The Sioni Cultural Complex: Cultural Complexity and Interaction during the Transcaucasian Chalcolithic

Belinda Mary Shapardon

ORCHID: 0000-0002-9485-4650

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Abstract

In the past, the Chalcolithic period (c. 5000-3500 B.C.E.) in the Transcaucasus represented a poorly defined "interlude" between the Late Neolithic and the Early Bronze Age. An understanding of this period was hindered by a lack of reliable chronological frameworks, radiocarbon dates, stratified cultural deposits, and adequately defined local and regional assemblages. However, within recent research, the Chalcolithic has emerged as a distinct chronological period within the Transcaucasus and is characterised by the appearance of new material assemblages, a shift in settlement patterns and subsistence strategies, and a trend towards increasingly complex socio-economic dynamics. These developments took place against a backdrop of intensified interregional interaction which formed an extensive network, stretching from northern Mesopotamia to the northern Caucasus, centred on the trade and exchange of natural resources and raw materials.

In the 1970s, the discovery of a ceramic assemblage, at the site of Sioni in the Marneuli district in eastern Georgia, led to the articulation of a local complex and a distinct Chalcolithic period in the Transcaucasus. The Sioni cultural complex is defined by its ceramic assemblage which is characterised by grit and obsidian tempered vessels with distinctive incised and impressed rims. Sioni ceramics are found concentrated at sites throughout eastern and southern Georgia but are also widely dispersed in small quantities across the Caucasus region including contemporary sites in Armenia, Azerbaijan, eastern Anatolia, north western Iran, and the northern Caucasus. Since its discovery, "Sioni" has become synonymous for the Chalcolithic period in the Transcaucasus and has come to represent a chronological indicator within the region.

Despite this, the Sioni complex remains inadequately defined. The term “Sioni” has come to refer to both a ceramic tradition and a broad set of technological, morphological, and stylistic features among contemporary assemblages. As a major complex, the lack of a concise definition regarding Sioni represents a significant gap within the current research and understanding of the Chalcolithic period within the Transcaucasus.

This research aims to provide a foundational definition for the Sioni complex through an analysis of the unpublished ceramic assemblage from the type site. This study also examines these ceramics in relation to other contemporary Sioni sites, throughout eastern and southern Georgia, and will trace the distribution of similar materials across the Caucasus. Beyond Georgia, Sioni ware will be analysed in relation to other contemporary traditions and shared features among these assemblages will be identified. In doing so, this research places the Sioni complex within the wider regional and chronological context of the Transcaucasus during the Chalcolithic period and articulates how it may have interacted, both locally and regionally, with other contemporary traditions.

The study concludes by suggesting a restricted approach to the Sioni complex by using the assemblage from the type site as a foundation for its definition. The major features of the ceramic tradition are highlighted and Sioni is defined as a domestic cooking ware local to the areas of eastern and southern Georgia during the Chalcolithic period.

Dedication

This thesis is dedicated to Professor Antonio Sagona,

supervisor and friend

Declaration

This is to certify that:

i. The thesis comprises only my original work towards the PhD, except where indicated in the preface,

ii. Due acknowledgement has been made in the text to all other material used,

iii. The thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies, and appendices.

Belinda Mary Shapardon, February 2020

Preface

Acknowledgement of Funding

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Figure 6.54: Jar 3 – Hole-mouthed jar fragments from Sioni (after Kiguradze and Sagona 2003, Fig. 3.8.5-7). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.	472	N

Figure 6.55: Hole-mouthed jar fragments from the Kitchen Ware assemblage of Mentesh Tepe, Period III (after Lyonnet et al. 2012, Fig. 148.8-9 and 11). Lyonnet, B., F. Guliyev, B. Helwing, T. Aliyev, S. Hansen, and G. Mirtskhulava. 2012. "Ancient Kura 2010-2011: The First Two Seasons of Joint Fieldwork in the Southern Caucasus." *Archäologische Mitteilungen aus Iran un Turan* 44: 1-190.	472	N
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Figure 6.58: Perforated tray fragments from Alazani III and Damtsvari Gora (after Kiguradze and Sagona 2003, Fig. 3.13.1-2). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.	474	N
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Figure 6.67: Base fragments from Dormishkanlu (after Maziar 2015, Fig. 6.4-6). Maziar, S. 2015. "Settlement Dynamics of the Kura-Araxes Culture: An Overview of the Late Chalcolithic and Early Bronze Age in the Khoda Afarin Plain, North Western Iran." *Paléorient* 41: 25-36.	478	N
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Figure 6.102: Vertical necked jar from Sioni decorated with small circular impressions along the neck (after Menabde and Kiguradze 1981, Fig. 3.2; Photo: B. Shapardon). Menabde, M., and T. Kiguradze. 1981. *Sionis Arqeologiuri Dzeglebi.* Tbilisi: Metsniereba.	494	N
Figure 6.103: Incised body sherd from Nachivchavebi (after Chikovani et al. 2010, Pl. II.11) Chikovani, G., Z. Shatberashvili, and G. Gogochuri. 2010. "A New Site of the Eneolithic-Early Bronze Age from Tetritsqaro." In *Rescue Archaeology in Georgia: Baku-Tbilisi-Ceyhan South Caucasian Pipelines,* edited by G. Gamkrelidze, N. Erkomaishvili, G. Kvirkvelia, G. Narmimanishvili, V. Sadradze, M. Tsereteli, and Z. Tskvitinidze, 95-109. Tbilisi: Georgian National Museum.	495	N
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Figure 6.108: Coarse jars from Poylu II decorated with thumb and rhomboid impressions along the neck (after Museibli 2008b, Pl. 3.3 and 3.5). Museibli, N. 2008b. *Poylu II Report: On Excavations of Poylu II Settlement at Kilometre Point 408.8 of Baku-Tbilisi-Ceyhan and South Caucasus Pipelines Right of Way.* Baku: BTC Pipeline Company.	496	N
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Figure 6.113: Rim fragment decorated with a series of conical lugs from Damtsvari Gora (after Kiguradze and Sagona 2003, Fig. 3.14.4). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K.	498	N

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Figure 6.117: Relief decoration on fragments of Kitchen Ware from Mentesh Tepe (after Lyonnet 2017, Fig. 15 and Fig. 16). Lyonnet, B. 2017. "Mentesh Tepe 2012-2014. The Pottery." In *The Kura Projects: New Research of the Later Prehistory of the Southern Caucasus,* edited by B. Helwing, T. Aliyev, B. Lyonnet, F. Guliyev, S. Hansen, and G. Mirtskhulava, 141-151. Berlin: Dietrich Reimer Verlag.	500	N
Figure 6.118: A collection of body sherds from Kul Tepe/Hadishahr demonstrating various types of relief decoration (after Abedi et al. 2014, Fig. 18.3, Fig. 18.7, Fig. 19.3, Fig. 19.6, Fig. 19.12, and Fig. 20.7). Abedi, A., H. K. Shahidi, C. Chataigner, K. Niknami, N. Eskandari, M. Kazempour, A. Pirmohammadi, J. Hosseinzadeh, and G. Ebrahimi. 2014. "Excavation at Kul Tepe (Hadishahr) North-Western Iran, 2010: First Preliminary Report." *Ancient Near Eastern Studies* 51: 33-165.	500	N

Appendix: Thumbnails of Ware Types and Principle Shapes		
Thumbnail 7: Jar 1.1 – Inward leaning, short necked jars from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.8, Fig. 3.7.1, and Fig. 3.7.5). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.	726	N

Thumbnail 8: Jar 1.2 – Vertical necked jars from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.2, Fig, 3.7.5, 10, and 12). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.	726	N
Thumbnail 9: Jar 1.3 – Outward flaring jars with a gentle curvature between the neck and the shoulder from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.4, Fig. 3.7.9, and Fig. 3.7.14). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.	727	N
Thumbnail 10: Jar 1.4 – Outward flaring jars with a strong curvature between the neck and the shoulder from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.6-7, Fig. 3.7.7, and Fig. 3.8.2-3). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.	727	N
Thumbnail 11: Jar 1.5 – Vertical necked jars with a distinct offset at the juncture between the neck and the shoulder from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.1., Fig. 3.7.2-3, Fig. 3.8.1, and Fig. 3.9.5). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.	728	N
Thumbnail 12: Jar 1.6 – Outward flaring jars with a sharp juncture between the neck and the shoulder from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.9, Fig. 3.8.4, and Fig. 3.9.6). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands: Investigations in Caucasia and Beyond,* edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.	728	N
Thumbnail 13: Jar 1.7 – Crinkled rim jars from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.5, Fig. 3.7.6, and Fig. 3.7.11). Kiguradze, T., and A. Sagona. 2003. "On the Origins of the Kura-Araxes Cultural Complex." In *Archaeology in the Borderlands:*	729	N

Investigations in Caucasia and Beyond, edited by A. Smith and K. Rubinson, 38-94. Los Angeles: Cotsen Institute of Archaeology, University of California.		
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Appendix: Maps and Tables		
Map 1: Map showing the major sites of the Maikop, Sioni, and Chaff-faced traditions (map drawn by C. Jayasuriya after Sagona 2018a, 135). Sagona, A. 2018a. *The Archaeology of the Caucasus: From Earliest Settlements to the Iron Age.* Cambridge: Cambridge University Press.	733	N

Chapter One: Introduction

In the Transcaucasus, the Chalcolithic period (c. 5000-3500 B.C.E.) occupies the liminal position between the Aratashen-Shulaveri-Shomutepe complex of the Late Neolithic and the Kura-Araxes of the Early Bronze Age.[1] Within the archaeological literature, the Chalcolithic period has come to represent a vague, 'interlude' between two better articulated traditions. As a result, the Chalcolithic period within the Transcaucasus has remained poorly understood and its study has been characterised by a lack of a reliable, chronological framework, radiocarbon dates, stratified cultural deposits, and adequately defined local and regional assemblages as a result of inconsistent terminologies and definitions. However, in recent research, the Chalcolithic has emerged as a distinct chronological period within the archaeological record characterised by the appearance of new material groups, a shift in settlement patterns and subsistence strategies, and a trend towards increasingly complex socio-economic dynamics.[2] These developments took place against a backdrop of intensified interregional interaction which formed an extensive network stretching from northern Mesopotamia to the northern Caucasus and focused on the trade and exchange of natural resources and raw materials.[3]

The Sioni complex represents a major ceramic tradition of the Chalcolithic period within the Transcaucasus. As an assemblage, Sioni is characterised by a grit and obsidian tempered ceramic production that is concentrated throughout eastern and southern

[1] Sagona 2014, 27; Sagona 2018a, 132.
[2] Kiguradze 2001b, 39; Kiguradze and Sagona 2003, 40; Connor and Sagona 2007, 30; Sagona 2010b, 688; Sagona 2014, 27; Sagona 2018a, 183.
[3] Palumbi 2010, 213-215; Sagona 2010b, 688; Marro 2011, 52; Marro et al. 2011, 72-76; Lyonnet et al. 2012, 105-107; Sagona 2014, 27; Sagona 2018a, 183.

Georgia and widely dispersed in small quantities across the Caucasus.[4] Sioni ceramics were first identified as a distinct Chalcolithic tradition by Georgian archaeologists Tamaz Kiguradze and Medea Menabde after the excavation of the type site in the Marneuli district of Kvemo Kartli.[5] Since its discovery, 'Sioni' has come to refer to both a ceramic tradition in addition to a broad set of technological, morphological, and stylistic features which occur across a number of contemporary assemblages during the Chalcolithic period. As a major cultural complex, the lack of a concise definition regarding the Sioni ceramic tradition represents a significant gap within the current research and understanding of the Chalcolithic period within the Transcaucasus.

Aims

The aim of this research is to provide a foundational definition for the Sioni complex through an analysis of the unpublished ceramic assemblage that was excavated at the type site. This study also seeks to expand upon the restricted features that are attested at the type site by analysing the ceramic materials in relation to other contemporary Sioni sites throughout eastern and southern Georgia.

This analysis will trace the distribution of the Sioni across the Caucasus. At sites outside of Georgia, this study will analyse Sioni ceramics in relation to other contemporary traditions and identify shared features among these assemblages which have crossed cultural and technological boundaries.[6] By studying Sioni ceramics in relation to other assemblages, this thesis places the Sioni complex within the wider regional and chronological context of the Transcaucasus during the Chalcolithic period.

[4] Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 48-49; Sagona 2014, 30; Sagona 2018a, 207.
[5] Menabde and Kiguradze 1981.
[6] Palumbi et al. 2014, 53.

In so doing, it will articulate the role of Sioni during the Chalcolithic period and how it may have interacted, both locally and regionally, with other contemporary traditions.

Approach

This study begins by setting the geographical and regional scope of the research presented here. Chapter Two defines the Caucasus region and its major geographic, topographic, and geopolitical boundaries and subdivisions. This chapter also analyses past environments through the identification of pollen core samples which track the development of climatic and ecological conditions from the Late Pleistocene through to the Late Holocene. These developments are placed within the context of early human groups and how they may have managed and manipulated the surrounding landscape and influenced the development of local and regional vegetation.

Chapter Three situates the study within the context of the development of archaeology as a professional academic discipline within Russia and the Transcaucasus. Traced in this section is the emergence of archaeology from the antiquarianism antecedents of the 18th century to its progression into a specialist field of inquiry during the late 19th century. After the Revolution of 1917, the trajectory of archaeology would change within the Transcaucasus with the introduction of Marxist ideology and the development of Soviet archaeology. The major theoretical and methodological developments of Soviet archaeology are outlined in addition to its limitations, innovations, and wide-reaching implications for archaeological research within the region. This chapter also follows the development of archaeology after the collapse of the Soviet Union which sees the emergence of the Transcaucasus as a centre for international, collaborative research.

Chapter Four provides a contextual setting for the Sioni complex by outlining the major developments and trends of the Chalcolithic period in the Transcaucasus. The Chalcolithic period is examined in relation to four contemporary traditions including Chaff-faced ware/Leilatepe, the Kura-Araxes complex, Tilkitepe, and Maikop. Each is analysed according to key sites, stratigraphy, radiocarbon dates, architecture, material assemblages, funerary practices, and subsistence strategies. Articulated is the wider regional network of interaction and exchange which culminated during the Chalcolithic period. This chapter also endeavours to identify the role of the four traditions within this network and the wider role of the Transcaucasus as a source of natural resources and raw materials.

Chapter Five traces the distribution of Sioni sites and ceramic materials across the Caucasus. Based on the excavation report, the chapter begins with an analysis of the type site in terms of its location, state of preservation, stratigraphy, and architectural features. Importantly, a comprehensive, descriptive gazetteer of Sioni sites across the Kvemo Kartli, Tbilisi, Kakheti, Mtskheta-Mtianeti, Shida Kartli, and Samtskhe-Javakheti regions of eastern and southern Georgia is presented for the first time. The gazetteer highlights the characteristic stratigraphic and architectural features of Sioni settlements in addition to mapping the distribution and grouping of sites. Beyond Georgia, also traced are the distribution of Sioni ceramics, and related technological, morphological, and stylistic features, throughout sites in Armenia, Azerbaijan, eastern Anatolia, north-western Iran, and the northern Caucasus and its frequent occurrence alongside other contemporary traditions.

Chapter Six presents a data analysis of the Chalcolithic ceramic assemblage from Sioni to refine current definitions of the Sioni complex based on core features that are attested at the type site. The chapter first outlines the methodological approaches used to process the data and discusses the systematic description of the assemblage, its storage, and how its current state of preservation has affected the data collection process. This is followed by a statistical overview and analysis of the Chalcolithic assemblage which examines methods of manufacture, firing processes, pastes and the identification of major ware types, surface treatments, morphological forms, and stylistic and decorative techniques. These features are also analysed in relation to ceramics from other Sioni settlements in eastern and southern Georgia which serve to supplement the narrow assemblage from the type site. This chapter also incorporates Sioni ceramics from sites outside of Georgia and highlights shared technological, morphological, and stylistic techniques which occur across other contemporary traditions and which may be viewed within the context of conservative domestic foodways and cross-cultural interactions between human groups.[7]

Chapter Seven concludes the study and proposes a restricted approach to the definition of the Sioni complex based upon the materials from the type site in addition to sites throughout eastern and southern Georgia. Underscored are the defining features of the Sioni complex and its wider role among contemporary Chalcolithic traditions of the Transcaucasus within the context of interregional interaction.

[7] Sagona and Shapardon in preparation.

Chapter Two: The Landscape of the Caucasus: Physical Geography, Climate, Vegetation, and Past Environments

Introduction

In western academic literature, the Caucasus has been regarded as a remote periphery to the well-studied cultures of the ancient Near East. Situated at the junction between Europe and Asia, the Caucasus, and the inseparable regions of eastern Anatolia and north-western Iran, have come to be viewed as a borderland and a cultural and geographical corridor.[8] A realm of mythical proportions, the Caucasus region has featured in several classical myths and Biblical tales including the story of Prometheus (Hes. *Th.* 521-569), Jason and the Argonauts (Apollon. *Argonautica* 1.1-4 and Eur. *Med.* 1-15), and Noah's Ark (*Gen.* 6-9).[9] The tale of Prometheus is particularly well-known. Chained to the icy peaks of the Caucasus Mountains for stealing fire from the gods, the punishment of Prometheus has painted a picture of the Caucasus Mountains and its adjacent regions as a wild and inhospitable hinterland (Hes. *Th.* 521-525 and 565-569).[10] Such views were further reinforced within Classical literature when, in the fifth century B.C.E., the Greek historian Herodotus described the Caucasus Mountains as "the longest and loftiest of all mountain ranges" and a place which was "inhabited by many different tribes, most of whom live off wild scrub (Hdt. *Histories* 1.203)."[11] In more recent times, the Caucasus region has continued to remain inaccessible to the west. Political borders

[8] Dewdney 1971, 2; Volodicheva 2002, 350; Rubinson and Smith 2003, 1-2; Palumbi 2008a, 2; Sagona and Zimansky 2009, 1; De Waal 2010, 1; Mosar et al. 2010, 261; Chataigner et al. 2014, 1; Connor and Kvavadze 2014, 12; Quinn and Woodward 2015, 145; Helwing 2017, 52; Rova and Tonussi 2017, 2.
[9] Yılmaz et al. 1998, 192; Smith 2005, 230; De Waal 2010, 6.
[10] Rubinson and Smith 2003, 1; De Waal 2010, 6.
[11] Smith 2005, 230; King 2008, 3; De Waal, 2010, 6.

were erected in place of geographical boundaries as the Caucasus lay sealed behind the iron curtain of the Soviet Union.[12]

The Caucasus region remains obscure and understudied within western academic literature. However, progress has been made towards developing an understanding of the cultural and historical complexities of the region. In recent archaeological research, the Caucasus has emerged as a specialist field of inquiry.[13] It has since become clear that it is no longer correct to view the Caucasus, geographically, as a passive periphery at the edge of Syro-Mesopotamia, a concept which has been popularised by theoretical models such as World Systems Theory.[14] To do so would be to over-simplify an archaeologically complex region in which a mosaic of unique cultures developed in their own right.

During the Neolithic, the Transcaucasus saw the development of complexes such as the Anaseuli and Paluri traditions in the west and, later, the Aratashen-Shularveri-Shomutepe culture in the east.[15] Following the Neolithic, the Chalcolithic saw the emergence of the local Sioni complex and the ostentatious kurgans of the Maikop to the north.[16] The Late Chalcolithic and Early Bronze Age saw the rise, and subsequent

[12] Black 1977, 1-2; Trigger 1989, 207; Kradin 2010, 244; Sagona 2010a, 145; Shnirelman 2014, 226; Tikhonov 2014, 161-162.
[13] Kuftin and Field 1946; Burney and Lang 1971; Sagona 1984; Badaljan et al. 1993; Badaljan et al. 1994; Chataigner 1995; Kushnareva 1997; Avetisyan et al. 2000; Kiguradze 2000; Kiguradze 2001a; Kiguradze 2001b; Kiguradze and Sagona 2003; Rubinson and Smith 2003; Badalyan and Avetisyan 2007; Kohl 2007; Lyonnet 2007; Badalyan et al. 2008; Palumbi 2008a; Badalyan et al. 2010b; Bakhchaliyev et al. 2010; Marro et al. 2011; Lyonnet et al. 2012; Sagona 2014; Palumbi 2016.
[14] Algaze 1993; Rubinson and Smith 2003, 2; Smith 2012b, 674; Kavtaradze 2014, 14; Helwing 2017, 52.
[15] Kiguradze 1986; Gulmac and Anthony 1992; Chataigner 1995; Kushnareva 1997; Kiguradze 2001a; Badalyan et al. 2004b; Menabde and Kiguradze 2004; Badalyan et al. 2007; Kohl 2007; Hamon 2008; Badalyan et al. 2010a; Lyonnet and Guliyev 2010; Lyonnet et al. 2015; Chataigner et al. 2014.
[16] Menabde and Kiguradze 1981; Chernykh 1992; Korenevskii 1992; Veselovskii 1997; Kiguradze 2000; Kiguradze 2001b; Kiguradze and Sagona 2003; Anthony 2007; Ivanova 2007; Kohl 2009b; Sagona 2010b; Sagona 2014.

dispersal, of the Kura-Araxes complex whose geographical distribution would not be rivalled until the development of the Achaemenid Empire during the sixth century B.C.E.[17] With this in mind, it is clear that the Caucasus region cannot be viewed in isolation.[18] From as early as the sixth millennium B.C.E., archaeological evidence indicates that cultures in the Caucasus were actively involved within interregional networks of interaction and exchange that extended further south.[19]

It must also be noted that the Caucasus is a region that is as geographically complex as it is culturally and historically diverse. It is important to have an understanding of the Caucasus and its regional geography, in addition to its past and present ecological and climatic conditions, to provide the context in which these archaeological complexes developed. From a modern geographical perspective, the region of the Caucasus remains ambiguous. The Caucasus does not fit within the parameters of a concise geographical definition. Positioned at the confluence of a number of geographical, political, cultural, historical, and religious boundaries, the Caucasus is neither east or west nor Europe or Asia. Rather, it is an amalgamation of each of these concepts and represents a region that is both culturally and historically unique.[20] As a result, the area of the Caucasus is plagued by inconsistent geographical, political, and ethnic terminology which reflects our wider inability to accommodate the region within a singular satisfactory definition. Today, the complexity of these contested and confused categories is directly reflected in the geopolitical organisation of the

[17] Kuftin 1941; Kuftin and Field 1946; Burney and Lang 1971; Sagona 1984; Kiguradze and Sagona 2003; Rubinson and Smith 2003, 2; Palumbi 2008a; Palumbi and Chataigner 2014; Sagona 2014; Palumbi 2016; Palumbi 2017, 113.
[18] Rubinson and Smith 2003, 7.
[19] Narimanov 1985; Narimanov 1987; Akhundov 2007; Museibli 2007; Kohl 2009a, 58; Lyonnet 2009; Nishiaki et al. 2015, 2; Lyonnet et al. 2016, 171; Baudouin et al. 2018, 50; Ricci et al. 2018, 1446.
[20] Volodicheva 2002, 350; De Waal 2010, 9-10; Quinn and Woodward 2015, 145.

Caucasus. Encompassing 14 different autonomous republics and federal regions, spread over six independent countries, the Caucasus is both culturally and linguistically diverse as well as politically volatile.[21]

For its size, the Caucasus demonstrates an exceptional level of geographic and ecological diversity. With peaks rising over 5000 metres above sea level and intermontane depressions as low as 28 metres below sea level, the Caucasus is a region of extremes with a climate ranging from subtropical to arid desert.[22] Just as the region is positioned at the cross-roads of several geographical and cultural boundaries, it also sits at the juncture of four major tectonic units.[23] As a result, powerful geological processes are responsible for the unique topography of the region. Such processes saw the development of the Black Sea and Caspian Sea basins and were also responsible for the formation of depressions, valleys, and highland plateaux which have come to characterise the region. Intense geothermal activity also saw the rise of a chain of volcanic centres throughout the Caucasus, many of which form major mountain peaks, and rich obsidian deposits.[24] Later, during the Neolithic, obsidian would become a major commodity within local and regional networks of exchange.[25] The same geological processes also saw the rise of the Greater and Lesser Caucasus mountains which serve

[21] Banks et al. 1997, 332; Connor et al. 2004, 230; Kohl 2007, 65; Adamia et al. 2008, 78; King 2008, 9-10; Palumbi 2008a, 2; De Waal 2010, 135-136; Mosar et al. 2010, 274; Connor 2011, 10; Quinn and Woodward 2015, 145-146.
[22] Robinson 1997, 4; Yılmaz et al. 1998, 173; Mitchell and Westaway 1999, 164; Kiguradze 2001b, 38; Volodicheva 2002, 353; Rubinson and Smith 2003, 2-4; Connor et al. 2004, 230; Kohl 2007, 64-65; King 2008, 3; Palumbi 2008a, 2; De Waal 2010, 7; Mosar et al. 2010, 261; Connor 2011, 12; Cummings and Colbert 2013, 644; Kohl and Trifonov 2013, 1571; Quinn and Woodward 2015, 109.
[23] Borunov et al. 1991, 20; Adamia et al. 2008, 78; Sagona and Zimansky 2009, 3; Adamia et al. 2010, 239; Adamia et al. 2011, 489; Connor and Kvavadze 2014, 12.
[24] Nalivkin 1973, 672; Adamia et al. 2008, 96; Adamia et al. 2010, 251-252; Badalyan 2010, 28; Adamia et al. 2011, 534; Biagi et al. 2017, 1; Nishiaki et al. 2019, 766.
[25] Kiguradze 2001b, 38; Sagona 2010b, 668; Biagi et al. 2017, 6; Biagi and Nisbet 2018, 8; Helwing and Aliyev 2018, 68; Nishiaki et al. 2019, 766.

to define and divide the region. In reference to these major mountain chains, the Caucasus may be divided into three geographical regions corresponding to the Greater Caucasus Mountains, the Transcaucasian Intermontane Depression, and the Lesser Caucasus Mountains which extend to include areas of eastern Anatolia and north-western Iran.[26] In each of these regions, strong horizontal and vertical ecological and climatic gradients occur resulting from a complex combination of factors relating to topography, orographic effects, and the influence of the Black and Caspian seas.[27]

Recent, palynological reconstructions of past climatic and environmental conditions of the Caucasus are based on a series of regional pollen cores taken from lakes, swamps, peat bogs, and wetlands. These samples indicate past environmental conditions and enable archaeologists to place cultural complexes within a contemporary climatic and ecological context. This may shed light on how past communities interacted with the surrounding landscape and what role humans may have had in the development of local and regional vegetation. Data from the pollen cores indicates that, since the Last Glacial Maximum, the Caucasus region has undergone major climatic and environmental change.[28]

During the Late Pleistocene, the quasi-glacial conditions of the Younger Dryas were followed by a gradual amelioration of climatic conditions at the beginning of the Early Holocene.[29] In this period, a peak in fire frequencies and the conspicuous delay of

[26] Volodicheva 2002, 350; Kohl 2007, 64-65; Kohl and Trifonov 2013, 1572; Quinn and Woodward 2015, 145.
[27] Volodicheva 2002, 350; Rubinson and Smith 2003, 4; King 2008, 8; Shumilovskikh et al. 2012, 178; Quinn and Woodward 2015, 145; Herrscher et al. 2018, 4.
[28] Landmann et al. 1996, 113; Roberts 2002, 1005.
[29] Van Zeist and Wright 1963, 65; Roberts and Wright 1994, 198; Stevens et al. 2001, 748; Roberts 2002, 1005; Volodicheva 2002, 361-362; Wick et al. 2003, 670; Connor and Kvavadze 2008, 529; Djamali et al. 2009b, 123; Joannin et al. 2010, 158; Turner et al. 2010, 371; Connor 2011, 220; Messager et al. 2013, 123; Joannin et al. 2014, 79.

afforestation during the Early Holocene may reflect human agency which indicates that, from as early as the Neolithic period, human societies actively manipulated and modified the surrounding landscape.[30] The gradual amelioration of climatic conditions continued until the Mid-Holocene, which reached climatic optimum, before the onset of cooler and variable climates at the beginning of the Late Holocene.[31] At this time, human impact upon the local and regional landscape becomes more apparent. From the Late Bronze Age, large scale cultivation and indiscriminate land use has resulted in environmental degradation and widespread deforestation across the Caucasus and the Near East.[32] Such impact has become more pronounced since the invention of modern agricultural practices during the 20th century. This demonstrates that, since the Early Holocene, the present-day regional landscape of the Caucasus has developed under the influence of a combination of both climatic and anthropogenic factors. Given its exceptional development and its unparalleled diversity, it is not surprising that the geographical and ecological complexity of the Caucasus is mirrored by the development of a rich and unique archaeological record.[33]

[30] Roberts 2002, 1007-1008; Turner et al. 2010, 272-273; Connor 2011, 180; Connor and Kvavadze 2014, 16; Joannin et al. 2014, 78-79.
[31] Van Zeist and Wright 1963, 66; Roberts and Wright 1994, 199-200; Wick et al. 2003, 665; Kvavadze and Connor 2005, 69; Connor and Sagona 2007, 30; Connor and Kvavadze 2008, 542; Djamali et al. 2008, 11; Palumbi 2008a, 5; Djamali et al. 2009b, 127; Messager et al. 2013, 136-137; Joannin et al. 2014, 79; Ryabogina et al. 2019, 124.
[32] Bottema and Woldring 1984, 148; Van Zeist and Bottema 1991, 138-139; Roberts et al. 1997, 409; Roberts 2002, 1005; Vermoere et al. 2002, 569; Djamali et al. 2009a, 1372-1373; Sagona and Zimansky 2009, 9; Connor 2011, 8-9, 243-244.
[33] Dewdney 1971, 2; Volodicheva 2002, 350; Rubinson and Smith 2003, 1-2; Palumbi 2008a, 2; Sagona and Zimansky 2009, 1; De Waal 2010, 1; Mosar et al. 2010, 261; Connor and Kvavadze 2014, 12.

Defining the Caucasus: Issues of Geonomenclature and Modern Geopolitical Boundaries

Occupying a liminal position at the juncture of Europe and Asia, the Caucasus does not conform to the arbitrary historical, socio-political, and geographical constructs which serve to demarcate the borderline between the east and west. Rather, the Caucasus is a region that has remained politically and culturally fluid. Over the course of its long history, Arabs, Mongols, Ottomans, and Russians have exerted their influence over the Caucasus. It is a place where the spheres of influence of Europe and Asia have converged and left an indelible mark on the region's distinctive cultural heritage.[34] As a result, debate still continues over the true nature of the Caucasus and whether it properly belongs within the geographical confines of Europe or Asia. In reality, the Caucasus, as we know it today, is a product of both regions.[35] Searching for a more concise definition, many geographers have used the Greater Caucasus Mountains as a natural border to mark the division between Europe and Asia. Today, it is commonly accepted to place the independent states of Georgia, Armenia, and Azerbaijan in Europe whilst the Turkish border, further south, and the Araxes River are used to delineate the frontier of Europe and Asia.[36] That is to say, that by the modern geographical definition, much of the Caucasus region falls within the boundaries of Europe. However, this definition is by no means fixed.

The Caucasus may be defined as the isthmus situated between the Caspian Sea in the east and the Black Sea and Sea of Azov in the west.[37] Topographically, the region

[34] Rubinson and Smith 2003, 1; King 2008, 11; De Waal 2010, 10; Hopper et al. 2018, 13.
[35] Volodicheva 2002, 350; De Waal 2010, 9-10; Quinn and Woodward 2015, 145.
[36] De Waal 2010, 9-10; Quinn and Woodward 2015, 145.
[37] Kiguradze 2001b, 38; Volodicheva 2002, 350; Rubinson and Smith 2003, 8; Kohl 2007, 64; Palumbi 2008a, 2; De Waal 2010, 8-9; Kohl and Trifonov 2013, 1571; Chataigner et al. 2014, 1; Guliyev and

is defined by two major mountain ranges, the chain of the Greater Caucasus Mountains to the north and the Lesser Caucasus Mountains to the south, which have served to divide the region **(*fig. 2.1*)**.[38] Geographers have used the terms "Cis-Caucasia" (*Predkavkaz'ye* in Russian) and "Transcaucasia" (*Zavkavkaz'ye* in Russian) to denote the areas immediately to the north and to the south of the Greater Caucasus Mountains.[39] In recent academic literature, the use of such terms has been criticised for emphasising a Russo-centric regional perspective.[40] The use of the prefixes 'Cis-' and 'Trans-' imply that one is looking across the region of the Caucasus from the perspective of the north.[41] Since the collapse of the Soviet Union, the terms "North Caucasus" and "South Caucasus" have come into usage to provide a politically neutral alternative in a region in which ethnic, political, and religious categories are disputed.[42] Despite its short comings, the term 'Transcaucasus' will continued to be used here to denote the region immediately south of the Greater Caucasus range while the term 'Northern Caucasus' will be used to denote the region to the north. Deeply embedded within the archaeological literature, the term 'Transcaucasia' or 'Transcaucasus' continues to be used consistently and, in an area of study weighed down by terminological inconsistencies, it seems counterproductive to deviate from the standard terminology.

Geopolitically, the area to the north of the Greater Caucasus Mountains falls within the Russian Federation **(*fig. 2.2*)**. To the west are the republics of Adygea and

Lyonnet 2014, 25; Mumladze et al. 2015, 36; Quinn and Woodward 2015, 145; Tibaldi et al. 2017, 35; Herrscher et al. 2018, 4; Baudouin 2019, 116.

[38] Banks et al. 1997, 332; Kiguradze 2001b, 38; Volodicheva 2002, 350; Connor et al. 2004, 230; Kohl 2007, 62; King 2008, 7; Connor 2011, 12; Chataigner et al. 2014, 1; Mumladze et al. 2015, 36; Quinn and Woodward 2015, 145; Hopper et al. 2018, 12.

[39] Rubinson and Smith 2003, 4-8; King 2008, XIII; De Waal 2010, 6-7.

[40] Rubinson and Smith 2003, 4; King 2008, XIII; De Waal 2010, 6-7.

[41] Rubinson and Smith 2003, 4; King 2008, XIII.

[42] King 2008, XIII; De Waal 2010, 6-7; Hopper et al. 2018, 12-13.

Karachay-Cherkessia. Along the central northern slopes of the Greater Caucasus Mountains are the republics of Kabardino-Balkaria and North Ossetia-Alania. Further east lie the republics of Ingushetia, Chechnya, and Dagestan.[43] To the north and to the west lie the large constituent entities of Krasnodar and Stavropol.[44] To the south of the Greater Caucasus Mountains, along the Black Sea coast to the west, lies the independent state of Georgia and the autonomous regions of Abkhazia and Adjara. Further east is the contested region of South Ossetia, which is divided by the Georgian-Russian border.[45] Immediately south of Georgia lies Armenia, the smallest of the independent states, and the autonomous republic of Nakhichevan, an exclave of Azerbaijan.[46] Azerbaijan is located to the east of Georgia and Armenia and is bordered by the coast of the Caspian Sea in the east. It is the largest of the three independent states to the south of the Greater Caucasus Mountains and it also includes the contested region of Nagorno-Karabakh, a *de facto* independent republic.[47]

The Transcaucasus, which is the focus of this study, roughly corresponds to the intermontane depression between the Greater and Lesser Caucasus mountains and includes the independent republics of Georgia, Armenia, and Azerbaijan.[48] Geographically, the Transcaucasus may be said to extend beyond the modern boundaries of the three independent states to also include the regions of eastern

[43] Adamia et al. 2008, 78; King 2008, 9-10; Palumbi 2008a, 2; Smith 2012b, 669; Herrscher et al. 2018, 4.
[44] King 2008, 9; Smith 2012b, 669.
[45] Banks et al. 1997, 332; Connor et al. 2004, 230; Adamia et al. 2008, 78; King 2008, 9-10; Palumbi 2008a, 2; De Waal 2010, 135-136; Connor 2011, 10; Smith 2012b, 669.
[46] Kohl 2007, 65; Adamia et al. 2008, 78; Palumbi 2008a, 2; De Waal 2010, 28; Smith 2012b, 669.
[47] As of 2017, a constitutional referendum was passed in favour of adopting the new title "Republic of Artsakh" in place of Nagorno-Karabakh. Given the regions' politically disputed status, the constitutional changes have not been fully recognised internationally and the region is often still referred to as 'Nagorno-Karabakh.' Kohl 2007, 65; De Waal 2010, 27; Mosar et al. 2010, 274; Smith 2012b, 669; Quinn and Woodward 2015, 145-146.
[48] Rubinson and Smith 2003, 4; Palumbi 2008a, 2; De Waal 2010, 6-7; Chataigner et al. 2014, 1; Akashi et al. 2018, 75; Herrscher et al. 2018, 4.

