a process of economic centralization and greater integration occurs in the Early Bronze Age (Akkermans and Schwartz, 2001). In line with this economic integration, one could argue that, over time, a growing demand for wine emerged among burgeoning elites of the developing urban landscape. This demand would have created a market that could be filled by the ETC; a people with a long history of *viti-* and *viniculture* and the skills necessary to increase the production of grapes and produce wine to fulfill this increasing demand. These groups would continue to extend production into other regions, re-arranging production and integrating it into local economies. This was achieved by establishing small, dispersed production centers on the fringes of prime agricultural land and adjacent to large urban centers; similar to what was seen in EB I Palestine to increase production for the emerging Egyptian market. *Contra* Philip (1999), these individuals were not opting out of local subsistence patterns and larger social spheres, rather they were importing *their* subsistence practices into a new region through the production of wine. As a result of ETC settlement, volume of wine theoretically could have increased and it would be transformed from a specialized or elite product to a commodity of high prestige, but one that was readily available which could quickly become incorporated into local cultures. As a result, we see the emergence of a 'Wine Culture' in North Syria, readily observed in the spread of a ceramic repertoire focused on producing, storing, serving, and drinking wine in north Syria (Mazzoni, 1994).

Cultural reverberations: wine culture in the northern Levant and the ETC

It is generally argued that the effects of contact between two societies of different levels of social complexity will have the greatest impact on the less complex of the two involved in the interaction (Algaze, 2001: 63). Curiously, with regard to the ETC in northwestern Syria, it would appear that such an assumption is not entirely correct. Instead, one could argue that it was the more complex urbanizing indigenous societies that underwent significant cultural development that benefited from contact with the ETC, best observed in the ceramic record of the Amuq sequence.

As noted earlier, Phase G in the Amuq Valley sees the beginnings of intensive settlement in the valley and the onset of the urbanization process. The ceramic assemblage of Phase G generally resembles that of most of north Syria and southeastern Anatolia (Fig. 12), consisting primarily of wheel-made Chaff-Faced Wares (CFW) and Plain Simple Wares (PSW), in addition to other minor ware groups such as Incised and Impressed Wares (IIW), Reserved Slipped Wares (RSW) and Multiple-Brush Painted Wares (MBPW). Vessel forms vary chronologically and by ware type, but there does appear to be a general centralization of production within a region, with all the various local forms made with the same clays, and a marked continuity in manufacturing technique (Braidwood and Braidwood, 1960: 282). Platters dominate the PSW assemblage, along with small cups or small bowls with incurved rims, although tall cups or goblets start to emerge in the middle of Phase G. Jars and bottles are found throughout the phase.

RSW flourishes in mid Phase G and consists almost exclusively of large, thin-slipped jars and rare examples of small bowls. Jars with drooping cylindrical spouts are also found in the RSW assemblage, which are reminiscent of Late Uruk droop-spouted jars that have tested positive chemically for wine at other sites in the Near

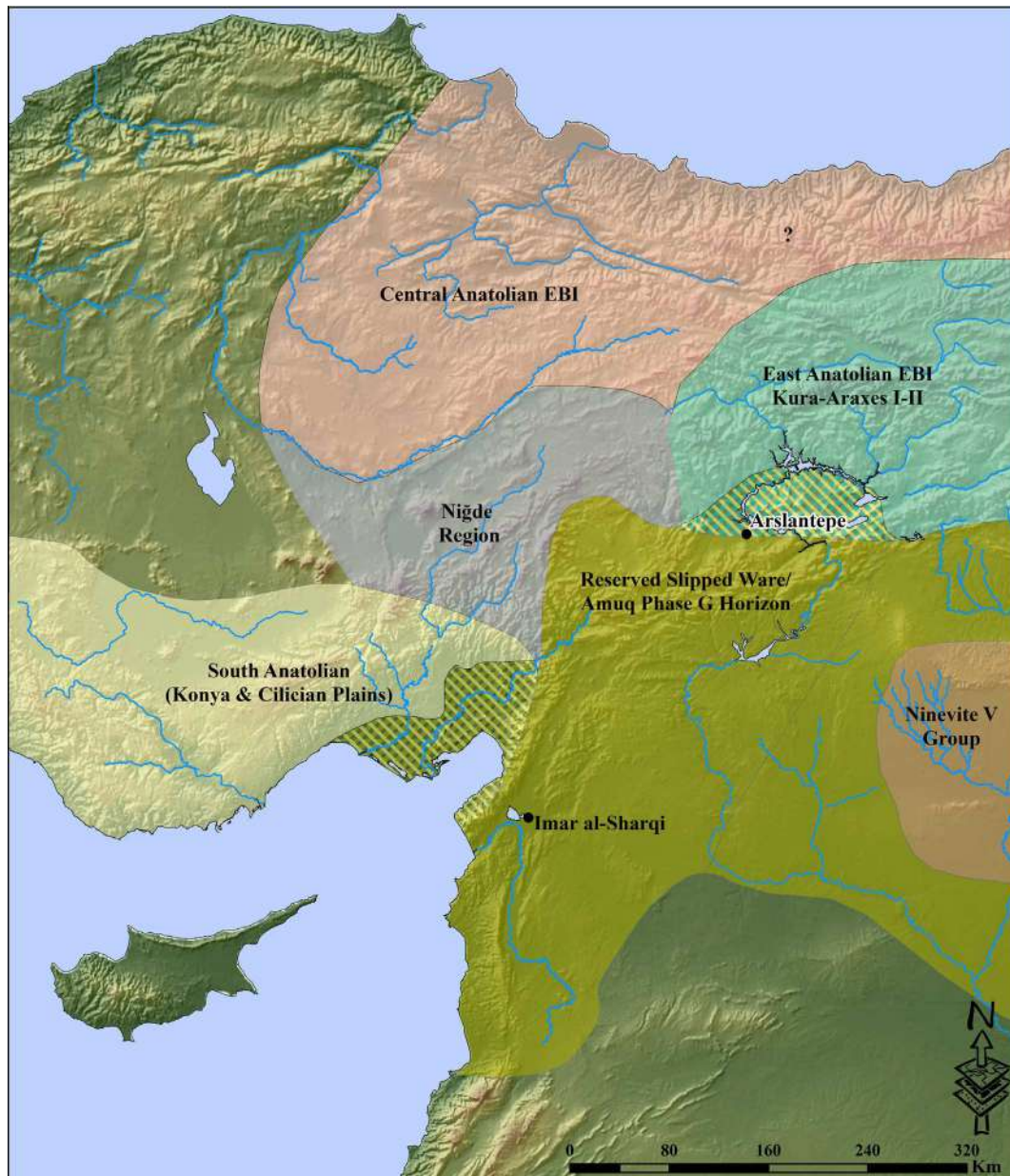


Fig. 12. Distribution of major Ware Groups in N. Syria (EB I–II) and East-Central Anatolia (EB I). Adapted from Mellaart, 1982.

East (McGovern, 2003: 161–163). Both IIW and MBPW seem to emerge again only in the middle of the Phase G sequence and for the most part mirror the PSW forms, with the exception of incurved cups and goblets, presumably for drinking, becoming more frequent in the MBPW assemblage in the later parts of Phase G.

What is evident are the beginnings of the centralization and standardization of ceramic production occurring in the middle of Phase G, at about the same point that ETC wares begin to emerge in the region. Of particular interest is the fact that a limited repertoire of ETC wares was introduced in this period, consisting only of small drinking bowls and kraters (making up approximately 2% of the assemblage). When looking at the mid-Phase G assemblages, one can observe the beginnings of a wine-kit, with small cups and goblets as well as numerous jar forms, particularly in the RSW assemblage. As the Amuq Valley is within the natural distribution of wild grapes, it is possible that wine was already being produced locally at this time and being consumed by local elites at centers such as Tell Imar al-Sharqi. However, the poorly repre-

sented state of the local 'wine-kit' vessels suggests its consumption was in all probability isolated to limited numbers of elites and not yet widespread.

The situation would appear to begin to change in following periods (Amuq Phases H and Early I, Fig. 13). During these periods, the monolithic nature of the ceramic groups that characterized southeast Anatolia and northwest Syria in the previous period fragments into numerous regional wares that differ in form, fabric and technology. In Phase H in the Amuq, the general Phase G assemblage continues with a dramatic increase in handmade ETC wares (to 52–55% of the assemblage) and includes a 'wine kit'. As noted earlier, the dominant profiles of the RBBW assemblage of the Amuq are bowls, specifically *cyma-recta* bowls, and cups (Batiuk, 2005: 153–154, Plate X, see Figs. 5 and 6–11) and a wide variety of large basins, kraters and jar forms.

The early part of Phase H wheel-made PSW assemblage does not differ much from that of Phase G, with small bowls or cups being present but relatively rare. Interestingly, the few develop-



Fig. 13. Distribution of major Ware Groups in N. Syria (EB II–III) and East-Central Anatolia (EB II). Adapted from Mellaart, 1982.

ments that do occur in the PSW shapes see the hybridization with ETC ceramics, incorporating the *cyma-recta* shape into the small drinking bowl or cup forms (see Figs. 5, 13 and 14), and the eventual development of truncated conical cups.¹⁷ RSW is still dominated by collared jars that are made of the same fabric as the PSW, IIW and MBPW, suggesting perhaps a shared production center for these various wares. However, RSW becomes less frequent throughout Phase H and disappears altogether in I. Additionally, a number of new jar forms emerge. The variety in the ceramic industry reflects the growth in cultural complexity introduced in the early Bronze, concurrent with urbanization that puts Syria on the political trajectory towards a city-state and regional state system.

