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The Kura-Araxes culture from the Caucasus to Iran, Anatolia and the Levant:
Between unity and diversity

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RETHINKING THE KURA-ARAXES GENESIS

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Abstract: *The Kura-Araxes horizon is arguably the most long-lived and geographically expansive archaeological complex of the prehistoric Near East, stretching from the Southern Caucasus through Eastern Anatolia and Northwestern Iran, to lands beyond. It is also highly distinctive with a cultural package that sets it apart from contemporary traditions. This paper investigates the origins of this perplexing tradition, generally placed around 3500/3400 BC, through a critical review of the evidence. Drawing on well-established sequences and new data, including those from Chobareti, in Southwestern Georgia, it contends that the 4th millennium BC in the Southern Caucasus was a period of cultural interplay and hybridity. This current picture is more interconnected and nuanced than the conventional view, and involves relationships between local and intrusive elements.*

Résumé : *L'horizon Kura-Araxe est probablement le complexe archéologique du Proche-Orient préhistorique qui a connu la plus grande extension dans le temps et dans l'espace ; il s'étire du Sud Caucase à l'Anatolie orientale et au nord-ouest de l'Iran, puis aux régions situées au-delà. Cette culture possède aussi une forte originalité avec un « bagage » culturel qui la distingue des traditions contemporaines. Dans cet article sont étudiées les origines de cette « surprenante » tradition, que l'on situe généralement autour de 3500/3400 av. J.-C., avec un examen critique des données. À partir de séquences bien établies et des fouilles récentes, dont celles de Chobareti dans le sud-ouest de la Géorgie, il est démontré que le 4e millénaire dans le sud du Caucase fut une période d'interaction culturelle. Cette vision suppose plus d'interconnexions que le schéma traditionnel et implique l'existence de relations entre des éléments culturels locaux et intrusifs.*

Keywords: *Origins of Kura-Araxes; Chalcolithic; Caucasus; Entanglement; Sioni.*
Mots-clés : *Origine du Kura-Araxe ; Chalcolithique ; Caucase ; Interaction ; Sioni.*

Nearly a decade ago Adam Smith (2005: 258) wrote, "[…] the debate over Kura-Araxes origins may be conceptually misplaced." He went on to question the purpose for seeking the tradition's origins and the trajectory the intellectual pursuit has taken:

> "What does it mean to suggest that the Kura-Araxes originated in eastern Anatolia rather than Transcaucasia? What is at stake in the question? At the moment, it turns out that quite little is at stake because we do not have a clear understanding of what the Kura-Araxes actually is."

In a region such as the Caucasus where labels, whether ancient or modern, ethnic or religious, are hotly contested, these are certainly valid questions.[1] We should not forget, however, that until recently evidence for the formative period of the Kura-Araxes complex suffered from severe limitations. Different modes of field techniques and sampling methodologies used by early excavators have meant that the analysis and interpretation of depositional layers at many sites are often difficult (or impossible) to determine. Consequently, the cultural environment that shaped the lives of past humans and societies, whom we study, fundamental to any conceptualisation of behaviour, has been necessarily elusive.

Even so, Soviet archaeology often placed an emphasis on cultural materialism and the supposition that communities could be seen as functioning wholes, producing assemblages that may reflect their distinctive social identities. This

1. It should be noted, though, that the overwhelming consensus even among Anatolian archaeologists is that the Kura-Araxes originated in the Southern Caucasus, not Eastern Anatolia. What has been argued—and this may be a source of confusion—is an east Anatolian, indeed central Anatolian, origin for the black-and-red firing technique, which subsequently melded with the monochrome Kura-Araxes forms from the Caucasus (Palumbi 2003).

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approach was expressed through the construction of complex artefact typologies, usually ceramics, based on local cultural variants, which were derived from many short-lived sites without solid chronometric dates. The result was confusion. Fleeting glimpses of settlements compounded by an almost free-floating chronology made it difficult to structure the data and assess change through time.

Presently, we are witnessing a sea change in the archaeology of the Caucasus, now an arena of intense international dialogue and collaboration. A surge of new research and the re-evaluation of early excavation results have gradually shifted us away from a unitary, if not unified, conception of the origin of the Kura-Araxes complex to a view that situates it within a rich and dynamic cultural interplay involving the lands from the greater Caucasus to the Syro-Mesopotamian foothills and beyond. Consequently, we have had several appeals to view the Kura-Araxes complex as part of a series of processes that was played out in the social, economic and religious spheres.

The period before us, the 4th millennium BC, is now emerging from the dimness of obscurity as a critical interlude in the Southern Caucasus. Most importantly, it has become increasingly obvious that during this stretch of time the development of the greater Caucasus cannot be understood in isolation. We owe much of the current re-assessment to nuanced sequences, a growing body of scientific data and the ever-increasing quantity of reliable radiocarbon evidence. They provide a picture of different cultural groups, scattered across an environmentally varied isthmus, intent on maintaining their distinct identities, yet also involved in local and long-range interaction. More radiocarbon dates are needed yet to establish a really sound chronology for the period. To this extent I present new absolute dates, indicated by an asterisk (*) in the bar graphs and tables, derived from secure samples collected from both early excavations (Berikldeebi and Sioni) and more recent investigations (Chobareti).[2] A comprehensive assessment of chronometric dates is here not possible, but those referred to show some clear trends. Collectively these new data require me to revise, in some instances completely, views expressed in a paper I wrote with Tamaz Kiguradze (Kiguradze and Sagona 2003). Hopefully, they will show that the genesis of the Kura-Araxes tradition is today no longer 'conceptually misplaced'; rather it is a topic well worth pursuing.

REMAINING PROBLEMS AND CONFLICTING CLAIMS

Despite the secure footings that recent radiocarbon analyses have provided, the compartmentalisation of the 4th millennium into periods and the terminology use to express changing cultural traditions are not without difficulties. Whereas other periods of the Caucasus face similar challenges, those of the Kura-Araxes are seemingly more acute, partly owing to the expansive geographical spread of the Kura-Araxes *oikumene*, which brought it into direct contact with the far better dated traditions of the ancient Near East, with whose sequences it needs to be reconciled. These problems can be summarised as follows:

THE NATURE OF RADIOCARBON DATES

The questioning that currently surrounds the trustworthiness of early analyses, carried out in both Western and Soviet laboratories, is worth flagging as a cautionary note.[3] Methods around the world in the 1960s were still being refined, and the potential scale of the 'old wood' effect, for instance, had not even surfaced. Another latent error some laboratories ignored (and continue to ignore) were the backgrounds standards, mostly affecting dates less than 10,000 years. The use of graphite (for AMS) or coal (for AMS or radiometric) for organic carbon background standards is considered inadequate by some researchers.[4] The different conditions under which they are preserved compared to charcoal do not make them true pre-treatment standards. One other consideration is that older radiometric dates required much larger samples, which may not have been pure charcoal; that is, organic carbon of

2. Presently, the samples from early excavations come from Georgia, though in time I aim to have a more representative dataset for the Southern Caucasus. I would like to thank my colleagues at the Georgian National Museum, in particular M. Menabde, M. Jalabadze, K. Kakhiani and G. Bedianishvili, for providing me with the necessary samples to begin this project. My gratitude is also extended to the Australian Research Council, the Australian Institute of Nuclear Science and Engineering, and various private donors for the funds to carry out the analyses. A new series of ^{14}C dates and other data on the relationship between the early kurgan and late Kura-Araxes periods will be published soon.

3. See, for example, Manning and Kromer 2011 for critique of the early analyses of samples collected from Gordion. A less hard line approach is taken by Bronk Ramsey (2008: 259), who notes: "We can also say that, with few exceptions, the measurements made decades ago are still valid within their quoted error limits. The problems in radiocarbon dating most often arise either in the pretreatment stage of the process or in the interpretation of the radiocarbon measurement."

4. I would like to express my gratitude to Alan Hogg and Fiona Petchey (Waikato Radiocarbon Laboratory) for their elucidating comments on radiocarbon analysis.

a different age could possibly have been associated with the sample. Little attention, too, was paid to the taphonomy of samples. How the samples came to be deposited and the nature of their context did not concern most early researchers. There was also a tendency for spot dates — one sample to represent a long period or deep deposit, rather than a cluster of dates. These single dates, precious though they are, cannot be used to define the parameters of a deposit, making inter-regional comparisons all the more difficult. Methods are now more precise and we can now count longer, but within the stated errors early radiometric dates can still be used with caution.

UNCRITICAL COMPARISONS OF CORRECTED RADIOCARBON READINGS

The 'second radiocarbon revolution', whereby raw dates were calibrated to mirror the now known natural atmospheric variations in radiocarbon levels, eventually affected the Caucasus. Spurred on by these developments Giorgi Kavtaradze (1983) collated the available radiocarbon readings and corrected them using the R.M. Clark curve (Clark 1975), the earliest attempt at re-calibration. Very influential though Kavtaradze's study was, its lasting effect has meant that the Clark calibrated dates are still being compared with recent readings adjusted using the OxCal program. This uncritical comparison of dates using different calibration curves can be misleading. Here we conform to the international standard known as the Trondheim Convention for citing radiocarbon dates and supporting information, whereby the uncalibrated BP readings are provided, as well as the cal. BC dates (Stuiver and Polach 1977). The calibrated date ranges have been calculated using a probabilities method at a resolution of one year and OxCal v4.1.7.[5] In this study, only calibrated dates with a 95.4% probability are used.

INCONSISTENCIES IN CERAMIC TYPOLOGIES

Ceramics continue to form the clearest indicator of cultural change in the Kura-Araxes complex. In ideal circumstances, a ceramic typology should divide a coeval series of vessels into categories of types and sub-types based upon the consideration of a wide range of attributes: technological (mode of manufacture and fabric), morphological (overall forms and their component parts such as rims or bases), functional (the use of the vessel in domestic or non-domestic contexts), qualitative (modes of decoration and surface treatment), and quantitative (the amount of a particular type as compared to another). None of the current typologies of Kura-Araxes ceramics cover all these criteria equally. Rather, most classifications have had to use the selective range of published attributes, seldom articulated precisely, to compose groups of 'look-alikes', which are rarely tested in an objective fashion for their time/space contiguity using distributional data. Another difficulty is one of scale. Some typologies have extensive distributions in time and/or space, whereas others are quite site-specific, making close inter-regional comparisons difficult.

CONFLICTING AND AMBIGUOUS TERMINOLOGIES AND PERIODISATIONS

Apart from the recent high dates from Ovçular Tepesi and Areni-1 Cave, which I shall discuss below, there is general agreement that the earliest expression of the Kura-Araxes horizon appeared around 3500/3400 BC, becoming well established by 3300 BC (Palumbi 2008). There is less accord, however, on terminology and how the horizon should be sliced up. The inter-changeability of terms can be an irritant. Kura-Araxes and synonymous descriptors like Early Transcaucasian, which represent a tradition of material culture with its own developmental phases, are often used as a default term for the Early Bronze Age, a techno-chronological period. The problem is compounded because there is no consensus on whether the entire Kura-Araxes tradition falls within one period. Should its formative phase, for instance, be assigned to the Late Chalcolithic period or the Early Bronze Age? Although today's use of archaeological periodisations no longer reflects the original European technological narratives advocated in the nineteenth century, the cultural stories associated with each temporal block do nonetheless carry meaning.