Anatolia and north-western Iran.[49] Eastern Anatolia is a region situated in the modern republic of Turkey. It is located to the south of the Pontic Mountain Range, which borders the Black Sea to the north, and also includes the Anti-Taurus Range further south closer to the borders of Syria and Iraq.[50] To the west, the region of eastern Anatolia is bounded by the Euphrates River.[51] The eastern extent of the region is largely defined by the geopolitical boundaries marking the borders of Georgia, Armenia, and Iran.[52]

Due to a strong geographic, ecological, and climatic continuity, the highlands of eastern Anatolia blend seamlessly into the highlands of southern Armenia and north-western Iran.[53] From south-eastern Anatolia, the Anti-Taurus Mountains continue on to the Zagros Mountain Range which, beginning in north-western Iran, spans the entire length of the western and south-western Iranian plateau, corresponding roughly to Iran's western geopolitical border.[54] To the north of the Zagros, lie the Elbruz Mountains along the coast of the Caspian Sea.[55] In north-western Iran, the Elbruz Mountains form a subrange known as the Talysh Mountains which continue north into south-eastern Azerbaijan.[56] The region of north-western Iran is largely confined to the northern Zagros

[49] Rubinson and Smith 2003, 4; Palumbi 2008a, 5; Akashi et al. 2018, 75.
[50] Dewdney 1971, 197-199; Palumbi 2008a, 4; Sagona and Zimansky 2009, 1-2; Cummings and Colbert 2013, 610.
[51] Dewdney 1971, 197-199; Palumbi 2008a, 4.
[52] Palumbi 2008a, 4; Sagona and Zimansky 2009, 1; Cummings and Colbert 2013, 605.
[53] Rubinson and Smith 2003, 4; Sagona and Zimansky 2009, 2.
[54] Van Zeist and Bottema 1991, 18; Sagona and Zimansky 2009, 2; Palumbi 2008a, 4; Cummings and Colbert 2013, 610; Quinn and Woodward 2015, 671.
[55] Van Zeist and Bottema 1991, 19; Volodicheva 2002, 350; Palumbi 2008a, 3-4; Cummings and Colbert 2013, 635; Ramezani et al. 2013, 39.
[56] Van Zeist and Bottema 1991, 19; Volodicheva 2002, 350; Palumbi 2008a, 3-4; Cummings and Colbert 2013, 635; Ramezani et al. 2013, 39.

and Talysh Mountains including the Urmia Basin which is situated between the two ranges.[57]

The Caucasus region is the result of a tumultuous geological history encompassing the collision of continents, the eruption of volcanoes and extensive lava flows, and shattering earthquakes. Just as the Caucasus is positioned at a cultural and geographical cross-roads, the region is also situated at the juncture of four major tectonic units forming part of the Mobile Belt Province **(*fig. 2.3*)**.[58] Within a relatively short period of time, the Caucasus region emerged from the depths of the ocean to form some of the highest peaks in Europe.[59]

Many of the major mountain peaks represent extinct volcanic centres while areas such as eastern Anatolia and the Armenian highlands represent vast and extensive lava plateaux. The intense volcanic activity of the Pliocene resulted in rich obsidian deposits throughout much of the Transcaucasus **(*fig. 2.4*)**.[60] A prized commodity, particularly during the Neolithic, obsidian provided an early impetus for the development of networks of communication and exchange between the Transcaucasus and regions further south.[61] The Caucasus is also well endowed with more than 1800 outcrops and mineral deposits containing native metals, particularly copper, gold, and

[57] Van Zeist and Bottema 1991, 19; Rubinson and Smith 2003, 4; Palumbi 2008a, 6; Kohl and Trifonov 2013, 1572-1573.
[58] Borunov et al. 1991, 20; Adamia et al. 2008, 78; Sagona and Zimansky 2009, 3; Adamia et al. 2010, 239; Adamia et al. 2011, 489; Connor and Kvavadze 2014, 12.
[59] Adamia et al. 1981, 437; Şengör and Yılmaz 1981, 183; Dercourt et al. 1986, 242; Gamkrelidze 1986, 263; Zonenshain and Le Pichon 1986, 208; Philip et al. 1989, 2; Nikishin et al. 1998, 173; Yılmaz et al. 2000, 180; Allen et al. 2002, 775; Robertson 2002, 2; Volodicheva 2002, 350; Brunet et al. 2003, 120; Golonka 2004, 242; Faccenna et al. 2006, 86; Saintot et al. 2006, 277; Vincent et al. 2007, 160; Zakariadze et al. 2007, 94; Mosar et al. 2010, 271; Sosson et al. 2010, 333; Avdeev and Niemi 2011, 1; Vincent et al. 2011, 1; Tibaldi et al. 2017, 35.
[60] Nalivkin 1973, 672; Innocenti et al. 1980, 296; Dewey et al. 1986, 3; Ollivier et al. 2010, 317.
[61] Kiguradze 2001b, 38; Sagona 2010b, 668; Helwing and Aliyev 2018, 68.

silver, and hydro-carbonated/oxide ores such as malachite.[62] From the Late Neolithic, metal ore would become a central commodity in systems of exchange in the wake of new technological developments in metallurgy.[63]

In recent years, a series of devastating earthquakes have demonstrated that the Caucasus region continues to remain geologically active.[64] In the Greater Caucasus Mountains, a system of thrust tectonics predominates. However, the Lesser Caucasus Mountains, and the adjacent regions of eastern Anatolia and north-western Iran, are characterised by a series of strike-slip faults **(*fig. 2.5*)**.[65] Many of these fault systems are directly associated with volcanic activity and seismic events **(*fig. 2.6*)**.[66] The Caucasus is a region that is continually undergoing a state of formation and reformation as geological processes actively shape the surrounding landscape.[67]

Recreating Past Environments: Palynological Reconstructions of the Late Quaternary Period

Spanning an area of roughly 68,000 square kilometres, the Caucasus displays a remarkable level of geographical and ecological diversity.[68] In a region characterised by a high degree of cultural and linguistic diversity, it is possible that such geographical and ecological variation has played some part in the development of the unique cultural

[62] Courcier 2014, 579.
[63] Courcier 2007; Courcier et al. 2008b, 35-40; Courcier 2010, 76-79; Courcier et al. 2012, 210; Couricer 2014, 579; Hansen 2014, 391; Nicolas 2015, 11; Courcier et al. 2016, 26; Courcier et al. 2017, 526-527.
[64] Dewdney 1971, 27; Borunov et al. 1991, 20; Triep et al. 1995, 4012-4013; Volodicheva 2002, 350-352; Rubinson and Smith 2003, 4; Adamia et al. 2008, 83; Adamia et al. 2011, 535-536; Cummings and Colbert 2013, 610, 641-642; Mumladze et al. 2015, 36, 43.
[65] Rebai et al. 1993, 1089; Koçyiğit et al. 2001, 177; Copley and Jackson 2006, 1; Tan and Taymaz 2006, 532-534; Adamia et al. 2008, 77-78; Avagyan et al. 2010, 393; Mosar et al. 2010, 267.
[66] Yılmaz et al. 1998, 195; Karakhanian et al. 2002, 339; Wick et al. 2003, 666; Adamia et al. 2008, 82.
[67] Reilinger et al. 2006, 2; Kadirov et al. 2013, 554.
[68] Borunov et al. 1991, 20; Rubinson and Smith 2003, 2-4; Kohl 2007, 64-65; King 2008, 9; Palumbi 2008a, 2; Kohl and Trifonov 2013, 1571; Quinn and Woodward 2015, 145.

heritage of the Caucasus.[69] From a geographical perspective, the Caucasus may be subdivided into three regions consisting of the Greater Caucasus Mountain Range, the Transcaucasian Depression, and the Lesser Caucasus Mountains.[70] Situated between the Taman Peninsular of the Black Sea and the Apsheron Peninsular of the Caspian Sea, the Greater Caucasus Mountains stretch almost 13,000 kilometres in a north-west to south-east direction (***fig. 2.7***).[71] As a result, the Greater Caucasus Mountains form a major cultural, geographical, and ecological boundary which serves to separate the two broadly distinct regions of the Eurasian Steppes to the north and the Transcaucasian Depression to the south.[72]

Since the end of the Last Glacial Maximum, 22,000 to 20,000 years ago, the Caucasus has undergone major climatic and vegetational change.[73] Palynological reconstructions of regional climatic and environmental trends are based on a series of pollen cores. For north-western Iran, the most important pollen core comes from Lake Urmia.[74] Based on two recent pollen cores, Lake Urmia provides a vegetational record spanning approximately 200,000 years making it one of the longest pollen cores in the Near East (***fig. 2.8***).[75]

[69] Kohl 2007, 64; Kohl and Trifonov 2013, 1571.
[70] Volodicheva 2002, 350; Kohl 2007, 64-65; Kohl and Trifonov 2013, 1572; Quinn and Woodward 2015, 145.
[71] Khain 1975, 133; Volodicheva 2002, 352-353; Kohl 2007, 64-65; Palumbi 2008a, 2; De Waal 2010, 6; Kohl and Trifonov 2013, 1571; Mumladze et al. 2015, 36; Quinn and Woodward 2015, 145; Vasilyev and Amirkhanov 2018, 105.
[72] Volodicheva 2002, 350; Kohl 2007, 64-65; King 2008, 8; Palumbi 2008a, 2; Mosar et al. 2010, 261; Kohl and Trifonov 2013, 1571; Quinn and Woodward 2015, 145.
[73] Landmann et al. 1996, 113; Roberts 2002, 1005.
[74] Bottema 1986, 241; Van Zeist and Bottema 1991, 64-65; Roberts and Wright 1994, 201; Djamali et al. 2008, 1; Djamali et al. 2010, 814; Joannin et al. 2010, 157; Connor 2011, 6; Connor and Kvavadze 2014, 17; Joannin et al. 2014, 79.
[75] Djamali et al. 2008, 1.

In the north-western and central sectors of the Zagros Mountains, two other major pollen cores come from Lake Zeribar and Lake Mirabad (***fig. 2.9 and 2.10***).[76] Spanning the last 22,000 years, the pollen diagram from Lake Zeribar has remained central to the reconstruction of the paleovegetation of western Asia.[77] Further east, Lake Van represents the key site of eastern Anatolia.[78] As the sediment is not suitable for radiocarbon dating, the chronology of Lake Van has been reconstructed through the method of varve counting.[79] As a result, the chronology of Lake Van has remained problematic and has produced dates that are likely too young by at least 1000 years.[80] More recently, the Lake Van diagram has been rectified by pollen cores from the nearby peat bog at Sogutlu (***fig. 2.11***).[81] New pollen cores from the lake have also been taken and the number of varves recounted stretching over 13,000 varve years (***fig. 2.12***).[82] Despite its shortcomings, the chronology from Lake Van falls roughly in line with pollen cores from other sites including those taken from Lake Urmia, Lake Zeribar, and Lake Mirabad.[83]

[76] Van Zeist and Wright 1963, 65; Van Zeist 1967, 301-305; Van Zeist and Bottema 1977, 27, 31; Van Ziest and Woldring 1978, 274; Bottema 1986, 241-242; Van Zeist and Bottema 1991, 64-65; Roberts and Wright 1994, 198; Stevens et al. 2001, 749; Wick et al. 2003, 673; Stevens et al. 2006, 494-495; Djamali et al. 2009b, 123; Sagona and Zimansky 2009, 5; Connor 2011, 6; Messager et al. 2013, 136; Connor and Kvavadze 2014, 17; Joannin et al. 2014, 79.
[77] Van Zeist and Bottema 1991, 55; Roberts and Wright 1994, 204; Sagona and Zimansky 2009, 5; Connor 2011, 6.
[78] Van Zeist and Woldring 1978, 249; Bottema 1986, 241-242; Van Zeist and Bottema 1991, 60-64; Roberts and Wright 1994, 201; Bottema 1995, 190; Landmann et al. 1996, 115; Lemcke and Sturm 1997, 653; Stevens et al. 2001, 749; Roberts 2002, 1005; Wick et al. 2003, 665; Sagona and Zimansky 2009, 5; Connor 2011, 8; Messager et al. 2013, 135-136; Connor and Kvavadze 2014, 15-17.
[79] Van Zeist and Woldring 1978, 249; Bottema 1986, 241; Van Zeist and Bottema 1991, 60; Roberts and Wright 1994, 201; Bottema 1995, 190; Lemcke and Sturm 1997, 653; Roberts 2002, 1006; Wick et al. 2003, 665; Litt et al. 2009, 1555; Sagona and Zimansky 2009, 5; Connor 2011, 8; Joannin et al. 2014, 79.
[80] Bottema 1986, 241; Van Zeist and Bottema 1991, 60-64; Roberts and Wright 1994, 207; Bottema 1995, 190; Roberts 2002, 1006; Wick et al. 2003, 670; Sagona and Zimansky 2009, 5; Connor 2011, 8.
[81] Bottema 1986, 260; Van Zeist and Bottema 1991, 60-64; Bottema 1995, 189-191.
[82] Wick et al. 2003, 665.
[83] Sagona and Zimansky 2009, 5.

Pollen samples have recently come from Georgia and Armenia. Situated in the Samtskhe-Javakheti plateau of southern Georgia, Lake Paravani represents a key site with a pollen core covering the last 13,000 years **(*fig. 2.13*)**.[84] Data from the site has been complimented by cores from smaller lakes found in the Tsalka plateau including Lake Imera, Lake Bareti, and Lake Aligol **(*fig. 2.14 and 2.15*)**.[85] In western Georgia, the pollen core from Ispani-II, a sphagnum mire located close to Kobuleti, provides a detailed reconstruction of vegetation over the past 6000 years in the context of the Black Sea.[86] A limited amount of data has also been published from sites in Armenia. These include the section from the Shamb-2 travertine in the Vorotan Valley in addition to the cores from Lake Arpi and the Zarishat fen in north-western Armenia **(*fig. 2.16*)**.[87] Together, the data from these sites paints a clear picture of the climatic and vegetational developments of the Caucasus.

From the Late Pleistocene, the Caucasus was characterised by cold and arid climatic conditions with low values of arboreal taxa.[88] The beginning of the Holocene saw the gradual amelioration of climatic conditions which reached full extent during the Mid-Holocene.[89] It was during the Mid-Holocene, when temperatures were warm and humid, that arboreal taxa reached maximum values before the onset of a more variable

[84] Messager et al. 2013, 125; Connor and Kvavadze 2014, 18.
[85] Connor 2011, 140-182.
[86] Connor et al. 2007, 25; Connor and Kvavadze 2008, 541; De Klerk et al. 2009, 890.
[87] Joannin et al. 2010, 157; Ollivier et al. 2011, 26; Connor and Kvavadze 2014, 15-16; Joannin et al. 2014, 157; Chataigner et al. 2015, 3.
[88] Van Zeist and Wright 1963, 65; Roberts and Wright 1994, 198; Stevens et al. 2001, 748; Roberts 2002, 1005; Volodicheva 2002, 361-362; Wick et al. 2003, 670; Connor and Kvavadze 2008, 529; Joannin et al. 2010, 158; Turner et al. 2010, 371; Connor 2011, 220.
[89] Roberts and Wright 1994, 201; Roberts 2002, 1005-1006; Connor and Kvavadze 2008, 542; Djamali et al. 2009b, 123; Turner et al. 2010, 372; Connor 2011, 6; Messager et al. 2013, 136; Joannin et al. 2014, 79.

and cooler climate during the Late Holocene.[90] It is during the Mid- to Late Holocene that human action is directly reflected in the palynological record. From as early as the Neolithic, human groups actively managed and manipulated the surrounding landscape playing a critical role in the development of local and regional vegetation.[91] Throughout the Late Holocene, the impact of human interference upon the regional vegetation increases and it has become clear that the current vegetation of the Caucasus has developed from a long history of climatic change and human interaction.

During the Last Glacial Maximum, much of the Caucasus was characterised by cold, dry climatic conditions with the predominance of steppe and semi-desert vegetation.[92] After the Last Glacial Maximum, the region experienced climatic warming and an increase in precipitation resulting in the gradual replacement of *Artemisia*-Chenopodiaceae (Aster-Amaranth) steppic taxa with grasslands and parkland forests.[93] This is best demonstrated by the records from Lake Van where, between 12,750 and 11,630 BP, an increase in arboreal pollen values indicates that rare stands of *Quercus* (Oak)*, Pistacia* (Pistachio)*,* and *Salix* (Willow) were able to become established in favourable habitats.[94]

The gradual amelioration of climate after the Last Glacial Maximum was interrupted by the onset of the Younger Dryas Cold Event which saw the return of quasi-

[90] Van Zeist and Woldring 1978, 249; Van Zeist and Bottema 1991, 70-72; Roberts 2002, 1005; Wick et al. 2003, 665; Connor and Kvavadze 2008, 542; Turner et al. 2010, 372; Connor 2011, 238, 253; Messager et al. 2013, 137; Connor and Kvavadze 2014, 18; Joannin et al. 2014, 78.
[91] Roberts and Wright 1994, 215; Roberts 2002, 1002; Turner et al. 2010, 384; Connor 2011, 232-234; Ponel et al. 2013, 208; Joannin et al. 2014, 70-71.
[92] Van Zeist and Bottema 1991, 126; Roberts and Wright 1994, 198-199; Stevens et al. 2001, 749; Roberts 2002, 1005; Conner et al. 2007, 25; Djamali et al. 2008, 10; Djamali et al. 2009b, 123.
[93] Van Zeist and Bottema 1991, 70; Connor and Kvavadze 2008, 529; Turner et al. 2010, 371; Connor 2011, 210; Messager et al. 2013, 136.
[94] Wick et al. 2003, 670.

glacial climatic conditions.[95] The Younger Dryas, from c. 12,900 to 11,600 BP, was caused by an interruption to the Atlantic meridional overturning circulation which is responsible for the transportation of warm water from the equatorial regions of the Atlantic Ocean towards Europe.[96] The interruption of this major current in the Atlantic Ocean resulted in a decline of temperatures between two and five degrees Celsius throughout the Northern Hemisphere.[97] As a result, the Caucasus, during the Late Pleistocene, was characterised by low temperatures and extreme aridity.[98] A comparison of pollen diagrams from lakes Urmia, Zeribar, Mirabad, and Van, in addition to the peat bog at Sogutlu, indicate a decrease in arboreal pollen values and an increase of herbaceous taxa. At each of the sites, the Late Pleistocene is characterised by open steppic and semi-desert vegetation dominated by high values of *Artemisia,* Chenopodiaceae, and Umbelliferae.[99] An increase in *Ephedra* (Joint-pine) during this period is also suggestive of particularly arid climatic conditions.[100] Low values of arboreal pollen indicate a near absence of trees throughout the region with the hyper arid conditions of the Younger Dryas representing a limiting factor for tree growth.[101]

[95] Roberts 2002, 1005; Wick et al. 2003, 672; Connor 2011, 253; Messager et al. 2013, 135-136; Varoutsikos et al. 2018, 234.
[96] Landmann et al. 1996, 107; Wick et al. 2003, 672; Connor 2011, 225; Varoutsikos et al. 2018, 234.
[97] Lemcke and Sturm 1997, 667.
[98] Van Zeist and Wright 1963, 65; Joannin et al. 2010, 157; Connor 2011, 220; Messager et al. 2013, 135-136.
[99] Van Zeist 1967, 308; Van Zeist and Bottemma 1977, 60; Van Zeist and Woldring 1978, 249; Roberts 1983, 169; Van Zeist and Bottema 1991, 68, 126; Bottema 1995, 189; Landmann et al. 1996, 115; Roberts 2002, 1005; Wick et al. 2003, 670; Djamali et al. 2008, 1; Joannin et al. 2010, 157; Connor 2011, 190-191; Messager et al. 2013, 135-136.
[100] Van Zeist and Woldring 1978, 249, 267; Roberts and Wright 1994, 201; Landmann et al. 1996, 115; Wick et al. 2003, 670; Connor and Sagona 2007, 26; Djamali et al. 2008, 1; Joannin et al. 2010, 154; Connor 2011, 190; Messager et al. 2013, 135-136; Joannin et al. 2014, 77.
[101] Van Zeist and Bottema 1977, 66-68; Van Zeist and Woldring 1978, 249; Van Zeist and Bottema 1991, 121; Wick et al. 2003, 673; Messager et al. 2013, 135-136.

Similar regional patterns of climate and vegetation are also attested from sites in Georgia and Armenia. During the Younger Dryas, the continental regions of Georgia were characterised by hyper arid semi-desert steppic environments with high values of *Ephedra* and *Artemisia*.[102] Pollen cores taken from Lake Paravani indicate that a cold and arid climate prevailed during the Younger Dryas favouring the development of open steppic taxa such as Chenopodiaceae, Poaceae (grasses), Asteraceae (daisy/sunflower), Cyperaceae (sedges), Brassicaceae (crucifers/mustards), and Caryophyllaceae (carnations) in addition to *Ephedra distachya*.[103] Similar conditions were attested at Lake Aligol and Lake Imera which show a prevalence of Chenopodiaceae, *Artemisia,* and *Ephedra* during this period.[104] From Armenia, pollen cores from Shamb and the Zarishat fen demonstrate comparable sequences. The early pollen sequence from Shamb is characterised by Caryophyllaceae, *Artemisia,* and *Ephedra* species indicative of steppic vegetation and dry climatic conditions.[105] Likewise, the early pollen assemblage from the Zarishat fen is dominated by *Artemisia,* Asteraceae, Poaceae, *Centaurea* (knapweed), Chenopodiaceae, and Caryophyllaceae in addition to *Ephedra* and *Juniperus* (Juniper).[106]

While much of the Caucasus experienced widespread aridity during the Late Pleistocene, the effects of the Younger Dryas were moderated along the coasts of the Black, Caspian, and Mediterranean seas. Higher rates of precipitation along the coastal areas allowed for the development of important refugia for thermophilus arboreal

[102] Connor and Sagona 2007, 26; Joannin et al. 2010, 154; Connor 2011, 226-227; Messager et al. 2013, 135-136; Joannin et al. 2014, 77.
[103] Messager et al. 2013, 134.
[104] Connor and Sagona 2007, 26; Connor 2011, 219-220; Messager et al. 2013, 135-136.
[105] Joannin et al. 2010, 154, 157; Ollivier et al. 2011, 28; Joannin et al. 2014, 79; Chataigner et al. 2015, 3.
[106] Joannin et al. 2014, 77.

taxa.[107] Core samples taken from coastal areas, such as the Sukhumi 36 pollen core from the Colchis lowland, indicate that mixed deciduous and coniferous forests were well established in these areas during the Younger Dryas. Species included *Fagus* (Beech)*, Quercus, Carpinus* (Hornbeam)*, Abies* (Fir)*, Pinus* (Pine)*,* and *Picea* (Spruce).[108] Such coastal refugia would come to play a central role in the afforestation of the Caucasus after the end of the Younger Dryas and throughout the Holocene.[109]

At the end of the Younger Dryas, the onset of the Early Holocene was marked by an increase in temperature, humidity, and effective moisture.[110] Along the coastal regions of the Black Sea, Caspian Sea, and the eastern Mediterranean, the amelioration of the Early Holocene climatic conditions is reflected in the abrupt expansion of *Quercus* and *Pistacia* forest.[111] The expansion of *Quercus* and *Pistacia* forest began as early as the Late Pleistocene in areas of the Levant as demonstrated by the pollen cores from the Ghab Valley and Lake Huleh **(*fig. 2.17 and 2.18*)**. Maximum arboreal pollen values were reached by c. 9000 BP which is suggestive of the development of a wet and temperate climate during the Early Holocene along the coast of the eastern Mediterranean and Arabian Peninsula.[112] Despite this, interior areas of the Zagros

[107] Van Zeist and Bottema 1991, 126; Myers et al. 2000, 853; Denk et al. 2001, 297-288; Kikvidze and Ohsawa 2001, 3; Roberts 2002, 1006; Connor and Kvavadze 2008, 529; Connor 2011, 194-196; Messager et al. 2013, 137; Connor and Kvavadze 2014, 15-16; Varoutsikos et al. 2018, 234.
[108] Yazvenko 1994, 65; Messager et al. 2013, 137.
[109] Van Zeist and Bottema 1991, 126.
[110] Van Zeist and Bottema 1991, 65; Stevens et al. 2001, 747-749; Roberts 2002, 1005; Connor and Kvavadze 2008, 529; Djamali et al. 2008, 1; Turner et al. 2010, 373; Connor 2011, 217, 253; Messager et al. 2013, 133.
[111] Van Zeist and Bottema 1991, 124-125; Roberts and Wright 1994, 200; Stevens et al. 2001, 753; Roberts 2002, 1005; Djamali et al. 2009a, 1364; Djamali et al. 2009b, 123; Sagona and Zimansky 2009, 9; Connor 2011, 8-9.
[112] Roberts and Wright 1994, 204; Stevens et al. 2001, 753; Roberts 2002, 1005; Connor 2011, 6-8.

Mountains, eastern Anatolia, the Lesser Caucasus, and the Transcaucasian Intermontane Depression remained dry throughout the Early Holocene.

When compared to the coastal regions, interior sites such as Zeribar, Mirabad, Urmia, Van, and Sogutlu indicate a delay in afforestation by c. 3000 years (***fig. 2.19***).[113] Similarly, the delay in afforestation is also echoed at sites in Georgia and Armenia including Lake Paravani, Lake Imera, and Lake Aligol in addition to Lake Arpi, the Zarishat fen, and the Shamb-2 travertine. In these areas, maximum arboreal pollen values were not reached until the Mid-Holocene.[114] At many of these sites, the beginning of the Early Holocene is marked by the transition from the cold *Artemisia*-Chenopodiaceae steppe of the Late Pleistocene to vegetation dominated by Poaceae and *Pistacia* scrub.[115] While the decline of *Artemisia*-Chenopodiaceae steppe indicates higher temperatures and a limited increase in effective moisture, the predominance of *Pistacia* suggests moderately arid conditions with dry spring and summer seasons.[116] At Lake Zeribar, the onset of the Early Holocene is dated to 10,500 BP.[117] This change occurs slightly later at Lake Van where the end of the Younger Dryas is placed at 10,460 BP.[118] In north-western Iran, the Early Holocene at Lake Urmia begins c. 9500 BP.[119] Pollen records demonstrate

[113] Van Zeist 1967, 301; Van Zeist and Bottema 1977, 83; Bottema 1986, 241-242; Van Zeist and Bottema 1991, 65; Roberts and Wright 1994, 204; Stevens et al. 2001, 749; Roberts 2002, 1005; Wick et al. 2003, 665, 673; Connor and Kvavadze 2008, 535; Djamali et al. 2009a, 1364; Djamali et al. 2009b, 123; Turner et al. 2010, 381; Connor 2011, 226-227; Messager et al. 2013, 136; Connor and Kvavadze 2014, 15-16; Joannin et al. 2014, 79; Chataigner et al. 2015, 3.
[114] Connor and Sagona 2007, 34; Connor and Kvavadze 2008, 535; Connor 2011, 180; Joannin et al. 2010, 157; Ollivier et al. 2011, 27; Messager et al. 2013, 136; Connor and Kvavadze 2014, 15-16; Joannin et al. 2014, 79-80; Chataigner et al. 2015, 3.
[115] Van Zeist 1967, 301; Stevens et al. 2001, 754; Roberts 2002, 1005; Wick et al. 2003, 673-674; Djamali et al. 2008, 1; Turner et al. 2010, 371; Connor 2011, 226-227; Messager et al. 2013, 136.
[116] Roberts and Wright 1994, 200-201; Stevens et al. 2001, 753-754; Roberts 2002, 1005; Wick et al. 2003, 665, 673; Djamali et al. 2010, 815; Connor 2011, 253; Joannin et al. 2014, 79.
[117] Van Zeist and Woldring 1978, 272; Van Zeist and Bottema 1991, 64-65; Roberts and Wright 1994, 201; Sagona and Zimansky 2009, 5.
[118] Lemcke and Sturm 1997, 653; Wick et al. 2003, 672; Sagona and Zimansky 2009, 5; Connor 2011, 8.
[119] Bottema 1986, 241; Van Zeist and Bottema 1991, 64-65; Roberts and Wright 1994, 206-207; Connor and Kvavadze 2015, 15-16.

that, throughout this period, values of arboreal pollen continued to rise gradually until the beginning of the Mid-Holocene which saw the rapid development of deciduous forests.[120]

The Mid-Holocene was characterised by an increase in temperature, moisture, and humidity when compared to the Early Holocene. It represents a period of climatic optimum throughout the Caucasus and resulted in the abrupt increase of arboreal pollen frequencies.[121] At Lake Van, the onset of Mid-Holocene climatic conditions is placed at 8200 BP.[122] This coincides well with the development of the Mid-Holocene at other sites, especially those from Georgia and Armenia. In the Lake Paravani area, the Mid-Holocene begins at 8300 BP with the expansion deciduous and coniferous forest. The expansion of arboreal vegetation in this area was rapid and was likely due to the close proximity of the lake to the glacial refugium of the Colchis.[123] At Zarishat, 8200 BP marks an increase in arboreal pollen values and the local development of water dependent Cyperaceae indicates an increase in humidity and effective precipitation.[124] At Lake Zeribar, the development of the Zagros oak woodland reaches its maximum extent between 6500 and 4500 BP.[125] Likewise, the replacement of *Pistacia-Quercus* forest steppe by the Zagros oak woodlands occurred in the Lake Urmia area by 6500 BP.[126] At Lake Van, the maximum extent of forest steppe is reached between 6200 and

[120] Stevens et al. 2001, 753-754; Djamali et al. 2008, 11; Connor 2011, 253; Joannin et al. 2014, 79.
[121] Van Zeist and Wright 1963, 66; Roberts and Wright 1994, 199-200; Wick et al. 2003, 665; Kvavadze and Connor 2005, 69; Connor and Sagona 2007, 30; Djamali et al. 2008, 11; Palumbi 2008a, 5; Djamali et al. 2009b, 127; Messager et al. 2013, 136-137; Joannin et al. 2014, 79.
[122] Lemcke and Sturm 1997, 672; Wick et al. 2003, 673-674.
[123] Messager et al. 2013, 125, 137.
[124] Joannin et al. 2014, 70.
[125] Van Zeist and Bottema 1991, 64-65; Djamali et al. 2008, 11; Djamali et al. 2009a, 1364; Djamali et al. 2009b, 123; Varoutsikos et al. 2018, 235.
[126] Van Zeist and Bottema 1991, 64-65.

4000 BP.[127] An increase in rates of spring and summer precipitation during the Mid-Holocene allowed for the expansion of *Quercus* at the expense of *Pistacia*. Despite this, *Pistacia* remained as an important constituent of Zagros oak woodland vegetation in addition to other species such as *Acer* (Maple) and *Pyrus* (Pear).[128] Similar conditions are also attested at sites in Georgia and Armenia where mixed oak forest, characterised by species such as *Quercus, Pinus, Carpinus, Abies, Fagus, Betula* (Birch), and *Castanea* (Chestnut), reach their maximum extent at lakes Paravani, Imera, Aligol, Arpi, and the Zarishat fen.[129]

The notable delay in the afforestation of interior sites during the Early Holocene is often explained in terms of environmental and climatic factors affecting the growth and spread of arboreal taxa.[130] Along the coastal regions of the eastern Mediterranean, the Caspian, and the Black Sea, the rapid onset of wetter conditions during the Early Holocene was partly due to the increased strength of the Indian and African monsoons which saw an increased rate of effective precipitation along the southern Arabian Peninsula, north Africa, the Levant, Greece, and the eastern Mediterranean.[131] At the same time, interior sites of the Zagros, Taurus, and Lesser Caucasus mountains remained cold and arid which may have resulted in the delayed onset of afforestation until the Mid-Holocene. The prevailing arid conditions in these regions may have resulted from

[127] Wick et al. 2003, 665.
[128] Van Zeist and Wright 1963, 66; Van Zeist 1967, 309; Van Zeist and Woldring 1978, 270; Roberts and Wright 1994, 201; Connor 2011, 8-9.
[129] Connor 2011, 198; Messager et al. 2013, 136-137; Connor and Kvavadze 2014, 15-16; Joannin et al. 2014, 79; Chataigner et al. 2015, 3; Varoutsikos et al. 2018, 235.
[130] Bottema 1986, 241-242; Van Zeist and Bottema 1991, 65; Roberts and Wright 1994, 204, 215; Roberts 2002, 1005; Wick et al. 2003, 673; Wright et al. 2003, 127-128; Djamali et al. 2010, 815; Connor 2011, 180; Messager et al. 2013, 136; Joannin et al. 2014, 79.
[131] Clark and Fontes 1990, 320; Sirocko et al. 1993, 324; Burns et al. 1998, 499; Roberts et al. 2001, 277; Djamali et al. 2010, 815; Stevens et al. 2001, 753; Connor 2011, 6-8.

the increased influence of the Siberian High which maintained low temperatures and saw a decrease in effective precipitation during the spring months which could have inhibited tree growth.[132]

Alternatively, the development of a typical Mediterranean continental climate during the Early Holocene could also explain the delay in afforestation.[133] The north-westward shift of the Intertropical Convergence Zone is likely to have displaced the subtropical anticyclonic belt and associated high pressure ridges resulting in the decreased effectiveness of low pressure systems originating over the north Atlantic and Black Sea areas. This promoted highly seasonal climatic conditions in the areas of western and north-western Iran, eastern Anatolia, and the Lesser Caucasus which were characterised by high rates of precipitation during the winter months and extended dry periods during spring and summer.[134] These conditions may have been responsible for the delay in the expansion of the Zagros oak woodlands as *Quercus* is dependent upon spring precipitation and is sensitive to long, dry seasons.[135] Other factors which may have contributed to the delay of afforestation in this region include migratory lag. During the Late Pleistocene, while arboreal taxa were found concentrated within the glacial refugia of the coastal regions, interior sites remained relatively treeless. During the re-colonisation of inland areas, some arboreal species would have to spread up to 1000

[132] Roberts and Wright 1994, 198; Wick et al. 2003, 673; Joannin et al. 2014, 79.
[133] Djamali et al. 2010, 815; Joannin et al. 2014, 79.
[134] Djamali et al. 2010, 815.
[135] Stevens et al. 2001, 754; Djamali et al. 2010, 815; Joannin et al. 2014, 79.

kilometres from the coastal regions.[136] This process may also have been limited by slow development of favourable edaphic conditions.[137]

More recently, it has been suggested that anthropogenic factors may also have played an important role in the delay of the Early Holocene woodland expansion.[138] The onset of the Early Holocene saw the widespread development of open grasslands and *Pistacia* scrub. In such ecosystems, wild cereals represent a major component of ground storey vegetation.[139] Additionally, open grasslands formed the natural habitat of many ungulates which were later to be domesticated.[140] It is not surprising that this period coincides with the cultural development of the Neolithic period.[141] Activities of the local Neolithic and Chalcolithic communities were likely to have had imperceptible effects on the regional landscape. Activities such as small-scale cultivation, cutting, or grazing are unlikely to be represented in the pollen diagrams of large lakes unless such activities were carried out within close proximity to where core samples were taken.[142]

The intentional use of fire, by the Neolithic and Chalcolithic communities, to manipulate the existing landscape could have had a regional impact on the development of Early Holocene vegetation.[143] With the gradual expansion of woodlands during the Early Holocene, early agro-pastoral societies of the Neolithic and Chalcolithic struggled

[136] Van Zeist and Bottema 1991, 126; Roberts and Wright 1994, 215; Roberts 2002, 1006; Connor and Kvavadze 2014, 16.
[137] Van Zeist and Bottema 1991, 65; Roberts 2002, 1006; Messager et al. 2013, 125; Connor and Kvavadze 2014, 16.
[138] Roberts 2002, 1006; Vermoere et al. 2002, 569; Wick et al. 2003, 665; Turner et al. 2010, 372-373; Connor 2011, 8-9; Messager et al. 2013, 137.
[139] Roberts 2002, 1007-1008; Turner et al. 2010, 284.
[140] Roberts 2002, 1006.
[141] Özdoğan 1997, 33; Roberts 2002, 1003-1005; Connor and Sagona 2007, 28; Turner et al. 2010, 373; Connor 2011, 232-233; Joannin et al. 2014, 79.
[142] Roberts 2002, 1007; Sagona and Zimansky 2009, 9; Connor 2011, 9; Turner et al. 2010, 384.
[143] Roberts 2002, 1007-1008; Turner et al. 2010, 272-273; Connor 2011, 180; Connor and Kvavadze 2014, 16; Joannin et al. 2014, 78-79.

to occupy the same territory. It has been suggested that such communities may have intentionally practised dry season burning in order to delay the onset of afforestation and maintain an open vegetation to sustain their agro-pastoral economies.[144] Micro charcoal analysis from lake sediments seem to support this view, indicating that fires achieved their maximum frequencies during the Early Holocene. In southern Georgia, sediments from Lake Aligol and Lake Imera indicate that, between 9000 and 7000 BP, when woodlands expanded regionally the area surrounding the lakes remained conspicuously open.[145] Between 7000 and 5000 BP, the expansion of woodlands in the Lake Aligol and Lake Imera areas is accompanied by an increase in fire frequencies.[146] Similar patterns are also attested in lake sediments throughout eastern Anatolia and north-western Iran suggesting that a combination of anthropogenic, climatic, and edaphic factors were responsible for the delay of afforestation in the interior areas of the Zagros, Taurus, and Lesser Caucasus mountains.[147]

During the Late Holocene, anthropogenic factors became more apparent within the palynological record. When compared to the climatic optimum reached during the preceding Mid-Holocene period, the Late Holocene is characterised by a progressive deterioration of climatic conditions. The onset of the Late Holocene witnesses a decrease in precipitation accompanied by an increase in seasonality during the winter and spring months.[148] In areas such as southern Georgia and Armenia, pollen samples from the Zarishat fen demonstrate progressive aridification and cooling as indicated by

[144] Pullar 1977, 15; Roberts 2002, 1007-1008; Turner et al. 2010, 372-373; Connor 2011, 183.
[145] Connor 2011, 180.
[146] Connor 2011, 180.
[147] Bottema 1986, 241-242; Van Zeist and Bottema 1991, 65; Roberts and Wright 1994, 204; Roberts 2002, 1009; Wick et al. 2003, 673; Turner et al. 2010, 372; Connor 2011, 180-182; Joannin et al. 2014, 79.
[148] Stevens et al. 2001, 753; Connor 2011, 220; Joannin et al. 2014, 79.

the decreasing tendency of Cyperaceae, mountainous taxa, such as *Abies* and *Fagus orientalis*, and temperate taxa such as *Carpinus betulus, C. orientalis*, and deciduous *Quercus*.[149]

While cooler temperatures and a decrease in precipitation saw the decline of the Mid-Holocene forest expansion, such Late Holocene conditions saw an increase in the distribution of cold tolerant coniferous species, particularly throughout the mountain forests of Georgia.[150] In areas such as Lake Van, increasing aridification saw the opening of woodland areas and the subsequent rise of herbaceous taxa.[151] In conjunction with these climatic changes, human groups had a more pronounced impact upon the development of local and regional vegetation.