In Phase I, a distinctive ‘wine kit’ emerges in the non-ETC wares, and it is found throughout northwestern Syria (Fig. 14). ETC wares continue to be found, but decrease in abundance (to 35–40%). Instead, a new ware group emerges called Simple or Caliciform Ware (making up 41–46% of the assemblage in the Amuq). This ware is an outgrowth of Plain Simple Ware, of the previous Phases G and H. Braidwood had noted in this new ware an emphasis on vessels for containing liquids or for drinking, most markedly with the explosion of initially truncated conical cups in the earlier part of the period, followed later by the introduction of simple goblets (1960: 520). There is a marked transformation with the development of Simple Wares corresponding with a decrease and or disappearance in the RSW, MBW, IIW, and the development of Painted Simple Ware assemblages, dominated by goblets. The probable shared production center for these earlier wares in the first part of the period, and their replacement by Simple Wares suggests a technological transformation with the homogenization of vessel forms across northwest Syria, which Mazzoni ties to a general

¹⁷ The incorporation of drinking vessels into the Phase H PSW wares is a pattern similar to what was observed by Dietler in southern France in the 6th century BC resulting from the introduction of Greek wine traders into the region (1990: 353–355).

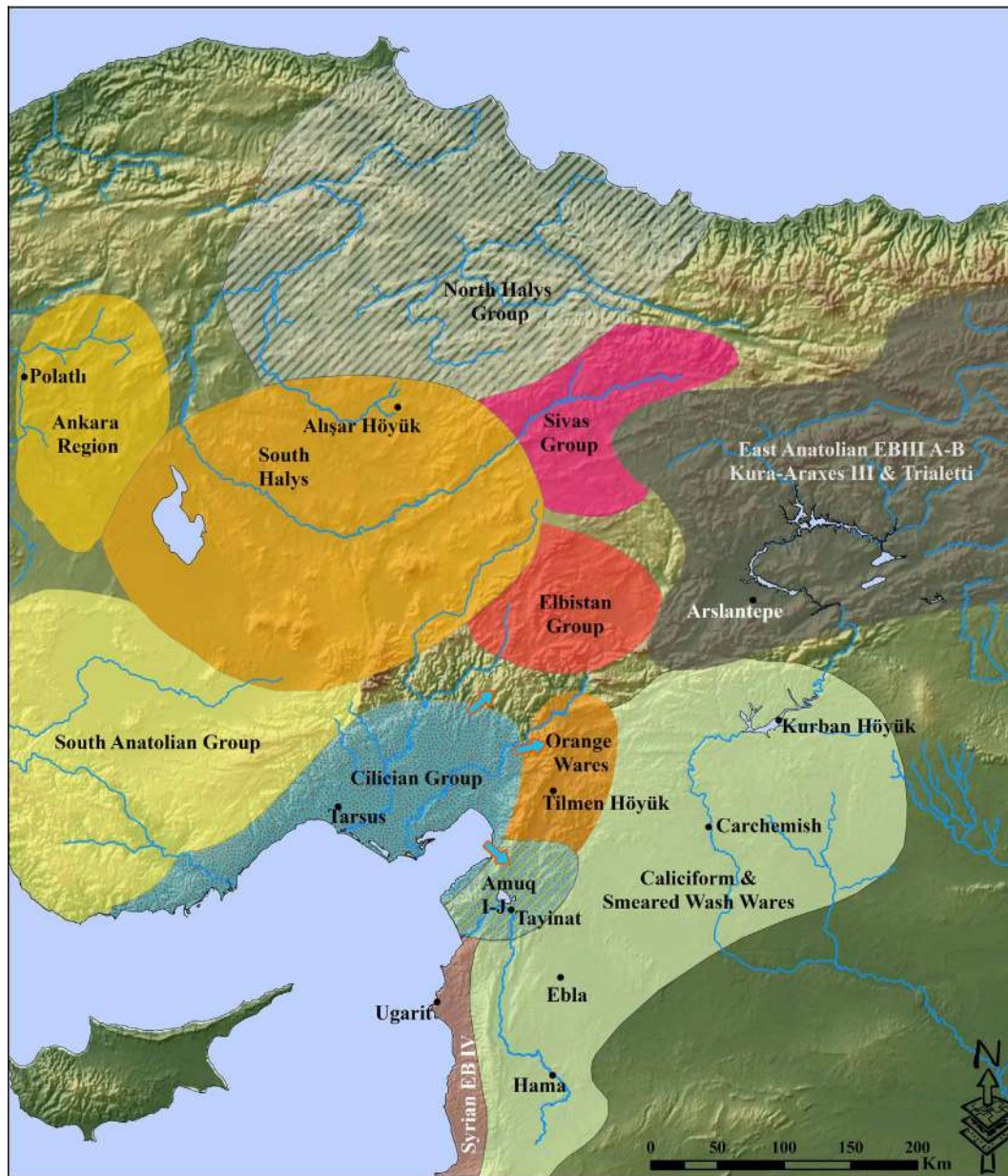


Fig. 14. Distribution of major Ware Groups in N. Syria (EB IV) and East-Central Anatolia (EB III). Adapted from Mellaart, 1982.

improvement in the economic conditions of the region, but is unable to identify the cause of the economic leap that emerges between the two periods (1985: 12). Given the shared function for these vessels – the consumption of beverages (Braidwood and Braidwood, 1960), Mazzoni further suggests that the explosion of vessels for the storage, preparing, serving and most importantly – drinking of beverages (see Fig. 15) could be tied to an explosion in the use of a utilitarian commodity of a liquid form (1994: 245). As the ceramic assemblage in question fits well within the definition of a ‘wine kit’, it can be suggested that this commodity that could be driving the economic leap, is wine. The conical cups, which are the hallmark of the later part of Phase H in the Amuq, are completely absent in the contemporary Pre-Palace G, IIA levels at Ebla. Rather, it is in the later Pre-Palace G IIB1 levels (Equivalent to early Amuq Phase I) that we see the slow introduction of the conical and corrugated cup (Mazzoni, 1985), followed by the goblet, suggesting that the drinking culture that so comes to dominate the Palace G levels, is introduced from elsewhere. As the form is first documented in the Amuq, we can posit it as the source of

the drinking culture. Therefore, one can see the “wine culture” of the ETC, introduced in Phase H (EB III), was adopted by the inhabitants of northwest Syria in Phase I (EB IVa) and into Phase J (EB IVb), the reverberations of which can be seen in the ceramic assemblage. Furthermore, this development coincides with the emerging state formation in the Amuq centered on Tell Tayinat and attested to in royal archives at ancient Ebla (Welton et al., 2011; Welton, 2011).

Production and consumption of wine in the Bronze Age of northwestern Syria

The site of Ebla (modern Tell Mardikh) in modern Syria, some 55 km southwest of the modern city of Aleppo, was the center of an important regional kingdom in the late 3rd Millennium. Excavations by the Italian team over the past forty-five years, and in particular the discovery of the royal archives of Palace G (c 2300 BCE – contemporaneous to Amuq Phase I), have dramatically altered our understandings of the cultures on the ‘periphery’ of the Mesopota-

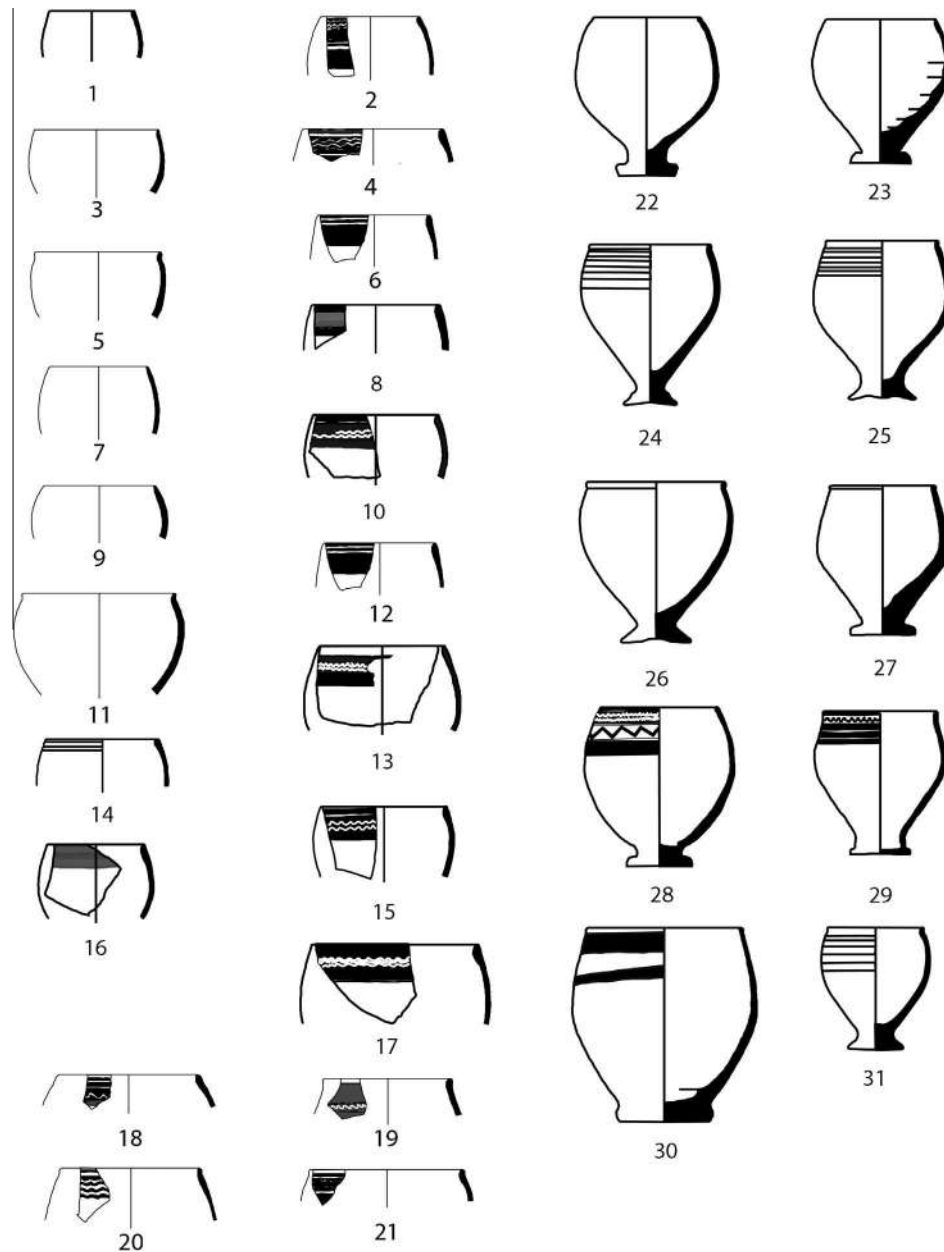


Fig. 15. EB IVB Simple ware goblets from Tell Tayinat. Drawings by Lynn Welton. Scale 1:4.

mian world (Matthiae, 1977). The archives from Ebla provide a glimpse into changes in the economic value of wine consumption in the later part of the Early Bronze Age. Ebla, a prime example of a wealth-finance system (see above), is an ideal place to evaluate the role wine played in the formation of social and corporate identity in western Syria in the Early Bronze Age.