So, then, what is the fundamental narrative behind the communities of the earliest Kura-Araxes? Philip Kohl (2009), following Evgeni Chernykh (1992), has suggested that it is the production of bronze metalwork and has forcefully argued that the earliest Kura-Araxes must define the beginning of the Early Bronze Age. But this view is not without its problems. Isolating metalworking as the driving factor of the Kura-Araxes complex is questionable, all the more so given the debate that surrounds the status of its metallurgy and

5. See C. Bronk-Ramsey, *OxCal Program V4.1.7*, Radiocarbon Accelerator Unit. University of Oxford. 2010. About the importance of precise radiocarbon analysis and its effect on chronology, see Shortland and Bronk-Ramsey 2013.

production. Is metalworking really at the hub of Kura-Araxes activities, or has it been overstated? Kura-Araxes communities cannot, to be sure, take credit for novel metalworking technologies. Rather they adopted practices, which were established at the end of the Neolithic, and improved during the second half of the 5th millennium BC, as the Mentesh Tepe finds illustrate (Lyonnet *et al.* 2008; Lyonnet and Guliyev 2010). Moreover, the question of whether arsenic, the fingerprint of early Caucasian metalwork, was added intentionally is still being argued.[6] One thing is certain, namely that both arsenical copper and unalloyed copper co-existed during the Kura-Araxes period.

If we turn to the measures of quantity or age, we find that the Kura-Araxes metalwork is not a stand out in the world of the Caucasus. The Maikop tradition was far more productive and precocious, and in its second phase (the Novosvobodnaiia stage) stylistic traits show that it influenced Kura-Araxes metal-smiths. A recent and comprehensive survey of metalwork in Georgia has put this matter into a sharper perspective (Gambashidze *et al.* 2010). For a start, hardly any metal objects can be dated to the earliest Kura-Araxes phase, and later on production and quantity of metalwork increase only in the second half of the 3rd millennium BC. This holds true even for Kvatskhelebi, which was completely excavated. The situation is not different in Northwestern Iran. G. Summers (2013 and this volume) has reiterated that Yanik Tepe and its neighbouring sites have no metal workshops or finds. Sos Höyük, near Erzurum, does not alter the picture either. There, the Kura-Araxes deposits are overwhelmingly lithic (obsidian) supplemented by worked bone tools. Basically, the core area of the Kura-Araxes cannot be seen as an advanced metallurgical centre in the period 3500-2500 BC.

Giulio Palumbi (2008) seeks a more holistic view to terminology. Whereas he admits that the Kura-Araxes metal technology remained essentially unchanged, he maintains that the social and cultural dynamics associated with the horizon were so transformative that they warrant the attribution Early Bronze Age. This is true. Among other advocates of an Early Bronze Age start is the project ArAGATS (Smith *et al.* 2009). Thirty years ago, I, too, coupled the inception of the Kura-Araxes tradition with the beginning of the Early Bronze Age in the Southern Caucasus and placed them around the mid-3rd millennium BC (Sagona 1984), but the excavations at Sos Höyük subsequently changed my mind. In my deliberations, I looked towards the Upper Euphrates region to provide some safe chronological anchorage, and accordingly attributed the earliest period at Sos Höyük, VA (3500/3400–3000 BC), to the Late Chalcolithic period (Sagona 2000). It has become increasingly clear, though, that Sos Höyük VA is closely aligned with the world of the Southern Caucasus, and should be attributed to the Early Bronze Age I period. The Erzurum region, it seems, is the westernmost extension of the Kura-Araxes homeland. Looking at it from an Anatolian perspective, Erzurum forms a cultural frontier in Northeastern Anatolia in late prehistory.

A few more words are apt on relative systems and the conundrum that faces archaeologists in regions like Anatolia that are not geographically coherent. The early techno-chronological constructs, formulated in Europe to explain the relative sequences of major developmental phases, have lingered on, and have been linked to distinctive traditions of material culture that are assumed to be approximately contemporary. Hence, in the Near East, the Uruk tradition defines the Mesopotamian Chalcolithic (Rothman 2001), whereas the Kura-Araxes is tied to the south Caucasian Early Bronze Age. In Eastern Anatolia, where the two worlds collided we have a curious terminological 'fault line'. On the one side we have communities in the core Kura-Araxes area initiating an 'Early Bronze Age' lifestyle around 3500/3400 BC, while across the fault line their distant and coeval neighbours in the socially complex Upper Euphrates region, whose relations with the early state systems of Mesopotamian world ensures they are locked into well a integrated framework, are placed in a Late Chalcolithic world. These relative systems were once useful in the absence of absolute dates, but we now have sufficient chronometric dates to think about dispensing with relative terms, especially if they confuse. This is clearly demonstrated by a quick glance at some recent syntheses on the material culture of the Caucasus, Anatolia and Iran (Lyonnet 2007: 13; Steadman and McMahon 2011; Petrie 2013: 5; Potts 2013; Bolger *et al.* 2014). The chronological interface between the end of the Chalcolithic and the beginning of the Early Bronze Age in these regions and their micro-regions varies considerably from 3500 BC to as low as 2900 BC. Clearly differentiated stratigraphies, dated precisely and objectively through radiocarbon analysis, is the way forward. Periodisation is convenient, to be sure, but we must keep in mind that it is simply a heuristic device, which categorises and makes manageable the study of large and complex data.

6. See papers delivered in Venice (9-11 January 2013) during the conference 'At the Northern Frontier of Near Eastern Archaeology: Recent Research on Caucasia and Anatolia in the Bronze Age': http://venus.unive.it/erovaweb/convegno/program.html

SOME NEW EVIDENCE

Defining the Chalcolithic period in the Southern Caucasus is more problematic than articulating the Kura-Araxes horizon (Chataigner 1995; Akhundov and Makhmudova 2008). Broadly speaking it has been assigned to the period from *ca* 5000 to 3500 BC, though some adhere to the later cut off of 3000 BC (Lyonnet 2007: 13). Culturally it comprises two broad horizons best known by their ceramics: Chaff-Faced Ware and Sioni Ware (fig. 1 and below figs. 2-3). The former was far more extensive, incorporating Northern Syria and Mesopotamia, Southeastern Anatolia, and extending into Northwestern Iran. The Sioni tradition, on the other hand, is a local internal development, especially prevalent in the Kvemo Kartli and adjoining regions.

At this stage we can do little better than to divide the Chalcolithic into two periods (Kiguradze 2000), now supported by a handful of radiocarbon readings. An early phase (*ca* 5000-4000 BC) well documented at Mentesh Tepe (Lyonnet *et al*. 2012), Ovçular Tepesi (Marro *et al*. 2009 and 2011) and Aratashen (Badalyan *et al*. 2004), and a late stage (*ca* 4000-3500 BC) when we have evidence for a greater number of sites. Exactly when the two phases separate and to what extent Late Chalcolithic traits linger on remain unclear. At Ovçular Tepesi, for instance, the material finds are reported as Late Chalcolithic, though the calibrated radiocarbon dates place them in the late 5th millennium BC, an interlude that in the Fertile Crescent falls between the Ubaid and Uruk periods (Marro 2012). Moreover, recent investigations at Mentesh Tepe (Lyonnet *et al*. 2012) have shown that this early phase may warrant a further sub-division into Early (5000-4500 BC) and Middle (4500-4000 BC). Regardless of how we slice up the period we should avoid referring to the Chalcolithic as Early Sioni and Late Sioni, or indeed prioritising the Sioni assemblage (Dzhaparidze 1989: 340-349). The use of this archaeological tradition to define the 5th and 4th millennia of the Southern Caucasus has muddied the waters.[7] When the term 'Sioni' is used it should be strictly limited to ceramics similar to those found at the type-site in Georgia (see below), but increasingly being discovered in Armenia and Azerbaijan.

Chalcolithic communities are distinguished from their Neolithic forebears by a number of traits (Marro *et al*. 2011; Sagona 2011; Palumbi 2011; Lyonnet *et al*. 2012; Courcier 2012): their more flexible lifestyle reflected in varying modes of occupation from permanent villages to seasonal camps, whether situated in open plains or caves (Areshian *et al*. 2012); their capacity to benefit from resources across a greater range of environmental zones, including those in higher altitudes; their diversified subsistence strategies which by this time incorporated wine-making (Batiuk 2013); their external networks, based on a flow of commodities, drew them into worlds beyond the Kura-Araxes interfluve; and finally their advancement of metallurgy.

A tentative framework for the Chalcolithic of the Southern Caucasus can be proposed using select sites:

Early Chalcolithic (*ca* 5000–4000 BC)
Azerbaijan: Mentesh Tepe II and III (Lyonnet's Early and Middle Chalcolithic), Ovçular Tepesi (Nakhichevan)
Armenia: Aratashen, Areni-1 Cave.
Georgia: Sioni.

Late Chalcolithic (*ca* 4000–3500 BC)
Azerbaijan: Leilatepe, Kültepe I, Alikemek Tepesi, Ovçular Tepesi (Nakhichevan)
Armenia: Areni-1 Cave, Godedzor, Tekhut
Georgia: Berikldeebi V, Sioni, Tsopi.

With the emergence of the Kura-Araxes horizon around the mid-4th millennium BC, we witness an altogether different tradition (figs. 1, 4) ascribed to the Early Bronze Age. These early farmers, who extended their settlements to even higher altitudes, perhaps as a result of ameliorating climatic conditions (Connor and Sagona 2007), displayed a remarkable cohesion in social terms. Elsewhere I have treated the Kura-Araxes as a cultural 'package' (Sagona and Zimansky 2009): a collection of artefacts and features displaying a distinctive type of cultural behaviour. The significance of this package is discussed below. In a relatively short period of time, we witness a rapid cultural change in the prehistory of the highlands. New material culture and customs appear and are quickly taken up across a vast area, reaching as far as the banks of the Upper Euphrates (Rothman 2005; Palumbi 2008). Southward they followed the arc of the Taurus and Zagros Mountains, extending down to the Amuq on one side and the Urmia basin through Godin Tepe to the Kangavar Plain on the other (Rothman 2011). A variant of this complex is found in the Southern Levant where it is known as Khirbet Kerak (Greenberg *et al*. 2006). Although various migration

7. In earlier papers, I also over-used the term Sioni (Kiguradze and Sagona 2003; Sagona 2011). Having examined the Berikldeebi V material, I can now confirm that the bulk of its ceramics is Chaff-Faced Ware.