From the Early Bronze Age, the fires which characterised the Neolithic and Chalcolithic periods cease indicating the introduction of a new means of landscape management coinciding with the development of Bronze Age metallurgy.[152] In particular, from the Late Bronze Age and Iron Age, pollen samples from south-western Anatolia reflect intensive anthropogenic influences upon the surrounding landscape. Known as the Beyşehir Occupation Phase (c. 3500 to 1300 BP), this period coincides with the decline of *Quercus* and the rise of cultivated arboreal species such as *Juglans* (Wallnut)*, Olea* (Olive), *Fraxinus* (Ash)*, Prunus* (stone fruits)*,* and *Vitis* (Grape) **(*fig. 2.20*)**.[153] Secondary anthropogenic indicators also include *Plantago lanceolata-type*

[149] Joannin et al. 2014, 79-80.
[150] Connor and Kvavadze 2008, 529; Connor 2011, 182-183, 199; Connor and Kvavadze 2014, 18.
[151] Van Zeist and Woldring 1978, 249; Van Zeist and Bottema 1991, 60; Wick et al. 2003, 671; Connor 2011, 183.
[152] Roberts 2002, 1008; Connor et al. 2007, 34; Turner et al. 2010, 386; Connor 2011, 239, 252; Connor and Kvavadze 2014, 17; Joannin et al. 2014, 70, 77.
[153] Willcox 1974, 130; Bottema and Woldring 1984, 148; Van Zeist and Bottema 1991, 138-139; Roberts et al. 1997, 409; Roberts 2002, 1005; Vermoere et al. 2002, 569; Djamali et al. 2009a, 1372-1373; Sagona and Zimansky 2009, 9; Connor 2011, 8-9, 243-244.

(Ribwort Plantanin)*, Centaurea solstitialis-type* (Yellow Star-thistle)*, Sanguisorba minor-type* (Garden Burnet)*, Matricaria-type* (Mayweed)*,* and Cichorioideae (Chichory/Dandelion).[154] In particular, *Plantago lanceolata* is favoured by processes of deforestation and is associated with vegetal disturbance related to activities such as grazing and subsequent soil erosion.[155]

Although first attested at sites in south-western Anatolia, the Beyşehir Occupation Phase occurred more or less simultaneously across Asia Minor and corresponding data has been found at sites in Georgia and Iran.[156] In the Javakheti Plateau, a Late Holocene vegetational change is attested in the Lake Paravani area between 3000 and 2000 BP.[157] This development corresponds to an opening of the landscape characterised by the decline of local forests with the extinction of *Abies* and a reduction in arboreal pollen values for deciduous species such as *Quercus, Fagus,* and *Carpinus*.[158] These changes are also associated with a rise in non-arboreal pollen species such as Chenopodiaceae, Asteraceae, and Poaceae.[159] The decline in deciduous forest also allowed for the expansion of *Picea* which may be linked to the cooler conditions of the Late Holocene but is also likely to have been facilitated by anthropogenic factors such as deforestation.[160]

[154] Van Zeist and Woldring 1978, 270-271; Bottema 1986, 256; Van Zeist and Bottema 1991, 57; Yazvenko 1994, 72; Wick et al. 2003, 673; Connor et al. 2007, 31-32; Djamali et al. 2009b, 131-132; Connor 2011, 8-9, 199-200; Ponel et al. 2013, 204.
[155] Van Zeist and Woldring 1978, 270-271; Van Zeist and Bottema 1991, 57; Djamali et al. 2009b, 131-132; Wick et al. 2003, 673; Connor 2011, 8-9, 199-200.
[156] Djamali et al. 2009a, 1372.
[157] Messager et al. 2013, 137-138.
[158] Messager et al. 2013, 137-138.
[159] Messager et al. 2013, 137-138.
[160] Messager et al. 2013, 137-138.

The opening up of the landscape led to edaphic erosion and the expansion of steppic taxa which remains predominant in this region today. A pollen diagram from Lake Almalou, situated in the Sahand volcanic complex of north-western Iran, indicates that arboreal cultivation began c. 3030 BP shortly after the beginning of the Iron Age.[161] Evidence for human interference with the natural vegetation is indicated by typical primary anthropogenic indicators including *Juglans, Vitis, Platanus* (Plane trees), and *Castanea*.[162] In contrast, another pollen sample from Lake Maharlou, located amongst the Zagros Mountains of south-western Iran, indicates that arboreal cultivation began as early as c. 4300 BP.[163] Once again, cultivated species included *Juglans, Olea, Vitis*, and *Platanus* in addition to secondary anthropogenic indicators such as *Plantago lanceolata*.[164] Human activities become clearer after 3700 BP, however, from 2700 until 1700 BP extensive stands of *Pistacia-Amygdalus* (Pistachio-Almond) scrub become extremely degraded under human pressure.[165] Much like Lake Paravani, anthropogenic factors contributed to the degradation of the surrounding landscape. In the case of the area surrounding Lake Maharlou, over exploitation led to the permanent destruction of a natural biotope and induced irreversible ecological conditions.[166] Largescale deforestation and the permanent disappearance of woodland areas are clearly associated with the Beyşehir Occupation Phase which indicates that a combination of climatic and anthropogenic factors have contributed to the development of Late Holocene vegetation throughout the region.

[161] Djamali et al. 2009a, 1372-1373.
[162] Djamali et al. 2009a, 1372-1373.
[163] Djamali et al. 2009b, 123.
[164] Djamali et al. 2009b, 123, 131-132.
[165] Djamali et al. 2009b, 123.
[166] Djamali et al. 2009b, 133-134.

Conclusion

The Caucasus is a region that is geographically, culturally, historically, and politically unique and this is directly reflected in its equally rich and diverse archaeological record. As a region situated at the juncture of major geographical, cultural, and political boundaries, the Caucasus continues to elude classification and occupies the liminal position between the dichotomies of east and west and Europe and Asia.[167] The complexities of the region have provided unique challenges for those who seek to study the past. Today archaeologists, must overcome cultural and linguistic barriers and navigate contested ethnic and political tensions. To some extent, the Caucasus region has remained as inaccessible to academic research as it has both geographically and politically. No doubt this has continued to foster the long-held notion that the Caucasus, as a geographical and cultural corridor, simply formed a passive periphery at the edge of the better studied regions of Syro-Mesopotamia.[168] However, recent research has forced archaeologists to reassess this view. As more data comes to light, there emerges a picture of a far-flung dynamic network of interaction and exchange in which the prehistoric communities of the ancient Caucasus were actively involved.[169]

A strong understanding of the Caucasus and its unique regional geography is essential if we are to place these cultural complexes within a local and regional perspective and move beyond the preconceived notion of the Caucasus as a passive

[167] Volodicheva 2002, 350; De Waal 2010, 9-10; Quinn and Woodward 2015, 145.
[168] Dewdney 1971, 2; Volodicheva 2002, 350; Rubinson and Smith 2003, 1-2; Palumbi 2008a, 2; Sagona and Zimansky 2009, 1; De Waal 2010, 1; Mosar et al. 2010, 261; Chataigner et al. 2014, 1; Connor and Kvavadze 2014, 12; Quinn and Woodward 2015, 145.
[169] Narimanov 1985; Narimanov 1987; Akhundov 2007; Marro 2007, 91; Museibli 2007; Marro 2008, 18; Kohl 2007, 58; Lyonnet 2009; Sagona 2010b, 686; Marro 2011, 47.

periphery and cultural and archaeological backwater. Understanding the complex regional geography of the Caucasus is part of the process in developing the spatial awareness essential to piecing together interregional networks of interaction and how the Neolithic, Chalcolithic, and Early Bronze Age communities of the Caucasus interacted on a local and regional basis. Forming part of one of the largest collisional orogens on Earth, the geological processes associated with continental convergence have shaped the unique topography of the Caucasus.[170] The collision of the Afro-Arabian and Eurasian lithospheric plates saw the development of the major mountain chains throughout the region including the Greater and Lesser Caucasus mountains, the Pontic and Anti-Taurus mountains in eastern Anatolia, and the Elbruz and Zagros mountains in north-western Iran.[171]

These mountain chains serve not only as an ecological and topographical divide but also as a cultural divide which has dictated the course of communication and exchange throughout the region. Routes of communication in the Caucasus were established along a north-south and east-west axis. Routes stretching in a north-south direction, through eastern Anatolia and the Greater Caucasus Mountains, were seasonally dependent and were only accessible from the late spring through to early autumn when the mountains and highlands were not covered in snow.[172] Although several passes exist today, for centuries what is now known as the Georgian Military

[170] Adamia et al. 1977, 183; Yılmaz et al. 1998, 173; Volodicheva 2002, 350; Adamia et al. 2008, 77; Mumladze et al. 2015, 36; Tibaldi et al. 2017, 35.
[171] Philip et al. 1989, 2; DeMets et al. 1990, 467; Yılmaz et al. 1998, 173; Jackson et al. 2002, 214; Volodicheva 2002, 350-352; Wick et al. 2003, 666; Allen et al. 2004, 1; Newton 2004, 99; Zor 2008, 1273-1274; Sagona and Zimansky 2009, 2; Quinn and Woodward 2015, 146, 761-762; Tibaldi et al. 2017, 36-37.
[172] Rubinson and Smith 2003, 5; Marro 2004, 115; Kohl 2007, 67; Palumbi 2008a, 6; Kohl and Trifonov 2013, 1527; Hopper et al. 2018, 15.

Highway, running between Valdikavkaz and Tbilisi, was the only road through the Greater Caucasus Mountains. More importantly, two major routes, stretching from east to west, connect the Caucasus to the region of Syro-Mesopotamia further south.[173] The northernmost route connects the area of Lake Urmia to north-eastern Anatolia and the Black Sea coast by crossing the Ararat Plain and following the Araxes River valley towards Erzurum.[174] To the south, another route stretches from Lake Urmia to the northern shores of Lake Van by crossing the Muș Plain and following the course of the Murat River into the region of Elaziğ.[175] It was along these routes that communities in the Caucasus interacted with those from regions further south.

The same geological processes which saw the uplift of the major mountain chains were also responsible for the volcanic activity which had come to characterise the region.[176] Just as the east-west trend of the major mountain chains dictated the routes of communication, they also may have provided the early impetus for interregional interaction. The vast obsidian deposits of the Caucasus formed an important commodity within the early economic strategies of Neolithic communities.[177] With archaeological evidence for interaction stretching as far back as the sixth millennium B.C.E., the Caucasus has a long history of interregional interaction which has been influenced by its unique geological, geographic, ecological, and climatic setting. [178]

[173] Rubinson and Smith 2003, 5; Kohl 2007, 67; Palumbi 2008a, 6; Kohl and Trifonov 2013, 1527.
[174] Rubinson and Smith 2003, 5; Marro 2004, 115; Palumbi 2008a, 6.
[175] Rubinson and Smith 2003, 5; Marro 2004, 115; Palumbi 2008a, 6.
[176] Adamia et al. 1977, 190-191; Yılmaz et al. 1998, 173; Mitchell and Westaway 1999, 163; Karakhanian et al. 2002, 319; Volodicheva 2002, 350-352; Adamia et al. 2008, 79; Adamia et al. 2010, 240; Adamia et al. 2011, 490; Cummings and Colbert 2013, 610; Connor and Kvavadze 2014, 12-13; Quinn and Woodward 2015, 3; Tibalidi et al. 2017, 35.
[177] Kiguradze 2001b, 38; Sagona 2010b, 668.
[178] Narimanov 1985; Narimanov 1987; Akhundov 2007; Museibli 2007; Kohl 2009a, 58; Lyonnet 2009; Sagona 2010b, 686; Ricci et al. 2018, 1446.

Palynological reconstructions of past environmental conditions are also important in order to place archaeological complexes within a contemporary ecological and climatic context. This could inform archaeologists as to how such communities interacted with the surrounding landscape and how this may have impacted choices reflecting subsistence strategies and settlement patterns within the archaeological record. The numerous pollen cores from eastern Anatolia, Georgia, Armenia, and north-western Iran indicate that the Caucasus has experienced considerable climatic variation since the Last Glacial Maximum.[179] The Neolithic, Chalcolithic, and Early Bronze Age communities of the Caucasus developed in the context of the gradual amelioration of climatic conditions, following the Younger Dryas, which characterised the Early to Mid-Holocene period.[180] During the Early Holocene, an increase in temperature, humidity, and effective moisture saw the development of extensive grasslands in which wild cereals formed a major component of ground storey vegetation.[181]

The climatic conditions of the Early Holocene, and the vegetation that it gave rise to, went hand in hand with the domestication of plants and animals and the development of the agro-pastoral economies of the Neolithic and Chalcolithic periods. Although much of these early agricultural activities would have had little bearing upon the surrounding landscape, a peak in fire frequencies during the Early Holocene suggests that Neolithic and Chalcolithic communities may have intentionally used fire to delay

[179] Landmann et al. 1996, 113; Roberts 2002, 1005.
[180] Van Zeist and Woldring 1978; 249; Bottema 1986, 241; Van Zeist and Bottema 1991, 60; Roberts and Wright 1994, 201; Bottema 1995, 190; Lemcke and Sturm 1997, 653; Roberts 2002, 1006; Wick et al. 2003, 665; Sagona and Zimansky 2009, 5; Connor 2011, 8; Joannin et al. 2014, 79; Ryabogina et al. 2019, 124.
[181] Van Zeist and Bottema 1991, 65; Stevens et al. 2001, 747-749; Roberts 2002, 1005-1008; Connor and Kvavadze 2008, 529; Djamali et al. 2008, 1; Turner et al. 2010, 373, 384; Connor 2011, 217, 253; Messager et al. 2013, 133.

the onset of afforestation in order to preserve their established agro-pastoral subsistence economies.[182] If this is correct then, as early as the Neolithic period, human groups in the Caucasus have played an active role in shaping and manipulating the surrounding landscape and its vegetal development.

The dynamics between human groups and the landscape were not fixed and often fluctuated in relation to political, cultural, and technological developments. This is seen in the abrupt decline in fire frequencies during the Early Bronze Age – a change concurrent with the development of the Kura Araxes complex and bronze metallurgy.[183] Later, at the beginning of the Late Bronze Age the widespread ecological degradation of the regional landscape, during the Beyşehir Occupation Phase, was the result of political instability rather than climatic influences.[184] This is to say that, today, the regional vegetation of the Caucasus bears the imprint of a long history of human environmental impact and has developed under the influence of both anthropogenic and climatic factors.

The immensely complex geopolitical, geological, and geographical history of the Caucasus provides the backdrop to modern archaeological research into past cultural complexes. Undoubtedly, the unique regional geography of the Caucasus, and its diverse ecological and climatic settings, has played some role in the development of local cultural complexes and the course of communication and exchange during the Neolithic, Chalcolithic, and Early Bronze Age.

[182] Roberts 2002, 1007-1008; Turner et al. 2010, 372-373; Connor 2011, 183.
[183] Roberts 2002, 1008; Connor et al. 2007, 34; Turner et al. 2010, 386; Connor 2011, 239, 252; Connor and Kvavadze 2014, 17; Joannin et al. 2014, 70, 77.
[184] Van Zeist and Woldring 1978, 270-271; Bottema 1986, 256; Van Zeist and Bottema 1991, 57; Yazvenko 1994, 72; Wick et al. 2003, 673; Connor et al. 2007, 31-32; Djamali et al. 2009b, 131-132; Connor 2011, 8-9, 199-200; Ponel et al. 2013, 204.

Chapter Two: Figures

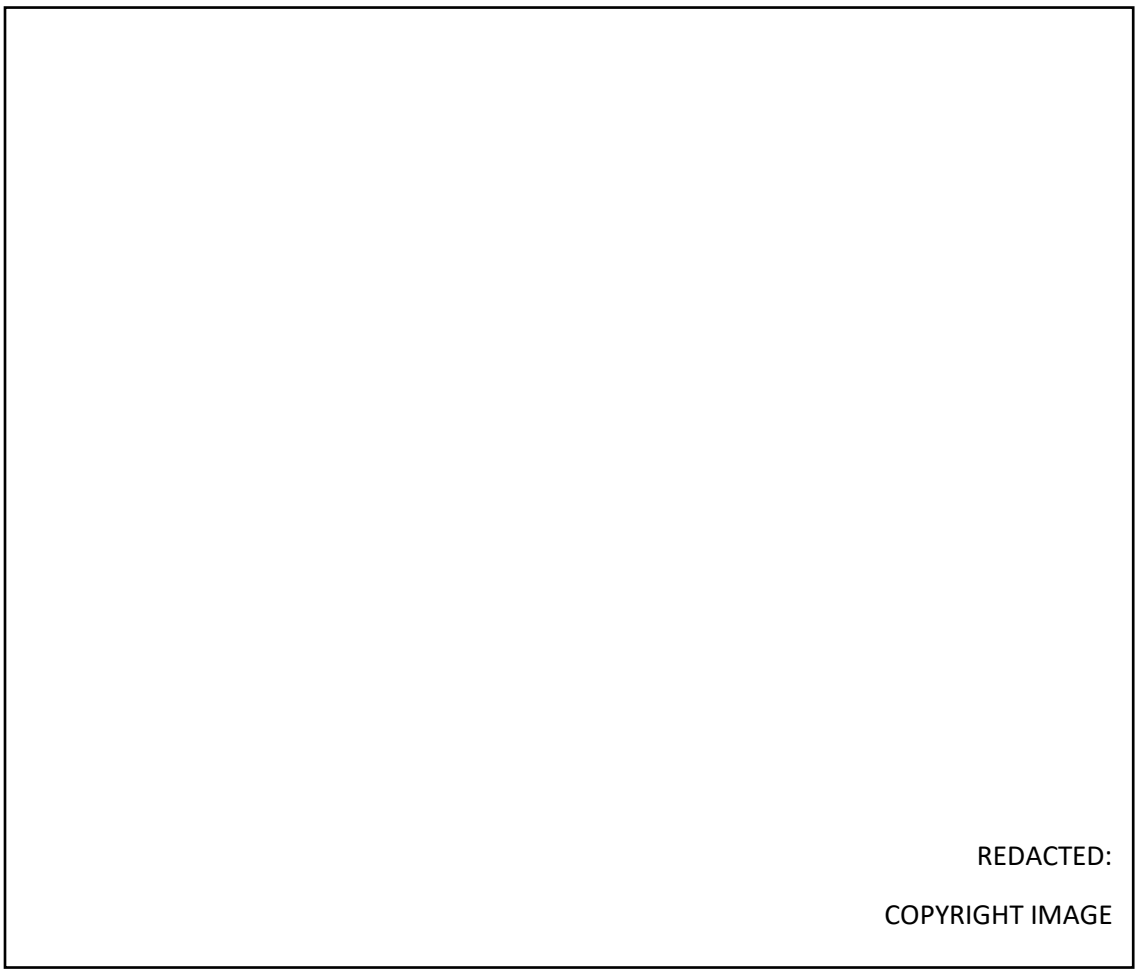


Figure 2.1: Topographical map of the Caucasus region (after Adamia et al. 2011, Fig. 1).



Figure 2.2: Geopolitical map of the Caucasus region (after Jeroencommons https://commons.wikimedia.org/wiki/File:Caucasus-political_en.svg).

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Figure 2.3: Map of the Caucasus showing the four major tectonic units of the region (after Tan and Taymaz 2006, Fig. 1a).



Figure 2.4: Obsidian deposits at the base of the Nemrut caldera (after E. Genkin http://www.wikiwand.com/en/Nemrut_(volcano)).

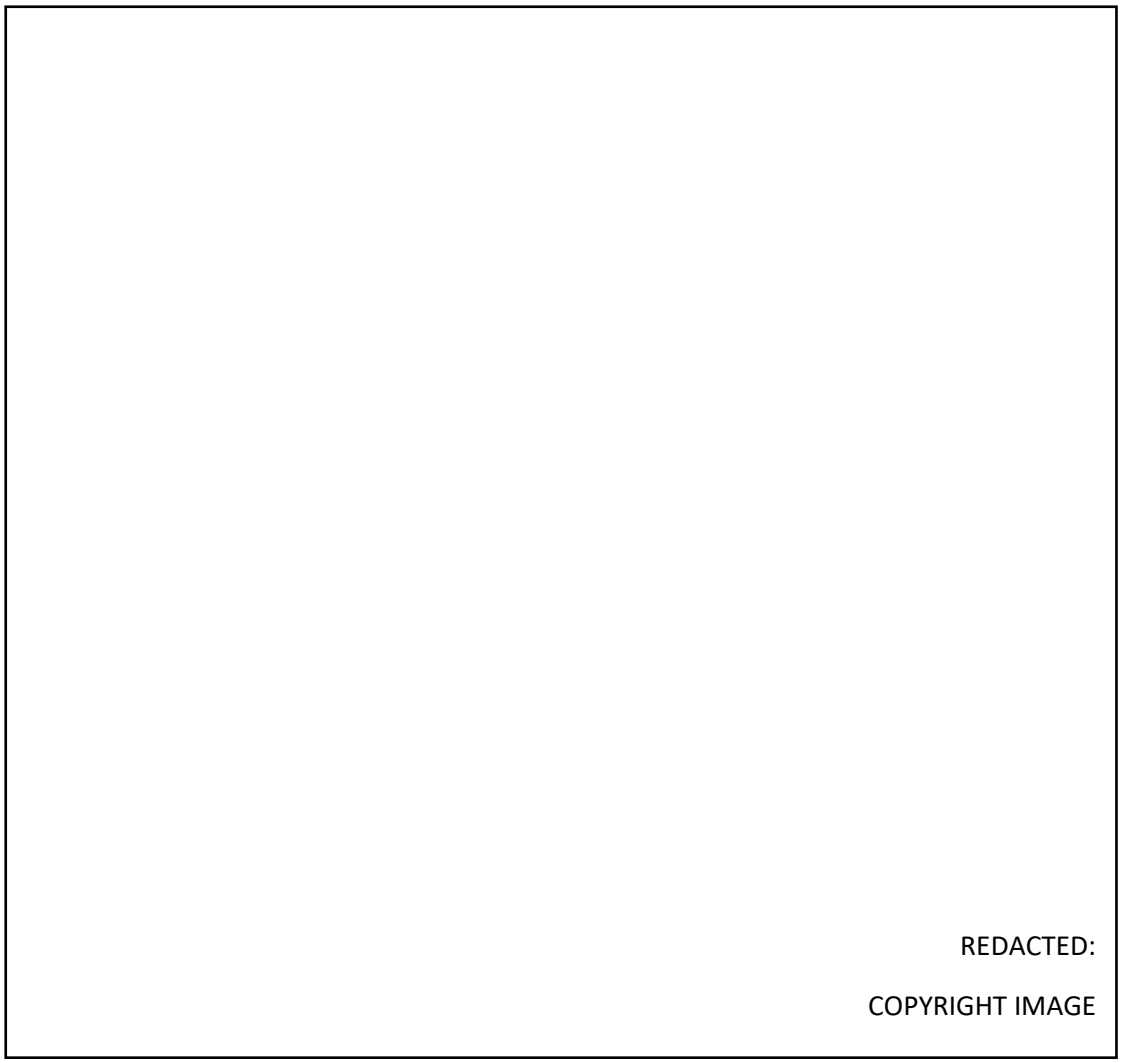


Figure 2.5: Map showing the major active geological faults in the Caucasus region (after Tsereteli et al. 2016, Fig. 15).

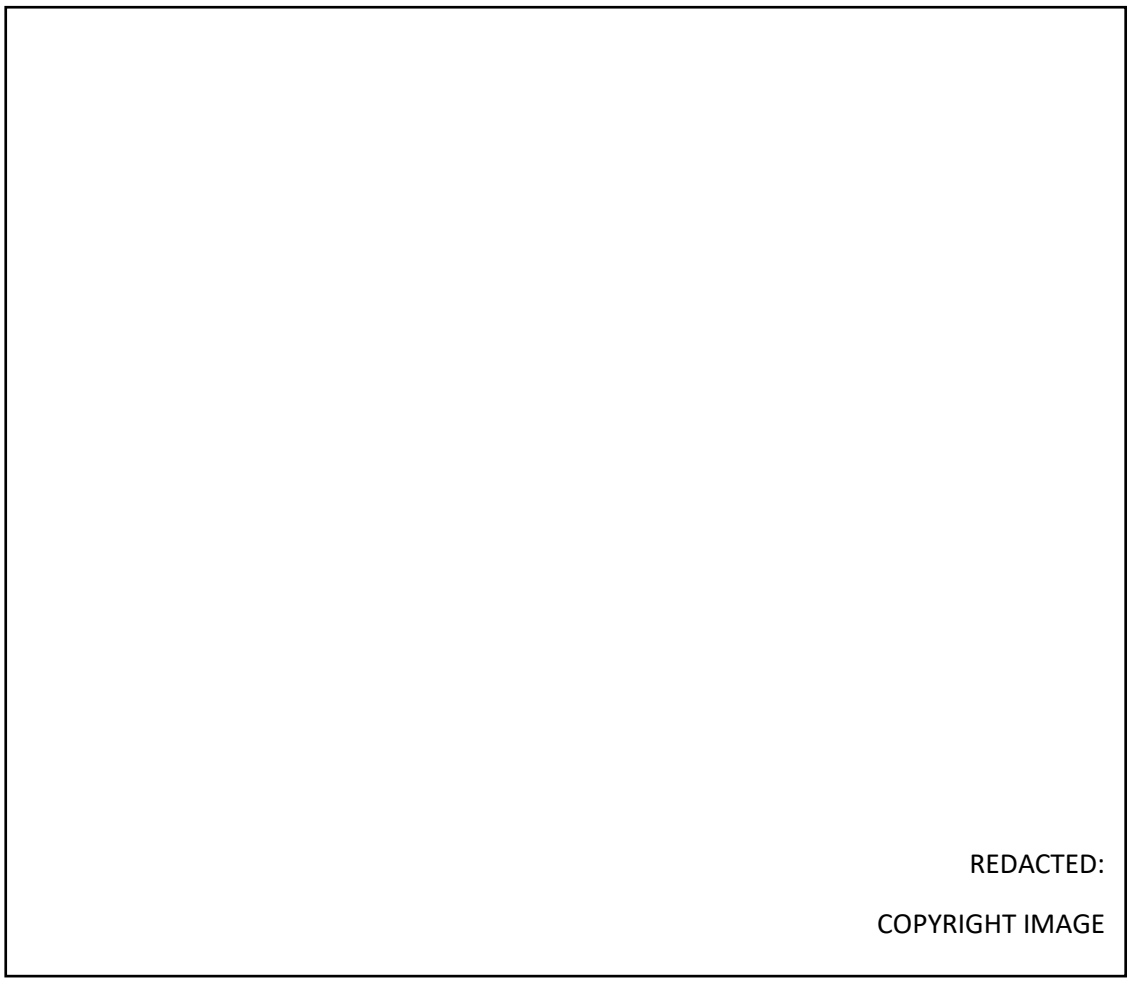


Figure 2.6: Map showing the epicentres of seismic activity at the Afro-Arabia and Eurasia collision zone between 1964 and 2001 (after Tan and Taymaz 2006, Fig. 2).

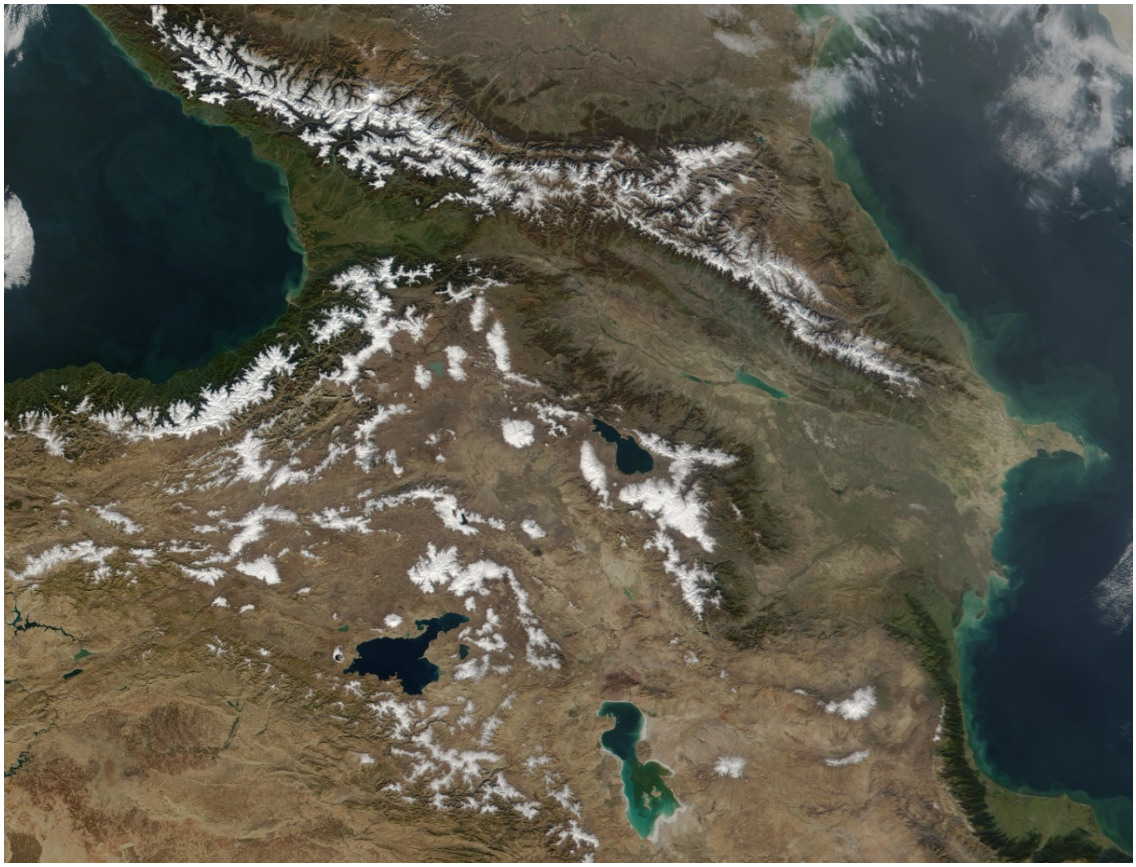


Figure 2.7: Satellite image of the Caucasus region showing the ice-capped peaks of the Greater Caucasus Mountains stretching between the Black and Caspian seas (after J. Descloitres, NASA https://visibleearth.nasa.gov/view.php?id=57190).

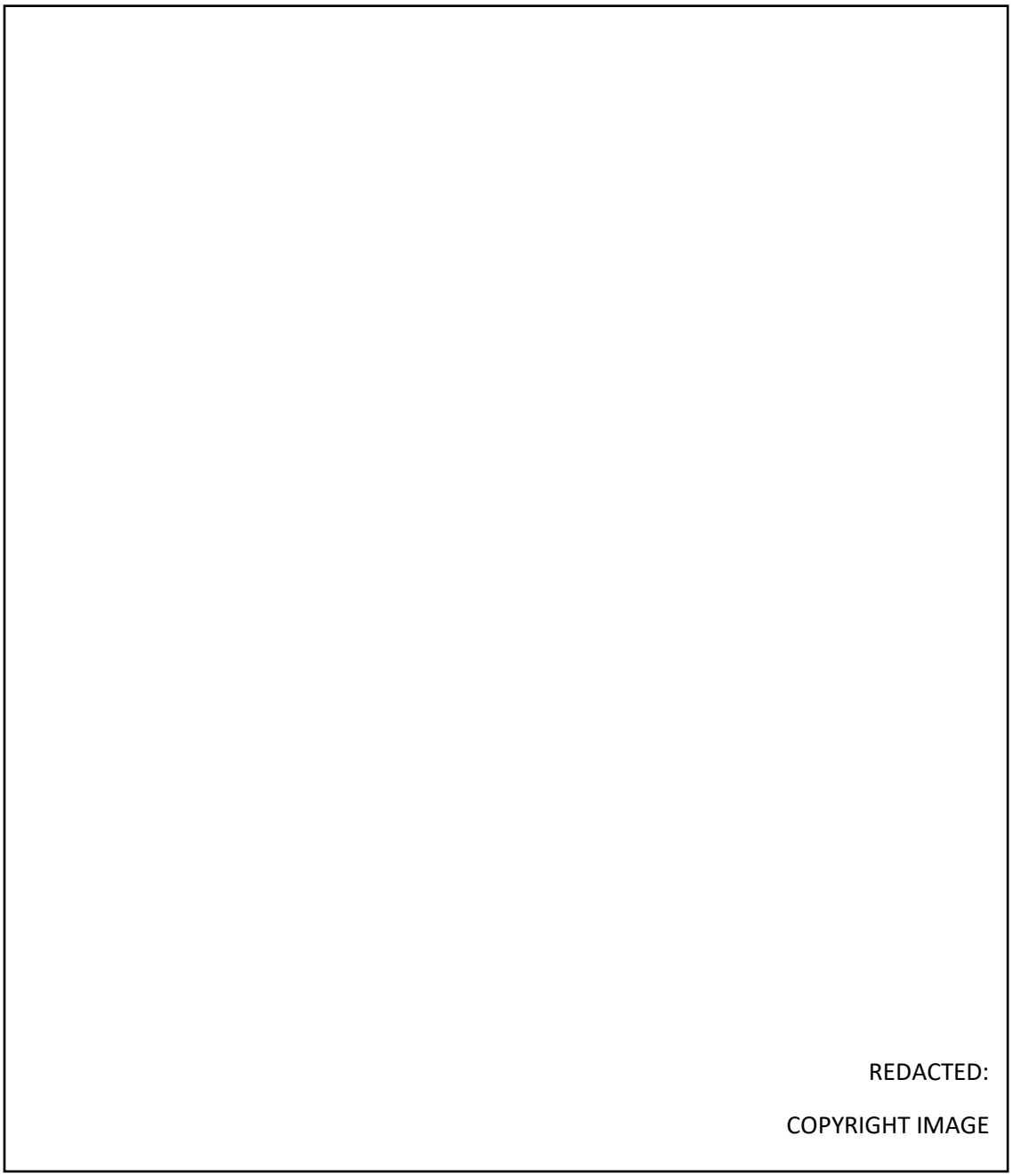


Figure 2.8: Lake Urmia pollen diagram (after van Zeist and Bottema 1991, Fig. 16).

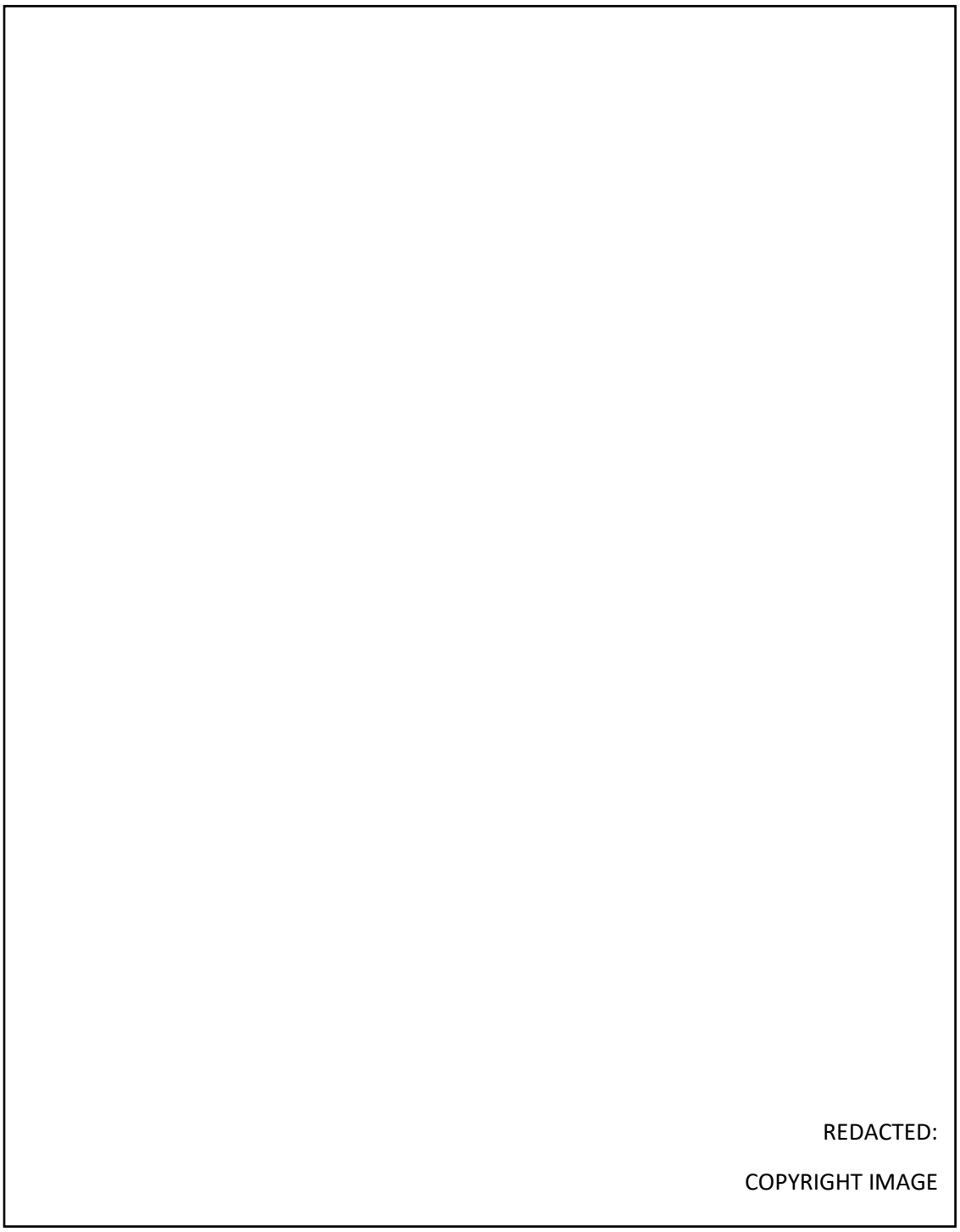


Figure 2.9: Lake Zeribar pollen diagram (after van Zeist and Bottema 1991, Fig. 14).