The region in and around Ebla is ideal territory for viticulture, but textual data reveal frustratingly little evidence for local wine production. Somewhat paradoxically, the majority of textual data mentions the Mesopotamian staple of beer rather than wine. Texts reveal a well-established industry for beer production in Ebla (Milano, 1994: 434) and beer is the main ration handed out to workers of the palace. However, wine consumption is well-documented as a royal gift, for rituals or public ceremonies, and for special feasts for the king or queen (Milano, 1994: 434). Interestingly, wine was accumulated by the king for use by the royal house alone, and was not used as daily offerings in temples or amongst the palace administration.

Data on the production of wine is particularly intriguing. Comparing the texts from Ebla with Mari from some six centuries later, Milano (1994: 438) suggests that both kingdoms treated the production of wine in the same manner; that is, production was not directed by the centers, rather it was done outside the immediate control of the palaces. However, its collection and storage in the palace was highly controlled. Wine was brought into the palace as royal gifts, tributes by city states or minor kingdoms under the control of Ebla, or by wine merchants as there is reference to wine being purchased with its price in silver (Milano, 1994: 437).

If wine was such a high prestige commodity, why was its collection, and not its production, under the control of the state or the crown? Milano suggests this is result of the way land tenure was organized in the Kingdom of Ebla. Land was allocated in large estates, as opposed to the more fractional land use systems more generally seen in northwestern Syria throughout the Bronze Ages (Steinkeller, 1999). This system was more amenable to large-scale

agriculture and olive horticulture than viticulture (Steinkeller, 1999: 436). Wine production appears to have been left to smaller scale farmers and villagers who worked on more diminutive land holdings, similar to the Moquegua viticulture landscape. Late Bronze Age records from both Ugarit on the Syrian coast (Liverani, 1975, 1989; Heltzer, 1990) and Alalakh in the Amuq valley (Wiseman, 1953, see below) similarly attest to a system where arable land is combined with vineyards in a more small-scale agricultural system. Furthermore, these smaller estates appear to have been highly effective with regard to wine production.

Although collection and storage in the palace was centralized by the crown, given the fact that production was out of Ebla's direct control, and even distribution appears to have been left to private wine merchants, it is likely that a portion of the production was still in circulation outside of palatial control. Although still a commodity of high value, it was one that was readily available to the larger population, to be used by political actors within Early Bronze societies of northwestern Syria that were renegotiating social arrangements from kin based to corporate societies. This would explain why drinking goblets are ubiquitous all over north-west Syria in EB Iva and not isolated to the palatial contexts. Wine therefore, is lubricating Mazzone's technological transformation and general improvement in the economic conditions of the region, along with the political reorganization that happens between the EB III and IVa. Given the limited textual data for the production of wine in the Ebla archives, can we say, that sufficient wine was being produced to achieve these social and economic changes?

Wine production in the Amuq Valley

The site of Tell Atchana – ancient Alalakh, becomes the principle settlement in the Amuq Valley in the Middle and Late Bronze Ages, after the abandonment of Tayinat at the end of the Early Bronze Age. Excavations undertaken by the British uncovered a capital city of a small regional kingdom known as Muqish (Woolley, 1953). The archives unearthed in the excavations are an invaluable source of information regarding the history, politics, and economy of the entire region in the Late Bronze Age. In particular, the Alalakh census lists provide a surprisingly detailed amount of information regarding landholdings and land use in the Kingdom of Muqish. Additionally, they shed some interesting light on vineyard ownership. Ownership of vineyards appears to have been conceived of differently, and more exclusively, than ownership of other agricultural land. For example, unlike agricultural lands, the King's vineyard holdings, are generally quite small, are recorded alongside those of regular small-scale landowners (Casana, 2003: 111). Like the textual data from Ebla or Ugarit, viticulture appears to have been practiced by independent land owners, perhaps the result of the special skills required to run a vineyard. However, again, like the textual data from Ebla, production may not have been controlled by the crown, but the collection and distribution probably was (Milano, 1989).

The Alalakh texts reveal that each household, or *bitû*, had one *ikû* of vineyards (approximately 0.63 ha). By combining the settlement data from the Amuq Valley with the Alalakh census list data, Casana (2003: 374) was able to estimate the amount of land that was used for both agriculture and viticulture (Fig. 16). Based on these data, Casana was able to divide settlements into three sizes and estimate the area of vineyards for each: 19 ha of vines for small sites, 31 ha for medium and 95 ha for large sites (Casana, 2003: 374). Taking these calculations one step further, one can tease out significantly more data on wine production. The productivity of vineyards can vary significantly based on a whole host of variables, such as the number vines per hectare, type of grape grown,

number of clusters per vine, and so on. Modern specialized vineyards can produce as much as 10,000 kg of grapes per hectare (Winkler, 1962). Powell (1995), in examining Late Bronze Age Hittite laws, has been able to establish the approximate Bronze Age production of wine at 600 L per *ikû* of vineyard.¹⁸ Using these estimations, small vineyards of the Kingdom of Muqish would be capable of producing 11,400 L of wine per year and large ones up to about 57,000 L. The Late Bronze settlement data reveals eighty small sites, ten medium, and three large sites. At these levels, one could estimate a production capacity for the Late Bronze Age Kingdom of Muqish at about 1,269,000 L of wine per year – not an insubstantial amount of wine.¹⁹ Comparing the settlement data suggests that similar production figures to the Middle to Late Bronze Ages²⁰ can be postulated for the Early Bronze Age when the Amuq is an emerging regional kingdom, and perhaps even one of the suppliers for the wine stores of Ebla (Fig. 17).

The Early Bronze Age archives at Ebla reveal that sources of the wine collected in the palace appear to have ranged from within the immediate environs of the kingdom to places further afield, such as the Taurus Mountains or along the Tigris River, both referenced in the archives (Milano, 1994). That local land owners were in charge of production in the kingdom of Ebla is highly significant. If a major economic center in a good wine producing region like Ebla was not directly in control of production, a similar model can be posited for the other smaller-scale regional kingdoms such as in the Amuq, suggesting the potential for a sizeable volume to make its way to Ebla, but also to remain in local circulation.

The size of Eblaite wine cellars is unfortunately unclear. However, given the fact that there appear to have been multiple managers of the cellars by the title “*LU₂ GEŠTIN*” (literally “wine man”) one could reconstruct significant holdings in the palace. The archive records at least eight individuals bearing this title, with at least three holding the position simultaneously, whose primary occupation was to receive, collect, organize, preserve, mix and prepare wine for consumption (Milano, 1994).

The explosion of ETC settlements in the Phases I of Amuq Valley would precede Palace G at Ebla by perhaps less than a hundred years, however, their use life would have been contemporaneous. Textual data from Ebla refers to a regional state or kingdom by the name of *Alalahu* (Archi 2006; 2008), which based on current evidence, would appear to be centered on Tell Tayinat (Batiuk and Horowitz, 2009; Welton et al., 2011). Should these settlements be seen as wine producing *bodegas*, similar to the Moquegua Valley, collection of wine would likely have been initiated at such a center like Tayinat, then sent onto Ebla in local ceramic vessels or skins. This would explain the limited examples of ETC wares in Ebla itself, as they were not in direct contact with the actual wine producers. This centralized collection of wine and its controlled circulation by Ebla administration, as depicted in the textual data, fits well with our understanding of a wealth-finance economic system. Wine as a consumable commodity with a high prestige value was amassed by the king and distributed to personages of his

¹⁸ According to Powell (1995), Hittite justice relies heavily on the concept of compensation and produces detailed definitions of the value of a variety of goods and services in the establishment of fine. These laws, dated to the Middle Bronze Age (ca. 2000–1600 BCE) were recognized appear to be normative, and parallel compensation rates for things in contemporaneous Babylonia, allowing one to establish the rough purchasing power of a shekel of silver (Powell, 1995: 117, Table 9.1) for a variety of goods including both wine (60 L) and the produce of a vineyards (1/10 the vintage from an *ikû* of vineyard).

¹⁹ Equivalent to 1% of all the wine made in Turkey in 2012 http://www.tcp.gov.tr/english/sectors/sectoringpdf/agric/wine_2012.pdf.

²⁰ One must bear in mind that the Late Bronze land holdings of the Kingdom of Muqish were not confined solely to the Amuq Valley, and therefore postulated EB wine production will not match exactly those of the Alalakh Census lists; however, there are more smaller EB settlements in the Amuq (which seem to be the bulk producers) than LB, allowing for larger production estimates.