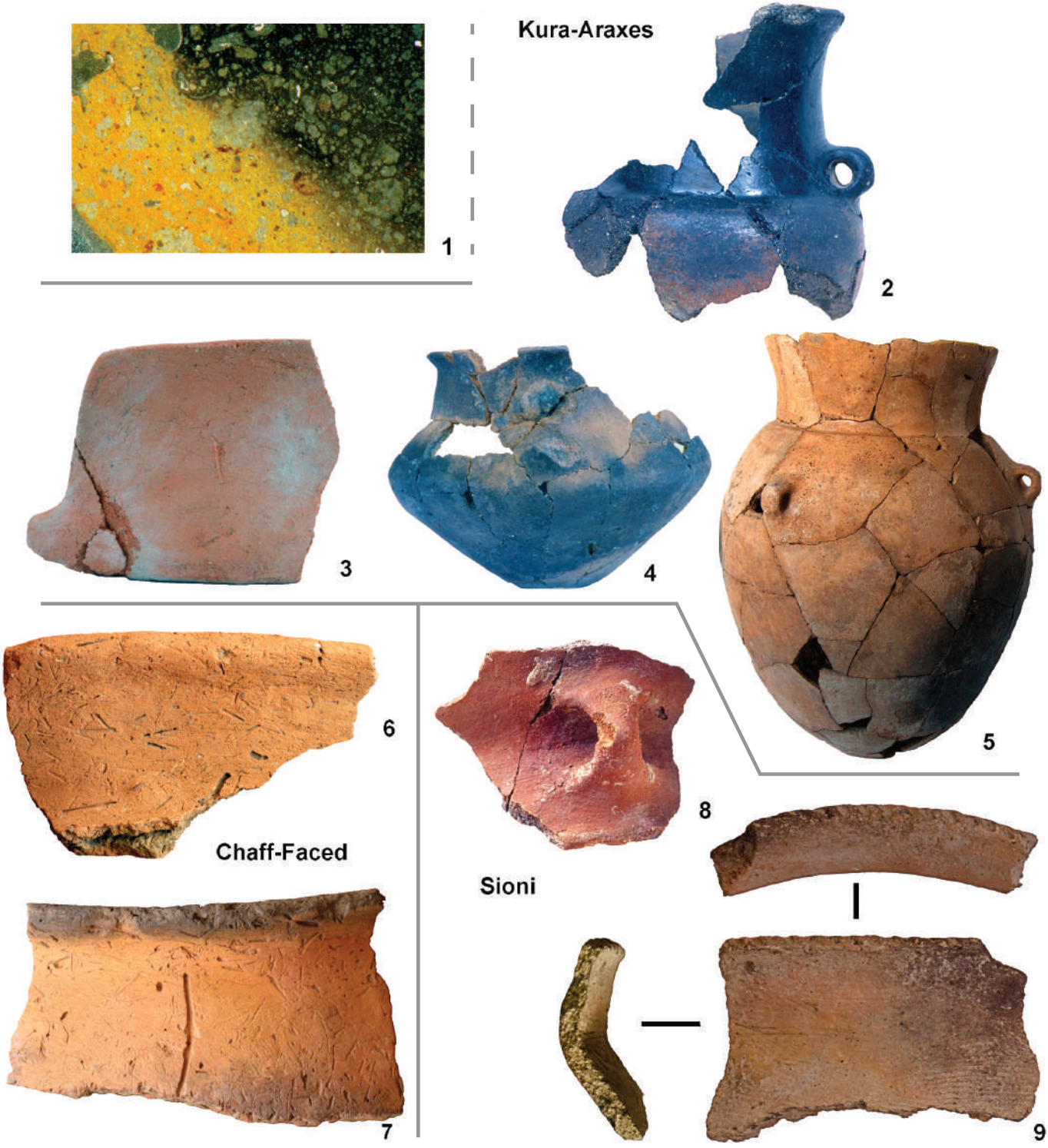

Fig. 1 – *Fourth millennium pottery wares.* ***1-4****,* ***8****) Sos Höyük;* ***5****) Chobareti;* ***6-7****) Godedzor;* ***9****) Sioni. 1) thin section of the red-black variety of Kura-Araxes, showing the grit inclusions and clear demarcation of the reduction/oxidation firing; 2) red-black Kura-Araxes; 3-5) monochrome Kura-Araxes; 6-7) Chaff-Faced ware; 8-9) Sioni – Not to scale; photographs by: A. Sagona (1-4 and 8); K. Kakhiani (5); C. Chataigner and G. Palumbi (6-7); B. Shapardon (9).*

models have been proposed for this spread (Rothman 2003; Batiuk 2013), we have yet to see an assessment of the role played by individual and population mobility. This can only be achieved with any degree of precision through the application of new geochemical techniques such as strontium isotopic analysis for assessing the age of human remains and the mobility of human populations.

Using a combination of radiocarbon dates (calibrated to a confidence level of one or two sigma), and comparative and typological schemes, G. Palumbi (2008) has proposed a credible sequence for the Kura-Araxes I and II periods (Sagona 1984). It can be summarised and updated as follows:

Kura-Araxes I (*ca* 3500–3300 BC)
Southern Caucasus:
Berikldeebi IV, Treli,
Samshvilde Level I, Grmakhevistavi,
Early Mentesh Tepe IV, and the early sequence at Horom,
Talin Tomb 11,
Early Gegharot all characterised by monochrome pottery.
– Note that most sites do not have radiocarbon dates.
Northeastern Caucasus: Ginchi and Velikent (hybrid versions)
Northeastern Anatolia: Sos Höyük VA [sondage L17/M17].
… *Contemporary non-Kura-Araxes traditions*
Upper Euphrates: Arslantepe VII and early VIA (public building).
The Chaff-Faced Ware horizon of Periods VII and VIA has small but important quantities of burnished wares (red-black, black and monochrome) that reflect central Anatolian influence.

Kura-Araxes II (*ca* 3300–2750 BC)
Sites included in the late 4th millennium, the chronological limit of this paper, are as follows:
Southern Caucasus:
Samshvilde Level II,
Didube, Khizanaant Gora D, Amiranis Gora,
Chobareti, Kiketi, Kvatskhelebi Tombs,
Horom, Aparan III, Talin Tombs 10 and 11,
Mokhrablur XI–IX, Gegharot, and early Mentesh Tepe IV.
Northeastern Anatolia: Sos Höyük VA.
[ceramic floor and round house] predominantly monochrome pottery on the ceramic floor, changing to mainly red-black burnished in the round house.
… *Contemporary non-Kura-Araxes traditions*
Upper Euphrates:
Arslantepe VIA (public building) and Tepecik Level 3.
Characterised by Red-Black Burnished Ware likely to have derived from Central Anatolia.

According to G. Summers (this volume), the Yanik Tepe deposits with its incised and excised pottery and circular houses are intrusive to the Urmia region, and date to *ca* 3000 BC. Very recent radiocarbon evidence from Kültepe near Hadishahr, in the Araxes Valley of Northwestern Iran, however, suggests that Kura-Araxes communities were already well settled there in the late 4th millennium BC.[8] Kültepe V, radiocarbon dated to 3360-3080 cal. BC (LTL 13402A), is distinguished by a deposit of predominantly monochrome pottery in association with a small quantity of Chaff-Faced ware. Interestingly, excised and incised ornaments, the hallmark of Northwestern Iranian facies, are rare.

CERAMICS

Despite the recent diversification of evidence, pottery wares still remain the most abundant indicator of regional groupings for the 4th millennium BC in the Southern Caucasus. We should not forget, though, that the importance of ceramics goes beyond archaeology—like other portable objects they had a life of their own, often imbued with cultural meaning (Greenberg 2007). I shall start with ceramics, and move to a few select sites and their key features.

Chaff-Faced Ware

Chaff-Faced Ware (fig. 1: 6-7; 2: 1-3, 5-6), or 'Amuq F', is conventionally associated with the Late Chalcolithic of Northern Mesopotamia and Southeastern Anatolia where it is the preponderant pottery (Braidwood and Braidwood 1960: 229). This spatial view has been challenged in recent years based on emerging evidence from the Southern Caucasus, which suggests that the geographical extent of the horizon's heartland was more extensive than once thought (Marro 2010 and 2012). Pushing this idea even further, some may argue that Chaff-Faced Ware of the 5th millennium BC could have developed out of the Neolithic chaff-tempered ceramics of the 6th millennium BC. These earlier wares are products of the Shulaveri-Shomutepe tradition, which have been attested at Mentesh Tepe (Lyonnet *et al*. 2012: 97) in the Kura Valley, Aknashen III-II (Badalyan *et al*. 2010: 190) in the Araxes basin, and at Kamiltepe in the Mil Steppe (Lyonnet *et al*. 2012: 38). But more data are certainly required to suggest continuity between the Neolithic and

8. Abedi *et al*. 2014.

Chalcolithic chaff-tempered wares, especially given the gap in occupation at most sites, such as Mentesh Tepe (Lyonnet *et al*. 2012: Tab. 19; Fig. 130). Regionalism is evident and usually reflected in variations of form. Hybridity, too, is noticeable on the edge of the cultural province where potters experimented with different pastes. Even so, the overriding trait of Chaff-Faced Ware is its fabric. Both surfaces bear clear impressions of the chaff temper that was burned in the firing process; grit inclusions are sparse in concentration in a dense and fairly rough paste. Most vessels are wet-smoothed, handmade (though there is some evidence of a slow wheel) and fired to a pale brown to orange buff colour (often not oxidised fully). There is a limited range of generic shapes belonging to bowls and large collared jars: wide-necked jars with short out-flaring rims, either plain or moulded; holemouth jars; hemispherical bowls with turned-in lips; outrolled rims—simple, beaded, or hammer-head, depending on the site—are characteristic of larger bowls. Potters marks were liberally used across Syro-Mesopotamia, though they are not common in the Trans-Caucasus. Trays perforated at the rim (fig. 2: 9) are characteristic, as they also are in the Sioni tradition (fig. 3: 7); trays and scoops also feature in the Kura-Araxes I.

Sioni Ware

Named after the site in the Marneuli district, Sioni Ware (fig. 1: 8-9; fig. 3: 5-8) has a much more restricted distribution than Chaff-Faced Ware (Menabde and Kiguradze 1981). It is focused within Eastern Transcaucasia, especially in Kvemo Kartli, where sites along the Kura, Araxes and Terek river basins have yielded varying quantities (Kiguradze and Sagona 2003). Outside the Southern Caucasus, Sioni sherds have been reported in Northwestern Iran in the Koda Afarin valley, and at sites in the Ağrı district, especially at Sarıgül and Çetenli in easternmost Anatolia (Marro 2008). Vessels are handmade, using either coils or slabs of clay.[9] Their fabric is hard and granular with few voids. Sand and crushed obsidian are characteristic inclusions, though the occasional piece of crushed pottery (grog) can be seen with the naked eye. The use of obsidian as temper was not a popular practice among potters outside the Southern Caucasus (Palumbi *et al*. 2014), even in Eastern or Central Anatolia where obsidian was also abundant. Anyone who has handled small slivers of obsidian will know why; their perilously sharp edges could potentially lacerate the fingertips of a potter. Late Sioni pottery also intentionally added chaff temper, indicating the hybridity that characterises the late 4th millennium BC. Many sherds are also highly micaceous, glinting as light catches their gold or silver flecks.

Vessels are fired to a range of pale colours (brown, red and yellow—though the baking process was often incomplete. Forms were restricted. Potters created ovoid-bodied jars usually with a holemouth, and bowls with upright or out-turned rims. Handles are not typical, though at Sos Höyük there are a few late examples (fig. 1: 8), no doubt imitating contemporary early Kura-Araxes practices. Mat-impressed bases are common. Sioni containers were hardly ever left plain. Some have combed surfaces, whereby the body was ornamented with a series of haphazardly executed incised lines. Whether or not there is any functional association between these Sioni 'combed' vessels and the 'flint scraped' containers of Northern Syria, generally attributed to Chaff-Faced Ware, remains to be seen. More commonly, Sioni vessels were wet smoothed, slipped or sparingly burnished. On the whole, decorativeness was reserved for the rims, which display a variety of ornaments, including oblique or transversely parallel incisions, circular impressions, and denticulation. Rims were also moulded into a scallop pattern. These ornamental rims are not numerous and seem to concentrate at the beginning of the 4th millennium BC.

Kura-Araxes Ware

The early Kura-Araxes ceramic assemblage has two visually distinct groups (fig. 1: 1-5; fig. 4: 4-5).

One is fired to shades of pale brown and often referred to as monochrome, though its surface is frequently mottled or smoke blackened (Palumbi 2008). Vessels can have a 'leathery' look even after a moderate polish. By contradistinction, the other category has a red and black colour scheme, whereby the exterior surface is usually dark and the interior is oxidised to red. This red-black horizon from the Kura-Araxes heartland (the Southern Caucasus and Eastern Anatolia) should be clearly distinguished from the Red-Black Burnished Wares from the Upper Euphrates, which are black on the interior and over the lip, continuing as red down to the base. Although there is merit in the argument that the Red-Black Burnished Ware from Arslantepe VI and VIA has a colour scheme that might derive from Central Anatolia (Frangipane and Palumbi 2007), the ceramic assemblages from the Upper Euphrates Valley and

9. I would like to thank Belinda Shapardon, a PhD candidate at the University of Melbourne, who is studying the Sioni material culture, for sharing her observations on the ceramics.