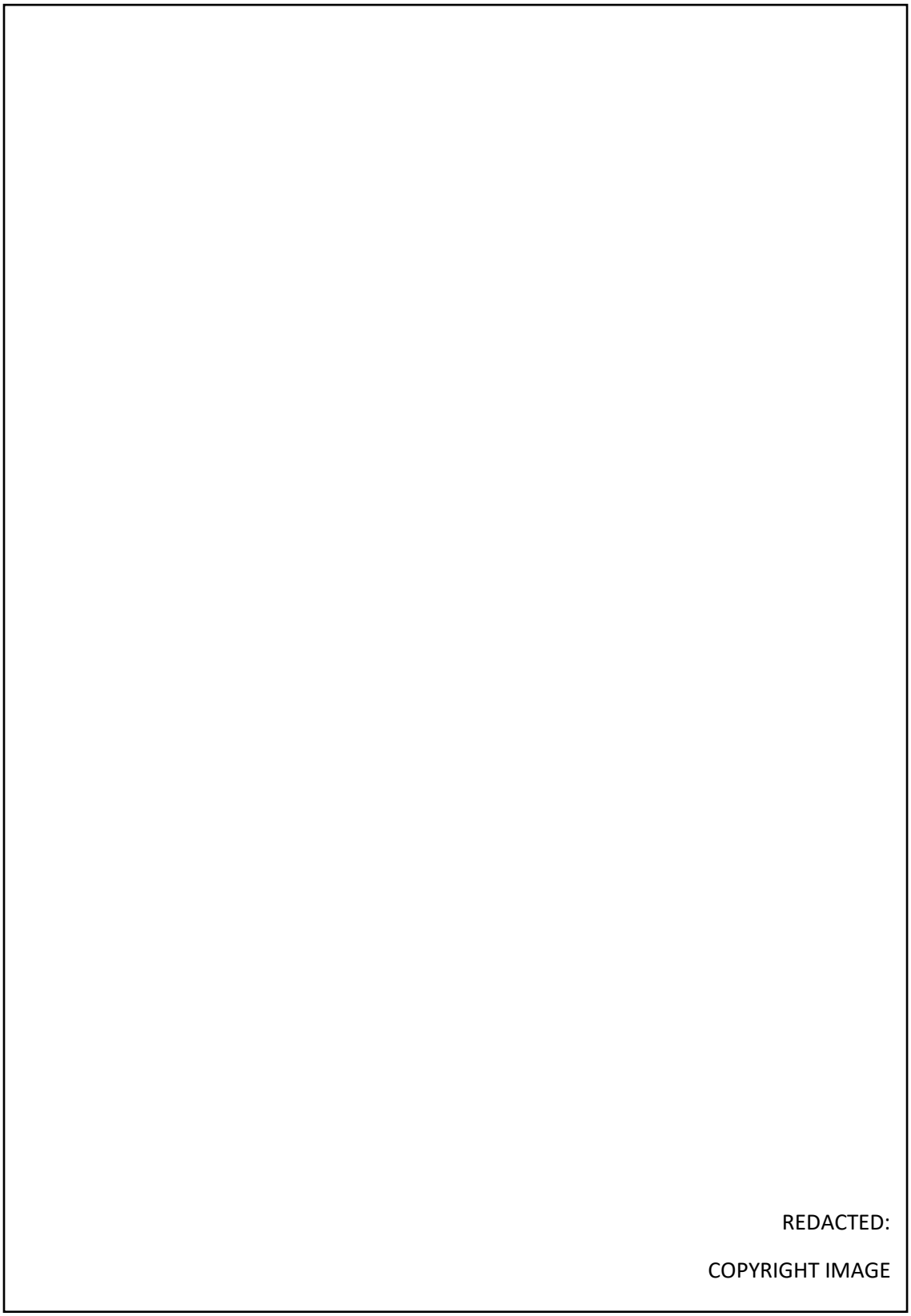


Figure 2.10: Lake Mirabad pollen diagram (after van Zeist and Bottema 1991, Fig. 15).

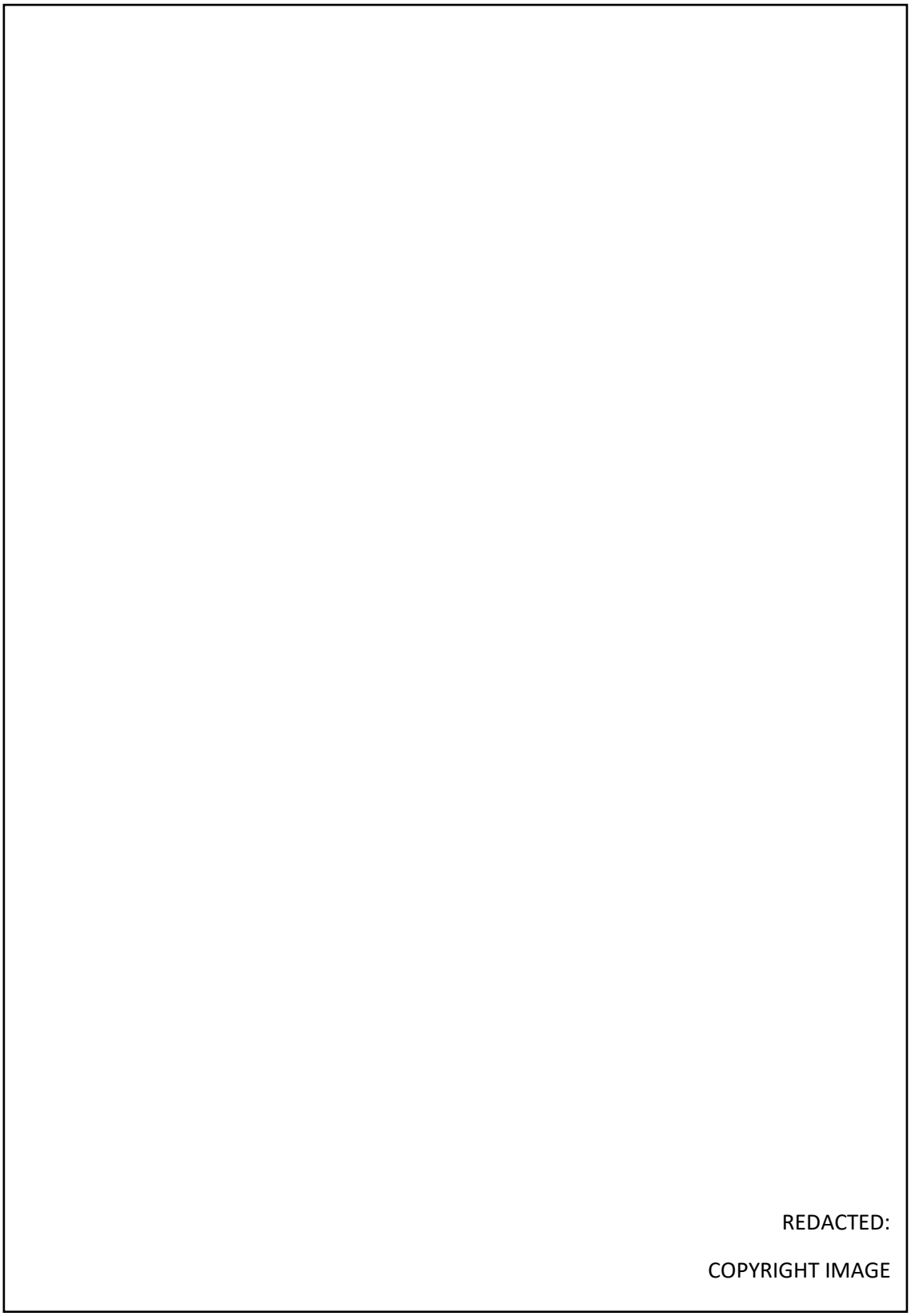


Figure 2.11: Lake Sogutlu pollen diagram (after van Zeist and Bottema 1991, Fig. 18).

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Figure 2.12: Pollen percentages of major arboreal and non-arboreal taxa at Lake Van. The timescale is given in varve years before 1990 (after Wick et al. 2003, Fig. 2).

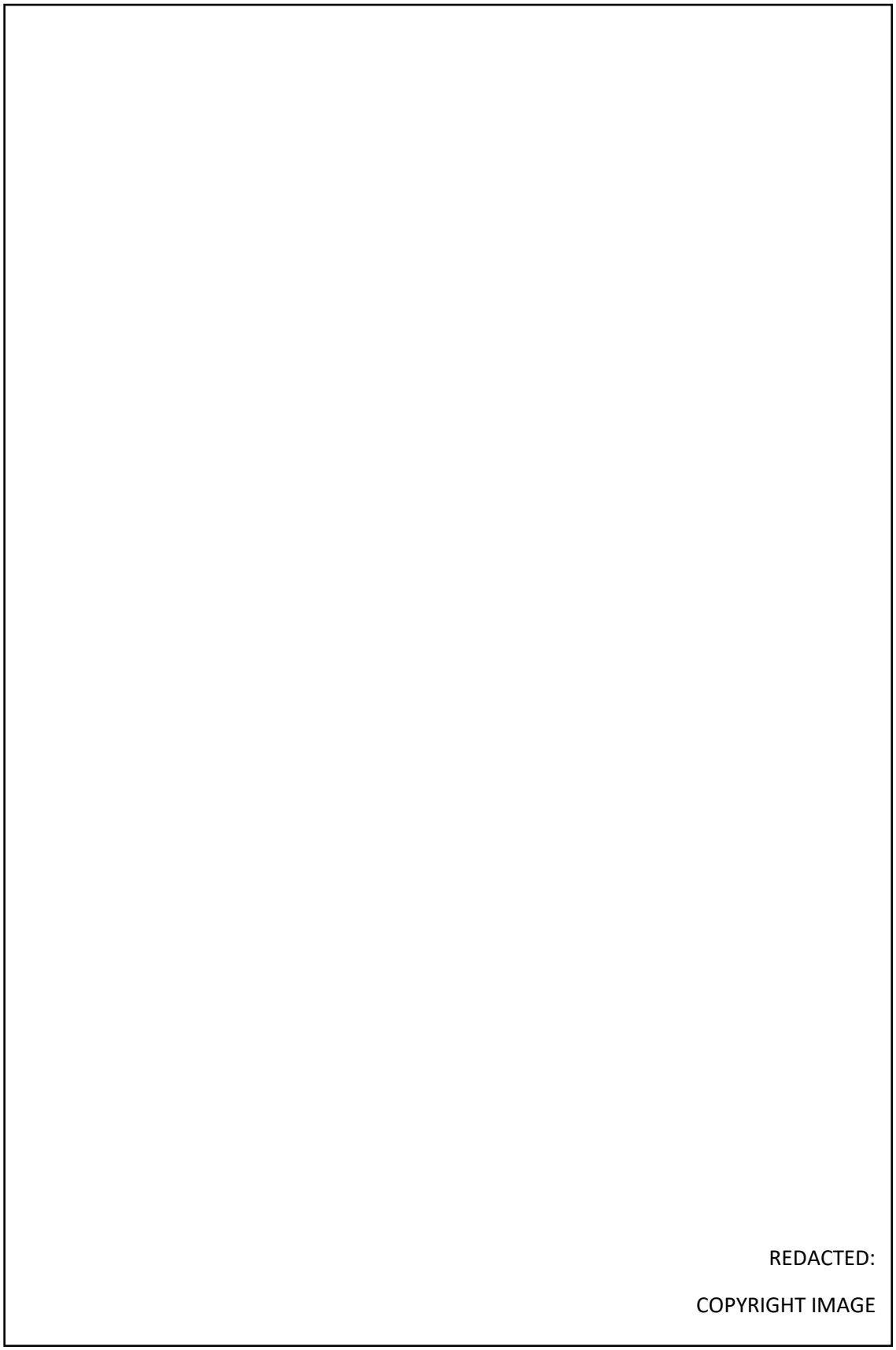


Figure 2.13: Diagram of selected pollen data from Lake Paravani (after Messager et al. 2013, Fig. 7).

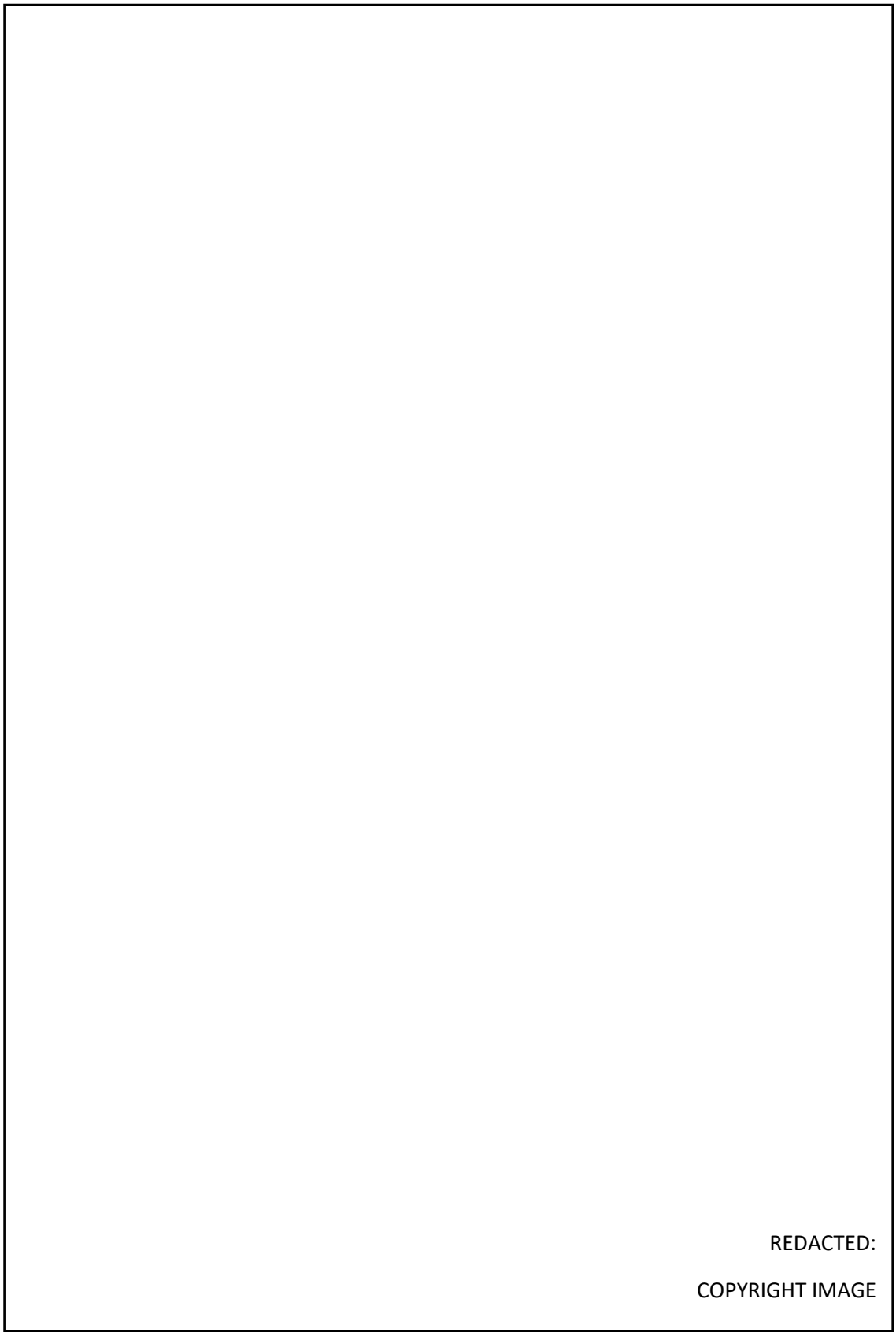


Figure 2.14: Pollen diagram of the major pollen types from Lake Imera (after Connor and Sagona 2007, Fig. 3).

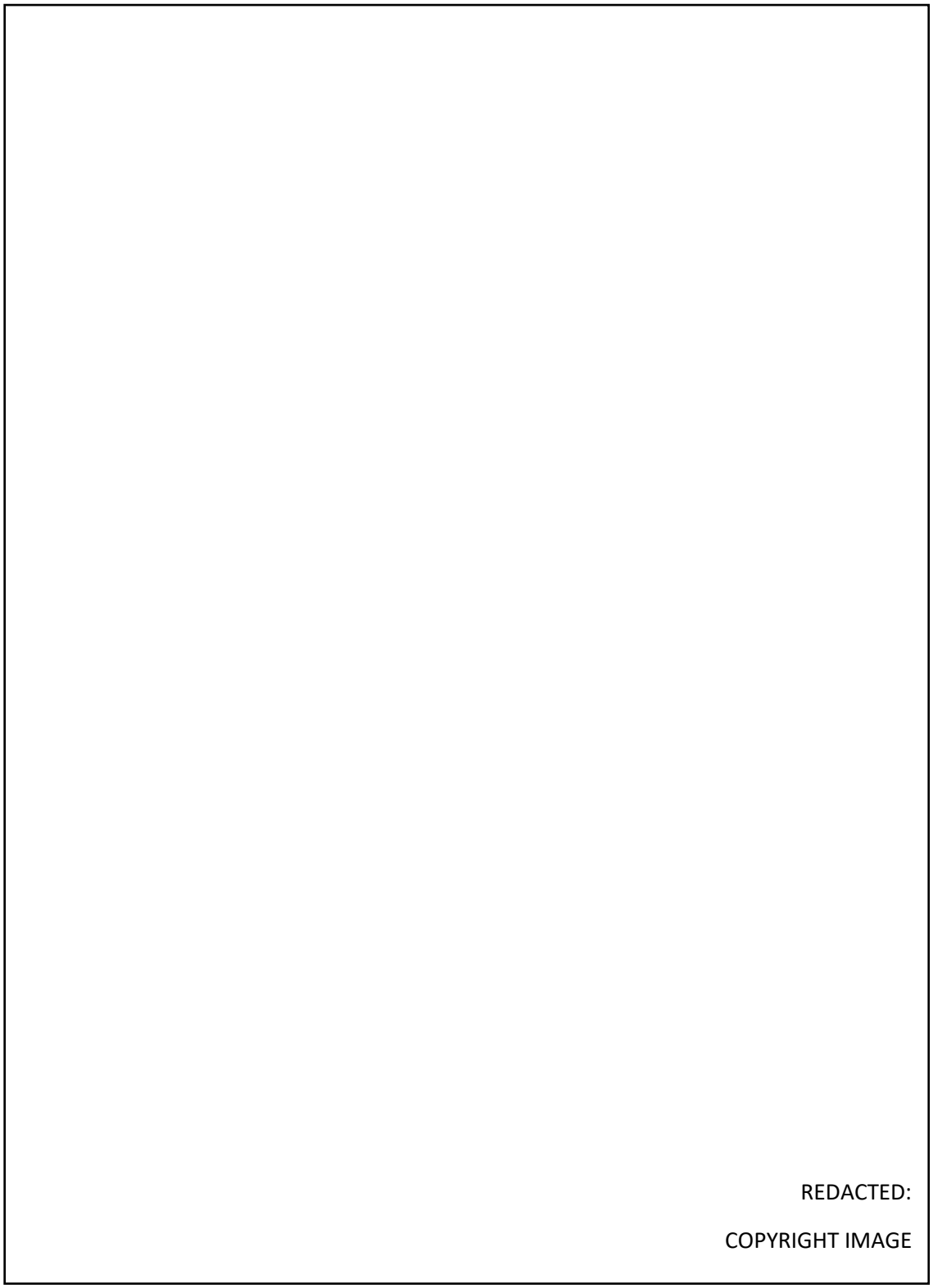


Figure 2.15: Pollen diagram of the major pollen types from Lake Aligol (after Connor and Sagona 2007, Fig. 4).

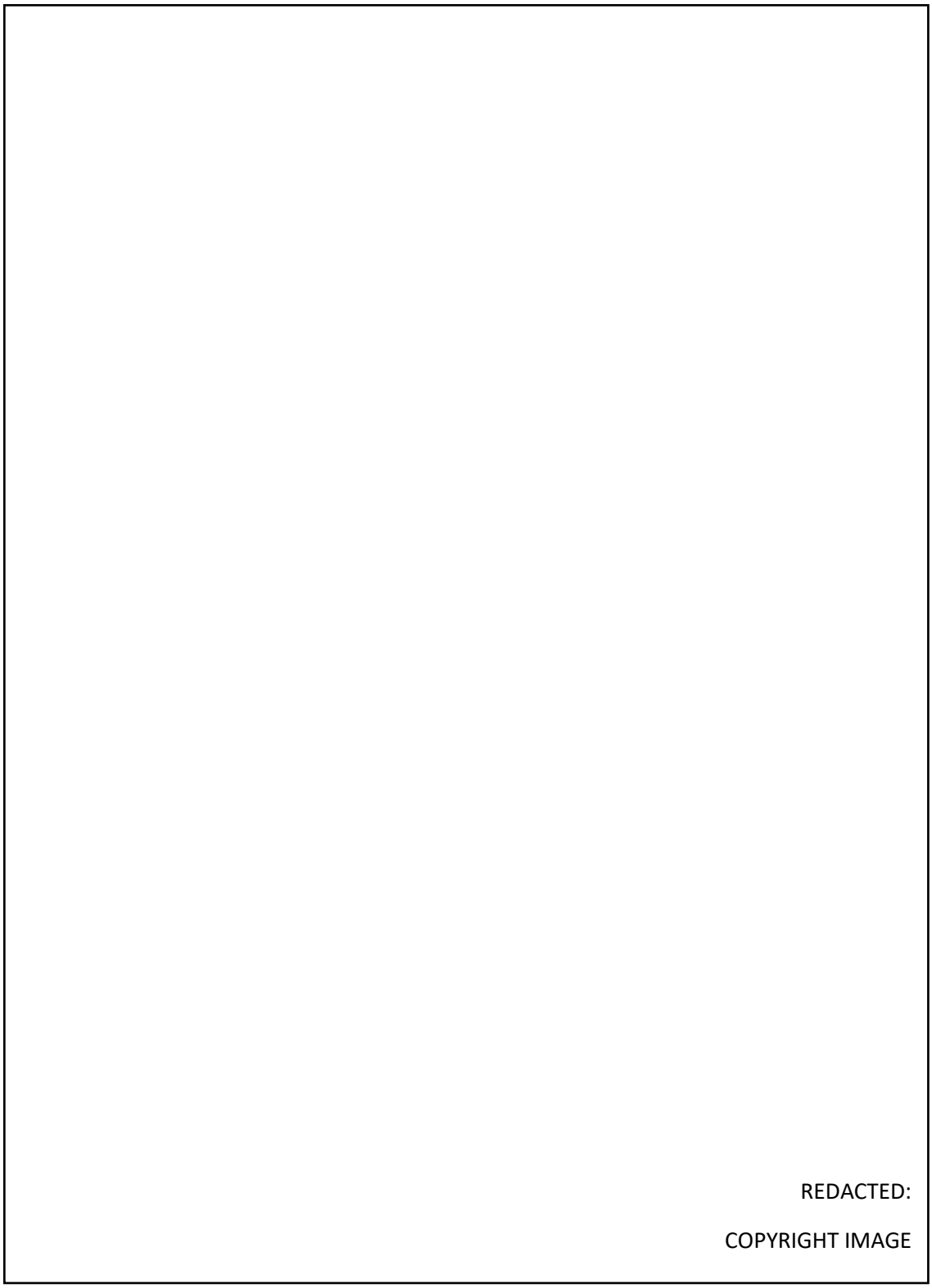


Figure 2.16: Pollen diagram from the Zarishat fen showing the major pollen taxa (after Joannin et al. 2014, Fig. 6).

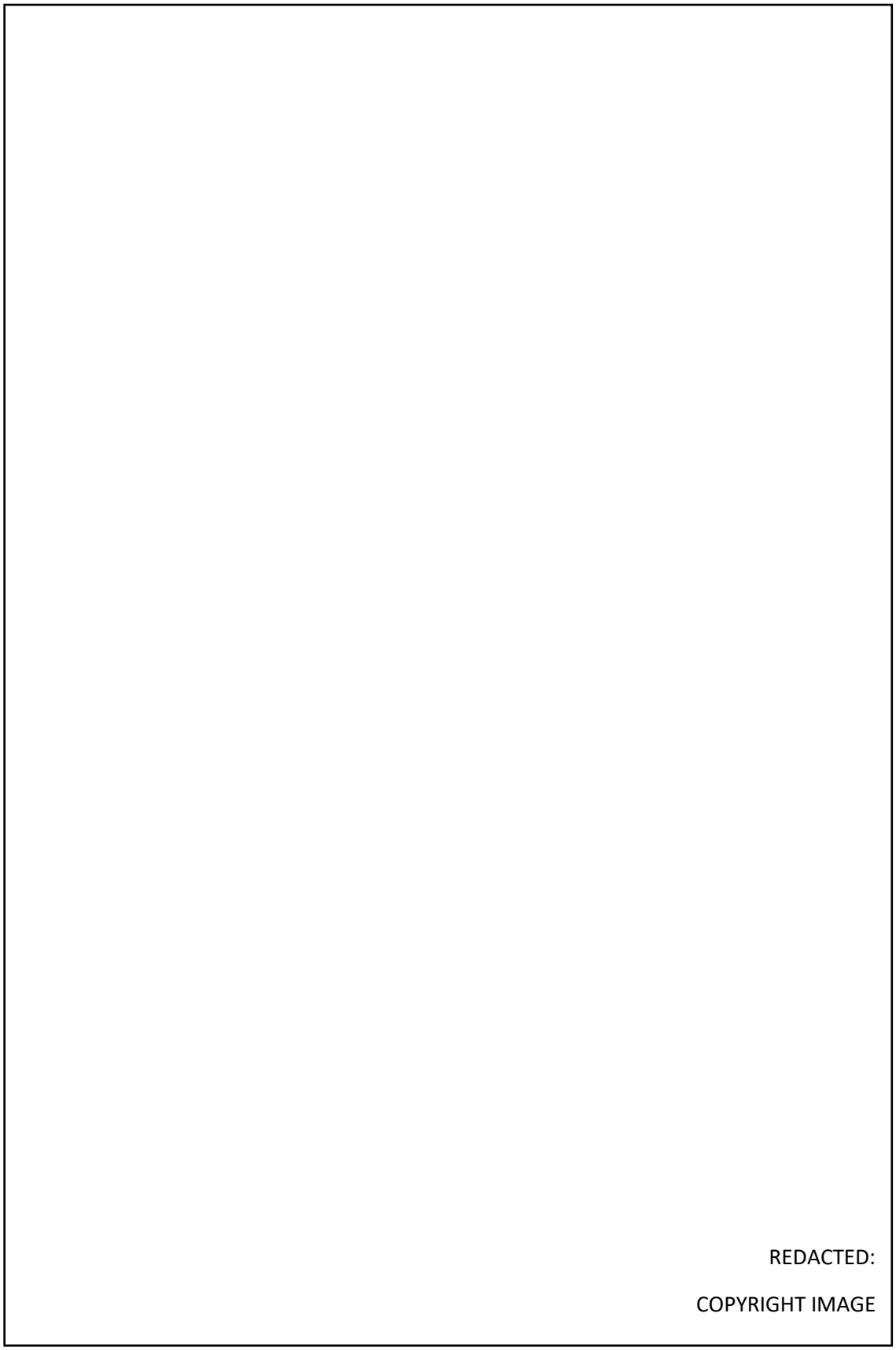


Figure 2.17: Pollen diagram from the Ghab Valley, Syria (after van Zeist and Bottema 1991, Fig. 35).

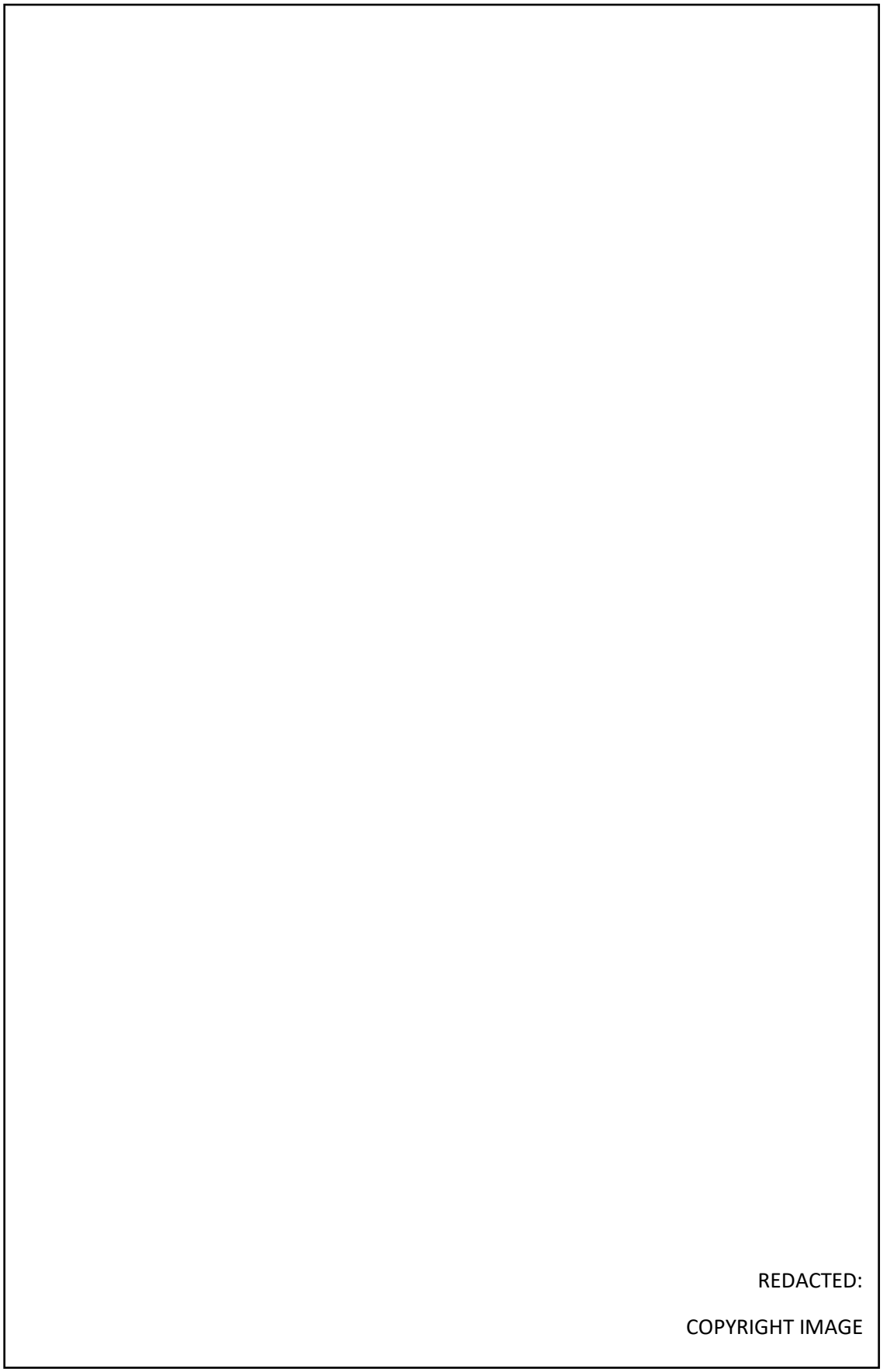


Figure 2.18: Pollen diagram from Lake Huleh, Jordan Rift Valley (after van Zeist and Bottema 1991, Fig. 37).

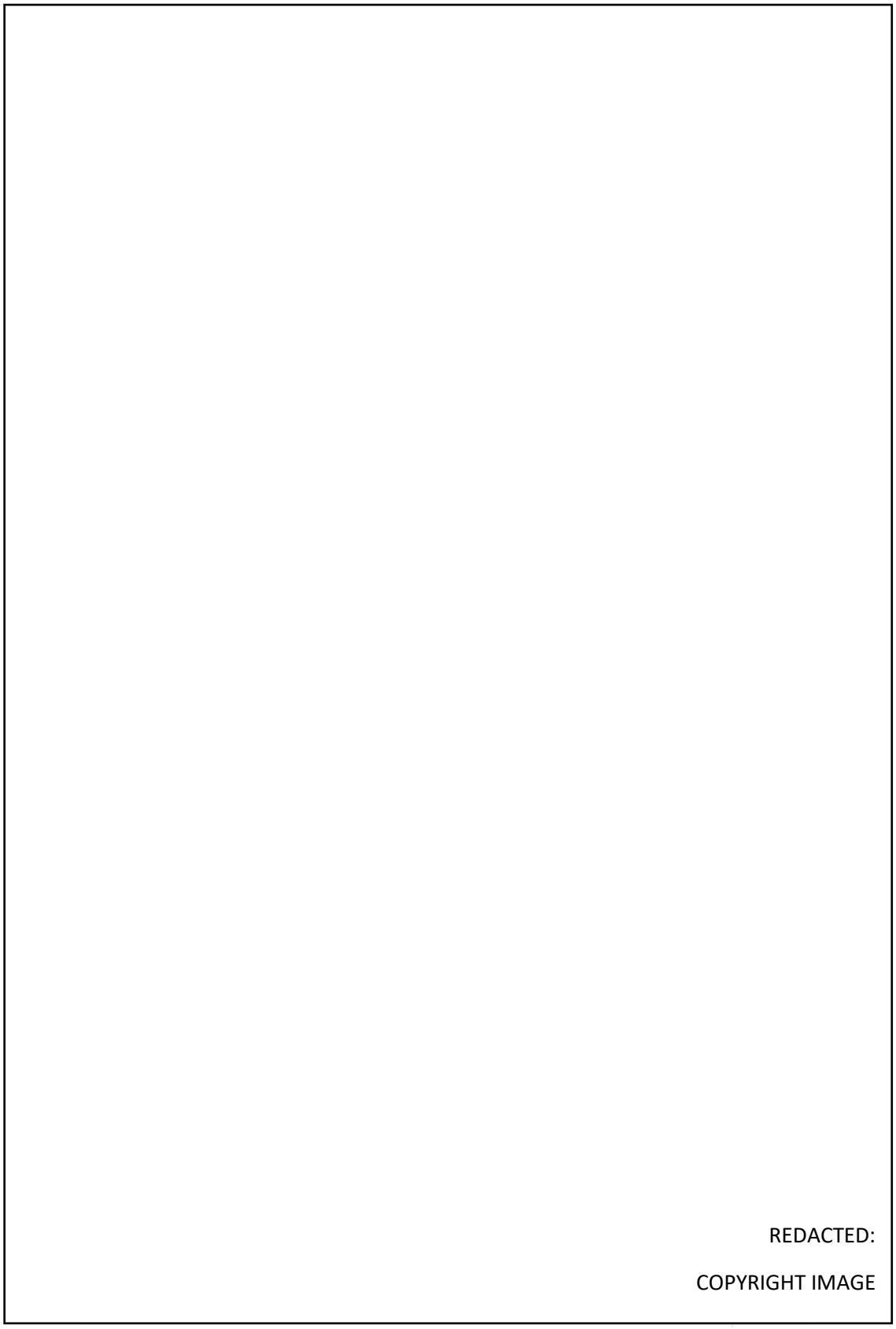


Figure 2.19: A comparison of pollen curves for *Quercus* from four key sites showing the delay of afforestation in the interior sites of eastern Turkey and north western Iran when compared to the Levant (after Sagona and Zimansky 2009, Fig. 1.5.2).