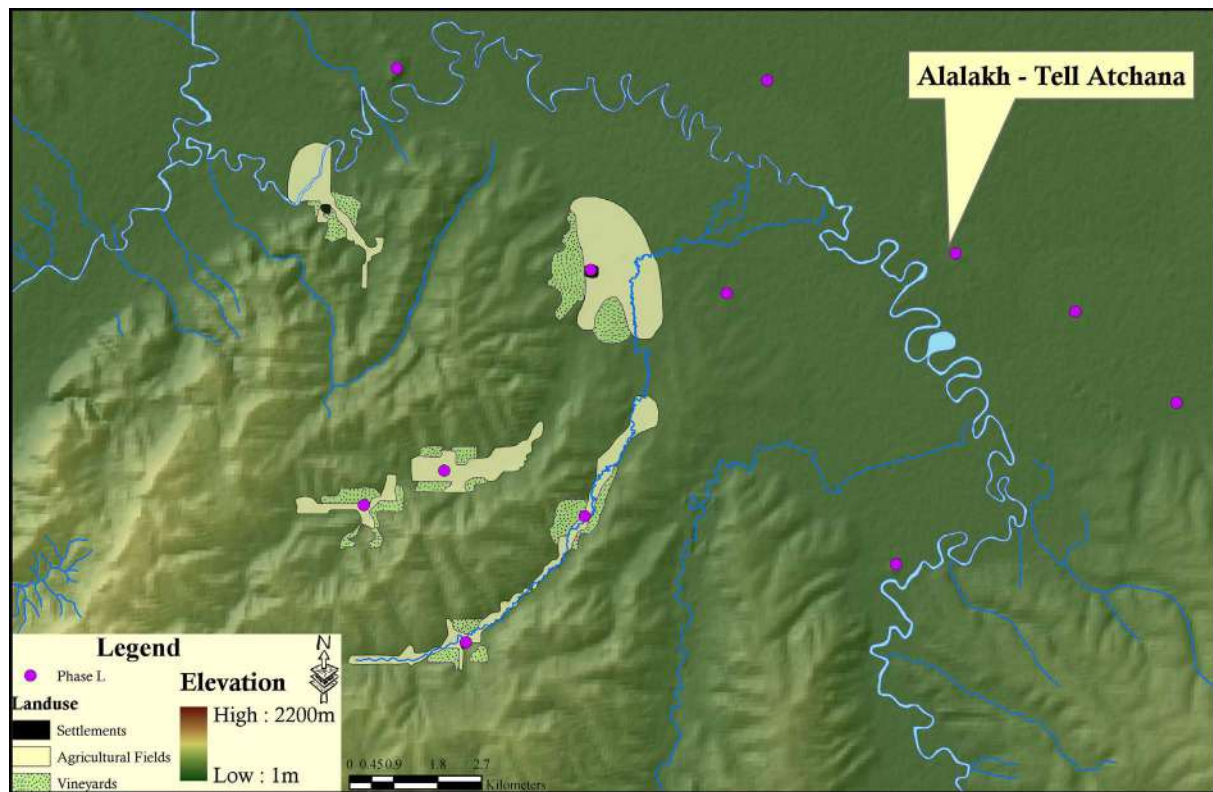


Fig. 16. Estimated agricultural and viticulture fields in the LB Amuq Valley. After Casana, 2003: 376.

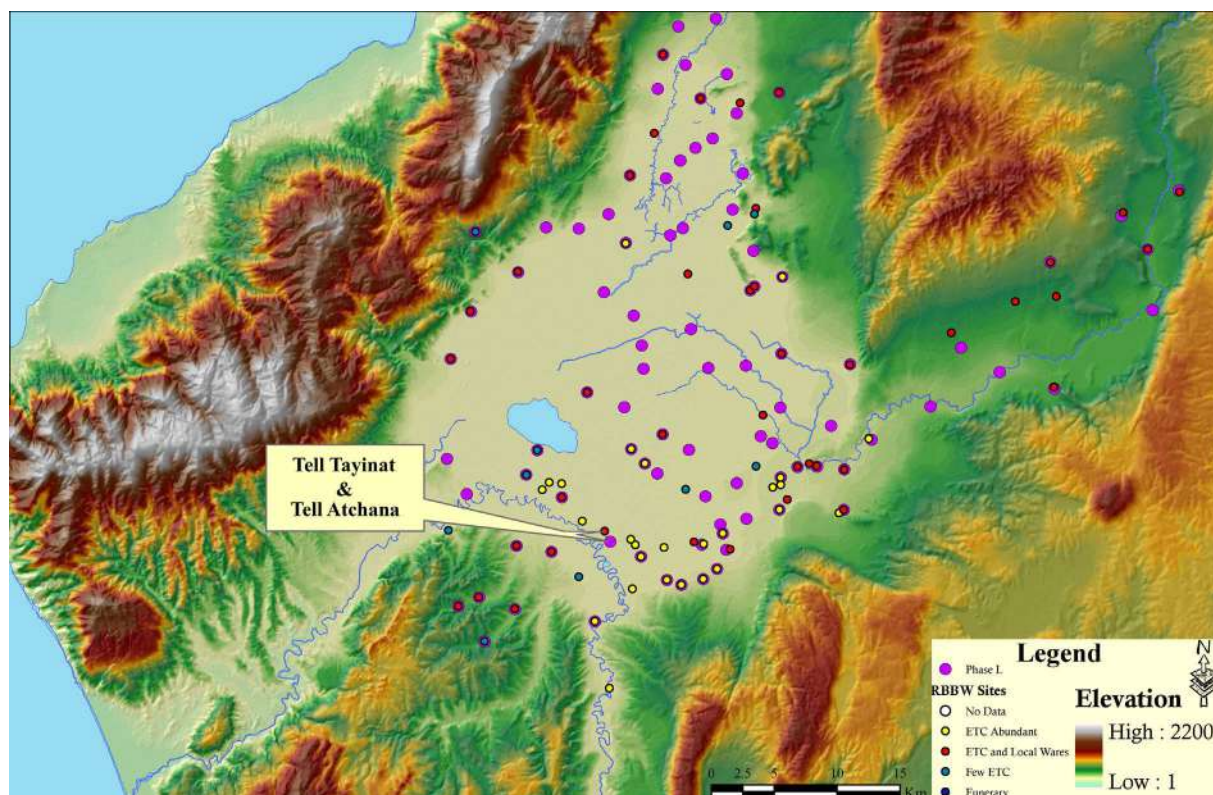


Fig. 17. Comparison of EB and LB Settlement patterns in the Amuq.

choosing at public and private celebrations. However, since wine production was not controlled by Elba, one could easily imagine that not all wine was shipped to Ebla and some remained in local

circulation. A similar pattern is witnessed in the EB I of the southern Levant, where wine was produced for export to Egypt, but some of it was still consumed locally as evidenced by vessels for

serving and consuming wine in the local ceramic assemblage (Finkestein and Gophna, 1993).

Conclusions: migration, wine production and the ETC – a workable model?

As migration has once again become a viable topic of investigation in archaeological literature, discussion of what happens to these migrants must also come to the forefront, particularly how group identity is maintained, or lost over time through assimilation. The model proposed here for northwestern Syria is a viable model with which to explore migration over a larger area.

What must be emphasized first is that the proposed model is not suggesting that viticulture was the primary motivation for the migration of the ETC. As stated earlier, migration is a social strategy, and the motivations for them are numerous, and often extremely difficult to understand and model. The movement of pastoral nomadic/transhumant elements in the ETC, or perhaps even the movement of itinerant metal workers/traders could have played a role in the dissemination of information about target locations for migrations. They very well may have played a role in the actual migrations. However, these two models cannot explain the longevity of the ETC settlement in their new home regions past the traditional three generation model of the Chicago School. *Viti* and *viniculture* were not the reason for the ETC migrations, but it may have been responsible for its longevity in some regions such as northwest Syria.

An interesting parallel can be seen with Huguenot settlement in South Africa. The French Protestants fled France in the 17th and 18th centuries to escape religious persecution at the hands of the French Crown. They fled to a number of Protestant nations including England, Denmark, Switzerland, Prussia and the Dutch Republic. The Dutch, under the auspices of the Dutch East India Company (VOC – *Verenigde Oost-Indische Compagnie*), began in 1688 to settle many of the Huguenots at the Cape of Good Hope in modern South Africa. The settlement at the Cape of Good Hope was established by the Dutch in 1652 as a resupplying station for ships coming to and from the East (Fourie and von Fintel, 2010). The initial economy of the Cape centered on wheat production and cattle rearing to supply the passing ships and was relatively unsuccessful as the northern Dutch farmers were ill equipped to handle the Mediterranean climate. When the first group of 155 Huguenots arrived in 1688, the French took up agriculture but quickly realized the ecological conditions were conducive to an economic niche they were familiar with – viticulture. By 1695, the economic value of viticulture, for both local consumption as well as for re-supplying passing ships, was quickly realized by the VOC and then strongly encouraged with settlement of more Huguenot refugees as they had the best skills to make the nascent viticulture successful, and it soon became the dominant industry of the Cape. More interestingly, the historical records document the rise of elite classes amongst the French and Dutch settlers with VOC Officials, Merchants, and large farm owners living lavishly in the growing settlement of Cape Town, and small scale farmers (producing wheat and wine) living in the environs of the Cape (Fourie and von Fintel, 2010: 6–7). The increase in demand led to the re-orientation of production in the region with the introduction of slave labor. The use of slave labor changed the economies of scale, allowing the large land owners to produce wine at costs the smaller farms could not, pushing smaller scale farmers to other crops, or out of the Cape and into the interior. At this point, the Huguenot element of South African society began to fade as they began to marry into the Dutch and German societies of the Cape.

Although the circumstances are not identical, the parallels are still applicable. A group of settlers, migrating to a new land for

one reason, yet finding success in another by establishing a *viniculture* industry. They achieved this success because they had the necessary skills that the other inhabitants did not, establishing small farmsteads in the surrounding countryside of mixed economy, but with a focus of *viti* and *viniculture*. Eventually, as the economic arrangement (and in this case mode of production) changes, they lose their livelihood and their identity. And the effects of their migration can still be seen today, almost three hundred years later, with the successful South African Wine Industry, although little physical or even remains can be linked to them, save a few Huguenot surnames. A situation not unlike what is being proposed here for the ETC.