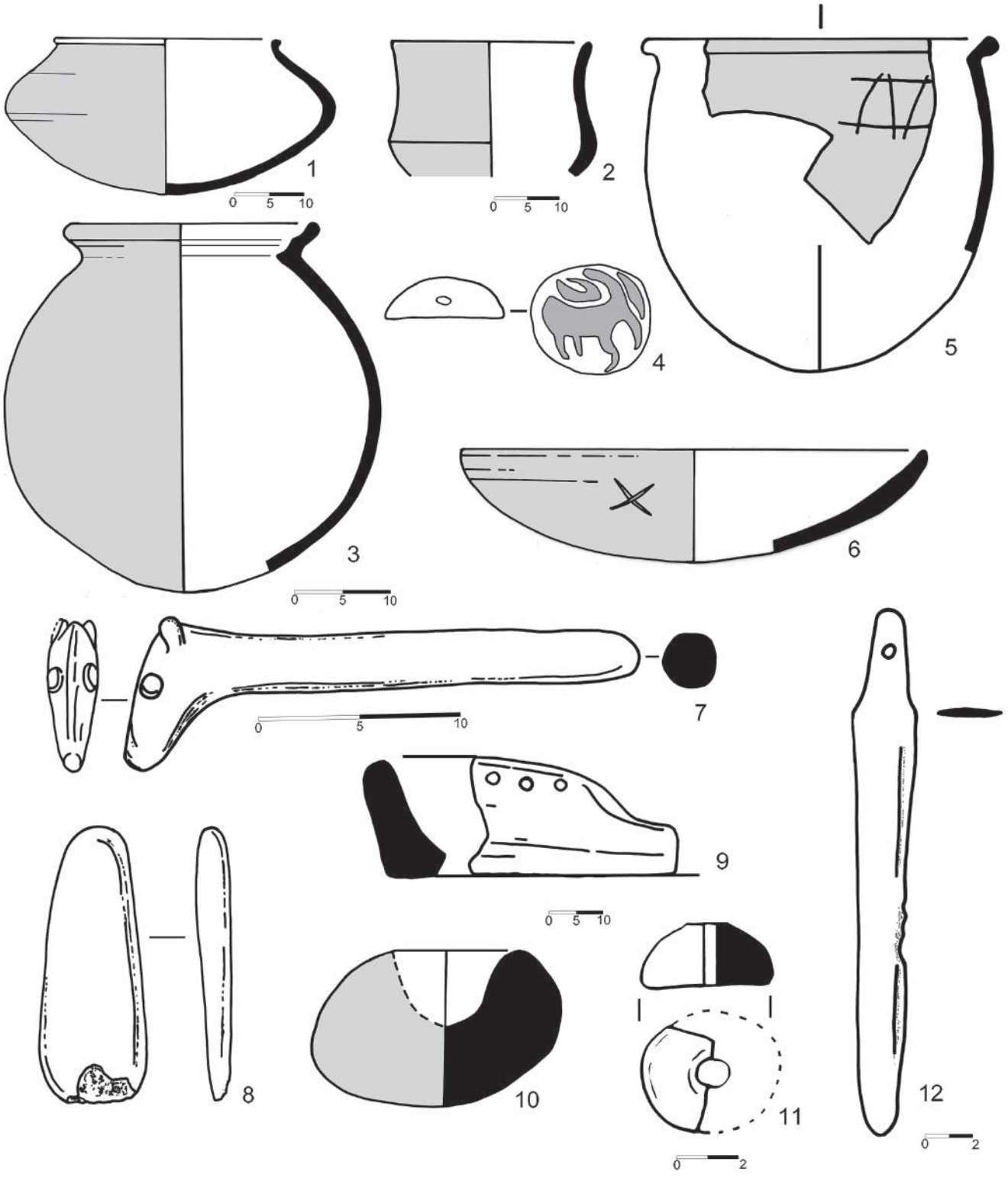

Fig. 2 – *Chaff-Faced Ware horizon. A select sample of material culture from Boyuk Kesik (**1, 3-4, 6, 8-9, 11-12**); Leilatepe (**2, 5, 10**); Soyuk Bulaq (**7**). Not to scale unless indicated.*

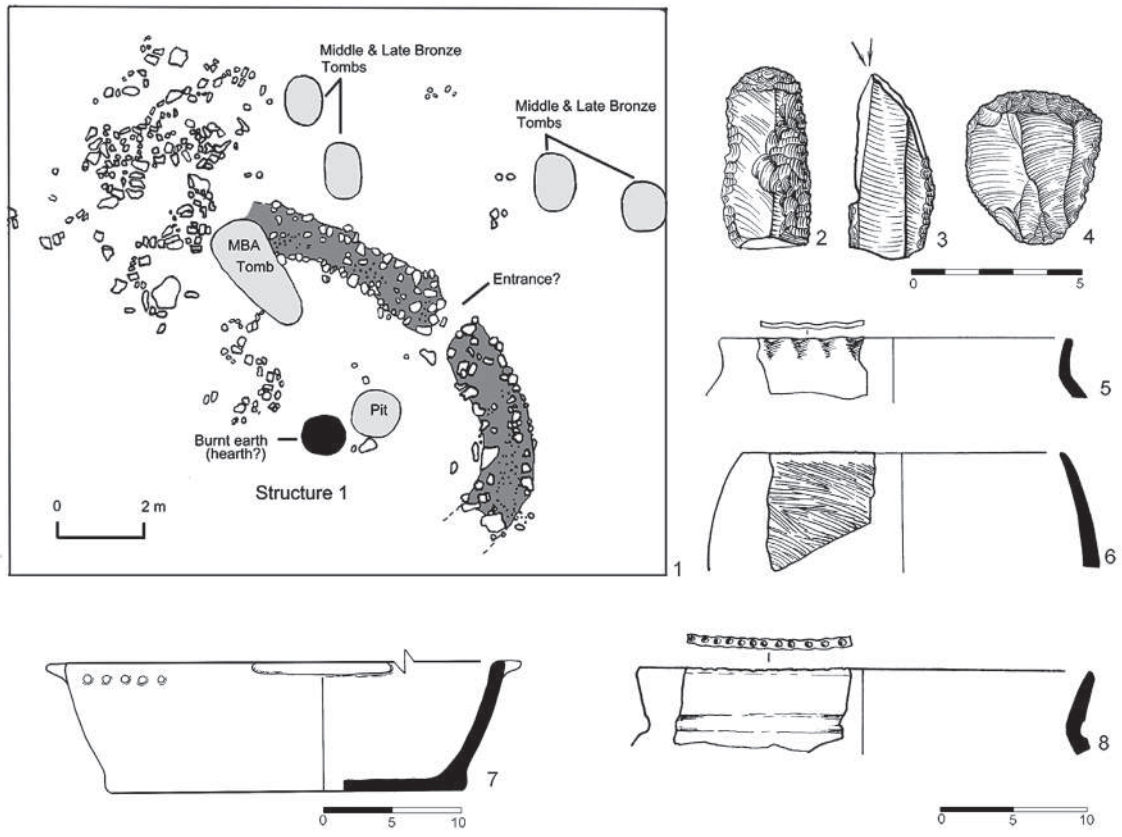

Fig. 3 – *Sioni horizon.* ***1****) Sioni, plan of Structure 1 (after Kiguradze and Menabde 1981);* ***2-4****) obsidian tools from Sioni;* ***5-8****) ceramics from Sioni (5-6, 8) and Damstvari Gora (7). Not to scale unless indicated (after Kiguradze and Sagona 2003).*

the central Plateau are quite distinct in both in shape and methods of manufacture.[10]

Both the monochrome and the red-black Kura-Araxes ceramics are represented in the late 4th millennium BC and share certain attributes such as mode of manufacture and forms. Both are handmade, for instance, and built using either coils or slabs of clay. They often also laminate vertically in cross-section to reveal textile impressions at the centre of the core. This indicates that either the slabs were flattened out on a woven textile, or that they were applied to a sand-filled cloth bag. The paste of monochrome vessels can vary from gritty to rather fine-grained sand. Forms include large tall-necked jars, with an out-turned rim; small, round-bodied pots, with tall flaring necks, ending in a thin and simple rounded lip; and loop handles linking rim to shoulder. Unlike later tastes, ornamentation was not popular in the early period, and usually took the form of an isolated relief motif. At Chobareti, for instance, where decoration is rare, some monochrome vessels have broad, flattened knobs, occasionally centred with a deep dimple. A more refined version has thin walls and is hard baked. These containers can be decorated with linear patterns incised after firing, a trait they share with some early black-and-red containers elsewhere (Sagona and Sagona 2000: Fig. 8: 4; Badalyan and Avetisyan 2007: 58). At Sos Höyük, these well-burnished jars with scratched motifs generally have a tall swollen neck and rounded body, and their paste is crisp. These characteristics, which are different to the later (3rd millennium BC) biconical forms, with thickened walls, straight necks, rail rims, and bold relief ornaments, prompted me to coin the provisional term 'proto-Kura-Araxes': a category

10. We need to be careful when using the generic term Red-Black Burnished Ware as it has the potential to conflate different horizons and confuse matters. Braidwood and Braidwood (1960) first coined the descriptor to represent the northern Levantine version of Khirbet Kerak Ware in the Amuq. In more recent years this colour scheme has been ascribed more widely to pottery from different traditions, namely the early black and red wares from the Upper Euphrates and Central Anatolia, as well as Kura-Araxes ceramics (Bolger *et al.* 2014).

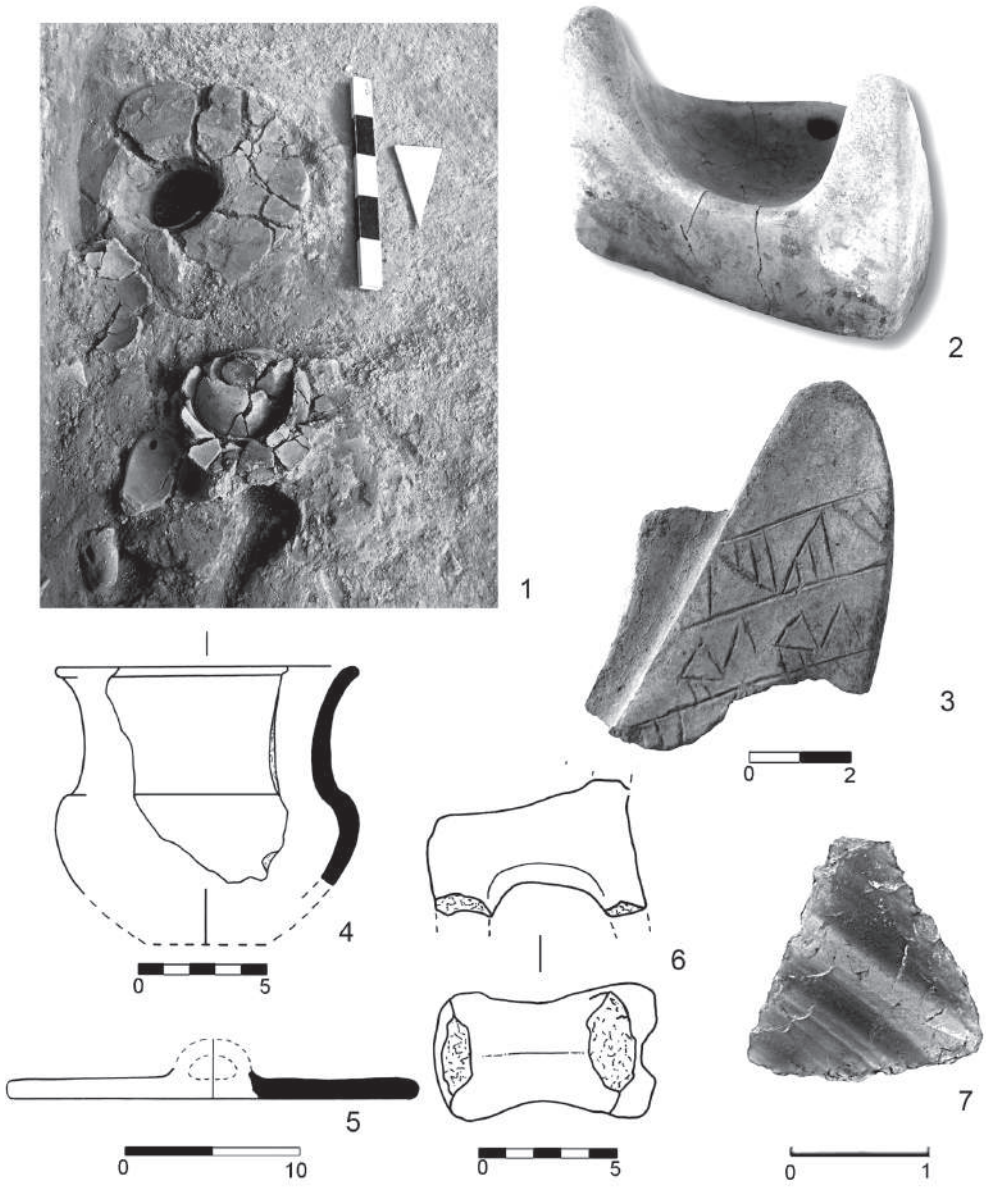

Fig. 4 – *Kura-Araxes horizon.* ***1****) Sos Höyük VA, central hearth and* in situ *items;* ***2-7****) select items of the Kura-Araxes package from Sos Höyük (2) and Chobareti (3-7). Not to scale unless indicated (photographs by A. Sagona).*

between the monochrome and the developed black and red. Although there is an evolution of red-black ware at Sos Höyük, this term can be confusing so I suggest we refrain from using it for the time being.