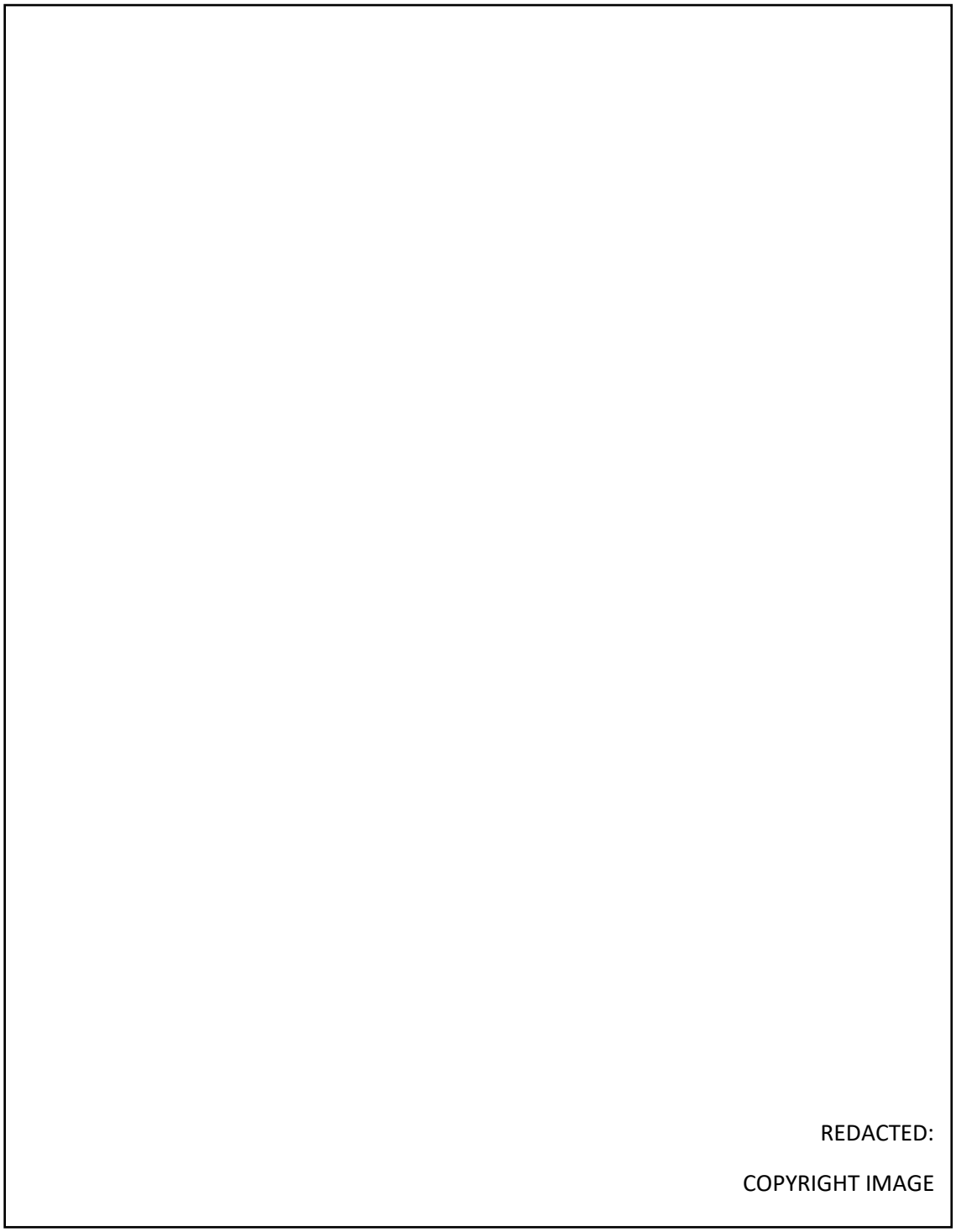


Figure 2.20: Pollen diagram from the site of Beyşehir in southwestern Turkey showing a clear curve in arboreal pollen values as a result of deforestation (after Sagona and Zimansky 2009, Fig. 1.6.2).

Chapter Three: Approaches to Archaeology in Russia and the Transcaucasus

Introduction

The development of a scientific archaeological tradition in Russia and the post-Soviet territories can be traced back to the 18th century.[185] From its very inception, archaeology was political in nature and developed in tandem with the political, economic, and military expansion of the Russian Empire.[186] Much like the rest of Europe, archaeology in Russia and the Transcaucasus developed out of antiquarianism.[187] Beginning with Peter the Great (1672-1725), Imperialist Russia saw the introduction of the first museums and archaeological societies in addition to the establishment of a governmental body for the licencing and management of archaeological fieldwork.[188] The rich cultural assemblage of the Transcaucasus drew the attention of both Russian and local aristocrats alike and Transcaucasian archaeology emerged as a specialist field of research within early Imperial archaeology.[189] Although archaeology in the Russian Empire developed along a similar trajectory to that of contemporary Europe, antiquarianism continued to plague the discipline until the early 20th century.[190] This

[185] Field and Price 1947, 212-213; Dolukhanov 1996, 200; Smith 2005, 235; Tikhonov 2007, 446; Kradin 2010, 244.
[186] Mongait 1961, 23; Dolukhanov 1996, 200; Khazanov 2000, 36; Smith 2005, 236; Shnirelman 2014, 225.
[187] Smith 2005, 237; Lindsay and Smith 2006, 167-168; Sagona 2010a, 145; Tikhonov 2014, 155; Hopper et al. 2018, 12.
[188] Khudiakov 1933, 68-70; Field 1946, 384; Mongait 1961, 67; Trigger 1989, 210; Dolukhanov 1996, 200; Smith 2005, 235; Lindsay and Smith 2006, 167-168; Tikhonov 2007, 446; Kradin 2010, 244; Sagona 2010a, 145; Shnirelman 2014, 222; Tikhonov 2014, 155.
[189] Gramkrelidze 2004, 211; Smith 2005, 239-240; Lindsay and Smith 2006, 168-169; Gramkrelidze 2010, 39-40; Sagona 2010a, 145; Avetisyan and Bobokhyan 2012, 9; Smith 2012a, 61-62; Tikhonov 2014, 158.
[190] Lindstrom 2000, 62; Klejn 2001, 1127-1132; Smith 2005, 240-241; Sagona 2010a, 145; Klejn 2012, 15.

meant that theoretical and methodological apparatuses in Russian Imperial archaeology consistently lagged behind developments seen in Europe and the west.[191]

The direction of archaeology in Russia and its neighbouring territories was to change dramatically after the Revolution of 1917.[192] The early years of the Soviet Union saw the introduction of Marxism into archaeology marking the theoretical and methodological divergence from archaeological approaches in the west. For the next 70 years, under the Soviet regime, the Marxist theoretical framework directed all archaeological research methods.[193] The introduction of Marxism coincided with the theoretical and methodological restructuring of archaeology as a discipline in the wake of increasingly politicised academic discourse.[194] As a consequence of the Great Patriot War (1941-1945) ethnogenetic theory came to predominate in Soviet archaeology.[195] Using the Marxist perspective, Soviet archaeologists were the first to examine social relations within the archaeological record.[196] The Soviet period also saw the pioneering development of settlement archaeology and methods of use-wear analysis.[197] As a prerogative of the state, archaeological fieldwork expanded rapidly and the systematic study of archaeological cultural complexes throughout the Soviet Union saw the

[191] Lindstrom 2000, 62; Klejn 2001, 1127-1132; Sagona 2010a, 145; Klejn 2012, 15.
[192] Black 1977, 1-2; Trigger 1989, 207; Kradin 2010, 244; Sagona 2010a, 145; Shnirelman 2014, 226; Tikhonov 2014, 161-162.
[193] Miller 1956, 75; Trigger 1989, 217-218; Lindsay and Smith 2006, 172; Klejn 2012, 222-223.
[194] Barber 1981, 5-7; Trigger 1984b, 365; Trigger 1989, 216-217; Byrnes 1991, 303-307; McGuire 1993, 101; Shnirelman 1995, 124; Khazanov 2000, 38; Lindstrom 2000, 64; Lindsay and Smith 2006, 172; Tikhonov 2007, 454; Klejn 2012, 18-23; Shnirelman 2014, 230.
[195] Trigger 1978, 196; Bulkin et al. 1982, 276; Trigger 1984b, 366; Klejn 1994, 81; Moore 1994, 15; Shnirelman 1995, 129-130; Shnirelman 1996, 10; Lindstrom 2000, 65; Sagona 2010a, 146; Klejn 2012, 32-33.
[196] Trigger 1989, 226; Dolukhanov 1993, 152; Lindstrom 2000, 63.
[197] Trigger 1984a, 4-5; Trigger 1984b, 365-366; Trigger 1989, 223; Dolukhanov 1993, 152; Lindsay and Smith 2006, 172; Sagona 2010a, 146; Klejn 2012, 29.

development of archaeology in regional territories, particularly in the Transcaucasus.[198] However, Marxism, as a politically mandated theoretical device, limited the ability of Soviet archaeologists to successfully incorporate aspects of archaeological material culture into meaningful historical narratives.[199]

By the 1980s it became clear that the Soviet Union was struggling to compete with western market economies and the democratic political structure.[200] Under Gorbachev, and his policy of *glasnost*, the Soviet Union was subjected to major restructuring incorporating profound democratic reforms including the lifting of censorship, political and ideological freedom, liberalisation, and the discrediting of Marxist dogma.[201] Despite democratic reform, *perestroika* signified the beginning of the end of the Soviet Union. In 1991, the collapse of the Soviet Union saw the end of political and ideological isolation. Theoretical boundaries were deconstructed, international contacts re-established, and post-Soviet archaeologists incorporated into international academic discourse.[202] The initial ramifications of the collapse of the Soviet Union plunged archaeology into crisis. Archaeology in the region was now decentralised.[203] With the economy in tatters, a rapid decrease in funding saw a major decline in fieldwork and academic publications.[204] The creation of the independent republics of

[198] Trigger 1989, 207; Lindsay and Smith 2006, 173-174; Beliaev et al. 2009; Sagona 2010a, 146; Klejn 2012, 30; Tikhonov 2014, 168.
[199] Klejn 1977, 13; Sagona 2010a, 147; Klejn 2012, 55.
[200] Klejn 2012, 44.
[201] Klejn 2012, 44.
[202] Lindstrom 2000, 57; Lindsay and Smith 2006, 165-167; Kradin 2010, 243-244; Avetisyan and Bobokhyan 2012, 11-12; Klejn 2012, 45.
[203] Pokrovsky 1992, 530; Dolukhanov 1993, 154; Chernykh 1995, 139; Lindsay and Smith 2006, 178; Kohl 2007, 16; Beliaev et al. 2009, 9; Kradin 2010, 247; Sagona 2010a, 148; Klejn 2012, 48; Tikhonov 2014, 174.
[204] Mervis 1992, 733; Pokrovsky 1992, 530; Dolukhanov 1993, 154; Chernykh 1995, 139-140; Khazanov 2000, 39; Smith 2005, 249; Lindsay and Smith 2006, 177-178; Sagona 2010a, 148; Klejn 2012, 46-47; Tikhonov 2014, 174.

Georgia, Armenia, and Azerbaijan saw the outbreak of ethnic conflicts and the rise of nationalist archaeologies.[205] Over the long term, the collapse of the Soviet Union paved the way for new directions in post-Soviet archaeology of the Transcaucasus. Today, archaeology in the region is characterised by international, multidisciplinary research projects with a focus on establishing reliable chronologies, cross regional comparisons, geographical surveys, and the definition of cultural assemblages.[206] These projects have been fundamental in introducing new theoretical and methodological devices in addition to new analytical technology into the discipline.[207] Western archaeologists have benefitted from this new found collaboration. Once considered "the great unknown," archaeology of the Transcaucasus is now changing the way we understand the dynamic cultural processes of the archaeological record of the ancient Near East and beyond.[208]

The Beginnings of Archaeology in Russia and the Transcaucasus: Antiquarianism and Imperial Archaeology

Peter the Great was the first to recognise the importance of archaeological artefacts (***fig. 3.1***). In 1714, he established the Kunstkammer (now the Museum for Anthropology), the first museum in Russia.[209] The museum housed a growing collection of rich artefacts acquired as a result of Russia's expanding imperial borders. In 1718, he formalised the collection of Russian artefacts by issuing a decree stating:

[205] Dolukhanov 1993, 154; Kohl 1993, 186; Chernykh 1995, 144-145; Kohl and Tsetskhladze 1995, 149; Dolukhanov 1996, 209-210; Kohl 1998, 224; Smith et al. 1998, 48; Shnirelman 1999, 271-272; Shnirelman 2001, 12-13; Smith 2005, 249; Shnirelman 2008, 33; Beliaev et al. 2009, 12-13; Kradin 2010, 243-244; Smith 2012a, 71; Shnirelman 2014, 238-239.
[206] Mervis 1992, 733; Dolukhanov 1993, 154; Chernykh 1995, 140; Lindstrom 2000, 57; Smith 2005, 249-250; Lindsay and Smith 2006, 165; Kradin 2010, 258; Sagona 2010a, 148; Avetisyan and Bobokhyan 2012, 10; Akashi et al. 2018, 76; Hopper et al. 2018, 12.
[207] Smith 2005, 250; Lindsay and Smith 2006, 178; Kradin 2010, 258; Sagona 2010a, 148; Avetisyan and Bobokhyan 2012, 10; Hopper et al. 2018, 12.
[208] Trigger 1978, 193; Klejn 2012, 3.
[209] Field 1946, 384; Dolukhanov 1996, 200; Smith 2005, 235; Tikhonov 2007, 446; Tikhonov 2014, 155.

> "Whoever finds in the ground or under water any objects, that is, unusual stones, human, animal, fish, or bird bones not as today but either exceptionally large or small, as well as inscriptions on stones, iron, or copper, or any unusual gun, weapon, and all other things old or unusual; they should be brought … [to me]."[210]

In the following year the first archaeological excavations on burial mounds began in Siberia, undertaken by the St. Petersburg Academy of Sciences by Messerschmidt between 1719 and 1727 and Miller and Gmelin between 1733 and 1743.[211] The aristocratic preoccupation with mortuary complexes defined much of the early Russian archaeological pursuits up until the early 20th century. Artefacts were sought for their aesthetic value.[212] This narrow focus was reinforced when, in 1774, the Black Sea coastal region was absorbed into the Russian Empire.[213] Scythian burial mounds and Greek colonies, rich in precious metals, jewellery, and metal artefacts, became a major objective of Russian excavations.[214] Archaeological excavations were largely funded and undertaken by self-taught, wealthy landowners and bureaucratic foot soldiers. According to state law, landowners legally owned any archaeological finds made on their own estates.[215]

The 19th century saw an increase in public interest regarding archaeology which led to the circulation of a large volume of antiquities as a result of treasure hunting.[216]

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[210] Field and Price 1947, 212-213; Mongait 1961, 66; Trigger 1989, 208; Dolukhanov 1996, 200-201; Smith 2005, 235; Kradin 2010, 244; Tikhonov 2014, 155.
[211] Tikhonov 2014, 155.
[212] Smith 2005, 237-238; Lindsay and Smith 2006, 167-168.
[213] Mongait 1961, 23; Smith 2005, 235; Tikhonov 2014, 156.
[214] Field and Price 1947, 214; Mongait 1961, 23; Trigger 1989, 208; Dolukhanov 1996, 201; Smith 2005, 235; Lindsay and Smith 2006, 167-168; Shnirelman 2014, 222; Tikhonov 2014, 156.
[215] Field and Price 1947, 212; Trigger 1989, 210-211; Smith 2005, 236; Lindsay and Smith 2006, 167-168; Tikhonov 2014, 157-158.
[216] Trigger 1989, 210.

Beginning in 1805, the government issued a decree for the protection and collection of Russian antiquities. However, treasure hunting remained an issue throughout the 19th century as similar decrees were also issued in 1826, 1837, 1848, and 1866.[217] Similar concerns were also echoed in Georgia, when, in 1837, the Georgian Statistical Committee drew attention to the need to record and protect historical monuments and artefacts.[218]

The establishment of the first archaeological societies and committees would come to form the structural backbone of an organised Russian Imperial archaeology.[219] The first was the Imperial Odessa Society of History and Antiquity in 1839.[220] This society was established in response to the growing collection of artefacts concentrated in the Crimean city of Kerch and was concerned with the study of Classical antiquities.[221] This was followed by the Russian Archaeological Society in St. Petersburg in 1846.[222] The Russian Archaeological Society was also focused on the study of Classical antiquities. The society was presided over by wealthy European elites until 1851 when the leadership was acquired by Russian nationalists.[223] The society became known as the Imperial Archaeological Society. Emphasis was placed on scientific publications and the scope was widened to include Slavic, Western European, and Near Eastern archaeology in addition to Classical antiquities.[224]

[217] Tikhonov 2014, 157-158.
[218] Gamkrelidze 2004, 108; Gamkrelidze 2010, 37.
[219] Tikhonov 2014, 156.
[220] Field and Price 1947, 213; Miller 1956, 27; Mongait 1961, 66-67; Trigger 1989, 209; Shnirelman 2014, 222; Tikhonov 2014, 156.
[221] Miller 1956, 27; Trigger 1989, 209.
[222] Field and Price 1947, 213; Kradin 2010, 244; Shnirelman 2014, 222; Tikhonov 2014, 156.
[223] Trigger 1989, 210; Smith 2005, 236; Lindsay and Smith 2006, 168; Sagona 2010a, 145; Shnirelman 2014, 222; Tikhonov 2014, 156.
[224] Dolukhanov 1996, 202; Smith 2005, 236; Tikhonov 2014, 156.

In 1850, the Russian Imperial Geographic Society held a meeting in Tbilisi. The meeting brought Transcaucasian antiquities into the official sphere of Russian Imperial archaeology with the pledge of establishing a Caucasian department.[225] In 1852, the Caucasus Museum was opened in Tbilisi. It was the first of its kind and contained departments of ethnography, natural history, and history.[226] In the same year the first scientific surveys and excavations were undertaken at the site of Uplistsikhe, 15 kilometres from Gori, by Meghvinetukhutsesishvili.[227] The excavations were funded by the government and marked the beginning of systematic excavations within the Transcaucasus. Short reports were also published in the regional newspaper *Kavkaz*.[228] By 1854, the Caucasus Museum had already amassed some 3300 local and regional artefacts and in 1855 the first exhibition of Transcaucasian archaeological materials was held there.[229]

A turning point came with the establishment of the Imperial Archaeological Commission by Tsar Alexander II in St. Petersburg in 1859 **(*fig. 3.2*)**.[230] The Commission was to become the most important centre of archaeological research within the Russian Empire and represents the early stages of a professional archaeology.[231] It operated within the Ministry of the Court and functioned as a governmental body which oversaw the licensing of excavations in all lands of the State, the Church, and private

[225] Gamkrelidze 2004, 210; Gramkrelidze 2010, 38.
[226] Gramkrelidze 2004, 210; Smith 2005, 238; Gramkrelidze 2010, 38-39; Sagona 2010a, 145; Avetisyan and Bobokhyan 2012, 8; Smith 2012a, 61-62.
[227] Gramkrelidze 2004, 209; Gramkrelidze 2010, 37.
[228] Gramkrelidze 2004, 209; Gramkrelidze 2010, 37-38.
[229] Gramkrelidze 2004, 210; Smith 2005, 238; Gramkrelidze 2010, 38-39.
[230] Khudiakov 1933, 68-70; Field and Price 1947, 213; Mongait 1961, 67; Trigger 1989, 210; Smith 2005, 238; Lindsay and Smith 2006, 167-168; Kradin 2010, 244; Sagona 2010a, 145; Shnirelman 2014, 222; Tikhonov 2014, 156.
[231] Field and Price 1947, 214; Klejn 2001; Sagona 2010a, 145.

ownership.[232] The Commission played an active role in initiating and overseeing much of the early archaeological fieldwork in Russia and its territories.[233] Archaeologists were required to report their finds directly to the Commission. The Commission was also concerned with the publication of several periodicals including *Annual Reports*, *Materials of Russian Archaeology,* and *News of the Imperial Archaeological Commission.*[234]

Despite the progression towards governmental regularisation and control, the focus of archaeology remained much as it had been prior to the 19th century. The Commission continued to prioritise the excavation of Greek colonies and rich burial mounds.[235] Archaeological artefacts, and their display within national museums, were considered as a powerful tool of imperial propaganda.[236] In serving the court, the Commission was concerned with the acquisition of artefacts that would demonstrate the greatness, strength, and stability of the Russian Imperial Empire.[237] The most striking artefacts were taken to be displayed at the Hermitage while other, less valuable artefacts, were distributed to local and regional museums.[238]

The 1860s and 1870s saw the growth of a largescale museum network, the regular publication of excavation reports, and an increasing professionalism in archaeology.[239] Archaeology in the Transcaucasus also became more formalised and professional with the establishment of region-specific archaeological institutions and

[232] Khudiakov 1933, 68-70; Field and Price 1947, 213-214; Mongait 1961, 67; Trigger 1989, 210; Smith 2005, 236; Lindsay and Smith 2006, 168; Shnirelman 2014, 222; Tikhonov 2014, 157-158.
[233] Smith 2005, 238.
[234] Field and Price 1947, 213-214; Lindsay and Smith 2006, 168; Tikhonov 2014, 157-158.
[235] Field and Price 1947, 214; Mongait 1961, 67; Tikhonov 2014, 157-158.
[236] Mongait 1961, 24; Khazanov 2000, 36.
[237] Khazanov 2000, 36; Smith 2005, 236-237.
[238] Trigger 1989, 210.
[239] Shnirelman 2014, 222.

increasing fieldwork.[240] In 1864, Count Uvarov established the Moscow Archaeological Society **(*fig. 3.3 and 3.4*)**. Often at odds with the Imperial Archaeological Commission, the Society undertook many largescale excavations and was responsible for the publication of a large volume of archaeological literature.[241] The development of the Moscow Archaeological Society spawned a number of local research societies including one in Tbilisi.[242] The Society also organised the All-Russian Archaeological Congress in different cities throughout the Empire. Fifteen congresses were held between 1869 and 1911.[243] The congresses played an important role in establishing local archaeological traditions in these regions, particularly in the Transcaucasus.

In response to the growing interest in Transcaucasian antiquities, the Imperial Archaeological Commission established a regional branch in Tbilisi in 1871. The Caucasus Archaeological Committee functioned as a coordinating body of archaeological excavations and historical studies in the Transcaucasus.[244] The establishment of the committee stimulated archaeological research within the region.[245] In the same year, Yeritsov (Yeritsyan in Armenian) conducted the first structured archaeological excavation in Armenia at Akner where he opened 23 'pre-Christian' burials in the Debed River canyon.[246] Yeritsov's article, published that same year in *Kavkaz*, was one of the first archaeological publications in the Transcaucasus.[247] He was the first to attempt

[240] Lindsay and Smith 2006, 168-169.
[241] Field and Price 1947, 213; Mongait 1961, 68; Lindsay and Smith 2006, 168; Shnirelman 2014, 222; Tikhonov 2014, 158.
[242] Lindsay and Smith 2006, 168.
[243] Mongait 1961, 68; Tikhonov 2014, 158.
[244] Gamkrelidze 2004, 211; Gamkrelidze 2010, 39-40.
[245] Gamkrelidze 2004, 211; Smith 2005, 239; Lindsay and Smith 2006, 239; Gamkrelidze 2010, 39-40; Sagona 2010a, 145.
[246] Smith 2005, 238-239; Lindsay and Smith 2006, 168; Avetisyan and Bobokhyan 2012, 9; Smith 2012a, 61-62.
[247] Smith 2005, 238-239; Lindsay and Smith 2006, 168.

theoretical applications to organise the archaeological data utilising Thomsen's three age system and applying European evolutionary frameworks.[248] Yeritsov's excavation served to draw attention to the Bronze and Iron Age complexes initiating a general trend towards an increasingly diversified archaeological focus.[249] Yeritsov also headed the publication of the new archaeological journal *Caucasian Antiquities*. The journal featured articles on history, archaeology, and ethnography of the Caucasus and was the first specialist archaeological publication in the region.[250]

The interest in Transcaucasian antiquities continued with the establishment of the Society of the Amateurs of Caucasian Archaeology in Tbilisi in 1873. The society's priority was to protect Caucasian antiquities and heritage buildings from treasure hunting and destruction.[251] Members of the society were encouraged to purchase antiquities from the public, to conduct excavations and research, and to publish reports upon the recommendation of the committee of the society.[252] By 1875 the society had published its first volume containing proceedings of meetings and scholarly articles followed by a second volume in 1877. The society later merged with the Caucasus Archaeological Committee.[253]

Interest in archaeology continued to grow in the 1880s and fields of research broadened amongst the scholarly circles of the Russian Empire. In 1877, Uvarov excavated one of the first Upper Palaeolithic sites along the Oka River.[254] The discovery

[248] Lindsay and Smith 2006, 168.
[249] Smith 2005, 240; Lindsay and Smith 2006, 168.
[250] Lindsay and Smith 2006, 168-169.
[251] Gamkrelidze 2004, 212; Gamkrelidze 2010, 39-40.
[252] Gamkrelidze 2004, 212; Gamkrelidze 2010, 39-40.
[253] Gamkrelidze 2004, 212; Gamkrelidze 2010, 39-40.
[254] Tikhonov 2014, 159.

brought prehistoric archaeology to the fore which had been neglected in favour of classical antiquities and burial sites.[255] Other Palaeolithic sites were excavated at Kostenki in Ukraine while the discovery of the Tripolye culture in western Russia extended archaeological research into the Neolithic.[256] Bronze and Iron Age complexes were also studied as archaeologists became interested in the development and spread of metallurgy.[257] Prehistory became recognised as a specialist subject and was considered as a natural science. It was regarded as separated from historical studies and was commonly affiliated with anthropology, ethnography, and geography.[258] Research centres were established in St. Petersburg under the Russian Anthropological Society and at several universities in Moscow under the Society of Naturalists, Anthropology, and Ethnography.[259] In the 1880s, archaeology was being taught at universities in Moscow and St. Petersburg.[260] This coincided with the first books concerning prehistoric archaeology including Uvarov's *Archaeology in Russia* and *Stone Age* and Inostantsev's *Prehistoric Stone Age Man on the Banks of Ladoga Lake.*[261]

Transcaucasian archaeology was formally recognised as a specialist field of research with the proceedings of the Fifth Archaeological Congress held in Tbilisi in 1881.[262] The congress was headed by Uvarov and Yeritsov and addressed a range of topics including prehistoric archaeology, archaeology of the Classical and Christian

[255] Field and Price 1947, 215.
[256] Trigger 1989, 210-211.
[257] Lindsay and Smith 2006, 170.
[258] Tikhonov 2014, 160.
[259] Tikhonov 2014, 160.
[260] Trigger 1989, 210-211; Tikhonov 2014, 161.
[261] Tikhonov 2014, 160.
[262] Gamkrelidze 2004, 214; Smith 2005, 239-240; Lindsay and Smith 2006, 170; Gamkrelidze 2010, 43; Sagona 2010a, 145; Avetisyan and Bobokhyan 2012, 9; Smith 2012a, 61-62; Tikhonov 2014, 158.

periods, art history, linguistics, geography, and ethnography.[263] Over 850 local and foreign scholars attended the congress and presented 81 papers.[264] The Fifth Archaeological Congress marked a shift towards the development of field methods and the understanding of artefacts as assemblages rather than art objects.[265] Migration and diffusion were discussed in relation to the development and spread of metallurgy during the Bronze Age.[266] For the first time, questions of chronology became a concern. The discussion was stimulated by the work of Bayern who excavated the Samtavro cemetery in Georgia in 1871 and the burials at Redkin-Lager in Armenia in 1879.[267] Bayern was the first to propose a regional archaeological sequence for the Caucasus by arguing that the burials at Redkin-Lager predated the pit graves at Samtavro.[268] Proceedings of the congress were published by Virchow the following year in Berlin which served to garner interest in Caucasian antiquities amongst European scholars.[269] By 1888, the Moscow Archaeological Society had published a special addition of *Materials on the Archaeology of the Caucasus.*[270]

Russian archaeologists were increasingly influenced by the theoretical and methodological developments in contemporary Europe.[271] By the late 19th century, two theoretical schools emerged centred on formalism and empiricism led by Gorodstov (1860-1945) and Spitzyn (1858-1931).[272] Gorodstov was the leading proponent of the

[263] Gamkrelidze 2004, 214; Smith 2005, 239-240; Gamkrelidze 2010, 43.
[264] Gamkrelidze 2004, 214; Gamkrelidze 2010, 43.
[265] Smith 2005, 240.
[266] Lindsay and Smith 2006, 170.
[267] Abramishvili 2003, 12; Gamkrelidze 2004, 210; Smith 2005, 238-239; Sagona 2010a, 145; Avetisyan and Bobokhyan 2012, 9.
[268] Abramishvili 2003, 12; Smith 2005, 240.
[269] Virchow and Dolbeschew 1882; Smith 2005, 239-240; Sagona 2010a, 145; Avetisyan and Bobokhyan 2012, 9; Tikhonov 2014, 158.
[270] Tikhonov 2014, 158.
[271] Trigger 1989, 211; Lindsay and Smith 2006, 168; Klejn 2012, 15.
[272] Trigger 1989, 211; Smith 2005, 237-238; Lindsay and Smith 2006, 168.

formalist school and was influenced by typologists such as Montelius and Dechelette (***fig. 3.5***). Gorodstov was concerned with the organisation of artefacts into chronological sequences based on aesthetic development.[273] In 1901, based on a study of prehistoric ceramics, Gorodstov was the first to introduce the principles of numerical taxonomy using a classificatory method which used type as the basic unit.[274] He was also the first to systematise Russian Bronze Age materials in to three successive phases based upon differences in mortuary constructions.[275] Gorodstov highlighted the importance of settlement archaeology and placed emphasis on the production of mundane items, particularly lithic assemblages.[276]

In contrast, Spitzyn headed the empirical school which was concerned with the detailed and accurate description of artefacts which led to the improvement of excavation and conservation standards (***fig. 3.6***).[277] Spitzyn is credited with the discovery of several Chalcolithic, Bronze, and Iron Age complexes throughout Russia.[278] Both scholars also played an active role in developing the ethno-cultural framework within Russian Imperial Archaeology. In particular, Spitzyn's studies were influenced by geography and were concerned with locating archaeological cultures within landscapes.[279] At this point, the ethno-cultural paradigm was used to organise vast amounts of archaeological data to group archaeological assemblages in to classificatory units of study.[280] During the late 19th and early 20th centuries, Russian archaeologists

[273] Trigger 1989, 211; Malina and Vašíček 1990, 46.
[274] Dolukhanov 1996, 202; Tikhonov 2014, 160.
[275] Miller 1956, 37; Mongait 1961, 69; Trigger 1989, 211; Tikhonov 2014, 160.
[276] Miller 1956, 37; Mongait 1961, 69; Trigger 1989, 211.
[277] Miller 1956, 32-33; Trigger 1989, 211-212.
[278] Dolukhanov 1996, 202.
[279] Dolukhanov 1996, 202; Smith 2005, 237-238; Klejn 2012, 15.
[280] Dolukhanov 1996, 202.

were more concerned with form, function, periodisation, and aesthetics rather than the identification of cultural and/or ethnic markers in the archaeological record.[281]

Despite the rapid development of Russian archaeology during the 18th, 19th, and early 20th centuries, there were no major developments in conceptual frameworks and research methods during this period.[282] The theoretical frameworks advocated by scholars, such as Gorodstov and Spitzyn, were borrowed from Europe and applied directly to the local and regional data. Despite the general progression towards increasing professionalism and diversified fields of research interests, antiquarianism continued to plague Russian archaeology prior to the Revolution.[283] Emphasis remained on rich burial sites. However, burials are often poorly stratified meaning that local and regional chronologies were left undeveloped, making cross-cultural comparisons between different assemblages almost impossible.[284] Although Russian Imperial archaeology developed along similar lines to Europe, Britain, and America, it still lagged behind contemporary developments, particularly those of Western Europe.[285]

New Directions: Archaeology under the Soviet Union

The early years following the Revolution were characterised by major academic institutional and structural reforms with a trend towards centralisation.[286] Under the new Soviet policy, leading archaeological societies, established prior to the Revolution, were shut down and local historical groups were stripped of their autonomy.[287] In 1919,

[281] Dolukhanov 1996, 202; Smith 2005, 237-238.
[282] Klejn 2001, 1127-1132; Sagona 2010a, 145; Klejn 2012, 15.
[283] Smith 2005, 240-241.
[284] Smith 2005, 240-241.
[285] Lindstrom 2000, 62; Klejn 2001, 1127-1132; Sagona 2010a, 145; Klejn 2012, 15.
[286] Doulkhanov 1993, 150; Sagona 2010a, 145; Klejn 2012, 5; Tikhonov 2014, 161-162.
[287] Barber 1981, 5-6; Tikhonov 2014, 161-162.

the Imperial Archaeological Commission was replaced by the Academy for the History of Material Culture in Petrograd (St. Petersburg).[288] Headed by leading academic, Nikolai Marr, the role of the academy was to consolidate all faculties of humanities and social sciences **(*fig. 3.7*)**.[289] With the introduction of new infrastructural reforms, archaeology became the prerogative of the Soviet State. Archaeological sites were declared State property.[290]

Under governmental control, the first decade following the Revolution saw a rise in professionalism marking a distinct break with the amateur archaeology practised throughout Old Imperialist Russia.[291] The rise in professional standards coincided with the first systematic training of new archaeologists.[292] Archaeology was now financed by the state and specialised courses were established at leading universities.[293] By the early 1920s, departments of archaeology were established at the universities in Petrograd and Moscow.[294] Major centres for archaeological research were also founded in, Kiev and Novosibirsk.[295] The academic structural and institutional reforms had long lasting effects. With the incorporation of the Transcaucasus into the Soviet Union in 1922, archaeology in the region was absorbed into the overarching direction of the Academy.[296] State museums were established in Armenia and Azerbaijan and the

[288] Field and Price 1947, 212; Mongait 1961, 24-25; Trigger 1989, 212; Byrnes 1991, 299; Lebedev 1992; Doulkhanov 1993, 150; Lindstrom 2000, 62; Lindsay and Smith 2006, 171; Tikhonov 2007, 453; Klejn 2012, 15; Tikhonov 2014, 161-162.
[289] Field and Price 1947, 212; Mongait 1961, 72-73; Trigger 1984a, 5; Trigger 1989, 212; Byrnes 1991, 299; Lebedev 1992; Dolukhanov 1993, 150; Slezkine 1996, 830-831; Lindstrom 2000, 62; Lindsay and Smith 2006, 171; Tikhonov 2007, 453; Klejn 2012, 24; Tikhonov 2014, 161-162.
[290] Mongait 1961, 24-25; Trigger 1989, 207; Doulkhanov 1993, 150; Tikhonov 2014, 161-162.
[291] Trigger 1989, 214-215.
[292] Trigger 1989, 214-215.
[293] Field and Price 1947, 215-216; Klejn 2012, 16-17.
[294] Trigger 1989, 213.
[295] Klejn 2012, 5.
[296] Miller 1956, 47; Trigger 1989, 212; Smith 2005, 243.