Available archaeological data suggests multiple waves of ETC migrations aiming to exploit specific ecological niches at the end of the Chalcolithic period, with the collapse of the Late Uruk expansion (Wilkinson et al., 2012). In some case, such as the Muş region eastern Anatolia, that niche was perhaps pastoralism as suggested by Rothman (2003). In other cases, such as northwestern Syria, that niche may have been *viniculture*. These groups established small settlements and farms on the periphery of existing centers, living in co-habitation with the indigenous inhabitants in an economic partnership as local producers of wine. The physical distance provided by living beside their vineyards and not in urban centers would promote maintenance of their own material culture and identities, rather than assimilation. The retained spatial separation of migrants from indigenous groups suggests the ETC were living in Diaspora communities. The increasing value ascribed to wine that emerged over time provided them with a relatively high socioeconomic status, which together with the specialized vessels required for wine production, storage and consumption, allowed them to maintain this cultural identity and resist full assimilation. Indeed, it may have initiated a change in the material culture of the indigenous society through the widespread adoption of a 'Wine Culture', and which may have even played a role the changes in northwest Syrian socio-political structures at the time. As this economic niche requires special skills often handed down through familial lines, this economic subsistence system remained a specialization of the migrant communities, further re-enforcing their cultural segregation and retaining their visibility as a distinct group in the archaeological record. However, these groups did not live in complete isolation and cultural interaction did allow for some transfer of ideas in both directions, seen in the hybridization of the local ceramic industries and the spread of the ETC 'Wine Culture' throughout northwestern Syria.

It is not until Phase J or EB IVB (2250–2000 BC) with the development of more powerful supra-regional authorities (e.g. Akkadian Empire of Mesopotamia) that we see the re-emergence of more monolithic ceramic assemblages (Fig. 14) and the decline of the ETC concurrent with economic and cultural unification of the region. A centralization of production may have occurred under these new entities which additionally may have re-organized production, concentrating it perhaps in fewer hands. In Phase J we see a dramatic drop off in the number of settlements from 49 in Phase I to 17 in Phase J. The continuation of ETC Wares into Phase J would suggest that disappearance of the ETC in northwest Syria are perhaps not as rapid as once thought, rather a slower process of gradual acculturation that coincides with the dramatic re-orientation of the political and economic situation of the region at the time. Robbed of their economic base, the Diaspora communities themselves finally assimilate, but their 'Wine Culture' lived on in EB IVB, MB and LB ceramic assemblages in the region.

Whether this model is a product of the unique economic and political circumstances of northwest Syria, or if can be applied to different regions where the ETC are found, such as the southern Levant, are avenues of further investigation. Evidence is beginning to emerge at some sites in the southern Levant that emergence of ETC

wares can be tied to changes in urban layout, defenses, and the development of a new north Syrian temple in-antis structures (Nigro, 1994; Sala, 2008a). However, the fact that the southern Levant had already established an extensive wine industry in the EB I, complicates the model, and questions the need for ETC migrants with viticultural skills. This is further complicated, by the fact that a drinking culture *per se*, does not appear to fully emerge in the local assemblage until the following EB IV period – after the disappearance of the ETC/ Khirbet Kerak Culture in the region (Greenberg and Bunimovitz, 2004). Given the spatial data, and that ETC drinking paraphernalia and *local imitations of ETC wares* (Sala, 2008b; Nigro, 2009) are the most conspicuous vessels found in Class 3 and 4 sites (Funerary contexts or individual fines at an indigenous settlement) would suggest that perhaps wine still does play a role in the southern Levant, but the exact circumstances remain at present frustratingly elusive.

The fruits of the Early Transcaucasian Culture migration into northwestern Syria

The ETC migration into northwestern Syria established a new horticultural industry that filled an economic niche in the developing wealth-finance societies of the area. The consumption of this high-status commodity was initially critical in the creation and reinforcement of social identity among the growing elites in the region and, as a corollary, helped to create and reinforce the social identity of ETC Diaspora communities who were in charge of its production. The success of this industry allowed the ETC to thrive, as is evidenced by numerous settlements in the Amuq Valley, and their success allowed them to remain economically independent and culturally distinct for almost a thousand years.

Understanding the “longue durée” of the ETC provides excellent data for exploring migrations in other parts of the archaeological record, and perhaps more importantly, what effect these migratory groups might have had on indigenous cultures. However, fundamental larger questions must first be asked, specifically that of the economic niche filled by migrants. Even in other cases of migrations in the Near East, which resulted in different political arrangements, such as the Amorite migrations, the individuals originally arrived filling economic niches – first as providers of pastoral products, then as workers and mercenaries. Migrants moving into a region need to find a way to fit in economically as well as socially, and co-exist, if only for a time. And some are more successful than others. The ETC, with their long history of *viti-* and *viniculture*, were one such successful example. And the cultural reverberations of the introduction of the ETC ‘wine culture’ into northwestern Syria lasted for millennia, with successive generations enjoying the fruits of the ETC migration long after they had faded from memory.

Acknowledgments

This research was partially funded by grants from the Social Sciences and Humanities Research Council of Canada (SSHRC) for which I am deeply grateful. I am also thankful for the assistance of Tim Harrison, Lisa Maher, Jim Phillips, Cathy D’Andrea, David Lipovitch, Kevin Fisher, and Lynn Welton, who generously spent time commenting on the numerous drafts of this paper.

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.jaa.2013.08.002>. These data include Google maps of the most important areas described in this article.

References

- Abay, E., 2005. The expansion of Early Transcaucasia culture: migration or cultural interaction. *Alten Orientalische Forschungen* 32 (1), 115–131.
- Adams, W.Y., 1978. On migration and diffusion as rival paradigms. In: *Proceedings of the 10th Annual Archaeological Conference of the University of Calgary*.
- Adams, W.Y., Van Gerven, D.P., Levy, R.S., 1978. The retreat from migrationism. *Annual Review of Anthropology* 7, 483–532.
- Akkermans, P.M.M.G., Schwartz, G., 2001. *The Archaeology of Syria: From Complex Hunter-Gatherers to Early Urban Societies (c. 16,000–300 BC)*. Cambridge University Press, Cambridge.
- Algaze, G., 2001. The prehistory of imperialism. In: Rothman, M.S. (Ed.), *Uruk Mesopotamia & Its Neighbors – Cross-Cultural Interactions in the Era of State Formation*. School of American Research Press, Santa Fe, pp. 27–83.
- Amiran, R., 1951. Connections between Anatolia and Palestine in the Early Bronze Age. *Israel Exploration Journal* 2, 89–103.
- Anthony, D., 1990. Migration in archaeology: the baby & the bathwater. *American Anthropologist* 92, 895–914.
- Anthony, D., 1992. The bath refilled: migration in archaeology again. *American Anthropologist* 94, 174–176.
- Anthony, D., 1997. Prehistoric migration as a social process. In: Chapman, J., Hamerow, H. (Eds.), *Migrations and Invasions in Archaeological Explanation*. BAR International 664. Archaeopress, Oxford, pp. 11–20.
- Areshian, G.E., Gasparyan, B., Avetisyan, P.S., Pinhasi, R., Wilkinson, K., Smith, A., Hovsepian, R., Zardaryan, D., 2012. The chalcolithic of the Near East and south-eastern Europe: discoveries and new perspectives from the cave complex Areni-1, Armenia. *Antiquity* 86, 115–130.
- Archi, A., 2006. Alalah al Tempo del Regno di Ebla. In: Morandi Bonacossi, D., Rova, E., Veronese, F., Zanollo, P. (Eds.), *Tra Oriente e Occidente: Studi in onore di Filippo Balestrazzi*. S.A.R.G.O.N Editrice e Libreria, Padova.
- Archi, A., 2008. *Hassum/Hassuwan and Ursum/Urasum from the Point of View of Ebla in Muhibbe Darga Armağani*. T. Tarhan, A. Tibet and E. Konya eds. Istanbul.
- Armstrong, J.A., 1976. Mobilized and proletarian diasporas. *The American Political Science Review* 70 (2), 393–408.
- Balossi Restelli, F., Sadori, L., Masi, A., 2010. Agriculture at Arslantepe at the end of the IV Millennium BC. Did the Centralized Political Institutions have an influence on farming practices? In: Frangipane, M. (Ed.), *Economic Centralisation in Formative States. The Archaeological Reconstruction of the Economic System in 4th Millennium Arslantepe*, vol. 3. Studi di Preistoria Orientale (SPO), Rome, pp. 103–117.
- Batiuk, S., 2005. Exploratory results of the petrographic analysis of the Early Transcaucasian ceramics of the Bayburt region. *Ancient Near Eastern Studies* 37, 153–163.
- Batiuk, S., 2005. *Migration Theory and the Distribution of the Early Transcaucasian Culture*. Ph.D. Dissertation, University of Toronto, Toronto.
- Batiuk, S., Rothman, M., 2007. Early Transcaucasian cultures and their neighbors: unraveling migration, trade, and assimilation. *Expedition* 49 (1), 7–17.
- Batiuk, S., Harrison, T.P., 2000. The 1999 Amuq Valley Regional Project Survey. *Araştırma Sonuçları Toplantısı* 18, 2.
- Batiuk, S., Horowitz, M., 2009. Temple deep sounding investigations 2001–2005. In: Yener, A.K. (Ed.), *The Amuq Valley Regional Projects, Excavations in the Plain of Antioch Tell Atchana/ancient Alalah: The 2003–2004 Excavation Seasons*, vol. 2. Koç University Press, Istanbul, pp. 161–176.
- Belisario, M., Follieri, M., Sadori, L., 1994. Nuovi dati archeobotanici sulla coltivazione di Vitis Vinifera L. ad Arslantepe (Malatya, Turchia). In: Milano, L. (Ed.), *Drinking in Ancient Societies. History and Culture of Drinks in the Ancient Near East. Papers of a Symposium held in Rome, May 1990*, Padova, pp. 77–91.
- Bernardini, Wesley, 2005. Reconsidering spatial and temporal aspects of prehistoric cultural identity: a case study from the American southwest. *American Antiquity* 70 (1), 31–54.
- Braidwood, R.J., Braidwood, L.S., 1960. *Excavations in the Plains of Antioch, the Earlier Assemblages. Phases A-J*. OIP, vol. 61. University of Chicago Press, Chicago.
- Braidwood, R.J., Sauer, J.D., Helbaek, H., Mangelsdorf, P.C., Cutler, H.C., Coon, C.S., Linton, R., Steward, J., Oppenheim, A.L., 1953. Symposium: did man once live by beer alone? *American Anthropologist* 55, 515–526.
- Brettell, C., 2008. Theorizing migration in anthropology. The social construction of networks, identities, communities and globalscapes. In: Brettell, C., Hollifield, J. (Eds.), *Migration Theory. Talking across Disciplines*, second ed. Routledge, London, pp. 113–159.
- Brettell, C., Hollifield, J., 2008. *Migration theory. Talking across disciplines*. In: Brettell, C., Hollifield, J. (Eds.), *Migration Theory. Talking across Disciplines*, second ed. Routledge, London, pp. 1–29.
- Brumfield, E.M., Earle, T.K. (Eds.), 1987. *Specialization, Exchange, and Complex Societies*. Cambridge University Press, Cambridge.
- Bulmer, M., 1984. *The Chicago School of Sociology: Institutionalization, Diversity, and the Rise of Sociological Research*. University of Chicago Press, Chicago.
- Burmeister, S., 2000. Archaeology and migration. *Current Anthropology* 41, 539–567.
- Burney, C.A., 1958. Eastern Anatolia in the Chalcolithic and Early Bronze Age. *Anatolian Studies* 8, 157–209.
- Burney, C.A., Lang, D.M., 1971. *The Peoples of the Hills. Ancient Ararat and Caucasus*. London.
- Casana, J., 2003. *From Alalah to Antioch: Settlement, Landuse, and Environmental Change in the Amuq Valley of Southern Turkey*. Ph.D. Diss. University of Chicago.