THE SITES

This discussion of sequences is restricted to a handful of sites for which we have either some new information (radiocarbon or stratigraphic), or that somehow emphasise the key characteristics of the periods in question. Other key sites, dealt with in detail elsewhere in this volume, will be treated later in the third section of this paper.

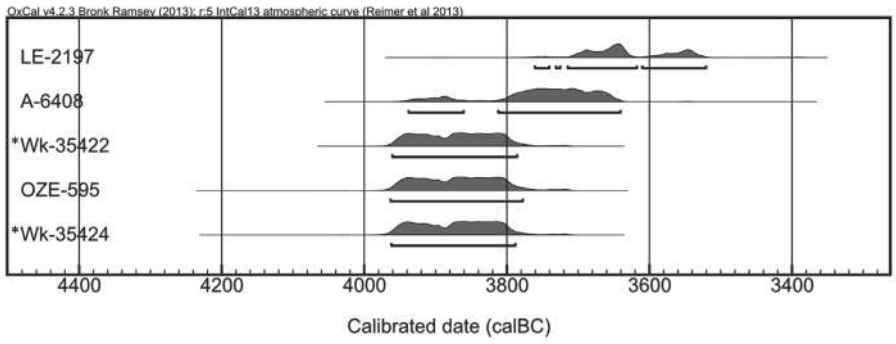

Fig. 5 – *Calibrated radiocarbon dates (95%) obtained on samples from Berikldeebi.* New absolute dates.*

Berikldeebi

The site of Berikldeebi (fig. 5) located at the confluence of the Kura and Prone Rivers in Shida Kartli has provided one of the most important multi-level sequences for the late prehistoric Southern Caucasus (Dzhavakhishvili 1998).[11] Alexander Dzhavakhishvili, who led the excavations between 1979 and 1992, discerned five cultural periods. The lowest horizon, Period V, belonged to the Late Chalcolithic, and was subdivided into two phases: V1, the lowest building level, and V2. Both have distinct Syro-Mesopotamian links.[12] Above this period, in Period IV, Dzhavakhishvili found a deposit of Kura-Araxes I, making Berikledeebi a rare and important site. At present we have five radiocarbon dates, three from Period V1 and one from V2. The two readings from the Waikato Laboratory are new, whereas the OZE-595 date was published about a decade ago (Kiguradze and Sagona 2003: 93, note 1). All three dates were derived from samples collected from pits in Period V1. A charcoal sample collected from Pit 174 (Wk-35422) has provided a reading of 5070 ± 37 BP which, when calibrated to a 95.4 percent probability, yields an absolute date of 3961–3786 cal. BC. Another reading (Wk-35424) derived from a Pit 172 sample has a similar range of confidence (3963–3789 cal. BC). The fourth sample (A-6408), analysed by the Arizona Radiocarbon Laboratory, belongs to Period V2, though no specific context is provided (Badalyan *et al*. 1992: 48, note 8). Its time range extends the sequence suitably, so that collectively the four dates place Period V between 4000 and 3600 cal. BC. As yet, we have one date for Period IV, analysed at the former Leningrad Laboratory (Kavtaradze 1983: 31):

- Measuring 25 to 30 cm in thickness, the lowest level (V1) comprised a black matrix laden with ash and organic admixtures, which, according to the excavator, might indicate considerable burning of chaff. Intermixed with the soil were many small pebbles. In one area Dzhavakhishvili found a concentration of pebbles covering about 16 m^2, in which were embedded human arm bones and an associated bronze bracelet bent in a half-spiral shape. Elsewhere he detected a 15 cm band of pebbles encircling an area approximately 5.5 m in diameter. Although heavily damaged, Dzhavakhishvili suggested the feature represented the remains of a cromlech. Other remnants of the Period V1 settlement consisted of fragments of structures, both mud brick and wattle-and-daub, and numerous pits, mostly bell-shaped and filled with debris.
- Berikldeebi Period V2 is quite different in character. A substantial mud brick wall defined the northern edge of the settlement, possibly a fortification wall. At its widest preserved point, the wall comprised seven bricks across measuring 2 m. Only one entrance that led into the compound survived. A cobble-based ditch 50 cm wide and 1 m deep defined the outside of the wall. Particularly important is a large rectilinear building (*ca* 14.5 x 7.5 m) designated 'the temple' by Dzhavakhishvili (fig. 6: 1). Although damaged by later pits, its plan is quite clear; the building is orientated east-west and comprises a large open hall and two small rooms at the eastern end. Nothing quite like it has been found in the Caucasus and it has been rightly linked to Mesopotamian influ-

11. See forthcoming, Dzhavakhishvili A. I., Dzhalabadze M. and Sagona A., *Berikldeebi: A Prehistoric Settlement in the Southern Caucasus.* Leuven: Peeters.

12. A fleeting visit by Rauf Munchaev and Shahmardan Amirov to the Georgian National Museum in June 2014 provided an important opportunity to discuss the connections between Berikldeebi V ceramics and their Syro-Mesopotamian counterparts. I would like to thank Mindia Jalabadze for making the material available.

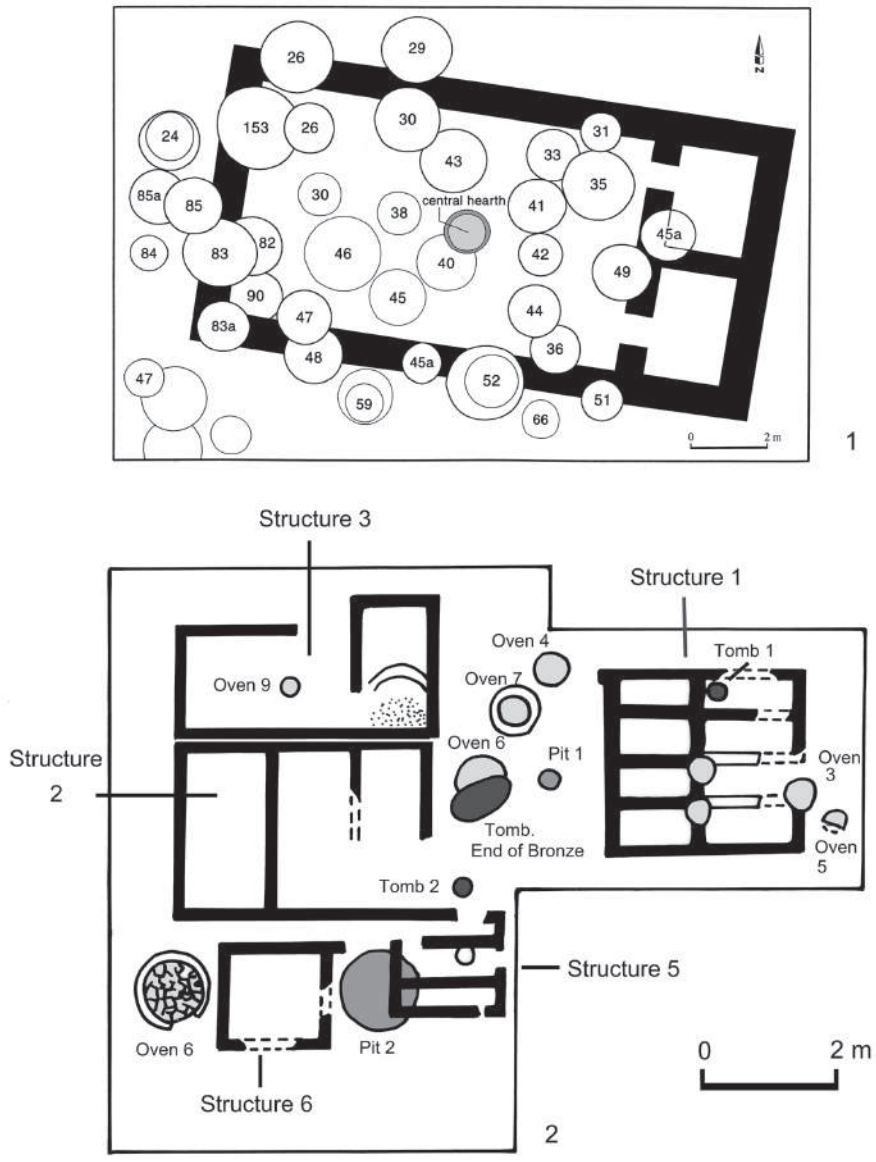

Fig. 6 – *1)* *Berikldeebi Period V2 (after Kiguradze and Sagona 2003);* ***2)*** *Leilatepe (after Akhundov and Makhmudova 2008).*

ence. An infant burial in a jar was found at the very end of Period V2, but little information exists on this feature. Although it is not yet possible to offer quantitative details of the Berikldeebi Period V ceramics, Chaff-Faced vessels with either a plain or burnished surface feature prominently. The amount of chaff temper can vary from containers that have a large quantity ensuring a light 'aerated' fabric, to those that have a small quantity of finely chopped chaff. Pale brown jars with out turned rims and dark grey core and open bowls with rolled rims were particularly popular. This pottery was found in association with a flint industry comprising largely blades.

– Period IV is poorly preserved, owing to later Bedeni pits and foxholes that have riddled the deposit. Even so, Dzhavakhishvili was able to discern two phases (IV1 and IV2). The remains of seven circular hearths were indicative of buildings, but only one (Building 1) had

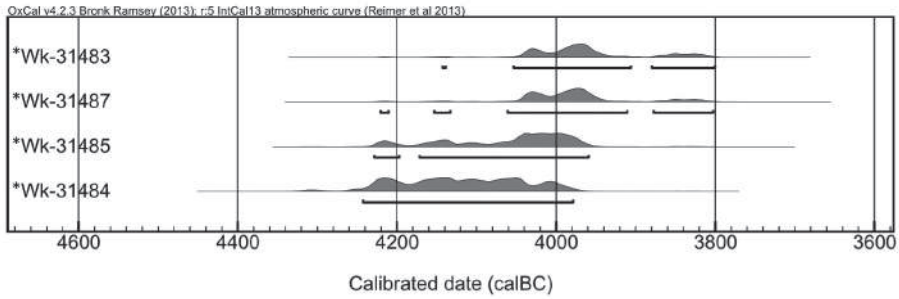

Fig. 7 – *Calibrated radiocarbon dates (95%) obtained on samples from Sioni.*

Table 1 – *Data from Sioni.*

Lab. No.	^{14}C years BP	Cal. BC Range (95.4%)	Material	Context
*Wk-31483	5164 ± 46	4055–3905	Animal bone	XVI-30
*Wk-31487	5172 ± 48	4065–3910	Animal bone	XVII–34
*Wk-31485	5227 ± 48	4175–3955	Animal bone	XVI–34
*Wk-31484	5281 ± 52	4245–3975	Animal bone	XVI–32

structural traces that were in any way coherent. Its plan approximated a circle (9.5 x 8.5 m) and its walls were built on a post framework filled with clay-plastered wickerwork. Inside a large circular hearth with a central basin was embedded slightly off-centre into a thick and well plastered floor next to a posthole. Large jars and accompanying flat lids were placed against the wall, in a characteristic fashion.