Caucasus Museum was reorganised as the Museum of Georgia.[297] By the early 1920s, several institutions for archaeology in Armenia had also been established including the Yerevan State University and the Committee for the Preservation of Historical and Cultural Monuments.[298]

Despite major institutional and structural reforms, during the years corresponding to the New Economic Policy (1921-1928), the attitude of the Soviet administration towards academia was characterised by a degree of non-interference.[299] Under Lenin's doctrine of *partiinost',* academics continued independent research provided that they adopted the proletarian standpoint in their published works and adhered to the party line on major political issues.[300] As a result, archaeology as a discipline continued much as it had done prior to the Revolution.[301] Prominent archaeologists, such as Gorodstov and Spitzyn, retained leading positions within the new academic infrastructure and became active members of the academy.[302] Concepts such as migration, diffusion, and ethnicity remained the preferred explanatory models for the discussion of change within the archaeological record.[303] Contacts between Russian and foreign archaeologists also continued unabated. The early 1920s saw the intensification of the exchange of research between Soviet and European academics.[304] Russian archaeologists continued to attend international conferences and multi-lingual journals,

[297] Smith 2005, 243; Lindsay and Smith 2006, 171; Gamkrelidze 2010, 44-45; Sagona 2010a, 145-146.
[298] Smith 2005, 243; Lindsay and Smith 2006, 171-172.
[299] Barber 1981, 4; Byrnes 1991, 300; Lindsay and Smith 2006, 172.
[300] Barber 1981, 5; Trigger 1984a, 4; Trigger 1984b, 365; Trigger 1989, 215-216.
[301] Mongait 1961, 27-28; Trigger 1984a, 4; Trigger 1984b, 365; Lindsay and Smith 2006, 172; Klejn 2012, 17; Shnirelman 2014, 226.
[302] Trigger 1989, 214; Klejn 2012, 17.
[303] Trigger 1989, 215; Shnirelman 1995, 123-124.
[304] Koryakova 2002, 240; Tikhonov 2014, 163-166.

such as *Eurasia Septentrionalis Antiqua* and *Seminarium Kondakovianum*, ensured the accessibility of Soviet research to European scholars.[305]

By the late 1920s a new generation of archaeologists entered the academy.[306] In 1930, Ravdonikas introduced Marxist ideology into archaeology with the publication of his paper *For a Marxist History of Material Culture* **(*fig. 3.8*)**.[307] Marxist historical materialism was introduced into Soviet archaeology via the application of Marr's Japhetic or Stadial theory which was developed prior to the Revolution to explain the linguistic system of the Caucasus by emphasising the connection between Semitic and Caucasian languages **(*fig. 3.9*)**.[308]

Following the Revolution, Marr revised the Japhetic theory in terms of Marxism and historical materialism.[309] According to Japhetic theory, changes in the archaeological record are reflective of a response to the shifts in the socio-economic organisation of a particular culture which are considered to result from the development of contradictions between different social classes and the forces of production.[310] Cultural development was conceptualised in terms of a unilinear evolutionary scheme of socio-economic formations.[311] Japhetic theory relied heavily on classical evolutionism and the archaeological record was interpreted with reference to Marx's five stages of

[305] Lindsay and Smith 2006, 172; Tikhonov 2014, 163-166.
[306] Barber 1981, 7; Trigger 1984b, 365; Byrnes 1991, 303; Shnirelman 1995, 124; Tikhonov 2007, 454; Klejn 2012, 18; Shnirelman 2014, 230.
[307] Miller 1956, 75; Trigger 1989, 217-218; Lindsay and Smith 2006, 172; Klejn 2012, 222-223.
[308] Matthews 1947, 177.
[309] Matthews 1947, 172; Mongait 1961, 27-28; Dolukhanov 1993, 150; Dolukhanov 1996, 203.
[310] Matthews 1947, 176; Miller 1956, 79; Trigger 1984a, 4-5; Trigger 1984b, 365; Malina and Vašíček 1990, 92; Slezkine 1991, 478; Klejn 1993a, 339; Shnirelman 1995, 122; Dolukhanov 1996, 203-204; Gilman 1998, 910; Lindstrom 2000, 63; Sagona 2010a, 145; Klejn 2012, 24; Shnirelman 2014, 231.
[311] Trigger 1984a, 4-5; Trigger 1989, 217-218; Klejn 1993a, 339; Smith 2005, 242.

socio-economic development.[312] Archaeological cultures and historical sequences were divided into successive stages consisting of primitive society, slave society, feudalism, capitalism, and socialism. Prehistory and primitive society were further subdivided into pre-clan, matriarchal clan, patriarchal clan, and terminal clan stages.[313] All cultures were considered to progress through these stages of development towards the outcome of a socialist state.[314]

With an emphasis placed on internal social and economic factors as a catalyst for change, Soviet archaeologists prioritised autochthonous development within the archaeological record.[315] Processes of migration and diffusion were considered to play a limited role within cultural change and were all together rejected as useful interpretive theoretical devices.[316] Within Japhetic theory, ethnicity was regarded as non-permanent and ephemeral.[317] Ethnicity was a continual process of the intermixing of different groups and was the by-product of socio-economic development.[318] Changes of ethnic markers within the archaeological record were interpreted as socio-economic transformations of one and the same population.[319] Japhetic theory fostered a prevailing trend of economic determinism within early Soviet archaeology.[320]

[312] Miller 1956, 78-79**;** Mongait 1961, 29; Dragadze 1979, 121; Petrova-Averkieva 1980, 22; Trigger 1984a, 4-5; Malina and Vašíček 1990, 91-93; Trigger 1993, 168; Klejn 1993b, 510; Kaiser 1995, 111; Lindstrom 2000, 64; Moore 2004, 3047; Lindsay and Smith 2006, 172; Klejn 2012, 20-21.
[313] Miller 1956, 78-79; Mongait 1961, 29; Trigger 1984a, 4-5; Trigger 1993, 168; Moore 2004, 3047; Lindsay and Smith 2006, 172.
[314] Trigger 1984b, 365-366; Dolukhanov 1996, 203; Klejn 2012, 20-21; Shnirelman 2014, 231.
[315] Howe 1976, 102; Dragadze 1979, 121; Trigger 1989, 226; Dolukhanov 1996, 204; Chapman 2003, 59-60; Smith 2005, 245; Shnirelman 2014, 231.
[316] Matthews 1947, 182; Klejn 1970, 301; Howe 1976, 102; Bulkin et al. 1982, 275; Trigger 1984b, 365; Trigger 1989, 226; Malina and Vašíček 1990, 92-93; Shnirelman 1995, 125; Dolukhanov 1996, 204; Slezkine 1996, 846; Lindstrom 2000, 63; Smith 2005, 245; Sagona 2010a, 145; Shnirelman 2014, 231.
[317] Mongait 1961, 72-73; Trigger 1989, 226; Malina and Vašíček 1990, 92-93; Shnirelman 1995, 125; Dolukhanov 1996, 204; Lindstrom 2000, 63-64; Shnirelman 2014, 230-231.
[318] Shnirelman 1995, 122; Lindstrom 2000, 63-64; Shnirelman 2014, 231.
[319] Trigger 1984b, 365; Trigger 1989, 225-226; Lindstrom 2000, 63; Klejn 2012, 24; Shnirelman 2014, 231.
[320] Malina and Vašíček 1990, 92-93.

Archaeological cultures were reduced to a series of predetermined socio-economic formations of the past.[321] The rejection of migration, diffusion, and ethnicity as interpretive theoretical devices rendered archaeological cultures as an 'immovable autochthonous mass.'[322] The investigation of cultural variation was discouraged and the archaeological record deprived of its diversity.[323]

Coinciding with the introduction of Japhetic theory into archaeology, from 1929 to 1934 archaeology as a discipline was subjected to a government review.[324] Under the Stalinist regime, academia became increasingly politicised. Existing theoretical apparatuses and methodologies were scrutinised to align the discipline with Marxist ideology and to eliminate potential opposition (***fig. 3.10***).[325] A wave of militancy overtook the discipline and pre-Revolutionary archaeologists were repressed. Many archaeologists were arrested, exiled, or killed leading to the loss of many specialists.[326] The formalist and empirical schools of archaeology were denounced as bourgeoisie and anti-Marxist. Both schools were accused of interpreting history in biological terms and by-passing the social and political significance of archaeological data.[327] In particular, the formalist approach was accused of fetishising artefacts through 'sheer artefactology.'[328] This led to the rejection of the typological method which had long

[321] Bulkin et al. 1982, 275; Smith 2005, 245; Klejn 2012, 19-20; Shnirelman 2014, 231.
[322] Bulkin et al. 1982, 275; Lindstrom 2000, 63; Klejn 2012, 24.
[323] Mongait 1961, 72-73; Trigger 1989, 226.
[324] Mongait 1961, 27-28; Black 1977, 2; Barber 1981, 9; Trigger 1984a, 4; Trigger 1984b, 365; Trigger 1989, 216-127; Byrnes 1991, 307; Shnirelman 1995, 124; Moore 2004, 3047; Smith 2005, 244; Tikhonov 2007, 454; Klejn 2012, 22-23; Shnirelman 2014, 230; Tikhonov 2014, 168.
[325] Barber 1981, 5; Trigger 1984b, 365; Trigger 1989, 216-217; Byrnes 1991, 307; McGuire 1993, 101; Shnirelman 1995, 124; Khazanov 2000, 38; Lindstrom 2000, 64; Lindsay and Smith 2006, 172; Klejn 2012, 22-23.
[326] Mongait 1961, 27-28; Barber 1981, 9; Trigger 1984a, 4; Trigger 1989, 216-217; Shnirelman 1995, 124; Formozov 2004; Smith 2005, 244; Lindsay and Smith 2006, 173; Tikhonov 2007, 454; Sagona 2010a, 146; Klejn 2012, 23; Shnirelman 2014, 231; Tikhonov 2014, 168.
[327] Miller 1956, 71-78; Trigger 1989, 217-218; Klejn 2012, 23.
[328] Miller 1956, 71-78; Howe 1976, 101-102; Trigger 1989, 217-218; Sagona 2010a, 145; Klejn 2012, 23.

lasting and detrimental effects throughout the discipline. Without the systematic classification of artefacts, Soviet archaeologists by-passed an important analytical step resulting in under-developed typologies, relative chronologies, and loosely defined cultural units.[329] In doing so, Soviet archaeologists deprived themselves of any chance of accurately dating material culture.[330]

The rejection of empiricism and formalism, led to the dogmatic application of Marr's Japhetic theory as a politically mandated theoretical framework.[331] Under Japhetic theory, the ethno-cultural approach was also denounced. Concepts such as ethnicity, migration, and diffusion were inherently racist and irreconcilable with Marxist internationalist ideology.[332] Under such volatile political conditions, contact with academics outside of the Soviet Union ceased and all theoretical discussions came to a halt.[333] From this point onwards, Soviet archaeologists became increasingly concerned with the evaluation of material culture in terms of Marxist ideological dogma at the expense of developing sound theoretical and methodological frameworks.[334]

Despite the severe limitations placed upon academics, the 1930s saw major advances in Soviet archaeology. Under the framework of Japhetic theory, Soviet archaeologists were the first to investigate social relationships of prehistoric communities within the archaeological record.[335] Soviet archaeologists were innovative

[329] Howe 1976, 101-102; Trigger 1989, 226-227; Klejn 2012, 23.
[330] Klejn 2012, 129-130.
[331] Klejn 1977, 12; Trigger 1984b, 365; Malina and Vašíček 1990, 93; Lindstrom 2000, 64; Lindsay and Smith 2006, 172; Klejn 2012, 25.
[332] Trigger 1989, 226; Shnirelman 1995, 125; Dolukhanov 1996, 204; Lindstrom 2000, 64; Shnirelman 2014, 230-231.
[333] Howe 1976, 106; Trigger 1984b, 216-217; Byrnes 1991, 297; Koryakova 2002, 240; Klejn 2012, 29; Tikhonov 2014, 169; Helwing 2017, 53; Rova and Tonussi 2017, 1.
[334] Howe 1976, 84; Trigger 1984a, 9; Shnirelman 1995, 127.
[335] Trigger 1989, 226; Dolukhanov 1993, 152; Lindstom 2000, 63; Koryakova 2002, 240.

in their focus on indigenous development and the role of technology in prehistoric society.[336] This led to the development of settlement archaeology. For the first time, settlements underwent largescale, horizontal excavations and cultural assemblages were analysed as a whole in relation to site plans and domestic structures.[337] Increased focus on settlements and domestic structures led to the development of lithicmicrowear and taphonomic analysis and saw the introduction of forensic science into archaeology.[338]

In his functional-traceological analysis, Semenov was the first to identify processes that had caused use-ware on bone and lithic tools and infer the function of such objects within the archaeological record **(*fig. 3.11*)**.[339] The 1930s also saw the development of archaeology in the outlying regions of the Soviet Union.[340] During this period, many major sites of the Transcaucasus were excavated including the Uratian fortress at Karmir Blur by Piotrovskii and the Ozni-Beshtasheni and Trialeti kurgans by Kuftin **(*figs. 3.12 and 3.13*)**.[341] Using the cultural-historical approach, Kuftin was the first to produce a regional periodisation of the Transcaucasus based upon a series of successive culture-areas that were unified by shared forms and styles of material culture.[342] Using this same approach, Kuftin was able to articulate the Trialeti assemblage and was one of the first to define Kura-Araxes complex which has formed the basis of subsequent research in the region to this day.[343]

[336] Trigger 1984b, 365-366; Dolukhanov 1993, 152; Sagona 2010a, 145.
[337] Trigger 1984a, 4-5; Trigger 1984b, 365-366; Trigger 1989, 223; Dolukhanov 1993, 152; Lindsay and Smith 2006, 172.
[338] Trigger 1989, 232-233; Lindsay and Smith 2006, 173-174; Sagona 2010a, 146; Klejn 2012, 29.
[339] Trigger 1989, 232-233; Lindsay and Smith 2006, 173-174; Sagona 2010a, 146; Klejn 2012, 29.
[340] Sagona 2010a, 146; Klejn 2012, 32.
[341] Kuftin 1941; Piotrovskii 1950; Smith 2005, 244; Sagona 2010a, 146.
[342] Kuftin 1943; Kuftin and Field 1946; Smith 2005, 244; Sagona 2010a, 146.
[343] Kuftin 1941; Kuftin and Field 1946; Smith 2005, 244; Sagona 2010a, 146.

With the outbreak of the Great Patriotic War in 1941, Soviet archaeology underwent an ideological shift from Marxist internationalism to Soviet nationalism.[344] In the decades since the Revolution, a sense of national self-consciousness and patriotism had been damaged by internationalist propaganda.[345] However, the threat of impending conflict necessitated the ideological mobilisation of nationalism, patriotism, and ethnic self-consciousness. This arose in Soviet archaeology as ethnogenetic theory.[346] Archaeologists became increasingly concerned with the origin of various ethnic groups within the Soviet Union.[347] Special interest was taken in the study of Slavic origins in order to prove the independent and early formation of a unique cultural heritage in a bid to combat German archaeological propaganda claiming racial superiority.[348]

With the introduction of the ethnogenetic framework, Soviet archaeology shifted towards Kossinnism and the Kulturkreise theory. The concept of 'archaeological culture' was reintroduced into Soviet archaeology and interpreted as the material expression of a distinct ethnic group.[349] The concept of *ethnos* formed the basis of Soviet ethnogenetic inquiry and encompassed components of shared language, territory,

[344] Moore 1994, 15; Shnirelman 1995, 129-130; Klejn 2012, 32-33.
[345] Shnirelman 1995, 129-130; Klejn 2012, 32-33.
[346] Trigger 1978, 196; Bulkin et al. 1982, 276; Trigger 1984b, 366; Klejn 1994, 81; Moore 1994, 15; Shnirelman 1995, 120; Shnirelman 1996, 10; Lindstom 2000, 65; Sagona 2010a, 146; Klejn 2012, 32-33.
[347] Humphrey 1984, 311-312; Trigger 1984b, 366; Trigger 1989, 229-230; Arutiunov 1994, 79; Moore 1994, 15; Shnirelman 1996, 10; Kohl 1998, 231-232; Moore 2004, 3045; Sagona 2010a, 146; Klejn 2012, 33.
[348] Klejn 1977, 13-14; Trigger 1978, 196; Trigger 1984b, 366; Trigger 1989, 230; Arutiunov 1994, 80; Shnirelman 1995, 133-135; Kohl 1998, 231-232; Shnirelman 2014, 223.
[349] Kossinna 1911; Veit 1989, 37; Anthony 1990, 896; Shnirelman 1995, 133; Shnirelman 1996, 10; Lindstrom 2000, 64-66; Shnirelman 2014, 236.

material culture, and biological homogeneity.[350] The Soviet interpretation of *ethnos* was derived from Stalin's definition of *ethnos* as:

> "a historically constituted, stable community of people formed on the basis of a common language, territory, economic life, and the psychological makeup manifested in a common culture."[351]

Ethnicity within the archaeological record was considered to be a stable developmental process identifiable through a set of permanent ethnic characteristics involving the formation of a dominant physical type, language, religion, and principle features of material culture.[352] After Stalin's denunciation of Japhetic theory in 1950, ethnogenesis emerged as a leading priority within Soviet archaeological research.[353] The adoption of ethnogenesis as an official theoretical framework provided new opportunities within archaeological research and saw the gradual reintroduction of concepts such as migration, diffusion, and assimilation.[354] The archaeological record reclaimed its diversity and was now populated by a mosaic of distinctive ethnic groups.[355] In search for the origins of the Soviet peoples, ethnogenetic studies bolstered archaeological research in the outlying regions of the Soviet Union. It also encouraged the development of interdisciplinary collaboration and relied heavily on the combined efforts of archaeology, linguistics, biology, and ethnology.[356]

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[350] Arutiunov 1994, 84; Shnirelman 1996, 8-9; Lindstrom 2000, 60-61; Klejn 2012, 109.
[351] Stalin 1975; Saroyan 1996, 402; Moore 2004, 3046-3047.
[352] Arutiunov 1983; Tishkov 1992, 372; Arutiunov 1994, 84; Banks 1996, 18; Shnirelman 1996, 1-8; **S**okolovskii and Tishkov 1996, 191; Lindstom 2000, 60-62; Klejn 2012, 108.
[353] Mongait 1961, 27-28; Howe 1976, 104; Black 1977, 19; Petrova-Averkieva 1980, 26; Trigger 1989, 231-232; Dolukhanov 1993, 150; Shnirelman 1993, 57; Moore 1994, 16; Shnirelman 1995, 120; Dolukhanov 1996, 204; Saroyan 1996, 406; Shnirelman 1996, 1; Slezkine 1996, 861; Sagona 2010a, 146; Klejn 2012, 213; Tikhonov 2014, 169.
[354] Trigger 1978, 196; Trigger 1989, 231-232; Sagona 2010a, 146; Klejn 2012, 33.
[355] Bulkin et al. 1982, 276-278; Trigger 1989, 231-232; Klejn 2012, 34.
[356] Moore 1994, 16.

With a push towards modernisation during the post-war era, the 1950s saw the introduction of cultural resource management into Soviet state legislature. Under the Development Act, companies were required to finance salvage excavations prior to the commencement of construction.[357] As a result, archaeological fieldwork expanded rapidly over the following decades with over 500 excavations and 3000 scholarly publications each year.[358] Under the new legislation, major discoveries were made in the Transcaucasus with the excavation of sites such as Kvatskhelebi and Shulaveris Gora in Georgia, Kultepe and Shomutepe in Azerbaijan, and Artik and Mestamor in Armenia.[359] Some of the major themes of Transcaucasian archaeology were developed during this period with the discovery of the Neolithic settlements of the Aratashen-Shulaveri-Shomutepe complex and the development of regional metallurgical practices during the Chalcolithic and Early Bronze Age.[360]

With the accumulation of a large corpus of archaeological data, new methodological interpretive apparatuses were required. In 1960s, new mathematical and statistical processing techniques were introduced into Soviet archaeology.[361] This coincided with an increase in scientific objectivity and research standards across the discipline.[362] With the death of Stalin in 1953, the post-Stalinist era saw the liberalisation of Soviet scholarship and a limited retreat from Marxist dogmatism. Soviet archaeologists were able to distance themselves from the subjectivity of the

[357] Dolukhanov 1993, 152-154; Dolukhanov 1996, 205; Koryakova 2002, 242; Lindsay and Smith 2006, 173-174; Sagona 2010a, 146; Klejn 2012, 35.
[358] Sagona 2010a, 146; Klejn 2012, 35.
[359] Abibullaiev 1959; Dzhavakhishvili and Glonti 1962; Narimanov 1965; Dzhaparidze and Dzhavakhishvili 1971; Khachatrian 1979; Khanzadian 1995; Sagona 2010a, 146.
[360] Sagona 2010a, 146.
[361] Areshian 1987, 114; Lindsay and Smith 2006, 173-174; Kradin 2010, 251; Klejn 2012, 35.
[362] Sagona 2010a, 146; Klejn 2012, 35.

ethnogenetic framework.[363] By the late 1960s, models of autochthonous development were rejected while theories of migration and diffusion became increasingly popular. The 1960s also saw a renewed interest in technological studies of archaeology with archaeobotanical and faunal analysis in addition to the development of paleometallurgy.[364]

Despite these advances, theoretical concepts in Soviet archaeology remained loosely developed and inadequately defined. After the denunciation of Marr, Soviet archaeologists did not attempt to develop a central theoretical apparatus to replace Marr's Japhetic theory.[365] Theoretical archaeology was by-passed as archaeologists continued to evaluate data in terms of Marxist ideological concepts. In the absence of a well-defined theoretical framework, Soviet archaeologists reverted to the application of empiricism as a primary research method.[366]

With the easing of international tensions between the Soviet Union and the West, the 1970s saw the diversification of theoretical perspectives.[367] Two theoretical subgroups, centred around traditional and innovative approaches, emerged to characterise Soviet archaeology in its later stages. The traditional subgroup consists of approaches which were developed during the early stages of Soviet archaeology including archaeological history, archaeological ethnogenetics, and archaeological sociology.[368] According to archaeological history, archaeology is viewed as a sub-

[363] Trigger 1989, 234; Lindsay and Smith 2006, 173-174; Sagona 2010a, 146; Klejn 2012, 35-36; Tikhonov 2014, 174.
[364] Chernykh 1966; Tretyakov 1966, 119; Artamonov 1967, 26-27; Trigger 1989, 238; Dolukhanov 1996, 205; Smith 2005, 247-248; Lindsay and Smith 2006, 173-174; Klejn 2012, 37; Tikhonov 2014, 174.
[365] Klejn 1977, 13.
[366] Klejn 1977, 13; Koryakova 2002, 250; Klejn 2012, 55.
[367] Bulkin et al. 1982, 281; Trigger 1989, 234; Dolukhanov 1993, 150-151; Koryakova 2002, 242; Smith 2005, 248; Lindsay and Smith 2006, 176; Sagona 2010a, 147; Klejn 2012, 39.
[368] Bulkin et al. 1982, 281; Sagona 2010a, 147; Klejn 2012, 62.

discipline of history or as "history armed with a spade."[369] Both history and archaeology were used to solve the same problems dealing with past events and the reconstruction of social processes of the past. As history and archaeology were viewed as one and the same, historical archaeologists did not develop any specialised theory for the interpretation of archaeological data that might distinguish the discipline from historical methodology.[370] Without the development of specialised interpretive approaches, archaeological history lent itself to generalisations within the archaeological record and remained descriptive rather than analytical.[371]

Archaeological ethnogenetics sought to identify the origins of modern ethnolinguistic groups in the archaeological record.[372] This approach relied upon the identification of archaeological culture as synonymous with an ancient ethnos which was identifiable through a set of ethnic indicators transmitted through the archaeological record.[373] Change in the archaeological record was conceptualised in terms of the movements of ethnic groups transporting language, culture, and biology.[374] Not only did archaeological ethnogenetics project modern ethnic groups into the past, its limited research focus reduced the archaeological record to a series of ethnic formations and failed to address the social structure of ancient societies.[375]

Archaeological sociology developed from the study of the early agricultural and urban cultural complexes of Central Asia and the Caucasus.[376] The sociological approach

[369] Artsikhovsky 1940, 3; Klejn 1993a, 339; Koryakova 2002, 247; Kradin 2010, 250; Sagona 2010a, 147; Klejn 2012, 62-63.
[370] Klejn 1993a, 339; Trigger 1989, 235-236; Koryakova 2002, 242; Sagona 2010a, 147; Klejn 2012, 62-64.
[371] Trigger 1989, 236; Sagona 2010a, 147.
[372] Lindstrom 2000, 71; Koryakova 2002, 247.
[373] Koryakova 2002, 242; Sagona 2010a, 147; Klejn 2012, 68.
[374] Lindstrom 2000, 71.
[375] Lindstrom 2000, 71; Klejn 2012, 69.
[376] Trigger 1989, 236; Sagona 2010a, 147; Klejn 2012, 69-70.

sought to reconstruct the economic, ideological, and social structures of ancient societies and to establish general laws regarding the processes of change in the archaeological record.[377] Archaeological sociology relied heavily on western theoretical concepts including neo-evolutionism and cultural materialism, as well as aspects of New Archaeology such as systems theory.[378] Much like archaeological history, the sociological approach had no firm theoretical apparatus at its basis. Consequently, archaeological sociology failed to bridge archaeological material culture with persuasive historical interpretations.[379]

The innovative theoretical subgroup consists of four approaches including descriptive archaeology, archaeotechnology, archaeological ecology, and sequential-theoretical archaeology. Descriptive archaeology emerged in the 1960s and reintroduced aspects of formalism into Soviet archaeology.[380] This approach sought, not simply to describe archaeological material, but to develop an objective approach to the analysis of archaeological data.[381] This resulted in the introduction of new methodological initiatives including the integration of mathematical methods and computer analysis into the discipline.[382] The formal analysis of artefacts also led to the revival and redevelopment of relative chronologies within Soviet archaeology.[383]

[377] Masson 1976, 12; Bulkin et al. 1982, 281; Trigger 1989, 236; Koryakova 2002, 248; Kradin 2010, 250-251; Sagona 2010a, 147; Klejn 2012, 70-71.
[378] Bulkin et al. 1982, 281; Koryakova 2002, 248; Kradin 2010, 250-251; Sagona 2010a, 147; Klejn 2012, 69-70.
[379] Sagona 2010a, 147; Klejn 2012, 72.
[380] Trigger 1989, 239; Koryakova 2002, 249; Kradin 2010, 251; Klejn 2012, 73.
[381] Koryakova 2002, 249; Sagona 2010a, 147; Klejn 2010, 73.
[382] Trigger 1989, 239; Koryakova 2002, 249; Kradin 2010, 251; Klejn 2012, 73.
[383] Koryakova 2002, 248; Klejn 2012, 74.

However, relying solely on descriptive methods, it failed to adequately relate material culture to its historical context.[384]

The archaeotechnological approach developed as an alternative to the historical and descriptive analytical methods.[385] Much like descriptive archaeology, the archaeotechnological approach stressed scientific objectivity and made use of hard sciences such as petrography, dendrology, and metallography.[386] However, the methods used by this approach were adapted from fields outside of archaeology. Without a developed archaeological theoretical apparatus, the archaeotechnological approach failed to link materials analysis to the explanation of social and cultural dynamics in the archaeological record.[387]

Archaeological ecology was committed to the study of the relationship between prehistoric societies and their natural environment.[388] According to the ecological approach, archaeological cultural complexes and their material manifestations were a product of the dynamic interactions between humans and natural ecology.[389] Articulating the relationship between ancient societies and their natural environment was considered fundamental to the reconstruction of the early stages of human history.[390] However, much like the archaeotechnological approach, archaeological

[384] Sagona 2010a, 147; Klejn 2012, 74.
[385] Sagona 2010a, 147.
[386] Bulkin et al. 1982, 283; Trigger 1989, 238; Koryakova 2002, 249; Sagona 2010a, 147; Klejn 2012, 76.
[387] Sagona 2010a, 147; Klejn 2012, 77.
[388] Trigger 1989, 238-239; Koryakova 2002, 249; Smith 2005, 248; Sagona 2010a, 147; Klejn 2012, 77-78.
[389] Dolukhanov 1979, 200; Trigger 1989, 238-239; Koryakova 2002, 249; Sagona 2010a, 147; Klejn 2012, 77-78.
[390] Koryakova 2002, 249; Klejn 2012, 77-78.

ecology failed to develop a discipline specific theoretical apparatus and relied on methods derived outside archaeology.[391]

Lastly, the sequential-theoretical approach seeks to develop an extensive theoretical framework that serves to link material culture to aspects of human behaviour.[392] According to this approach, material culture from the archaeological record carries no direct historical information. Rather, historical information regarding the past must be extracted and reprocessed using a multi-phase research scheme drawing on aspects from all the available archaeological approaches.[393] The priority of the archaeologist is to transform a series of archaeological cultures into a meaningful sequence that can be compared to other cultural sequences in an attempt to accurately reconstruct historical processes of the past.[394] With the development of several theoretical schools, by the 1980s, archaeology in the Soviet Union had developed into a dynamic field of research. Despite such developments, prior to the collapse of the Soviet Union, archaeology in Russia and the Transcaucasus still remained unfamiliar to academics in the west.

Archaeology after the Soviet Union: Current Themes and Directions in Transcaucasian Archaeology

By the 1990s, the failure of Gorbachev's *glasnost* policy to introduce aspects of democratic reform and the Soviet Union's inability to compete with western global markets marked the beginning of the end of the Soviet Union. With the collapse of the Soviet Union, the new political order necessitated major transformations within the

[391] Klejn 2012, 79.
[392] Trigger 1989, 238; Koryakova 2002, 250; Sagona 2010a, 148; Klejn 2012, 79.
[393] Koryakova 2002, 250; Sagona 2010a, 148; Klejn 2012, 80.
[394] Koryakova 2002, 250; Sagona 2010a, 148; Klejn 2012, 80.

sphere of academia. In the aftermath, archaeology in Russia and the former union republics became decentralised.[395] The Academy of Sciences of the USSR, which acted as the governing body of scientific research throughout the Soviet Union, ceased to exist. In Russia, the Institute of Archaeology was divided into two independent institutions situated in Moscow and St. Petersburg while the newly independent republics of Georgia, Armenia, and Azerbaijan continued to develop their own institutional frameworks for the management of archaeology.[396] In the absence of the Academy, archaeology as a discipline saw a decline in professionalism, methodology, and practice as independent centres and institutions emerged around local universities and museums.[397] The dissolution of the Academy also resulted in the breakdown of the scientific communication network. The collapse of the Soviet Union erected political boundaries within archaeological research as interregional cooperation between Russia and the former union republics declined.[398] Archaeology in the region became increasingly fragmented.

The transition to a market economy also severely disrupted archaeological research. In the wake of an economic crisis, state funding was drastically cut leading to a rapid decline in archaeological research and scholarly publications. Largescale research projects and fieldwork ceased.[399] Universities struggled to support the discipline

[395] Dolukhanov 1993, 154; Chernykh 1995, 139; Khazanov 2000, 40; Koryakova 2002, 244; Lindsay and Smith 2006, 178; Beliaev et al. 2009, 9; Sagona 2010a, 148; Klejn 2012, 48; Tikhonov 2014, 174.
[396] Dolukhanov 1993, 154; Lindsay and Smith 2006, 178; Beliaev et al. 2009, 9; Sagona 2010a, 148; Tikhonov 2014, 174.
[397] Chernykh 1995, 140; Kohl 2007, 16; Kradin 2010, 246; Klejn 2012, 48.
[398] Dolukhanov 1993, 154; Chernykh 1995, 139; Koryakova 2002, 244; Kohl 2007, 16; Beliaev et al. 2009, 9; Kradin 2010, 247; Klejn 2012, 47; Tikhonov 2014, 174.
[399] Mervis 1992, 733; Pokrovsky 1992, 530; Dolukhanov 1993, 154; Chernykh 1995, 139-140; Khazanov 2000, 40; Koryakova 2002, 244; Lindsay and Smith 2006, 177; Beliaev et al. 2009, 9; Sagona 2010a, 148; Klejn 2012, 47; Tikhonov 2014, 174.

resulting in a brain drain as professionals left the department for other financially viable career paths.[400] However, as the research output from institutions declined, salvage excavations continued to receive funding from independent companies. The rise in oil prices and the increased demand for modern infrastructure spurned the development of salvage archaeology, particularly in Georgia and Azerbaijan with the construction of major pipelines.[401] While academic institutions were caught in the grip of financial crisis, salvage archaeology was fundamental in securing funding to support the discipline.[402]

Immediately after the collapse of the Soviet Union ethnic tensions, which had long since simmered beneath the surface of the Soviet administration, came to the fore and the Transcaucasus was engulfed in a series of violent ethnic conflicts. Between 1988 and 1994 three major conflicts erupted including the Armenian-Azerbaijani war in the region of Nagorno-Karabakh, the Abkhaz-Georgian war, and the South Ossetia war as part of the Georgian-Ossetian conflict.[403] The rise of ethnic nationalism in the former union republics of the Transcaucasus emerged directly from the hierarchical ethno-political administrative arrangement of the former Soviet state.[404] With the politicisation of ethnicity by the Bolsheviks in the 1920s, the Soviet Union emerged as a federation of political divisions based on ethno-territorial units organised into an overarching administrative hierarchy encompassing national republics through to

[400] Chernykh 1995, 139-140; Lindsay and Smith 2006, 178; Beliaev et al. 2009, 9; Kradin 2010, 252; Klejn 2012, 47.
[401] Smith 2005, 249; Beliaev et al. 2009, 9; Kradin 2010, 246-247; Klejn 2012, 47; Hopper et al. 2018, 14.
[402] Smith 2005, 249; Beliaev et al. 2009, 9; Kradin 2010, 246-247; Klejn 2012, 47; Hopper et al. 2018, 14.
[403] Dolukhanov 1993, 154; Kohl 1993, 183-184; Chernykh 1995, 143; Kohl and Tsetskhladze 1995, 149; Dolukhanov 1996, 210; Kohl 1998, 224; Smith et al. 1998, 48; Beliaev et al. 2009, 13; Kohl 2012, 153; Smith 2012a, 71; Shnirelman 2014, 212.
[404] Saroyan 1996, 403-404; Shnirelman 2001, 383.

national districts.[405] The development of a ranked ethnic system within the administration of the Soviet Union allowed for the articulation of ethnic nationalist ideologies and served to reinforce ethnic cohesion, particularly in the Transcaucasian republics.[406]

With the collapse of the Soviet Union, post-Soviet archaeology in the Transcaucasus has since developed within the context of politicised ethnic conflicts. The rise of nationalist archaeologies has seen the use of the cultural-historical approach and theories of ethnogenetics in an attempt to project modern ethnic groups and political boundaries into the past.[407] Archaeology has been actively employed as a powerful tool in the bid to legitimise territorial disputes, to develop and foster a sense of national and ethnic self-identity, and in the political and ideological struggle for cultural and ethnic supremacy.[408] Since the outbreak of regional conflicts, following the collapse of the Soviet Union, the Transcaucasus has since stabilised. However, many disputes remain unresolved and archaeology continues to play a leading role in fostering ethno-territorial and political friction. International archaeologists must bear this is mind if they are to successfully interpret the complex archaeological record of the Transcaucasus.[409]

Despite the instability caused by ethnic conflicts, since *perestroika* the Transcaucasus has emerged as a centre of international collaborative research

[405] Suny 1993, 87; Verdery 1998, 293-294; Saroyan 1996, 403-404; Shnirelman 2001, 383; Smith 2005, 248.
[406] Verdery 1998, 239; Saroyan 1996, 403-404; Shnirelman 2001, 383.
[407] Fowler 1987, 240; Shennan 1989, 5-6; Kohl 1993, 183-184; Kaiser 1995, 109; Kohl and Tsetskhladze 1995, 150-151; Dolukhanov 1996, 210; Shnirelman 1996, 61; Kohl 1998, 231; Kohl 2007, 1; Kohl 2012, 153.
[408] Dragadze 1979, 122; Fowler 1987, 240; Shennan 1989, 5-6; Kohl 1993, 183-184; Arutuinov 1994, 79; Chernykh 1995, 143; Kaiser 1995, 109; Kohl and Tsetskhladze 1995, 150-151; Dolukhanov 1996, 210; Shnirelman 1996, 2; Kohl 1998, 231; Smith et al. 1998, 59; Beliaev et al. 2009, 13; Kohl 2012, 153; Shnirelman 2014, 220.
[409] Kohl 1993, 184; Kohl 1998, 231; Kohl 2012, 153.

programmes.[410] International research has since changed the face of archaeology in the Transcaucasus. It has provided an invaluable source of funding in addition to introducing new theories and methodologies that move beyond the cultural-historical and ethnogenetic perspectives.[411] Transcaucasian prehistory, from the Neolithic through to the Early Bronze Age, has proved to be one of the most dynamic areas of research within Transcaucasian archaeology.[412] International collaborative research projects are conducted on a regional basis in addition to site specific investigations.

Regional investigations seek to develop a broad understanding of the archaeological record, stretching over several chronological periods, in order to establish a unified prehistory of the Transcaucasus.[413] Such programmes endeavour to articulate major transformations within the archaeological record in relation to the development of complex societies and their social and political dynamics in addition to their interaction with the prehistoric environment.[414] One of the earliest collaborative regional programmes, the International Programme for Anthropological Research in the Caucasus (IPARC), began in the late 1980s.[415] IPARC was a joint collaborative project between American, Armenian, and Georgian archaeologists who conducted excavations at the sites of Horom in Armenia, Satkhe in Georgia, and Velikent in Daghestan.[416] IPARC

[410] Lindstrom 2000, 57; Koryakova 2002, 244; Smith 2005, 250; Lindsay and Smith 2006, 165; Kradin 2010, 243-244; Sagona 2010a, 148; Avetisyan and Bobokhyan 2012, 11-12; Akashi et al. 2018, 76; Helwing and Aliyev 2018, 59; Hopper et al. 2018, 12; Ricci et al. 2018, 1446.
[411] Smith 2005, 250; Lindsay and Smith 2006, 178; Kradin 2010, 258; Sagona 2010a, 148; Avetisyan and Bobokhyan 2012, 10; Akashi et al. 2018, 76; Helwing and Aliyev 2018, 59.
[412] Lindsay and Smith 2006, 165.
[413] Badaljan et al. 1992; Kohl et al. 1992; Badaljan et al. 1993; Badaljan et al. 1994; Gadzhiev et al. 1995; Gadzhiev et al. 1997; Smith 2005, 250; Lindsay and Smith 2006, 177.
[414] Avetisyan et al. 2000, 19; Lindsay and Smith 2006, 178; Badalyan et al. 2008, 45; Badalyan et al. 2010, 265; Sagona 2010a, 148; Lyonnet et al. 2012, 3-4.
[415] Badaljan et al. 1994, 1; Smith 2005, 250; Lindsay and Smith 2006, 177.
[416] Badaljan et al. 1992; Kohl et al. 1992; Badaljan et al. 1993; Badaljan et al. 1994; Gadzhiev et al. 1995; Gadzhiev et al. 1997; Smith 2005, 250; Lindsay and Smith 2006, 177.

set a precedent for collaborative archaeological research in the Transcaucasus and paved the way for future research programmes including the joint Armenian-American Project for the Archaeology and Geography of Ancient Transcaucasian Sites or Project ArAGATS.[417] Beginning in 1998, Project ArAGATS is the longest running collaborative, archaeological research project in the Transcaucasus.[418] The project began with the first systematic transect survey of the northern flank of Mount Aragats and the Tsaghaovit plain. The survey was followed by test excavations at five fortress sites and four cemeteries before shifting focus towards intensive excavations at the two fortress sites of Gegharot and Tsaghaovit **(*figs. 3.14 and 3.15*)**.[419] Two Middle to Late Bronze Age kurgans, near the village of Gegharot, were also excavated as part of this project.[420]

Other regional projects include the Nakhichevan Archaeological Project which began in 2006 as a joint Azerbaijani-American collaboration.[421] The project initiated extensive surveys of the Arpaçay river system in Şerur Rayon in addition to deep soundings at the Early Bronze Age sites of Kültepe 2 and Maxta **(*fig. 3.16*)**.[422] The Ancient Kura Project is another collaborative project which begun in 2010 as a joint initiative between Georgian, Azerbaijani, French, and German archaeologists.[423] With a focus on sites situated along the middle course of the Kura River, the Ancient Kura Project has initiated the extensive excavation of several localities representing a cross-section of

[417] Lindsay and Smith 2006, 177.
[418] Avetisyan et al. 2000; Badalyan et al. 2003; Badalyan et al. 2004a; Smith et al. 2004; Smith 2005, 249-250; Badalyan et al. 2008; Smith et al. 2009; Badalyan et al. 2010b; Badalyan et al. 2014, 149.
[419] Avetisyan et al. 2000, 19; Smith et al. 2004, 5; Lindsay and Smith 2006, 178; Badalyan et al. 2008, 45; Badalyan et al. 2010b, 265; Badalyan et al. 2014, 149.
[420] Badalyan and Smith 2017, 11.
[421] Ristvet et al. 2011, 2-3.
[422] Ristvet et al. 2011, 2-3.
[423] Courcier et al. 2012; Lyonnet et al. 2012; Lyonnet et al. 2015; Helwing et al. 2017, 4; Ricci et al. 2018, 1446.

archaeological periods ranging from the sixth through to the third millennium B.C.E. The sites include the Neolithic site of Aruchlo in Eastern Georgia, the multi-period site of Mentesh Tepe in Azerbaijan, and a series of Neolithic settlements in the Mil Plain in Southern Azerbaijan with a particular focus on the site of Kamiltepe **(*fig. 3.17*)**.[424]

International, collaborative site-based excavations focus on situating individual settlements within the wider regional archaeological narrative. Site specific excavations provide a detailed image of prehistoric settlements and society and expand upon regional surveys and soundings. Beginning in 1997, the Armenian-French Archaeological Mission sought to investigate the period spanning from the sixth to the fifth millennium B.C.E. in Armenia.[425] This culminated in the excavation of the site of Aratashen from 1999 to 2004 and subsequently the site of Aknashen-Khatunarkh from 2004 to 2009 **(*fig. 3.18*)**.[426] The excavations at these sites are the first to provide new data regarding the Neolithic in Armenia and represent the initial steps to filling the gap in the archaeological record.