- Casana, J., Wilkinson, T.J., 2005. Settlement and landscapes in the Amuq region. In: Yener, K.A. (Ed.), *The Amuq Valley Regional Projects. Surveys in the Plain of Antioch and Orontes Delta, Turkey, 1995–2002*, vol. 1. Oriental Institute Publication No. 131. University of Chicago Press, Chicago, pp. 25–65.
- Chapman, J., Dolukhanov, P.M., 1992. The baby and the bathwater: pulling the plug on migrations. *American Anthropologist* 94, 169–174.
- Chapman, J., Hamerow, H., 1997. On the move again: migrations and invasions in archaeological explanation. In: Chapman, J., Hamerow, H. (Eds.), *Migrations and Invasions in Archaeological Explanation*. BAR International Series 664. Archaeopress, Oxford.
- Chazan, M., McGovern, P.E., 1984. Khirbet Kerak pottery at Beth Shan: technological evidence for local manufacture. *MASCA Journal* 3 (1), 20–24.
- Chilashvili, L., 2004. The Vine, Wine, and the Georgians. GWS Ltd., Tbilisi.
- Childe, V.G., 1925. *The Dawn of European Civilization*. London.
- Childe, V.G., 1950. Prehistoric Migrations in Europe. Oslo.
- Clifford, J., 1994. Diasporas. *Cultural Anthropology* 9 (3), 302–338.
- Connor, S., Sagona, A., 2007. Environment and society in the late prehistory of southern Georgia, Caucasus. In: Lyonnet, B. (Ed.), *Les cultures du Caucase (VI–IIIème millénaires av. notre ère). Leurs relations avec le Proche-Orient*. CNRS Éditions, Paris, pp. 21–36.
- Cribb, R.L., 1991. *Nomads in Archaeology*. Cambridge.
- D'Altroy, T.N., Earle, T.K., 1985. Staple finance, wealth finance, and storage in the Inka political economy. *Current Anthropology* 26, 187–206.
- D'Altroy, T.N., Hastorf, C.A. (Eds.), 2001. *Empire and Domestic Economy*. Plenum Press, New York.
- Dietler, M., 1990. Driven by drink: the role of drinking in the political economy and the case of Early Iron Age France. *Journal of Anthropological Archaeology* 9, 352–406.
- Dietler, M., 2006. Alcohol: anthropological/archaeological perspectives. *Annual Review of Anthropology* 35, 229–249.
- Esse, D., 1991. Subsistence, Trade and Social Change in Early Bronze Age Palestine. SAOC, No. 50. University of Chicago Press, Chicago.
- Esse, D., Hopke, P., 1986. Levantine trade in the Early Bronze Age: from pots to people. In: Olin, J., Blackman, M.J. (Eds.), *Proceedings of the 24th International Archaeometry Symposium, Washington*, pp. 327–39.
- Finkelstein, I., Gophna, R., 1993. Settlement, demographic and economic patterns in the highlands of Palestine in the Chalcolithic and Early Bronze periods and the beginning of urbanism. *Bulletin of the American School of Oriental Research* 289, 1–22.
- Fourie, J., von Fintel, D., 2010. The fruit of the vine? An augmented endowments-inequality hypothesis and the rise of an elite in Cape Colony. In: *United Nations University World Institute for the Development of Economic Research Working Paper*. 2010/112, pp. 1–29.
- Frangipane, M., 1993a. Local components in the development of centralized societies in Syro Anatolian regions. In: Frangipane, M., Hauptmann, H., Liverani, M., Matthiae, P., Mellink, M. (Eds.), *Between the Rivers and Over the Mountains*. Dipartimento di Scienze Storiche Archeologiche ed Antropologiche dell'Antichità. Università di Roma La Sapienza, Roma, pp. 133–162.
- Frangipane, M., 1993b. Arslantepe-Melid-Malatya, in Arslantepe, Hierapolis, Iasos, Kyme. Scavi Archeologici Italiani in Turchia, Marsilio, Venezia, 31–103.
- Frangipane, M., 2000. The Late Chalcolithic/EBI sequence at Arslantepe. Chronological and cultural remarks from a frontier site. In: Marro, C., Hauptmann, H. (Eds.), *Chronologies des Pays du Caucase et de l'Euphrate aux IV–III Millénaires*. Institut Français d'Études Anatoliennes d'Istanbul De Boccard, Paris, pp. 439–472.
- Frangipane, M., 2001a. The transition between two opposing forms of power at Arslantepe (Malatya) at the beginning of the third millennium. *TÜBA-AR Turkish Academy of Sciences Journal of Archaeology* 4, 1–24.
- Frangipane, M., 2001b. Centralization processes in Greater Mesopotamia. Uruk “expansion” as the climax of systemic interactions among area of the Greater Mesopotamian region. In: Rothman, M. (Ed.), *Uruk Mesopotamia & Its Neighbors*. School of American Research Press, Santa Fe, pp. 307–348.
- Frangipane, M., 2007. Establishment of a Middle/Upper Euphrates Early Bronze I culture from the fragmentation of the Uruk world. New data from Zeytinli Bahçe Höyük (Urf, Turkey). In: Peltenburg, E. (Ed.), *Euphrates River Valley Settlement. The Carchemish Sector in the Third Millennium BC*. Oxbow Books, Oxford, pp. 122–141.
- Frangipane, M., Palmieri, A., 1983. Cultural developments at Arslantepe at the beginning of the third millennium. *Origini XII*, 523–574.
- Frangipane, M., Palumbi, G., 2007. Red-Black Ware, Pastoralism, Trade, and Anatolian-Transcaucasian Interactions in the 4th–3rd Millennium BC. In: Lyonnet, B. (Ed.), *Les Cultures du Caucase (VI–IIIème millénaires avant notre ère). Leurs Relations avec le Proche-Orient*. CNRS Éditions, Paris, pp. 233–256.
- Gans, H.J., 1992. Comment: ethnic invention and acculturation: a bumpy-line approach. *Journal of American Ethnic History* 11 (1, Fall), 42–52.
- Gordon, M.M., 1964. *Assimilation in American Life: The Role of Race, Religion, and National Origins*. Oxford University Press, New York.
- Green, M.W., 1989. Early Cuneiform. In: Sener, W.M. (Ed.), *The Origins of Writing*. University of Nebraska Press, Lincoln, pp. 43–57.
- Greenberg, R., 2000. Changes in ceramic production between Early Bronze II and III in Northern Israel, based on the pottery of Tel Hazor and Tel Dan. In: *Ceramics and Change in the Early Bronze Age of the Southern Levant*. Sheffield Academic Press, Sheffield, pp. 183–200.
- Greenberg, R., 2007. Transcaucasian Colors: Khirbet Kerak Ware at Khirbet Kerak (Tel Bet Yerah). In: Lyonnet, B. (Ed.), *Les cultures du Caucase (VI–IIIème millénaires avant notre ère)*, Paris, pp. 257–268.
- Greenberg, R.E., Bunimovitz, S., 2004. Revealed in their cups: Syrian drinking customs in intermediate Bronze Age Canaan. *Bulletin of the American Schools of Oriental Research* 334, 13–19.
- Greenberg, R., Eisenberg, E., Paz, S., Paz, Y., 2006. *Bet Yerah: The Early Bronze Age Mound*. Vol. 1. Excavation Reports, 1933–1986. Israel Antiquities Authority, Jerusalem.
- Greenberg, R., Goren, Y., 2009. Migrating Technologies at the Cusp of the Early Bronze Age III. *Tel Aviv* 36, 129–134.
- Greenberg, R., Porat, N., 1996. A Third Millennium Pottery production center: typology, petrography, and provenience of Metallic Ware of Northern Israel and Adjacent Regions. *Bulletin of the American Schools of Oriental Research* 301, 5–24.
- Harrison, T.P., 1999. The 1998 Amuq Valley Regional Project Survey. in *Araştırma Sonuçları Toplantısı* Vol. 17.2, 127–32.
- Harrison, T.P. and Batiuk, S., 2000. The 1999 Amuq Valley Regional Project Survey. in *Araştırma Sonuçları Toplantısı* Vol. 18.2, 181–6.
- Heath, D.B., 1987a. Anthropology and alcohol studies: current issues. *Annual Review of Anthropology* 16, 99–120.
- Heath, D.B., 1987b. A decade of development in the anthropological study of alcohol use: 1970–1980. In: *Constructive Drinking: Perspectives on Drink from Anthropology*. Cambridge Univ. Press, Cambridge, pp. 16–69.
- Heath, D.B. (Ed.), 1995. *International Handbook on Alcohol and Culture*. Greenwood Press, Westport, CT.
- Hans, B., Doole, A.N., Areshian, G., Gasparyan, B., Faull, K.F., 2011. Chemical evidence for wine production around 4000 BCE in the Late Chalcolithic Near Eastern highlands. *Journal of Archaeological Science* XXX, 1–8.
- Heltzer, M., 1990. Vineyards and wine in Ugarit (property and distribution). *Ugarit Forschungen* 22, 119–135.
- Helwing, B., 2003. Feasts as a social dynamic in Prehistoric Western Asia – three case studies from Syria and Anatolia. *Paléorient* 29 (2), 63–85.
- Hennessy, J.B., 1967. *The Foreign Relations of Palestine during the Early Bronze Age*. Colt Archaeological Institute Publications, London.
- Herodotus, 1996. *The Histories* (Penguin Classics). Tra. Aubrey De Selincourt. Penguin Classics.
- Hood, S., 1951. Excavations at Tabara el Akrad, 1948–49. *Anatolian Studies* 1, 113–135.
- Hornsey, I.S., 2007. *The Chemistry and Biology of Wine Making*. The Royal Society of Chemistry, Cambridge.
- Iserlis, M., 2009. Khirbet Kerak ware at Bet Yerah: segregation and integration through technology. *Tel Aviv* 36, 181–195.
- Iserlis, M., Greenberg, R., Badalyan, R., Goren, Y., 2010. Bet Yerah, Aparan III and Karnut I: preliminary observations on Kura-Araxes homeland and diaspora ceramic technologies. *TÜBA-AR* 13, 245–262.
- Joffe, A., 1998. Alcohol and social complexity in ancient Western Asia. *Current Anthropology* 39 (3), 297–322.
- Kavtaradze, G., 2004. The Chronology of the Caucasus during the Early Metal Age: observations from Central Trans-Caucasus. In: Sagona, Antonio (Ed.), *A View from the Highlands, Archaeological Studies in Honour of Charles Burney*. Ancient Near Eastern Studies, Suppl. 12. PETERS, Leuven, pp. 539–552.
- Kelly-Buccellati, M., 1979. The Outer Fertile Crescent Culture: North Eastern Connections of Syria and Palestine in the Third Millennium B.C. *Ugarit Forschungen (Festschrift für Claude F.A. Schaeffer)* 11, 413–430.
- Kibaroglu, M., Sagona, A., Satir, M., 2011. Petrographic and geochemical investigations of the late prehistoric ceramics from Sos Höyük, Erzurum (Eastern Anatolia). *Journal of Archaeological Science* 30, 1–13.
- Kiguradze, T., Sagona, A., 2003. On the origins of the Kura-Araxes cultural complex. In: Smith, A.T., Robinson, K. (Eds.), *Archaeology in the Borderlands: Investigations in Caucasia and Beyond*. Cotsen Institute Press, Los Angeles, pp. 38–94.
- Kinner Wilson, J.V., 1972. *The Nimrud Wine Lists; A Study of Men and Administration at the Assyrian Capital in the Eighth Century*. British School of Archaeology in Iraq, London.
- Kohl, P., 2009. Origins, homelands and migrations: situating the Kura-Araxes Early Transcaucasian ‘Culture’ within the history of Eurasia. *Tel Aviv* 36, 241–265.
- Kossina, G., 1911. *Die Herkunft der Germanen*. Leipzig.
- Kossina, G., 1912. *Die Deutsche Vorgeschichte ein Hervorragend National Wissenschaft*. Berlin.
- Kramer, C., 1977. Pots & People in Mountains and Lowlands: essays in the Archaeology of Greater Mesopotamia. In: Levine, Louis, Young, T.C., Jr. (Eds.), *Bibliotheca Mesopotamia*, vol. 91. Undenda Publications, Malibu.
- Kuftin, B., 1941. *Arkeologičeskie Raskopki v Trialeti*. Akademii Nauk Gruzinskoj SSR, Tbilisi.
- Kuzucuoğlu, C., 2007. Climatic and environmental trends during the third millennium B.C. in Upper Mesopotamia. In: Kuzucuoğlu, C., Marro, C. (Eds.), *Sociétés humaines et changement climatique à la fin du troisième millénaire: une crise a-t-elle eu lieu en Haute Mésopotamie?* Varia Anatolica, 19. Istanbul, pp. 459–480.
- Kushnareva, K. Kh., 1997. The Southern Caucasus in Prehistory: Stages of Cultural and Socioeconomic Development from the Eighth to the Second Millennium B.C. Tr. H.N. Michael. The University Museum University of Pennsylvania, Philadelphia.
- Lamb, W., 1954. The culture of North-East Anatolia and its neighbours. *Anatolian Studies* 4, 21–32.
- Lesko, L.H., 1995. Egyptian wine production during the New Kingdom. In: McGovern, P.E., Fleming, S.J., Katz, S.H. (Eds.), *Origins and Ancient History of Wine*. Gordon & Breach, Amsterdam, pp. 215–230.