Sioni

Sioni is located on the Khudis Tskali, a tributary of the Shulaveri River, which has eroded one side of the site (fig. 7; table 1). Middle and Late Bronze Age graves further disturbed the Chalcolithic levels, making it difficult to determine the stratigraphy in certain areas. Sections of stone walls and floor surfaces were encountered across much of the site, but no extensive settlement plan was discerned. Even so, it is clear that the community at Sioni did build large structures. A circular building (Structure 1), originally 10-12 m in diameter, survived as a segment, comprising the foundations of a curved stone wall about 80-100 cm thick (fig. 3: 1; Menabde and Kiguradze 1981: 10). The wall was faced with large fieldstones and filled with rubble. To enter the building, one had to step over a stone threshold down onto a beaten and lime-plastered floor, slightly lower than the ground surface outside. A conspicuous red-baked circle in the centre of the floor is suggestive of a hearth.

Near the hearth, to its north, was a circular pit, *ca* 2.3 m in depth, with an interesting deposition, possibly structured. At the base were pottery sherds superimposed by a bull's skull, which in turn was sealed by a layer of stones. Whereas Structure 1 had two floor surfaces, the excavators stress that the Chalcolithic at Sioni is a homogenous assemblage representing one cultural deposit. The uppermost level in Structure 1 yielded the greatest number of objects, but none of the many ceramic sherds could be reconstructed to form a complete vessel. Similar in plan and construction is Structure 2, which is represented by a 6.2 m curved segment. Other smaller wall sections were encountered across the site, which might also have had a perimeter wall, though it was too fragmentary to be sure.

In addition to ceramics, Sioni produced a large quantity of flaked stone tools. The overwhelming majority is knapped from obsidian, presumably derived from the Chikiani source. According to the excavators, the Sioni repertoire is largely a blade industry, with end-scrapers forming the largest category, followed by *pièces écaillées* and burins. Microliths are rare (*contra* Nebieridze 2010), as are sickle blades. Querns and other ground stone objects are also not common, and fragments of 29 bone awls represent the total quantity of worked bone tools.

We now have four radiocarbon dates from Sioni.[13] The samples (animal bones) were collected from secure contexts in Structure 1 and clearly straddle period between the 5th and 4th millennia BC. It is worth noting that a test pit revealed that cultural deposits extended below the foundation level of Structure 1, indicating that the settlement was probably estab-

13. I would like to thank Medea Menabde for providing me with these samples and for the consistent support she has shown over the years both to my students and me.

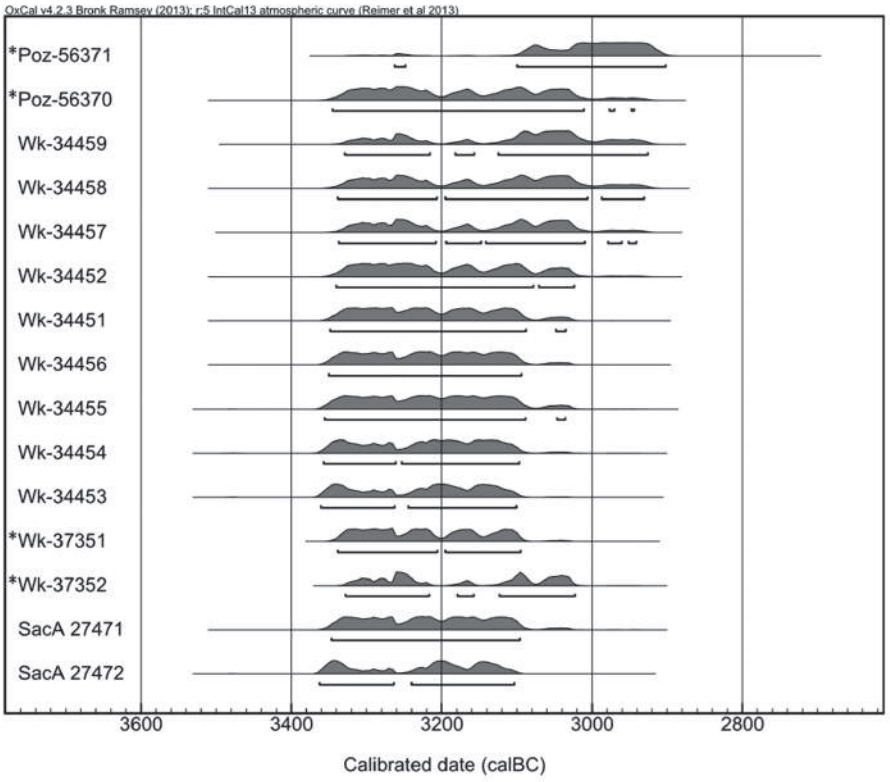

Fig. 8 – *Calibrated radiocarbon dates (95%) obtained on samples from Chobareti.*

Table 2 – *Data from Chobareti.*

Lab. No.	^{14}C years BP	Cal. BC Range (95.4%)	Material	Context
*Poz-56371	4380 ± 40	3100–2903	Human Bone	Burial 9
*Poz-56370	4460 ± 40	3346–3011	Human Bone	Burial 5
Wk-34459	4434 ± 35	3125–2926	Grain	Sq. F42, *Locus* 103
Wk-34458	4449 ± 41	3195–3007	Grain	Sq. F42, *Locus* 103
Wk-34457	4551 ± 34	3141–3010	Grain	Sq. F42, *Locus* 103
Wk-34452	4470 ± 36	3341–3079	Charcoal	Pit 7
Wk-34451	4490 ± 90	3349–3089	Charcoal	Structure 3
Wk-34456	4501 ± 33	3351–3094	Charcoal	Pit 15
Wk-34455	4501 ± 39	3356–3090	Charcoal	Pit 7 base
Wk-34454	4517 ± 35	3254–3098	Charcoal	Pit 14
Wk-34453	4528 ± 34	3244–3101	Charcoal	Pit 3
*Wk-37351	4490 ± 21	3339–3206	Grain	F42, *Locus* 122
*Wk-37352	4454 ± 20	3329–3217	Grain	F42, *Locus* 112
SacA-27471	4500 ± 30	3348–3096	Grain	Pit 16
SacA-27472	4535 ± 30	3241–3104	Grain	Pit 17

lished somewhere towards the upper end of the radiocarbon timescale. These chronometric dates are quite precious and clearly position Sioni in the Chalcolithic period.

Chobareti

From the Samtskhe-Javakheti region we now have emerging evidence from Chobareti (fig. 8; table 2), a terraced site in the Akhaltsikhe region of Georgia (Kakhiani *et al*. 2013). An early Kura-Araxes site, Chobareti also has a small quantity of Chaff-Faced Ware, as well as an infant jar burial in the Late Chalcolithic tradition (Burial 9) found below the floor of a large Kura-Araxes building. A round, stone stamp seal with a fugitive geometric incised design, recovered in the 2013 season, attests distant connections. The suite of radiocarbon dates also enables a nuanced delineation of occupation and a tantalising glimpse of the interface between monochrome and red-black burnished ceramics.

Excavations in the Lower Operation have so far exposed four buildings (Structures 3-6) cut into the soft, whitish, limestone bedrock; their lower walls were stone built, and most

likely had wooden superstructures. The floor levels of two fully exposed buildings were very well-preserved.[14] One building (Structure 4) is unusually large, measuring around 15.3 m in length. It has a curvilinear back wall and compartmentalised interior, which had the standard Kura-Araxes package, including pale-coloured (monochrome) pottery vessels. Judging by the number of ground stone saddle querns and concentrations of carbonised cereals, the inhabitants of Structure 4 clearly processed food within its walls.

Radiocarbon readings and depositional levels confirm two occupational phases. The earliest and most intense period, distinguished by a dark ashy soil and well-articulated in the 2013 season, suggests the building was constructed around 3300-3200 cal. BC. The two readings (Wk-37351; Wk-37352) were obtained from grain samples collected from the lowest floor. It was contemporary to a series of pits and, to judge from a charcoal sample (Wk-34451) collected from a sounding in 2009, to Structure 3 (see below) as well. The three dates we have from the upper deposit in Structure 4 (Wk-34457, Wk-34458, Wk-34459), again reckoned from grain samples, are later. They indicate that it continued to be occupied between 3190 and 2900 cal. BC.

Structure 3 is a single-roomed house positioned on the edge of a terrace, overlooking the valley below. Aligned north-south, the room measured 3.8 m across the back wall. Its front has eroded away, but its plan and content are clear. At the centre of the room is a fixed hearth embedded into the floor. Along the back wall is a bench, shaped from the limestone bedrock, and clearly delineated by a row of small stones. At some point a pit was dug into the bench and several pots and a horn core of a sheep were placed in the depression.[15] Between the bench and the hearth, is a post-hole edged by stones. Other built-in features include a roughly circular stone platform along the east wall, a pit in the north-east corner and another shallow pit filled with an ashy matrix in the north-west corner. Across the entire floor we found a considerable number of *in situ* vessels. The vessels were found on the central hearth and around it, on the stone platform, and along the back wall. Unlike Structure 4, preliminary analysis indicates that this room did not contain much grain; nor did it have the quantity of grinding stones that were found in Structure 4.

Burials at Chobareti provide some significant insights.[16] Seven are stone cist tombs, some rectangular in shape with walls built of small field stones. Two large slabs originally supported by wooden beams sealed each tomb. The deceased was laid in a crouched position accompanied by a ceramic vessel. In one instance, a pit was reused for burial: Burial 5 (Pit 12). In preparation for that burial a rudimentary floor was constructed from monochrome pottery sherds, though it is difficult to determine whether the sherds are contemporary with the pit or the burial. Even so, the length of time between pit use and burial must not have been great. Radiocarbon analysis of human bone from Burial 5 has provided a reading of 3346–3011 cal. BC (Poz-56370).[17] Burial 9 was different. It contained the remains of an infant and was found in Structure 4 beneath the floor belonging to the second phase of occupation. That is, it was dug into the earliest occupation floor. This stratigraphic detail supports the radiocarbon reading (Poz-56371) of 3100–2903 cal. BC analysed from bone. There are two primary reasons why Burial 9 is significant. First, it fuses a Late Chalcolithic custom—burying an infant in a jar—with a Kura-Araxes black-and-red container. This is a clear sign of social memory lingering on past the *floruit* of a practice. Second, it suggests that at Chobareti red-black pottery was introduced at the very end of the 4th millennium, following monochrome pottery with which it overlapped for a time.[18] The Burial 5 and 9 dates support this sequence. In 2014, another burial (no. 11) was discovered.[19] It is an earthen pit originally sealed by stone slabs. The deceased, a sub-adult, was placed in a foetal position. Interestingly, the grave goods—a large saddle quern and handstone, and ceramic vessels—were placed on top of the grave.

Sos Höyük

Mention should be made here of Sos Höyük, which has strong links with the Southern Caucasus (fig. 9; table 3).[20] The developmental sequence of Sos VA, the earliest cultural period, is clear. Around the mid-4th millennium BC, the first community settled on the natural knoll that overlooks a stream immediately to the north. An exploratory sounding in Trench

14. Structures 5 and 6, opened in 2014, also have very good floor; they will be fully investigated in 2015.
15. I would like to thank R. Berthon for the identification of the horn core.
16. M. Poulmarc'h has studied the skeletal material from these tombs.
17. I would like to thank sincerely Estelle Herrscher who shared these dates from the Poznań Radiocarbon Laboratory, Poland. Funds of the ORIMIL Project (ANR-12-JSH3-0003-01), directed by E. Herrscher, made the analyses of the samples possible.
18. Although the quantitative analysis of Chobareti pottery continues (some 14,000 sherds have been counted, weighed and classified), I can report that the overwhelming number of Kura-Araxes vessels is monochrome with a small percentage of red-black and all black pottery. I would like to thank Claudia Sagona, responsible for the pottery analysis, for this information.
19. Burial 10 was a small, stone-lined cist grave. It was badly damaged and contained no grave goods the only skeletal material was a cattle *Phalanx* bone.
20. The final report of the Sos Höyük excavations is in preparation.