Important excavations related to Chalcolithic settlements include the Azerbaijani-French collaboration at the site of Ovçular Tepesi in Nakhichevan as part of the Middle-Araxes Archaeological Project **(*fig. 3.19*)**.[427] Excavations began in 2006 and radiocarbon dates place the site around last quarter of the fifth millennium B.C.E.[428] Roughly contemporary with Ovçular Tepesi is the Areni-1 cave complex in Armenia

[424] Lyonnet et al. 2012, 3-4; Helwing et al. 2017, 4; Helwing and Aliyev 2018, 59; Ricci et al. 2018, 1446.
[425] Badalyan et al. 2004b, 400; Palumbi 2007, 63.
[426] Badalyan et al. 2002; Badalyan et al. 2004b; Palumbi 2007; Badalyan et al. 2010a.
[427] Bakhchaliyev et al. 2009; Bakhchaliyev et al. 2010; Marro 2011; Marro et al. 2011; Berthon et al. 2013; Marro et al. 2014; Marro et al. 2015.
[428] Bakhchaliyev et al. 2009, 55; Bakhchaliyev et al. 2010, 87; Marro 2011, 35; Berthon et al. 2013, 192; Marro et al. 2014, 131; Marro et al. 2015, 157.

which was excavated in 2007 by a collaborative team of Armenian, British, and American archaeologists (***fig. 3.20***).[429] Both sites are significant in that the recent discovery of Kura-Araxes material in Late Chalcolithic contexts has reignited the debate over the genesis of the Kura-Araxes complex.[430]

Other important excavations also include the Armenian-French investigations at the site of Godedzor as part of the CAUCASUS archaeological mission.[431] Excavations began at the site as a result of a salvage operation in 2004. The site, dated from the mid to late fourth millennium B.C.E., represents one of the northern-most examples of an Ubaid-related settlement.[432] Godedzor sheds light on the role of the Transcaucasus in the interregional cultural dynamics which have come to define the Chalcolithic period. Azerbaijani-French excavations at the site of Soyuq Bulaq, between 2005 and 2006, in Azerbaijan have also uncovered several Late Chalcolithic kurgans (***fig. 3.21***).[433] Radiocarbon dates place the Late Chalcolithic kurgans within the early fourth millennium B.C.E.[434] They represent some of the earliest examples in the Transcaucasus and have pushed the development of this funerary tradition back by 1000 years.[435]

Important Early Bronze Age sites include the site of Chobareti in southern Georgia. First discovered in 2008, the site was later excavated by a Georgian-Australian collaboration as part of the Georgian-Australian Investigations in Archaeology (GAIA)

[429] Areshian et al. 2012; Wilkinson et al. 2012.
[430] Marro 2011, 35; Marro et al. 2011, 53; Areshian et al. 2012, 129; Wilkinson et al. 2012, 20; Marro et al. 2014, 131; Palumbi and Chataigner 2014, 249; Sagona 2014, 23; Marro et al. 2015, 157.
[431] Chataigner et al. 2010.
[432] Chataigner et al. 2010, 391; Sagona 2014, 41.
[433] Akhundov 2007; Courcier et al. 2008; Lyonnet et al. 2008; Lyonnet 2009; Lyonnet and Guliyev 2010; Courcier 2014.
[434] Courcier et al. 2008, 21; Lyonnet et al. 2008, 36.
[435] Lyonnet et al. 2008, 42; Lyonnet 2009, 44; Lyonnet and Guliyev 2010, 22.

project (***fig. 3.22***).[436] The site is dated to the late fourth millennium B.C.E. and provides a detailed view of early highland Kura-Araxes communities.[437] Evidence of continuity between Late Chalcolithic and early Kura-Araxes burial practices suggests that a Late Chalcolithic level may be located beneath the Early Bronze Age settlement which may provide a stratigraphical link between the two periods.[438] Lastly, the joint Armenian-American excavations at the Early Bronze Age site of Shengavit, conducted between 2009 and 2012, have revealed a large Kura-Araxes settlement (***fig. 3.23***).[439] The earliest levels are dated to the late fourth millennium B.C.E.[440] By the third millennium, at six hectares in size, Shengavit had developed into a major centre for the local Kura-Araxes population.[441] Evidently, international archaeological research has played a major role in stimulating archaeological research in the Transcaucasus. More importantly, it has opened up a dynamic international dialogue which continues to contribute to how we understand the prehistory of the Transcaucasus in addition to its wider role in the processes of interregional contact and exchange that extended to regions further south.

Problems relating to chronology, terminology, typology, and regional comparisons have emerged as major international research directions. A leading priority for archaeological research in the Transcaucasus is the establishment of a reliable chronological framework based on sound radiocarbon dates. During the Soviet period, the early reliance upon uncalibrated radiocarbon dates and isolated samples, later followed by the uncritical adoption of corrected radiocarbon dates, resulted in the

[436] Kakhiani et al. 2013, 2.
[437] Kakhiani et al. 2013, 21-26; Sagona 2014, 37.
[438] Kakhiani et al. 2013, 48-49.
[439] Simonyan and Rothman 2015, 12.
[440] Simonyan and Rothman 2015, 10.
[441] Simonyan and Rothman 2015, 18.

development of an inaccurate chronological framework for the whole of the Transcaucasus.[442] Current archaeological excavations focus on collecting a number of datable samples from securely stratified contexts using the OxCal calibration system to provide accurate calibrated radiocarbon dates.[443]

The establishment of a reliable absolute chronological framework is also fundamental to the development of a unified terminology and regional periodisation. Transcaucasian archaeology is plagued by inconsistent terminology and periodisations which limits our ability to accurately analyse and synthesise archaeological data.[444] This is particularly evident regarding the Late Chalcolithic to the Early Bronze Age transition in the Transcaucasus. For example, the geographically diverse Kura-Araxes complex is referred to by a number of confusing and conflicting terms including Early Transcaucasian Culture, Outer Fertile Crescent Culture, Karaz, Red-Black Burnished Ware, and Khibert Kerak Ware.[445] Additionally, the strong association with the emergence of the Kura-Araxes complex and the Early Bronze Age has become problematic as radiocarbon dates push the development of the Kura-Araxes back to the mid-fourth millennium B.C.E. This has led to disagreements regarding the chronological division between the end of the Late Chalcolithic period and the beginning of the Early Bronze Age.[446] While the periodisation of prehistory may be conceptually useful, terms

[442] Clark 1975; Kavtaradze 1983; Sagona 2014, 24-25.
[443] Sagona 2014, 25.
[444] Palumbi 2008a, 23; Sagona 2014, 27.
[445] Palumbi 2008a, 7.
[446] Kiguradze and Sagona 2003; Marro 2007; Marro 2008; Marro 2010; Marro et al. 2009; Marro et al. 2011; Areshian et al. 2012; Wilkinson et al. 2012; Palumbi and Chataigner 2014; Marro et al. 2014; Sagona 2014; Marro et al. 2015.

such as 'Neolithic,' 'Chalcolithic,' and 'Early Bronze Age' are relative rather than objective and should be used in conjunction with reliable radiocarbon dates.[447]

The typological definition of local cultural assemblages and their regional variants has also emerged as a major problem in Transcaucasian archaeology. With the rejection of the typological method soon after the introduction of Marxism into archaeology, and the fear of committing 'artefactology,' cultural assemblages remained loosely defined.[448] Until recently, the discussion of some Neolithic cultural traditions, such as the Anaseuli and Odishi complexes, in addition to the little known Sioni complex of the Chalcolithic was highly problematic as these assemblages lacked radiocarbon dates and were virtually undefined.[449] Recent archaeological research has initiated the revaluation of local typologies in order to better articulate local complexes and to document processes of change in the archaeological record.

Archaeologists are also concerned with situating the Transcaucasus within the wider regional context of the ancient Near East. The discovery of Halaf and Ubaid related materials from sites such as Kultepe I in Nakhichevan and Aratashen Level II in Armenia indicate that, from the sixth B.C.E., the Transcaucasus was involved within broader systems of interaction that linked communities in the Anatolian and Syro-Mesopotamian regions.[450] Contacts between the Transcaucasus and the ancient Near East were maintained well into the Chalcolithic period, as suggested by the predominance of Chaff-faced ware at sites such as Berikldeebi, Leilatepe, and Boyuk

[447] Sagona 2014, 26.
[448] Miller 1956, 71-78; Howe 1976, 101-102; Trigger 1989, 217-218; Sagona 2010a, 145; Klejn 2012, 23.
[449] Sagona 2014, 42.
[450] Watson 1983, 232; Badalyan et al. 2002; Badalyan et al. 2004b; Palumbi 2007, 63; Kohl 2007, 58; Chataigner et al. 2010, 377; Ricci et al. 2018, 1446.

Kesik, which may also relate to questions regarding the development of the Maikop in the Northern Caucasus.[451] As a result, archaeological developments in the Transcaucasus cannot be considered in isolation. The Transcaucasus, from the Neolithic to the Early Bronze Age, played an active role in interregional networks of interaction and exchange. Current archaeological research in the Transcaucasus may shed light on some of the political, economic, and social processes that characterised Chalcolithic and Early Bronze Age communities from Syro-Mesopotamia to the northern Caucasus.

Conclusion

The development of an archaeological tradition in Russia and the Transcaucasus began with Peter the Great in the 18th century. The first museums and formalised collections of archaeological artefacts, and the establishment of the Imperial Archaeological Commission as the first governmental body for the licensing and management of archaeological fieldwork, would come to form the organisational backbone of a professional archaeology in Russia and the Transcaucasus.[452] The development of regional archaeological centres, the establishment of the Caucasus Archaeological Committee, and the Fifth Archaeological Congress in Tbilisi saw Transcaucasian archaeology emerge as a specialist field of research garnering international attention.[453] There was a general progression towards an increasingly professional archaeological discipline. However, mortuary complexes remained a

[451] Zavaxisvili 1998, 8; Kiguradze 2001b, 38; Kiguradze and Sagona 2003, 44; Akhundov 2007, 95; Ivanova 2007, 7; Museibli 2007; Museibli 2009, 52-53; Marro 2011, 35; Ivanova 2012b, 53; Sagona 2014, 29; Museibli 2015, 58.
[452] Khudiakov 1933, 68-70; Field and Price 1947, 213; Mongait 1961, 67; Trigger 1989, 210; Smith 2005, 238; Lindsay and Smith 2006, 167-168; Kradin 2010, 244; Sagona 2010a, 145; Shnirelman 2014, 222; Tikhonov 2014, 156.
[453] Gamkrelidze 2004, 214; Smith 2005, 239-240; Lindsay and Smith 2006, 170; Gamkrelidze 2010, 43; Sagona 2010a, 145; Avetisyan and Bobokhyan 2012, 9; Smith 2012a, 61-62; Tikhonov 2014, 158.

leading priority in archaeological research and local and regional chronologies were left undeveloped.

After the Revolution of 1917, the course of archaeology in Russia and the Transcaucasus was to deviate dramatically from the contemporary approaches emerging in Europe and the west.[454] Despite processes of early reform, in the 1930s Marxism was formally introduced into Soviet archaeology.[455] The theoretical and ideological restrictions, placed upon Soviet academics during the Stalinist period, saw the adoption of Marr's Japhetic theory as the politically mandated theoretical framework.[456] With the introduction of Marxism and Marr's Japhetic theory, Soviet archaeologists were the first to investigate social relationships within the archaeological record.[457] They were also the first to focus on indigenous development and the role of technology in prehistoric societies.[458] The 1930s also saw the development of settlement archaeology and use-wear analysis.[459] Following the outbreak of the Great Patriotic War, ethnogenesis emerged as the leading theoretical framework for archaeological research as wartime ideology necessitated the shift from Marxist-inspired internationalism to Soviet nationalism.[460] Academia in the Soviet Union remained highly politicised and tightly controlled resulting in loosely defined theoretical and methodological apparatuses in the presence of Marxism.

[454] Black 1977, 1-2; Trigger 1989, 207; Kradin 2010, 244; Sagona 2010a, 145; Shnirelman 2014, 226; Tikhonov 2014, 161-162.
[455] Miller 1956, 75; Trigger 1989, 217-218; Lindsay and Smith 2006, 172; Klejn 2012, 222-223.
[456] Klejn 1977, 12; Trigger 1984b, 365; Malina and Vašíček 1990, 93; Lindstrom 2000, 64; Lindsay and Smith 2006, 172; Klejn 2012, 25.
[457] Trigger 1989, 226; Dolukhanov 1993, 152; Lindstom 2000, 63.
[458] Trigger 1984b, 365-366; Dolukhanov 1993, 152; Sagona 2010a, 145.
[459] Trigger 1984a, 4-5; Trigger 1984b, 365-366; Trigger 1989, 223; Dolukhanov 1993, 152; Lindsay and Smith 2006, 172; Sagona 2010a, 146; Klejn 2012, 29.
[460] Trigger 1978, 196; Bulkin et al. 1982, 276; Trigger 1984b, 366; Klejn 1994, 81; Moore 1994, 15; Shnirelman 1995, 120; Shnirelman 1996, 10; Lindstom 2000, 65; Sagona 2010a, 146; Klejn 2012, 32-33.

In 1991, the ramifications of the collapse of the Soviet Union plunged archaeology into institutional and financial crisis. The transition to a market economy crippled archaeological research within the region. In the absence of state funding, archaeological fieldwork and the publication of excavation reports ceased.[461] The rise of ethnic conflicts in the Transcaucasus also severely disrupted archaeological research. In Georgia, Armenia, and Azerbaijan, nationalist archaeologies have played an active role in fulling ethno-territorial disputes and in the political and ideological struggle for ethnic and cultural supremacy.[462]

In more recent years, archaeology in the Transcaucasus has emerged as a centre of international collaborative research.[463] International research programmes have injected a much-needed financial stimulus for archaeological research in the Transcaucasus. Additionally, such programmes have provided the opportunity to introduce new theoretical, methodological, and analytical techniques into the discipline.[464] With the increase in archaeological research, several themes relating to chronology, terminology, typology, and cross-regional comparisons have emerged as major research directions within current Transcaucasian archaeology in addition to the definition of local complexes. A lack of radiocarbon dates, stratified cultural deposits, and inconsistent typologies has meant that many local assemblages lack strict

[461] Mervis 1992, 733; Pokrovsky 1992, 530; Dolukhanov 1993, 154; Chernykh 1995, 139-140; Khazanov 2000, 40; Lindsay and Smith 2006, 177; Beliaev et al. 2009, 9; Sagona 2010a, 148; Klejn 2012, 47; Tikhonov 2014, 174.
[462] Dragadze 1979, 122; Fowler 1987, 240; Shennan 1989, 5-6; Kohl 1993, 183-184; Arutuinov 1994, 79; Chernykh 1995, 143; Kaiser 1995, 109; Kohl and Tsetskhladze 1995, 150-151; Dolukhanov 1996, 210; Shnirelman 1996, 2; Kohl 1998, 231; Smith et al. 1998, 59; Beliaev et al. 2009, 13; Kohl 2012, 153; Shnirelman 2014, 220.
[463] Lindstrom 2000, 57; Smith 2005, 250; Lindsay and Smith 2006, 165; Kradin 2010, 243-244; Sagona 2010a, 148; Avetisyan and Bobokhyan 2012, 11-12.
[464] Smith 2005, 250; Lindsay and Smith 2006, 178; Kradin 2010, 258; Sagona 2010a, 148; Avetisyan and Bobokhyan 2012, 10.

definitions.[465] Archaeologists are also re-evaluating the long standing view of the Transcaucasus as a passive periphery. Today, archaeological research in the Transcaucasus is actively contributing to the way we understand the course of fundamental political, economic, and social processes that characterised the archaeological record, from the Neolithic to the Early Bronze Age, from Syro-Mesopotamia to the northern Caucasus.

[465] Miller 1956, 71-78; Howe 1976, 101-102; Trigger 1989, 217-218; Sagona 2010a, 145; Klejn 2012, 23.

Chapter Three: Figures



Figure 3.1: Peter the Great (1672-1725) – The father of Russian archaeology (after P. Delaroche https://commons.wikimedia.org/wiki/File:Peter_der-Grosse_1838.jpg).



Figure 3.2: Tsar Alexander II (1818-1881) – Founder of the Imperial Archaeological Commission (https://en.wikipedia.org/wiki/Alexander_II_of_Russia#/media/File:Alexander_II_of_Russia_photo.jpg).

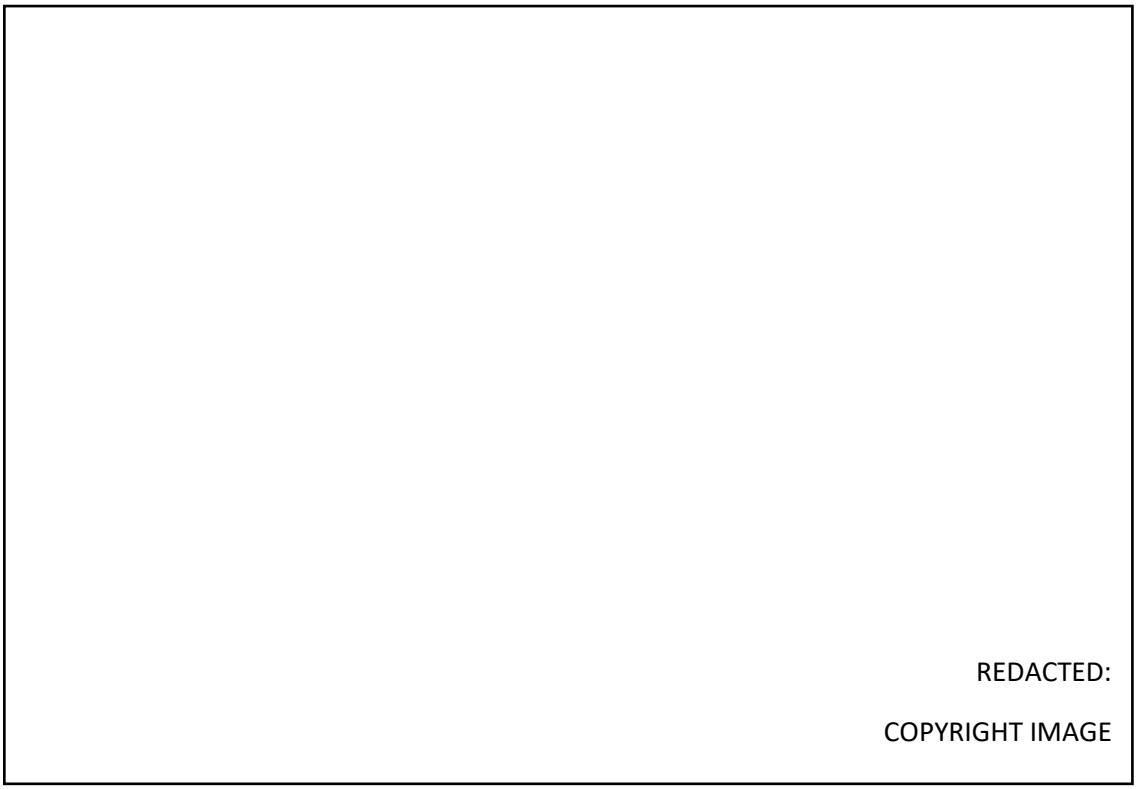


Figure 3.3: Count Uvarov – Founder of the Moscow Archaeological Society (after Tikhonov 2014, Fig. 9.2).

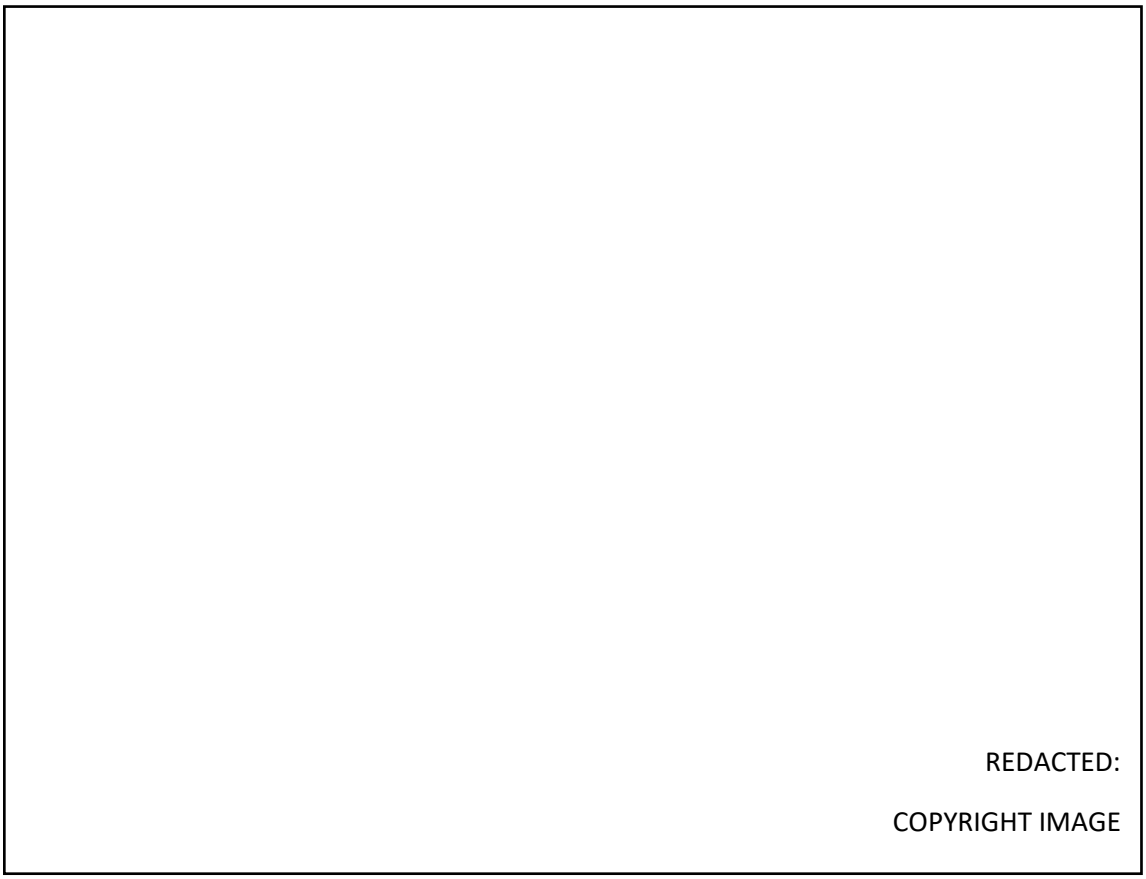


Figure: 3.4: Countess Uvarova – Head of the Moscow Archaeological Society after the death of her husband (after Klejn 2012, Fig. 2.1).

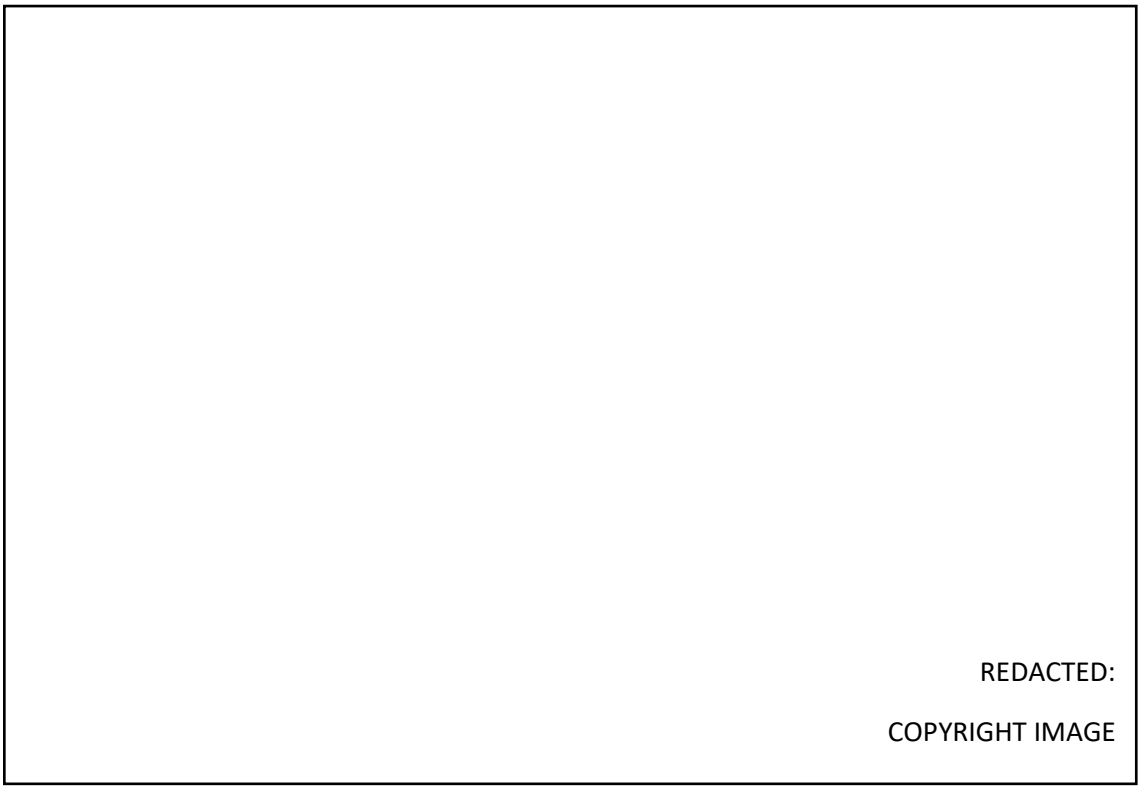


Figure 3.5: Gorodstov – Proponent of the Formalist School within Russian Imperial Archaeology (after Klejn 2012, Fig. 2.3).

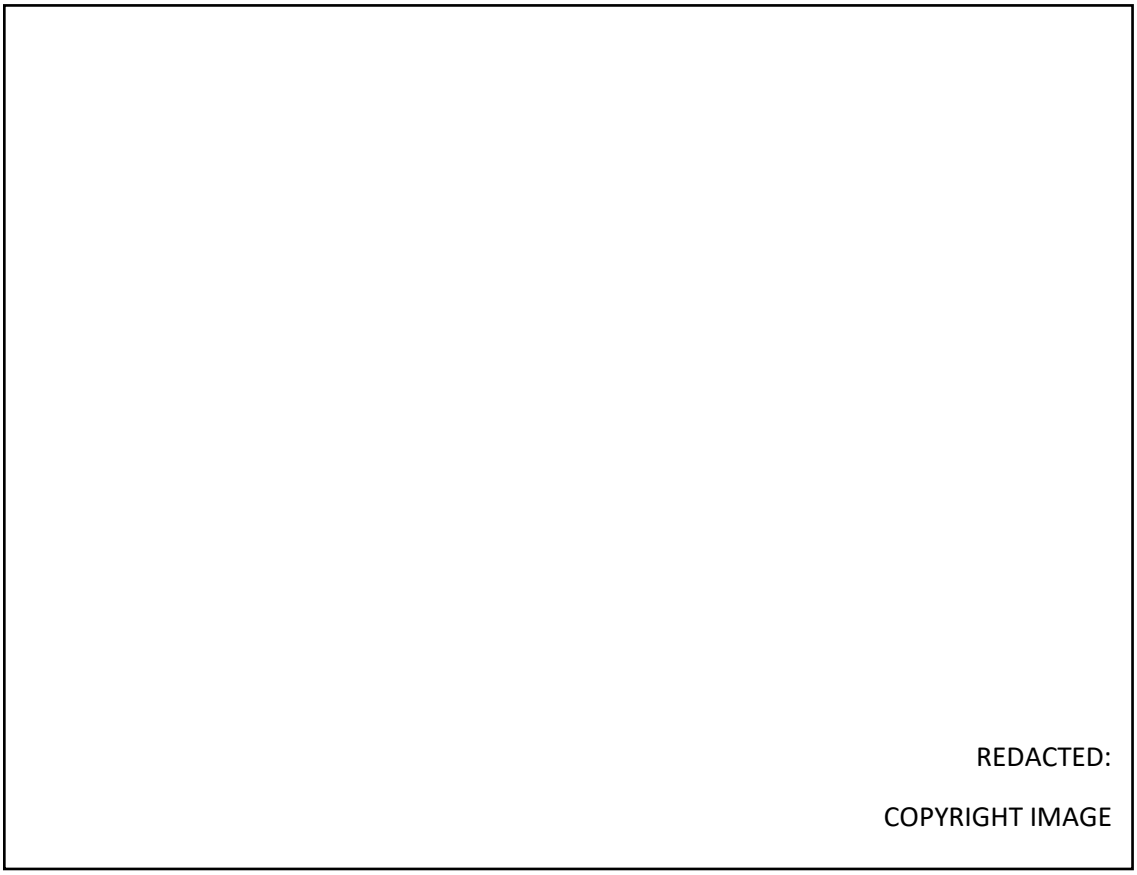


Figure 3.6: Spitzyn – Proponent of the Empirical School within Russian Imperial Archaeology (after Klejn 2012, Fig. 2.4).

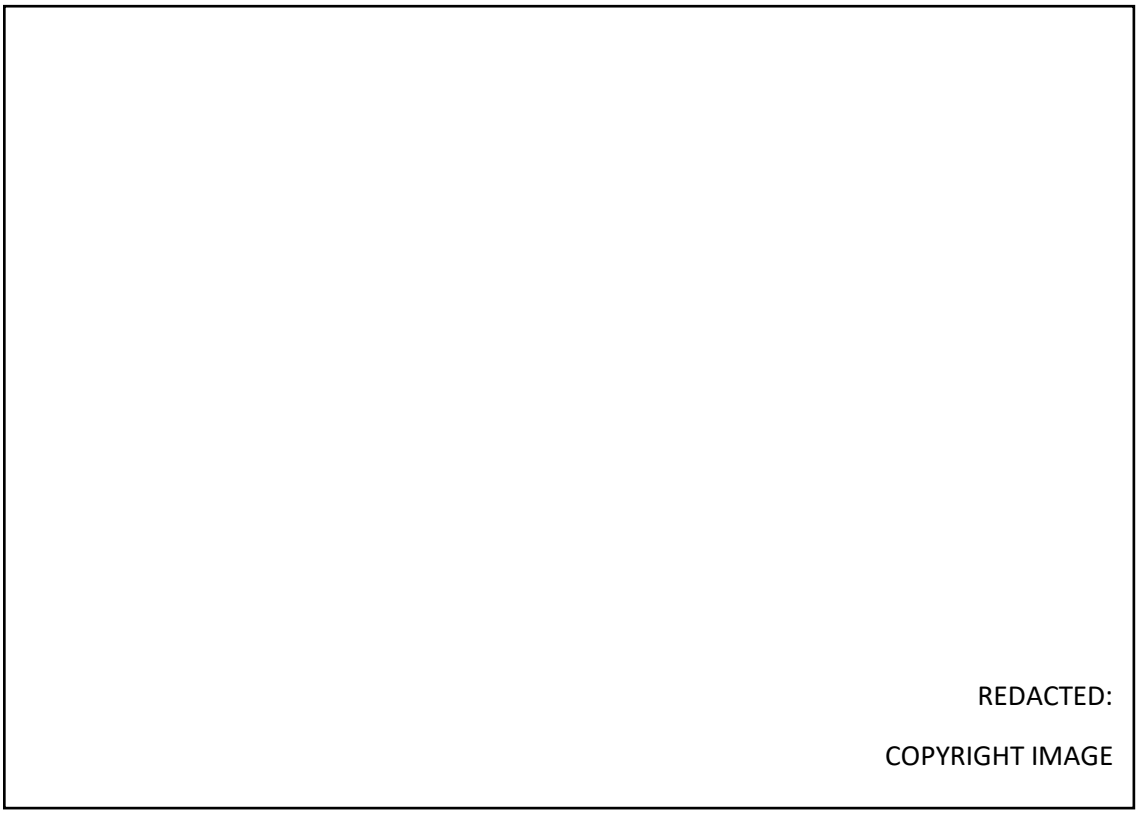


Figure 3.7: Founding members of the Russian Academy for the History of Material Culture, 1919 (after Tikhonov 2014, Fig. 9.4).

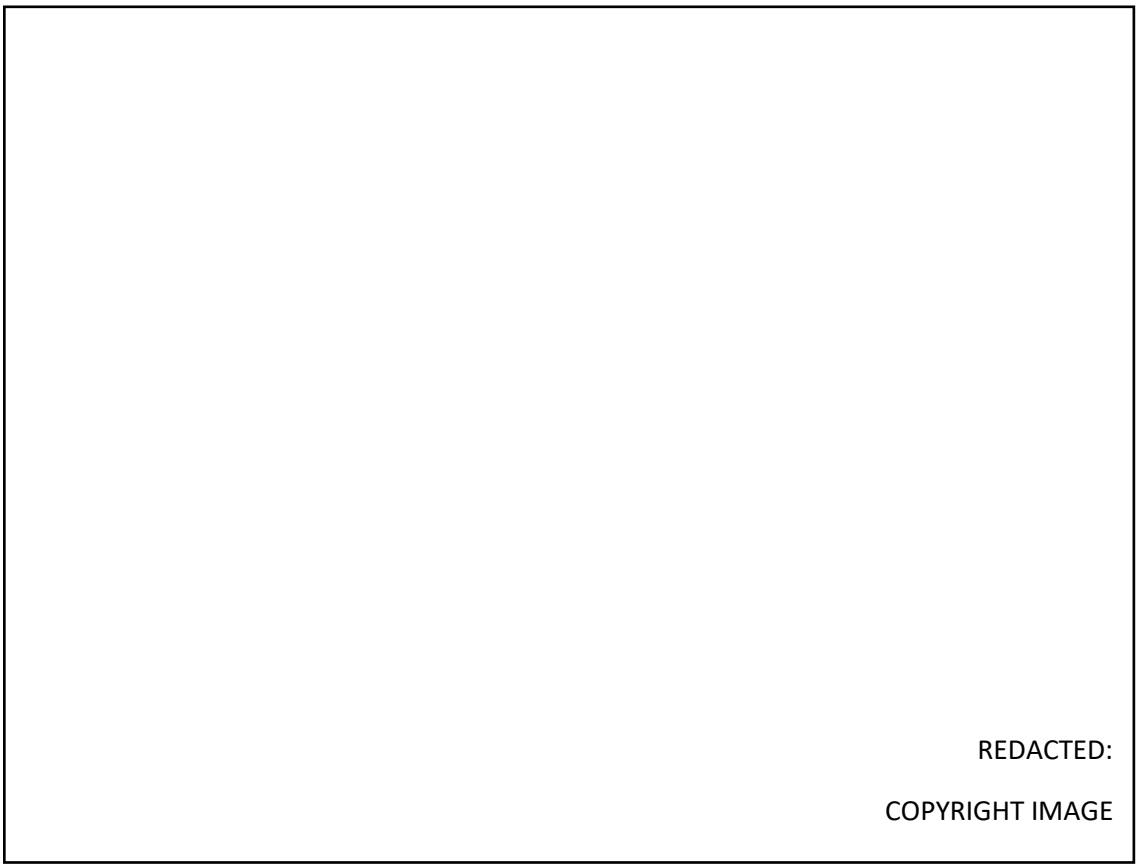


Figure 3.8: Ravdonikas – The first archaeologist to formally introduce Marxist ideology into archaeology (after Klejn 2012, Fig. 12.1).