- Liverani, M., 1975. Communautés de village et palais royal dans la Syrie du II^e millénaire. *Journal of the Economic and Social History of the Orient* 18, 146–164.
- Liverani, M., 1989. Economy of Ugaritic Royal Farms [orig. Italian: 1979 *Economia delle fattorie palatine ugaritiche*. DdA NS 1/2:57–72]. In: Zaccagnini, C. (Ed.), *Production and Consumption in the Ancient Near East*. University of Budapest, Budapest, pp. 127–168.
- Marro, C., Bakhshaliyev, V., Ashurov, S., 2011. Excavations at Ovçular Tepesi (Nakhchivan, Azerbaijan). Second Preliminary Report: The 2009–2010 Seasons". *Anatolia Antiqua* XIX, pp. 53–100.
- Marro, C., Bakhshaliyev, V., Sanz, S., 2010. Archaeological investigations on the salt mine of Duzdağı (Nakhchivan, Azerbaijan). *TUBA-Ar* 13, 229–244.
- Mason, R.B., Cooper, L., 1999. Grog, petrology, and early Transcaucasians at GodinTepe. *Iran* 37, 25–31.
- Matson, Frederick R., 1965. *Ceramics and Man*. Aldine, Chicago.
- Matthiae, P., 1977. Ebla: An Empire Rediscovered. Hodder and Stroughton, London.
- Mazar, A. et al., 2000. The Early Bronze Age II–III at Tell Beth Shean: preliminary observations. In: Philip, G., Baird, D. (Eds.), *Ceramic and Change in the Early Bronze Age of the Southern Levant*. Sheffield, pp. 255–278.
- Mazzoni, S., 1985. Elements of the Ceramic Culture of Early Syrian Ebla in Comparison with Syro-Palestinian EB IV. *Bulletin of the American School of Oriental Research* 257, 1–18.
- Mazzoni, S., 1994. Drinking vessels in Syria: Ebla and the Early Bronze Age. In: *Drinking in Ancient Societies: History and Culture of Drinks in the Ancient Near East: Papers of a Symposium Held in Rome, May 17–19, 1990*. L. Milano Ed. Padova, pp. 245–76.
- McGovern, P.E., 2003. *Ancient Wine: The Search for the Origins of Viticulture*. Princeton University Press, Princeton.
- McGovern, P.E., Fleming, S.J., Katz, S.H. (Eds.), 1995. *The Origins and Ancient History of Wine*. Gordon & Breach, Amsterdam.
- Mellaart, James D., 1982. Archaeological evidence for trade and trade routes between Syria and Mesopotamia and Anatolia during the Early and the Beginning of the Middle Bronze Age. *Studi Eblaiti* 5 (86), 15–32.
- Milano, L., 1989. Food and diet in pre-classical Syria. In: Zaccagnini, C. (Ed.), *Production and Consumption in the Ancient Near East*. Chaire d'Égyptologie de l'Université Eötvös Lorand de Budapest, Budapest, pp. 201–271.
- Milano, L., 1994. "Vino e birra in oriente confini geografici e confini culturali" in *Drinking in Ancient Societies: History and Culture of Drinks in the Ancient Near East: Papers of a Symposium Held in Rome, May 17–19, 1990*. L. Milano Ed. Padova, pp. 421–440.
- Miroschedji, P. de, 2000. Le ceramique de Khirbet Kerak en Syro-Palestine: Etat de la question. In: *From the Euphrates to the Caucasus: Chronologies for the 4th–3rd millennium B.C.*, Marro, C. & Hauptmann, H. Institute Français D'Études Anatoliennes D'Istanbul, Istanbul, pp. 279–298.
- Munchaev, R.M., 1971. Kavkaz v epokhu eneolit i rannei bronzy (V–III tysyacheletii do n.e.). (Avtoreferat doktora). Tbilisi.
- Nigro, L., 1994. Ricerche sull'architettura palaziale della Palestina nelle età del Bronzo e del Ferro. Contributi e Materiali di Archeologia Orientale XIII. Università degli Studi di Roma "La Sapienza", Roma.
- Nigro, L., 2009. "Khirbet Kerak Ware at Jericho and the EB III Change in Palestine". In: Petit, L., Kaptijn, E. (Eds.), *A Timeless Vale: Archaeological and Related Essays on the Jordan Valley in Honour of Gerrit van der Kooij on the Occasion of His Sixty-Fifth Birthday*. Archaeological Studies Leiden University, 19. Leiden, pp. 69–83.
- Novacek, G.V., 2007. "Barbarians from the North": Continuity and Change in Northern Palestine during the Early Bronze II–III (ca. 3100–2200 B.C.E.) in Light of the Khirbet Kerak Ware Phenomenon. Ph.D. Dissertation, University of Chicago, Chicago.
- Palumbi, G., 2003. Red-Black Pottery: Eastern Anatolian and Transcaucasian Relationships around the Mid-Fourth Millennium BC. *Ancient Near Eastern Studies* 40, 80–134.
- Palumbi, G., 2004. La più Antica Tomba "Reale". Dati Archeologici e Costruzione delle Ipotesi". In: Frangipane, M. (Ed.), *Alle origini del potere*. Arslantepe, la Collina dei Leoni, Electa, Milano, pp. 115–119.
- Palumbi, G., 2008. *The Red and Black*. Social and Cultural Interaction between the Upper Euphrates and the Southern Caucasus Communities in the Fourth and Third Millennium BC. Sapienza Università di Roma, Rome.
- Paz, S., 2009. A home away from home? The Settlement of Early Transcaucasian Migrants at Bet Yerah. *Tel Aviv* 36, 196–216.
- Peltenburg, E., 2007. New perspectives on the Carchemish sector of the Middle Euphrates River valley in the 3rd millennium BC. In: Peltenburg, E. (Ed.), *Euphrates River Valley Settlement. The Carchemish Sector in the Third Millennium BC*. Oxbow Books, Oxford, pp. 1–26.
- Philip, G., 1999. Complexity and diversity in the Southern Levant during the Third Millennium B.C.: The Evidence of Khirbet Kerak Ware. *Journal of Mediterranean Archaeology* 12, 26–57.
- Philip, G., 2007. The metalwork of the Carchemish region and the development of grave repertoires during the third millennium BC. In: Peltenburg, E. (Ed.), *Euphrates River Valley Settlement. The Carchemish Sector in the Third Millennium BC*. Oxbow Books, Oxford, pp. 187–197.
- Piro, J.J., 2009. Pastoralism in the Early Transcaucasian Culture: The Faunal Remains from Sos Hoyuk. Unpublished PhD. Dissertation, New York University.
- Pliny the Elder. *Historia Naturalis* (Penguin Classics). Tra. John F. Healey. Penguin Books, London.
- Portes, A., Zhou, Min, 1993. The New Second Generation: segmented assimilation and its variants. *The Annals of the American Academy of Political and Social Science* 530, 74–96.
- Portes, A., Fernández-Kelly, P., Haller, W., 2005. Segmented assimilation on the ground: the new second generation in early adulthood. *Ethnic and Racial Studies* 28, 1000–1040.
- Powell, M.A., 1995. Wine and the vine in ancient Mesopotamia: the cuneiform evidence. *Food and Nutrition in History and Anthropology* 11, 97–122.
- Ramishvili, R., 1983. New materials on the history of viticulture in Georgia" (in Georgian, with Russian summary). *Matsne (History, Archaeology, Ethnology and Art History Series)* 2, 125–140.
- Rice, P., 1987. *Pottery Analysis: A Source Book*. Chicago.
- Rice, P.M., 1996. The archaeology of wine: the wine and brandy haciendas of Moquegua, Peru. *Journal of Field Archaeology* 23, 187–204.
- Rothman, M., 2003. Style zones and adaptations along the Turkish-Iranian borderland. In: Miller, N., Abdi, K. (Eds.), *Yeki Bud Yeki Nabud, Essays in Honour of William Sumner*, Los Angeles, pp. 207–216.
- Rothman, M., 2004. Ripples in the stream: Transcaucasia–Anatolian interaction in the Murat/Euphrates Basin at the beginning of the third millennium BC. In: Smith, A., Robinson, K. (Eds.), *Archaeology in the Borderlands: Investigation in Caucasia and Beyond*, Los Angeles, pp. 94–114.
- Sagona, A.G., 1984. The Caucasian Region in the Early Bronze Age. *BAR International Series* 214. Oxford.
- Sagona, A., 2004. Social boundaries and ritual landscapes: the Late Prehistory of Trans-Caucasus. In: Sagona, A. (Ed.), *A View from The Highlands: Studies in Honour of Charles Burney, Peeters, Louvain*, pp. 485–549.
- Sagona, A.G., Zimansky, P., 2010. *Ancient Turkey*, London.
- Sala, M., 2008a. L'architettura sacra della Palestina nell'età del Bronzo Antico I–III. In: *Contributi e Materiali di Archeologia Orientale XIII*. Università degli Studi di Roma "La Sapienza", Roma.
- Sala, M., 2008b. Khirbet Kerak Ware from Tell es-Sultan/ancient Jericho: a Reassessment in the Light of the Finds of the Italian–Palestinian Expedition (1997–2000). In: Córdoba, J.M., Molist, M., Pérez, M.C., Rubio, I., Martínez, S. (Eds.), *Proceedings of the 5th International Congress on the Archaeology of the Ancient Near East*, Madrid, April 3–8 2006, vol. III. Publications Service of the Universidad Autónoma de Madrid, Madrid, pp. 111–133.
- Sardarian, S.A., 1967. *Pervobytnoe obshchestvo v Armenii*. Erevan.
- Schwartz, M., Erdman, K., Morison, M., 2009. Migration, diffusion and emulation: petrographic comparisons of early Transcaucasian and Anatolian pottery from Malatya–Elazığ, Turkey. *Ancient Near Eastern Studies* 46, 138–159.
- Shimelmitz, R., 2003. A glance at the Early Transcaucasian culture through its nomadic component. *Tel Aviv* 30 (2), 204–221.
- Smogorzewska, A., 2004. Andirons and their role in Early Transcaucasian culture. *Anatolica* 30, 151–177.
- Steinkeller, P., 1999. Land tenure conditions in Third Millennium Babylonia: the problem of regional variation. In: *Urbanization and Land Ownership in the Ancient Near East. Study of Long Term Economic Trends*. International Scholars Conference of Ancient Near Eastern Economies, vol. 2, Bethesda, pp. 289–329.
- Stöllner, T., Gambaschidze, I., Hauptmann, A., Mindiasvili, A., Gogocuri, G., Steffens, G., 2010. Goldbergbau in Südgeorgien. Neue Forschungen zum Frühbronzezeitlichen Bergbau in Georgien. In: Hansen, S., Hauptmann, A., Motzenböcker, I., Pernicka, E. (Eds.), *Von Majkop nach Trialeti. Gewinnung und Verbreitung von Metallen und Obsidian in Kaukasien im 4.–2. Jahrtausend v. Chr.* Dr. Rudolf Habelt GmbH, Bonn, pp. 139–160.
- Tadmor, M., 1964. Contacts between the 'Amuq and Syria–Palestine. *Israel Exploration Journal* 14, 253–269.
- Takaoglu, T., 2000. Hearth structures in the religious pattern of Early Bronze Age Northeast Anatolia. *Anatolian Studies* 50, 11–16.
- Thomas, W.I., Znaniecki, F., 1918. *The Polish Peasant in Europe and America*. University of Chicago Press, Chicago.
- Todd, I.A., 1973. Anatolia and the Khirbet Kerak Problem. In: Hoffner Jr., H.A. (Ed.), *Orient and Occident (Essays Presented to Cyrus H. Gordon on the Occasion of his Sixty-Fifth Birthday)*. Alter Orient und Altes Testament 22, 181–206.
- Ur, J., 2005. Sennacherib's Northern Assyrian Canals: new insights from satellite imagery and aerial photography. *Iraq* 67, 317–345.
- van Dommelen, P., 2002. Ambiguous matters: colonialism and local identities in Punic Sardinia. In: Lyons, C., Papadopoulos, J. (Eds.), *The Archaeology of Colonialism*. Getty Restoration Institute, Los Angeles, pp. 121–147.
- van Dommelen, P., 2005. Colonial interactions and hybrid practices. Phoenician and Carthaginian settlement in the ancient Mediterranean. In: Stein 2005 ed. *The Archaeology of Colonial Encounters. Comparative Perspectives*. School of American Research Press, Santa Fe, pp. 109–141.
- Waters, M.C., Jiménez, T.R., 2005. Assessing immigrant assimilation: new empirical and theoretical challenges. *Annual Review of Sociology* 31, 105–125.
- Welton, L., Batiuk, S., Harrison, T.P., 2011. Tell Tayinat in the Late Third Millennium: recent investigations of the Tayinat Archaeological Project 2008–2010. *Anatolica* 37, 147–185.
- Welton, L., 2011. Tayinat in the Late Third Millennium BC. *Journal of the Canadian Society for Mesopotamian Studies* 6, 15–27.
- Wilkinson, K.N., Gasparian, R.B., Pinhasi, R., Aветisyan, P., Hovsepyan, R., Zardaryan, D., Areshian, G.E., Bar-Oz, G.B., Smith, A., 2012. Areni-1 Cave, Armenia: a Chalcolithic–Early Bronze Age settlement and ritual site. *Journal of Field Archaeology* 37 (1), 20–33.
- Winkler, A.J., 1962. *General Viticulture: Contemporary Research, Practices, and Progress in Present-Day Care of Grapevines*. University of California Press, Los Angeles.
- Wiseman, D.J., 1953. *The Alalakh Tablets*. British Institute of Archaeology at Ankara, London.
- Woolley, Sir C.L., 1953. A Forgotten Kingdom. Being a Record of the Results Obtained from the Excavations of Two Mounds, Atchana and Al Mina, in the Turkish Hatay. Harmondsworth.