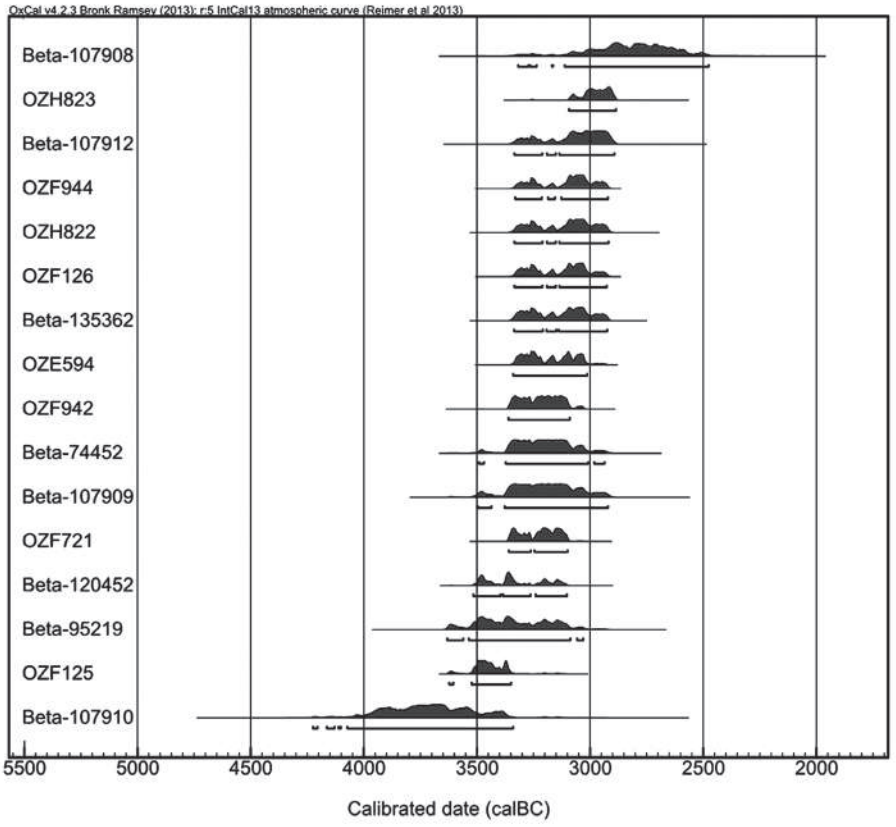

Fig. 9 – *Calibrated radiocarbon dates (95%) obtained on samples from Sos Höyük.*

L17/M17, which reached natural gravelly soil, revealed these earliest occupation deposits—a series of burnt floors and large stones associated with a twin-horned portable pot stand and a well fashioned stone blade displaying extensive use wear (Sagona and Sagona 2000: 58). Apart from Beta-107910, which has an extended probability, the readings point to initial settlement around 3400 BC. Shortly after, *ca* 3300 BC, the inhabitants at Sos Höyük felt the need to build a large, curved wall on the crest of the site, whence the surrounding plain is visible in every direction (Sagona 2000). The foundation of the wall is constructed with a tight packing of small field stones and hard clay, and measured 2.5 m wide, whereas its superstructure was presumably built from wood and mud packing. Although only a quarter of the wall has been exposed, it appears to have encircled the core of the settlement. Given that domestic architecture was built on either side of the wall, its purpose was not defensive. Rather it probably had a socio-political function. At least four building levels of domestic architecture are associated with the massive wall. Unlike the pre-wall village walls now stood on stone foundations. No complete house plans were

Table 3 – *Data from Sos Höyük.*

Lab. No.	^{14}C years BP	Cal. BC Range (95.4%)	Material	Context
Beta-107908	4230 ± 120	3133–2476	Charcoal	L17B, *Locus* 1586
OZH-823	4340 ± 50	3093–2886	Charcoal	L16, *Locus* 4144
Beta-107912	4390 ± 70	3137–2893	Charcoal	L17D/M17C, 4201
OZF-944	4430 ± 40	3128–2922	Charcoal	L17B, *Locus* 4287
OZH-822	4430 ± 50	3137–2919	Charcoal	L16, *Locus* 4161
OZF-126	4440 ± 40	3136–2927	Bone	M17, *Locus* 3766
Beta-135362	4440 ± 50	3139–2925	Charcoal	L17B, *Locus* 4247
OZE-594	4457 ± 34	3340–3013	Bone	L16C, *Locus* 4110
OZF-942	4510 ± 40	3361–3090	Charcoal	L16C, *Locus* 4110
Beta-74452	4510 ± 70	3374–3009	Charcoal	L17D, north sector
Beta-107909	4510 ± 90	3378–2921	Charcoal	L17B, *Locus* 1590
OZF-721	4524 ± 34	3247–3100	Charcoal	M17, *Locus* 3779
Beta-120452	4590 ± 0	3369–3353	Charcoal	L17D/M17C, 4223
Beta-95219	4600 ± 90	3536–3088	Charcoal	M16, *Locus* 591
OZF-125	4643 ± 43	3524–3350	Charcoal	M17, *Locus* 3770
Beta-107910	4910 ± 170	4073–3341	Charcoal	L17B, *Locus* 1593

exposed. Instead excavations revealed a burnt floor level with a twin-horned andiron. Hearths were the most conspicuous elements in each of the three subsequent levels. The central role of hearth in the domestic domain is evident not only by their quantity, both portable and fixed, but also by the practice of building fixed hearths directly above the earlier ones, highlighting the importance of place. One round hearth in the third level from the bottom was set on fine sand. Above it, in the latest level, a large ceramic vessel was modified into a hearth and defined by vertical stones arranged in a U-shape.

Then disaster struck. Part of the wall collapsed, possibly as a result of an earthquake *ca* 3100 BC. The community did not re-build the wall immediately, confirmed by the remains of three dwellings and floors—a floor composed of crushed pottery, a rectilinear house, and a round house—sandwiched between the two building phases of the wall. Immediately after the collapse, some floors were distinctively covered of broken pottery sherds laid on a layer of fine, river sand, and hearth had also been embedded into sand. Presumably the combination of sherds and sand had a functional purpose, namely to increase the efficiency of the hearths. Broken sherds would retain heat, whereas the sand would reduce heat loss into the floor. This is a widespread, if patchy and short-lived practice. Above this ceramic floor, lay a rectilinear house, with bench along the back wall, lime-plastered floor and central circular hearth. Shortly after a circular freestanding house was constructed entirely of mud bricks set directly onto the ground. Its hard packed clay floor was covered with much organic debris, including carbonised matting. In the centre was the standard circular hearth, placed directly above an earlier one. An almost complete re-fit of an obsidian pebble reconstituted from the flakes collected on the floor (*Locus* 4244) demonstrates that stone working activities were carried out in the house (Kobayashi 2007). In the centre of the house and built into the floor was a circular hearth that would have caught the eye as one entered the doorway on the western side. Portable hearths, ceramic vessels and other items were also on the floor scattered around a posthole, which originally supported the roof. Radiocarbon dates indicates this round house was occupied *ca* 3350–3000/2900 cal. BC, which, in turn, provides a secure *terminus ante quem* for the reconstruction of the stone wall. But the wall did not remain intact for very long. Shortly after the re-building it collapsed again, but this time it was left in ruins.

G. Palumbi has already articulated the general trend of ceramics from Sos Höyük VA (Palumbi 2008: Figs. 3.9; 3.10). Namely, in the lower levels, especially the 'Ceramic Floor', there is a preponderance of monochrome Kura-Araxes sherds (58%), followed by a drab local ware (29%), red-black Kura-Araxes (11%) and a small number of Sioni fragments (2%). The percentages are significantly different in the Round House: red-black (67%), monochrome (25%), black burnished (4%), Sioni (2%) and drab (2%). This sequence—monochrome to red-black—is in line with evidence from the Southern Caucasus.

CULTURAL INTERPLAY IN THE HIGHLANDS

The Caucasus presented to the prehistoric inhabitants of the 4th millennium a mosaic of microregions, each with its own constraints and opportunities. This period was a time of great change and more varied than our very partial picture allows us to distinguish. Farming groups, representing both native and intrusive elements, settled over much of the region from plains to highlands. In this regard they expanded beyond the geographical boundaries of the better-known Shulaveri-Shomutepe complex of the Late Neolithic, which is well represented in Kvemo Kartli, the Ararat Plain and Western Azerbaijan. Although there are signs of similar behavioural activities and even hybridity in potting traditions, the 4th millennium BC societies representing the three key horizons—Chaff-Faced Ware, Sioni (grit-tempered) and Kura-Araxes (grit-tempered)—are at once strikingly different.

The Chaff-Faced tradition reflected the pre-Uruk connections that ran along a north-south axis, extending from Syrian-Anatolian borderlands around the Van basin through the Southern Caucasus all the way to Maikop. This far-flung system was no doubt driven by the search for metals and semi-precious stones to cater to the tastes of the emerging elite. Mention has been made of Berikldeebi, in Shida Kartli, but there are other sites where resemblances with Northern Mesopotamia have been well-documented. Leilatepe is one of about 20 contemporary sites identified in the Karabag steppe (Akhundov and Makhmudova 2008).[21] The village of Leilatepe was well-planned (fig. 6: 2). Rectangular structures, invariably fitted with circular hearths, were built using two standard sizes of mud brick (44 x 21 x 10 cm and 50 x 25 x 8 cm) neatly laid on a layer of mortar. Bricks came in two colours—grey-brown and yellow—though walls and floors were regularly coated with lime plaster, which concealed the regular use of both coloured bricks.

Several buildings were exposed with different functions. Structure 1, for instance, is almost square (5.6 x 6.2 m) and

21. I would like to thank Tufan Akhundov for this information.

comprises eight longitudinal rooms, but no signs of a doorway. Its layout plus its organic fill suggest that its purpose was storage. Structures 3 and 4, on the other hand, revealed evidence of metalworking. Large amounts of ash were interspersed with the wastes of metallurgy—slag deposits, crucibles and the occasional metal object found near the hearth in Structure 3. At Leilatepe, hearths were located outside in the courtyards, defined by a ring of lime-plastered clay. Four infant jar burials were also found. We essentially have two ceramic horizons at Leilatepe: Chaffed-Faced Ware and grit-tempered Sioni, regularly with combed surfaces and decorative rims (Narimanov *et al*. 2007; Akhundov 2007). Despite its rich assemblage, we have no absolute dates, but its assemblage links it to Berikldeebi V and Boyuk Kesik, where five radiocarbon dates place it in the first half of the 4th millennium BC (Museyibli 2007).

Boyuk Kesik also has strong links to the south but its architecture is more varied. Structures range from square, mud brick houses, through a circular arrangement, to one of irregular plan, which combined mud brick with wattle-and-daub (Akhundov 2007; Museyibli 2007; Lyonnet and Guliyev 2010). Five infant burials were found. Burials 1-4 were similar to those at Leilatepe—bowl and jar inhumations. But Burial 5 was different. A cluster of disarticulated bones covered by a large bowl is indicative of a secondary burial. Chaff-Faced vessels, some with simple linear potter's marks, complement those at Leilatepe, whereas a small number has a combed exterior. The few pieces with incised rims recall the Sioni tradition, but the lack of grit inclusions reflect hybridity. Two hemispheroid stamp seals with a single horned animal figure engraved on the base, forelegs bent, are redolent of Gawra glyptics (fig. 2: 4). As at Leilatepe, metallurgy is well attested (fig. 2: 12).

Equally significant for any consideration of the Late Chalcolithic is Godedzor (Chataigner *et al.* 2010) in the harsh Vorotan Valley (Armenia), Ovçular Tepesi (Marro *et al*. 2011) and Aratashen (Palumbi 2007). Ovçular Tepesi, significant for the co-existence of Kura-Araxes ceramics within a Chaff-Faced horizon, is discussed in this volume. Here it is sufficient to note that it displays characteristic features of the Late Chalcolithic: rectilinear mud brick houses featuring circular platforms (referred to as 'dials'), infant jar burials (one with copper axes), a Chaff-Faced pottery repertoire, and stone tool blade industry comprising both obsidian and flint. Godedzor assumes importance as one of the northern outliers of the Ubaid-related tradition, distinguished by chaff-tempered pottery (fig. 1: 6-7), some of which is painted in the Late Ubaid style. Parallels can be drawn with Tepe Gawra XII, and Pisdeli Tepe and Tappaeh Giljar C in Northwestern Iran. Radiocarbon readings, straddling the mid- to late 4th millennium BC, also indicate that Godedzor is a relatively late example of the Chaff-Faced horizon. There is no need to detail further Chaff-Faced sequences, suffice it to say that we have many and include those in the Ararat Plain (Aratashen and Tekhut), Vayots Dzor region (Areni-1 Cave), Nakhichevan (Kültepe I) and the Mughan steppe (Alikemek Tepesi). The exceptionally dry conditions of Areni-1 Cave have provided a wealth of evidence on organic remains, including the now famous leather shoe dated between 3653-3377 cal. BC (Areshian *et al*. 2012). Equally significant is the information on foods, both its variety and heavy exploitation of tree fruits.

Perhaps the clearest sign of intersecting cultural traditions during this period is the appearance of barrow burials, which combine a Chaff-Faced horizon with a mortuary practice generally connected to the Northern Caucasus. These early 4th millennium BC mound burials are scattered: at Kavitskhevi (Makharadze 2007) in Shida Kartli, at Soyuq Bulaq in Western Azerbaijan (Lyonnet *et al*. 2008), and at Sé Girdan in Northwestern Iran (Muscarella 2003). Barrow burial 1 at Soyuq Bulaq is particularly noteworthy for its long distance connections: lapis lazuli and heated steatite beads point east, whereas the horse-head mace (fig. 2: 7) shows contact with the Eurasian steppe. Other artefacts included items of gold and silver, and an arsenical copper dagger.

Turning to the bearers of the Sioni tradition, we find that they had little major effect on societies beyond their heartland in the Southern Caucasus. Theirs was a native tradition concentrated at a small number of sites. At first glance, one could be persuaded by the view that the Sioni communities continued the earlier Shulaveri-Shomutepe tradition of living in circular spaces. Given that space, together with type, form and function is a constituent element of architecture, this would seem reasonable. There are, however, differences: houses at nearby Shulaveri and Kharmis Didi Gora were small, domed and built with mud bricks, whereas at Sioni they were large, founded on stone and were semi-subterranean. Further dissimilarities between the two complexes include ceramics and stone tools—those from Shulaveri-Shomutepe display a diversity of flake tools, a large quantity of scrapers, and the adoption of advanced blade techniques. The small quantity bone tools, and agricultural tools such as querns and sickle blades, so abundant at Shulaveri sites, underscore the disparities.

The most distinctive element of the Sioni horizon is its grit-tempered pottery with decorated rims. As we have seen, it is not uncommon to find Sioni ceramics with Chaff-Faced ware, but ratios differ depending on geography and site. At Tsopi, for instance, Chaff-Faced ware is in the minority, the reverse to that found at Leilatepe (Nebieridze 2010). Other contacts link

Sioni to the western Georgian Late Neolithic, where sites such as Odishi, Anaseuli II and Gurianta have also yielded pottery with decorated rims. This relationship, however, is far from clear. We have no radiocarbon dates from Western Georgia, and there is a question over the respective stone tool assemblages. Even so, the four radiocarbon dates we have for Sioni argue against Lamar Nebieridze's view, based primarily on her claim of a substantial microlithic repertoire, that Sioni is a late Neolithic site (Nebieridze 2010).[22] In an attempt to place Sioni along a cultural timeline, the excavators claimed its ceramics foreshadowed the later Kura-Araxes, but these connections are loose (Menabde and Kiguradze 1981: 27-29).

Radiocarbon dates are sparse for the Kura-Araxes I phase, but evidence indicates that the complex emerged *ca* 3500/3400 BC sharply and decisively from this cultural milieu, comprising a strong mix of Syro-Mesopotamian influences and local developments. Though its advent is identifiable, the processes are not yet clear. Environmental changes might well have played a part, providing communities with a wider choice of subsistence strategies (Connor and Sagona 2007). Contrary to earlier views, these Kura-Araxes I communities do not appear to be highly mobile societies. Rather we are dealing with farmers who cultivated cereals and kept domesticated stock (Hovsepyan 2009; Howell-Meurs 2001; Kakhiani *et al*. 2013; Longford *et al*. 2009; Piro 2009).

Turning to Ovçular Tepesi (Marro *et al*. 2009 and 2011; see Marro *et al*. this volume) and Areni-1 Cave (Areshian *et al*. 2012; Wilkinson *et al*. 2012), new evidence has thrown the matter of chronology into a spin. Excavators from both teams claim that Kura-Araxes ceramics were found in well-sealed Chalcolithic deposits, which have yielded radiocarbon dates that straddle either side of 4000 BC for Areni-1 and 4300-4100 BC for Ovçular Tepesi. At Areni-1, Kura-Araxes ceramics is one of five groups, including Chaff-Faced ware and pre-Maikop, though it is not clear whether the Kura-Araxes pottery is spread throughout the Chalcolithic levels or localised. Moreover, some of the Ovçular ceramics are the black-and-red type, thus preceding the pale brown (monochrome) vessels. These Ovçular and Areni-1 dates effectively place the emergence of the Kura-Araxes at the Early-Late Chalcolithic interface. Compelling as this new and unexpected evidence is, it might be prudent to wait for further clarification, especially given the absence of an associated Kura-Araxes package.

Dozens of regions in the Near East have concentrations of Kura-Araxes settlements. As this *oikumene* developed over more than a millennium, Kura-Araxes groups came into contact with other populations, co-existing for varying lengths of time. This led to a greater differentiation of regional groupings. Even so, the Kura-Araxes communities were socially conservative by nature and tenaciously maintained their identity. It is worthwhile being reminded of the constituent parts of the Kura-Araxes identity.

At its heart is the notion of house and compound. Given the geographical extent of the developed Kura-Araxes complex, it is not surprising that houses reflect regionalism in terms of basic plan (rectilinear, subrectangular, and circular houses), modes of construction (mud brick, wattle and daub, timber and stone), and spatial relationship to each other (free-standing, abutting, and terraced). This diversity, already apparent in the formative stages, surely reflects different groupings and traditions, and the specific ways of life appropriate to environmental settings. Villages of free-standing houses are more common than the complex mud brick agglomerations typical of the Near East. Among the clearest examples we have of houses in the second half of the 4th millennium are those at Khizanaant Gora (Kikvidze 1972) and Chobareti (Kakhiani *et al*. 2013).

Whereas houses would have looked different on the outside, their internal arrangement of features conveyed a clear code of practice, perhaps reflecting a shared ideology. Uniformity prevailed for the most part, with fixed points of human existence clearly delineated. The layout of the house with a circular hearth and a bench along the back wall was fundamental to the psyche of Kura-Araxes communities. In the early periods, the hearth comprised a flat ceramic platform with an ash pit in the middle, which was always fixed into the floor usually near the centre (fig. 4: 1). In time, each hearth was replete with symbolism, expressed either in carefully incised patterns or through its elaborate construction, with clover-leaf-shaped centres and raised horns. The portable hearth or pot stand (also known as andiron), often with anthropomorphic or zoomorphic renderings (Smogorzewska 2004), was another vital element of Kura-Araxes individuality. Elsewhere, I have argued that the hearth and its associations with horned animal figurines, often placed nearby, were part of the paraphernalia of domestic worship (Sagona 1998). Along the back wall of the house ran a bench on top of which were ceramic containers. A room, usually used for storage, was placed at the entrance of free-standing structures.

Not only do these houses express the idea of space containment, shelter, and territorial demarcation, they also communicate an enduring social organisation. Given that the dead in Kura-Araxes societies were often placed in stone cists (for

22. My gratitude is extended to L. Nebieridze for a discussion we had on this matter, and for showing me select material from Odishi.

example, Chobareti), the collective burial sealed under a barrow at Mentesh Tepe IV stands out as extraordinary example of cultural entanglement (Lyonnet *et al.* 2012).[23] Used over several centuries, the burial chamber was edged by wooden posts and finally set alight.

In terms of crafts, Kura-Araxes pottery is conspicuous. Though the range of forms is restricted, it is nonetheless eye-catching, often displaying a contrasting colour scheme of black, grey, brown, and red, and sometimes bearing elaborate ornamentation. Potting was no doubt a domestic activity, and to judge from ethnographic analogies, possibly the product of women, who probably scheduled pot making during the summer months (Sagona and Zimansky 2009). The idea that black-and-red firing (**not** the Kura-Araxes horizon itself) originated in Anatolia is an appealing one, and certainly explains the gradual petering of monochrome in the Caucasus (Kiguradze and Sagona 2003; Palumbi 2003).[24] Portable hearths (or andirons), a consistent horned animal figurine, a simple range of bronze objects—often with a high content of arsenic—well-crafted bone implements, and a standardised stone tool repertoire complete the package. Manufactured primarily from obsidian in the eastern areas, stone tools are often expedient though the well-crafted tool is the tanged projectile point.

Let's conclude by returning to the questions posed at the beginning this paper, namely concepts that may be useful in exploring the genesis of the Kura-Araxes complex. Hopefully, this paper has shown that in writing about the Southern Caucasus in the 4th millennium we have to be mindful of scale and contingency. On the one level, it is about delineating expansive processes: the interplay of different cultural traditions, including those from Syro-Mesopotamia, the onset of rapid migration over large areas, and so forth. Yet, on another level, we seek to interpret these broad developments through individual and group agency, through the remnants of routine life in villages, and through the resources and environments that structured the known world of Kura-Araxes communities.

So, returning to Smith's quotation at the beginning of this paper, do we have a clear understanding of what the Kura-Araxes actually is? We certainly have a better understanding than we did a decade ago. Four salient points, to my mind, encapsulate the Kura-Araxes cultural tradition:

- First, is its cultural package: a distinctive collection of artefacts and features that displays broad similarities despite vast geographical distances. It is the tenacity with which these deeply conservative communities retained the basic elements of this package that warrants the continued use of the term Kura-Araxes, even though micro-regions certainly show variations on the same theme.
- Second is the sense of place. This was important to the Kura-Araxes villagers. For the most part communities did not establish their settlements on earlier sites, but reinforced their sense of identity by choosing new locations on which to build their homes.
- Then, we have their standardised concept of architectural space: distinctive features such as benches and hearths and their arrangement within the home, which determined how the household functioned. The constraints of area would have meant that social activities and the distribution of goods around the house were probably well defined. Thus, the 'blueprint' of a Kura-Araxes home is a clear expression both of social unity and a conservative building code.
- Finally, all these characteristics emphasise the cultural discontinuity between the Chalcolithic cultures, on the one hand, and the Early Bronze Age Kura-Araxes I on the other. What stimulated this dramatic change, heralding a novel set of ideologies, is an issue that still eludes us.

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23. For a useful explanation of the concept of 'entanglement' which emphasises how an object's meaning and function are ultimately transformed through a series of processes, involving appropriation and then creative manipulation of meaning, see Stockhammer 2012.
24. This view has been at times incorrectly interpreted as an argument for an east Anatolian origin of the Kura-Araxes. Neither Palumbi nor I have argued this. Our comments pertain to the concept of the black and red colour scheme.

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