- Yasur-Landau, A., 2010. *The Philistines and Aegean Migration at the End of the Late Bronze Age*. Cambridge University Press, New York.
- Yener, K.A., 2000. The Domestication of Metals: The Rise of Complex Metal Industries in Anatolia (c. 4500–2000 B.C.). E.J. Brill, Amsterdam.
- Yener, K.A., Wilkinson, T.J., Branting, S., Friedman, E., Lyon, J., Reichel, C., 1996. The 1995 Oriental Institute Amuq Regional Projects. *Anatolica* 22, 49–84.
- Yener, K.A., Edens, C., Harrison, T.P., Verstraete, J., Wilkinson, T.J., 2000. The Amuq Valley Regional Project 1995–1999. *American Journal of Archaeology* 104, 163–220.
- Yener, K.A. (Ed.), 2005. *The Amuq Valley Regional Projects. Surveys in the Plain of Antioch and Orontes Delta, Turkey, 1995–2002*. Oriental Institute Publications, No. 131, Vol. I. Oriental Institute of the University of Chicago, Chicago.
- Yilmaz, O.Y., Tolunay, D., 2012. Distribution of the major forest tree species in Turkey within spatially interpolated plant heat and hardiness zone maps. *Journal of Biogeosciences and Forestry* 5, 83–92.
- Zohary, D., 1995. The domestication of the Grapevine *Vinifera* L. in the Near East. *Food and Nutrition in History and Anthropology* 11, 23–30.