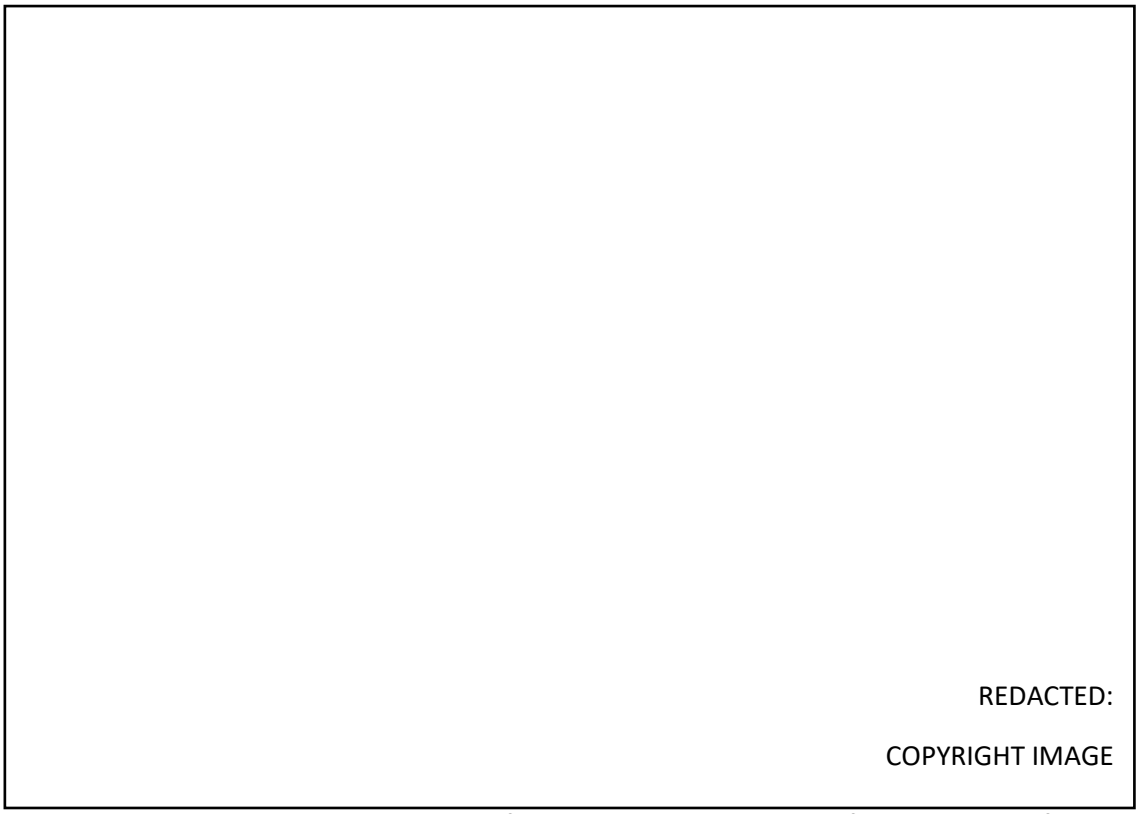


Figure 3.9: Marr – Leading proponent of Japhetic Theory and head of the Academy of the History of Material Culture (after Klejn 2012, Fig. 11.2).

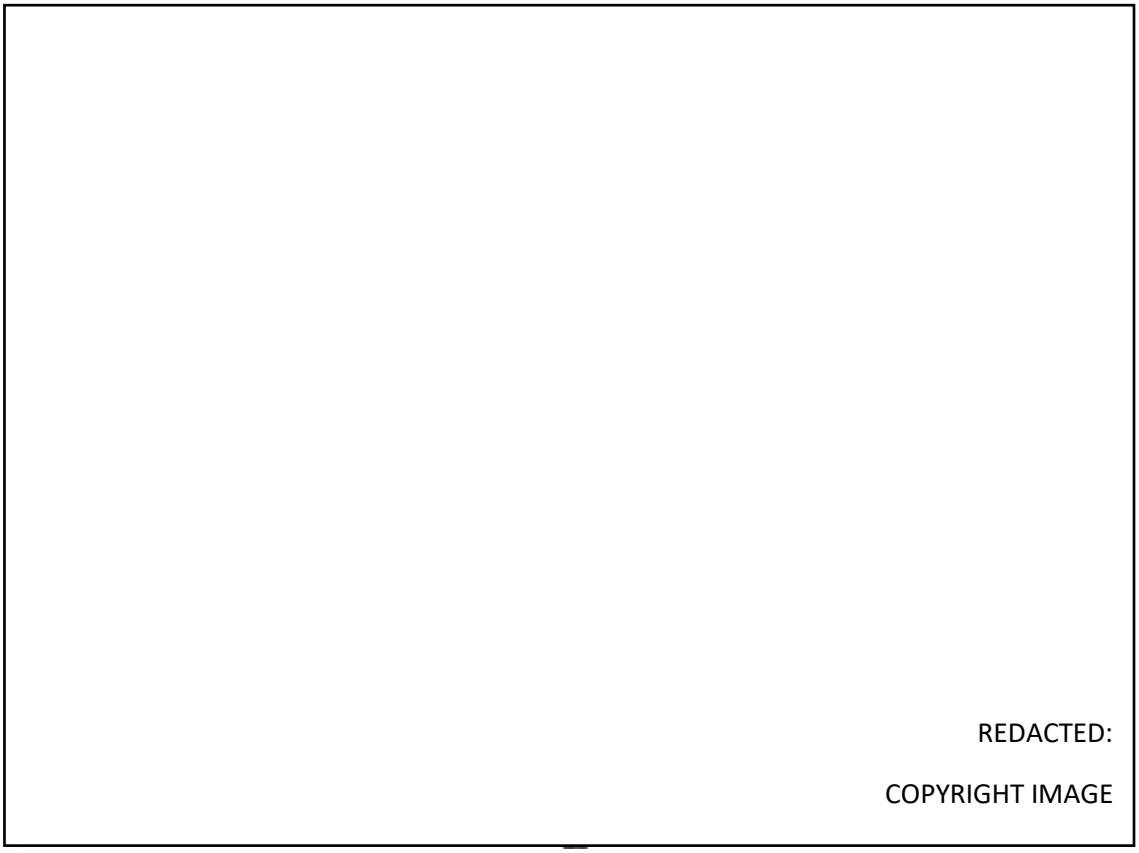


Figure 3.10: The names of scholars and theoretical concepts, which were deemed to be in conflict with Marxist ideology, were struck from academic literature using black ink (after Klejn 2012, Fig. 2.2).

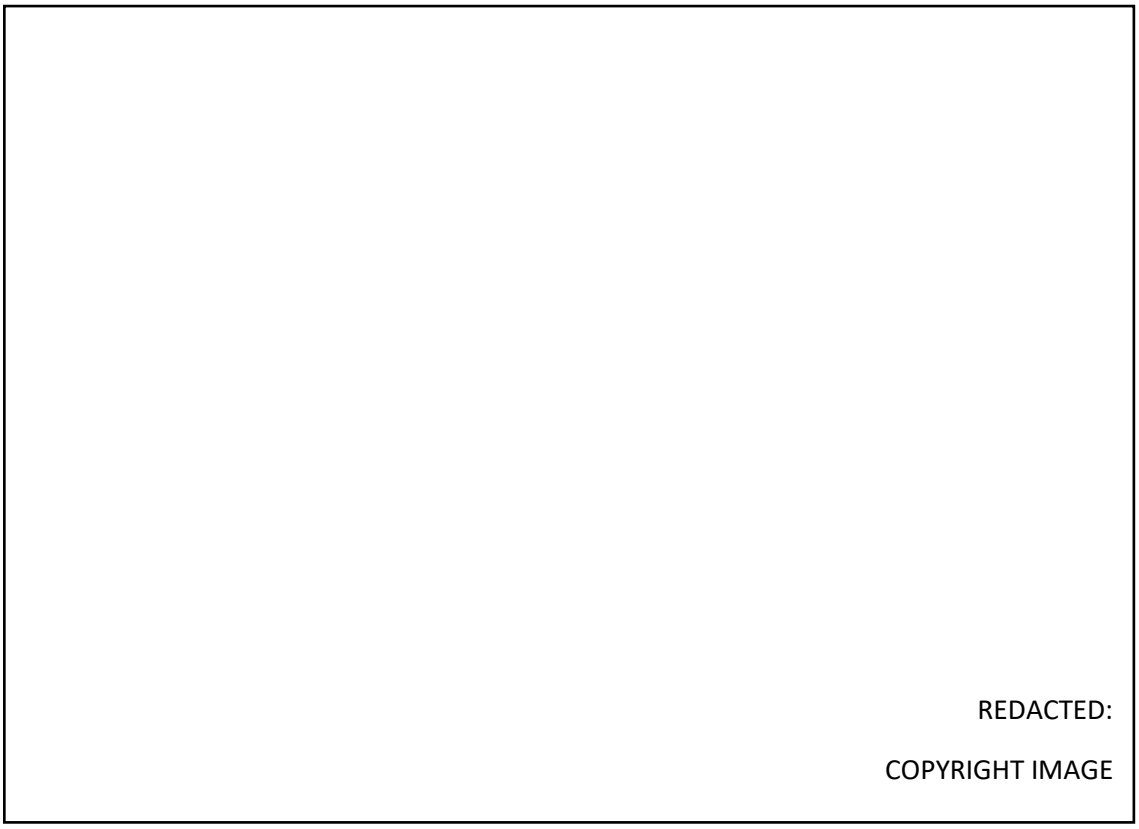


Figure 3.11: Semenov – Founder of the functional-traceological method in archaeology (after Klejn 2012, Fig. 4.3).

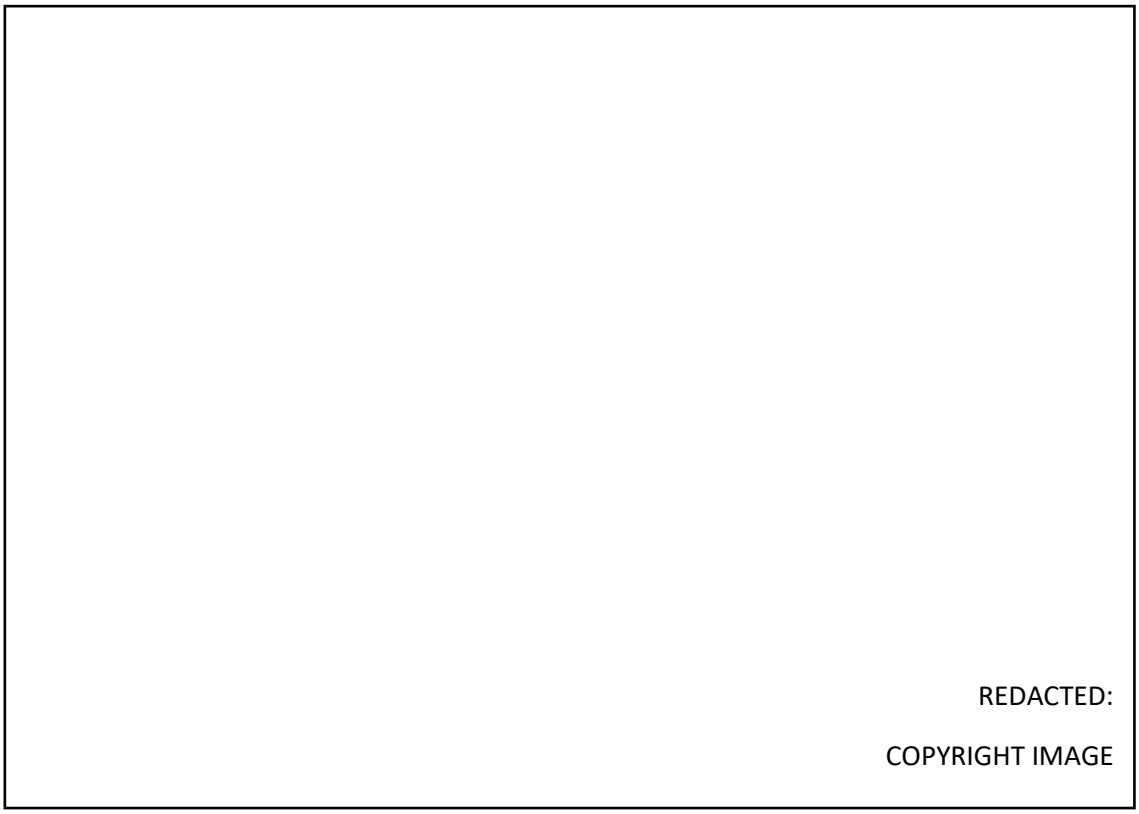


Figure 3.12: Piotrovskii – Responsible for initiating the systematic study of the Kingdom of Urartu (after Tikhonov 2014, Fig. 9.9).

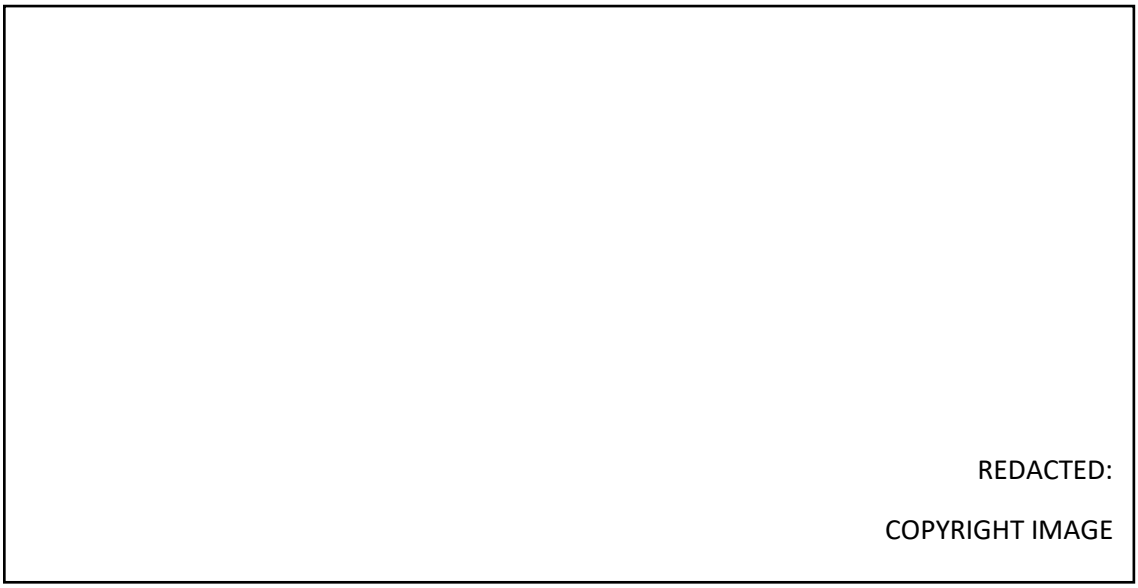


Figure 3.13: Kuftin – The first archaeologist to articulate the Trialeti and Kura-Araxes cultural complexes (after the Georgian National Academy of Sciences http://science.org.ge/old/dis_academ_e.html).

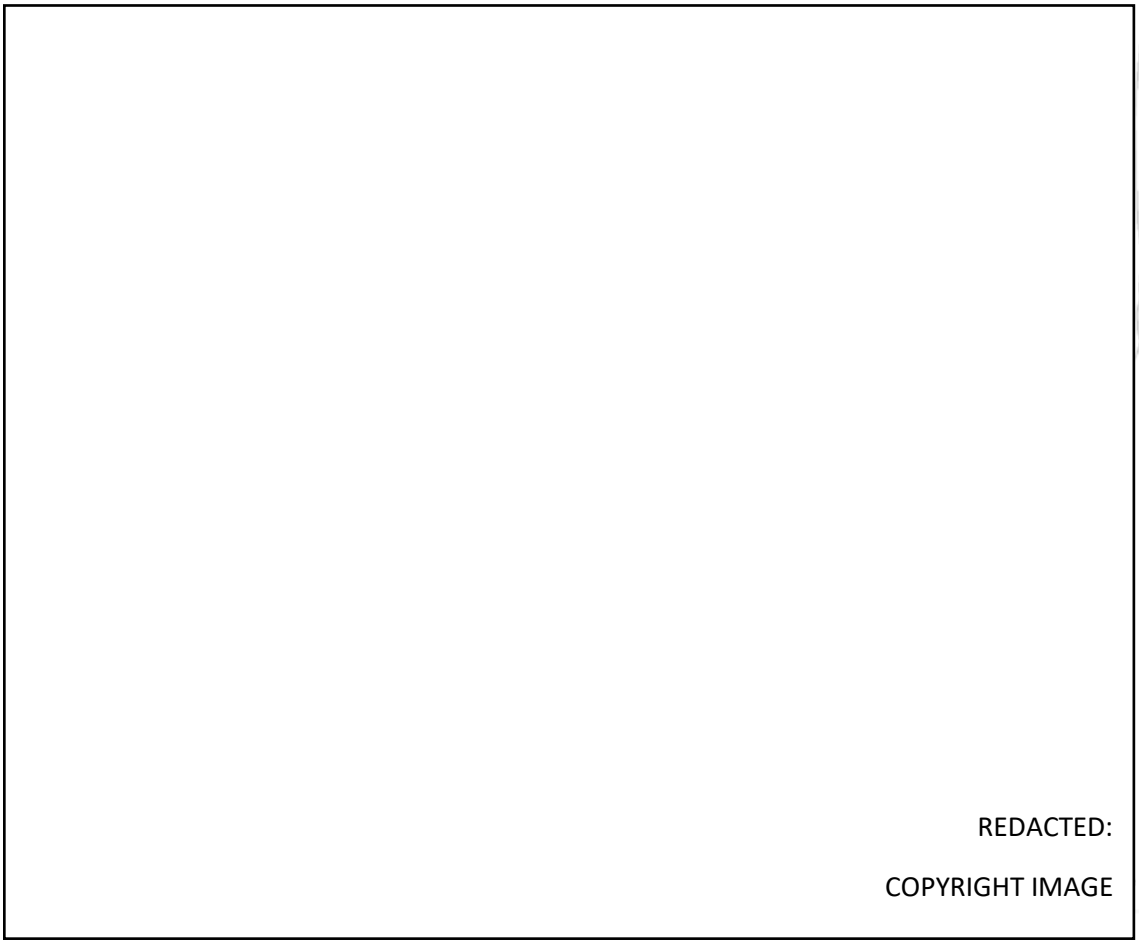


Figure 3.14: Map of the site of Gegharot which is currently under excavation as part of Project ArAGATS (after Badalyan et al. 2008, Fig. 3).

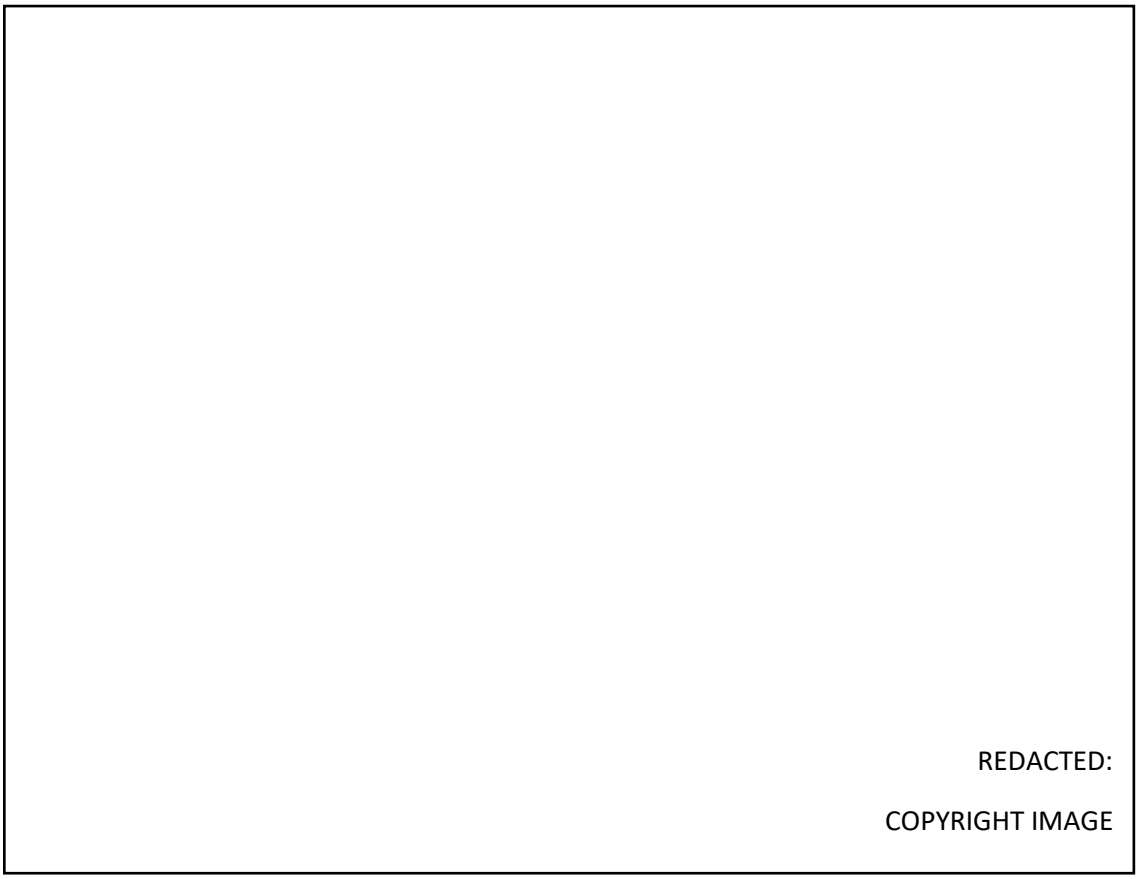


Figure 3.15: Map of the site of Tsaghaovit which is currently under excavation as part of Project ArAGATS (after Badalyan et al. 2008, Fig. 26).

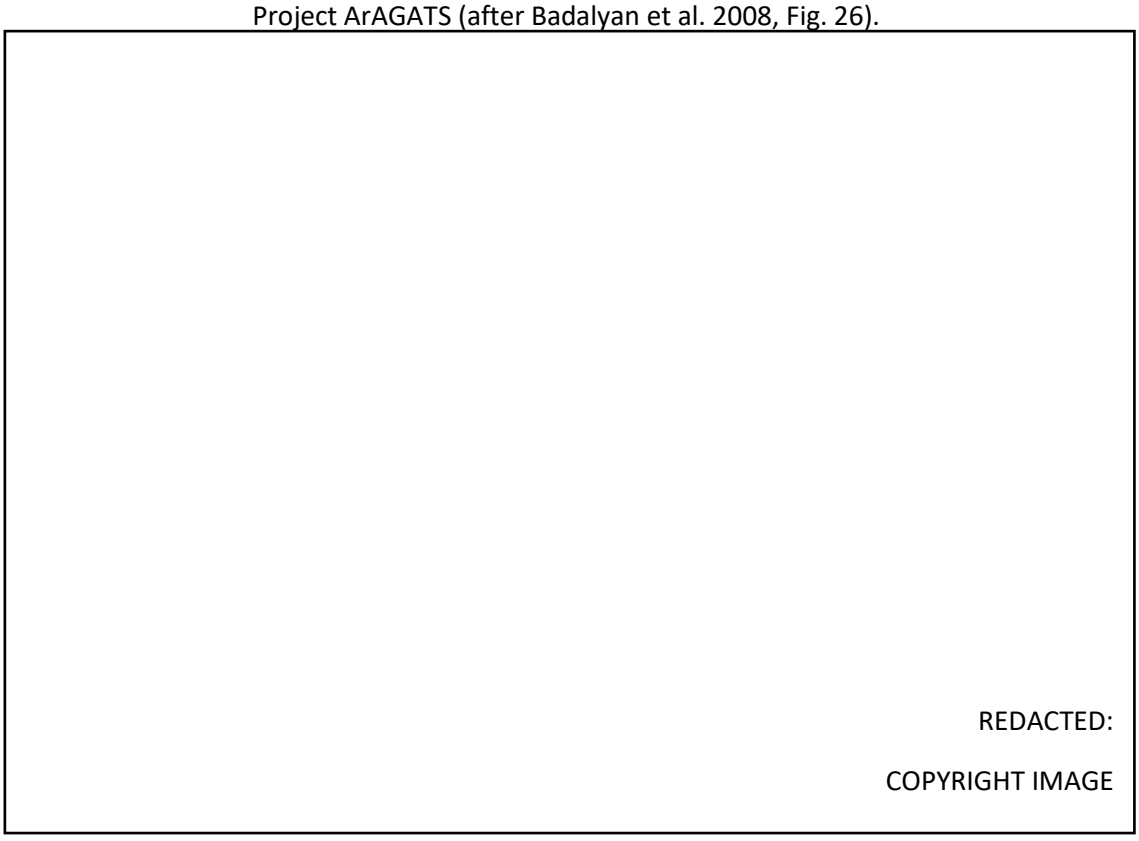


Figure 3.16: Map showing the survey area of the 2006 Naxçivan Archaeological Project (after Ristvet et al. 2011, Pl. I).

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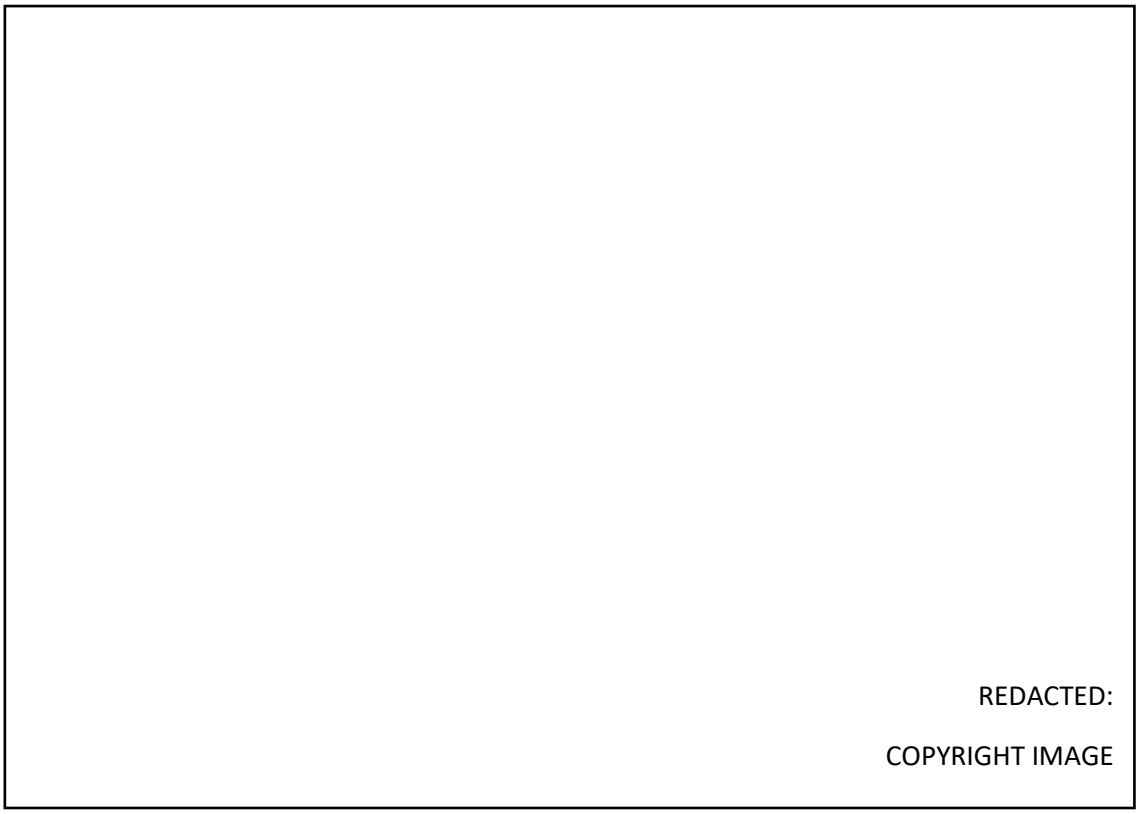
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Figure 3.17: Excavations at the site of Aruchlo, Georgia, as part of the Ancient Kura Project (after Lyonnet et al. 2012, Fig. 84).

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Figure 3.18: The site plan of Neolithic Aknashen-Khatunarkh, Armenia, excavated as part of the Armenian-French Archaeological Mission (after Badalyan et al. 2010a, Fig. 5.1).



Ovçular Tepesi in Naxçivan. The site is currently under excavation as part of the Middle-Araxes Archaeological Project (after Marro et al. 2011, Photo 8).

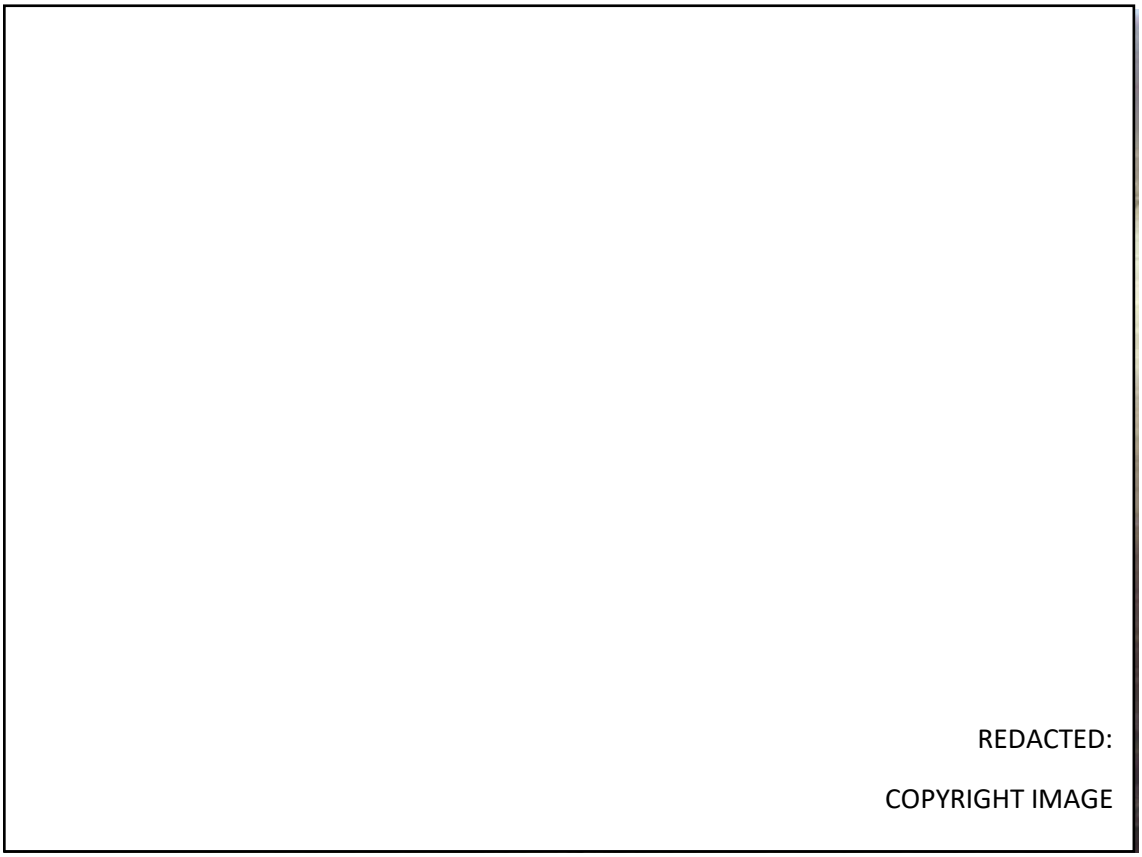


Figure 3.20: Chalcolithic remains from the Areni-1 cave complex (after Areshian et al. 2012, Fig. 6).

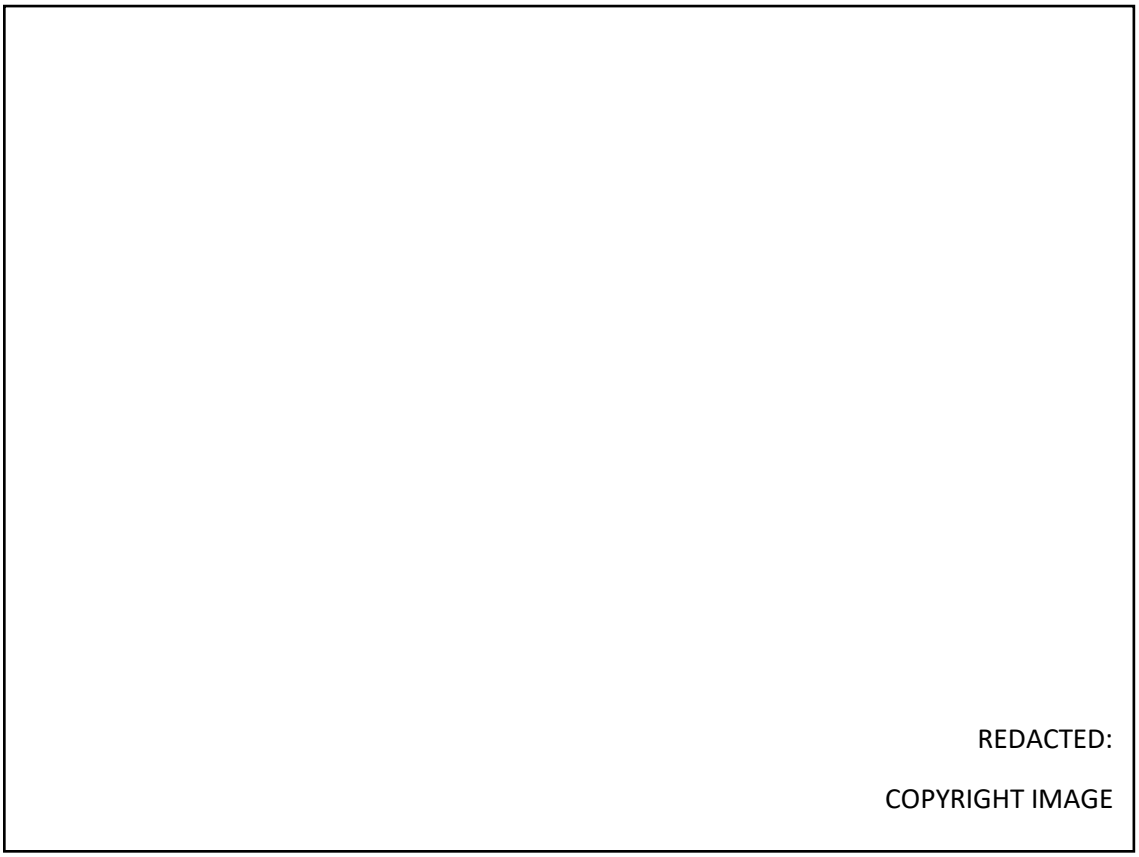


Figure 3.21: Plan of a Late Chalcolithic kurgan from the site of Soyuq Bulaq (after Lyonnet et al. 2008, Fig. 14).

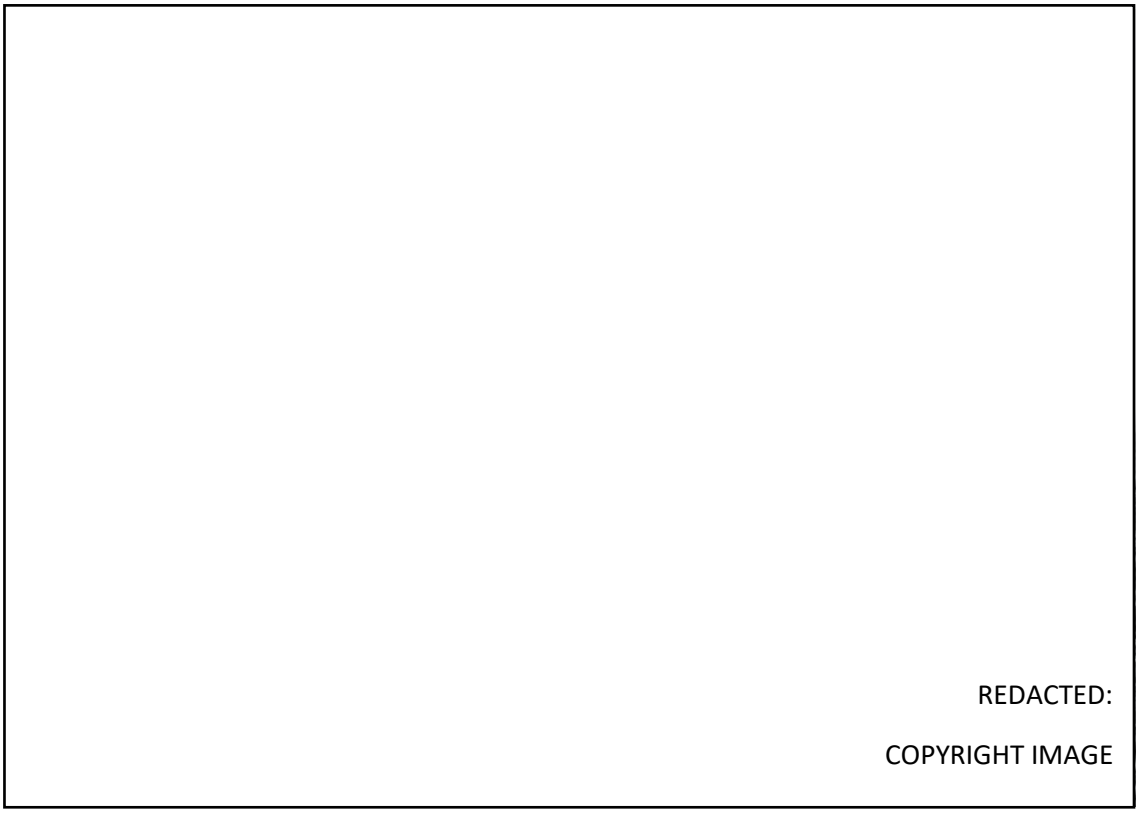


Figure 3.22: Early Bronze Age remains from the site of Chobareti, Georgia, excavated as part of the GAIA Project (after Kakhiani et al. 2013, Fig. 23.2)

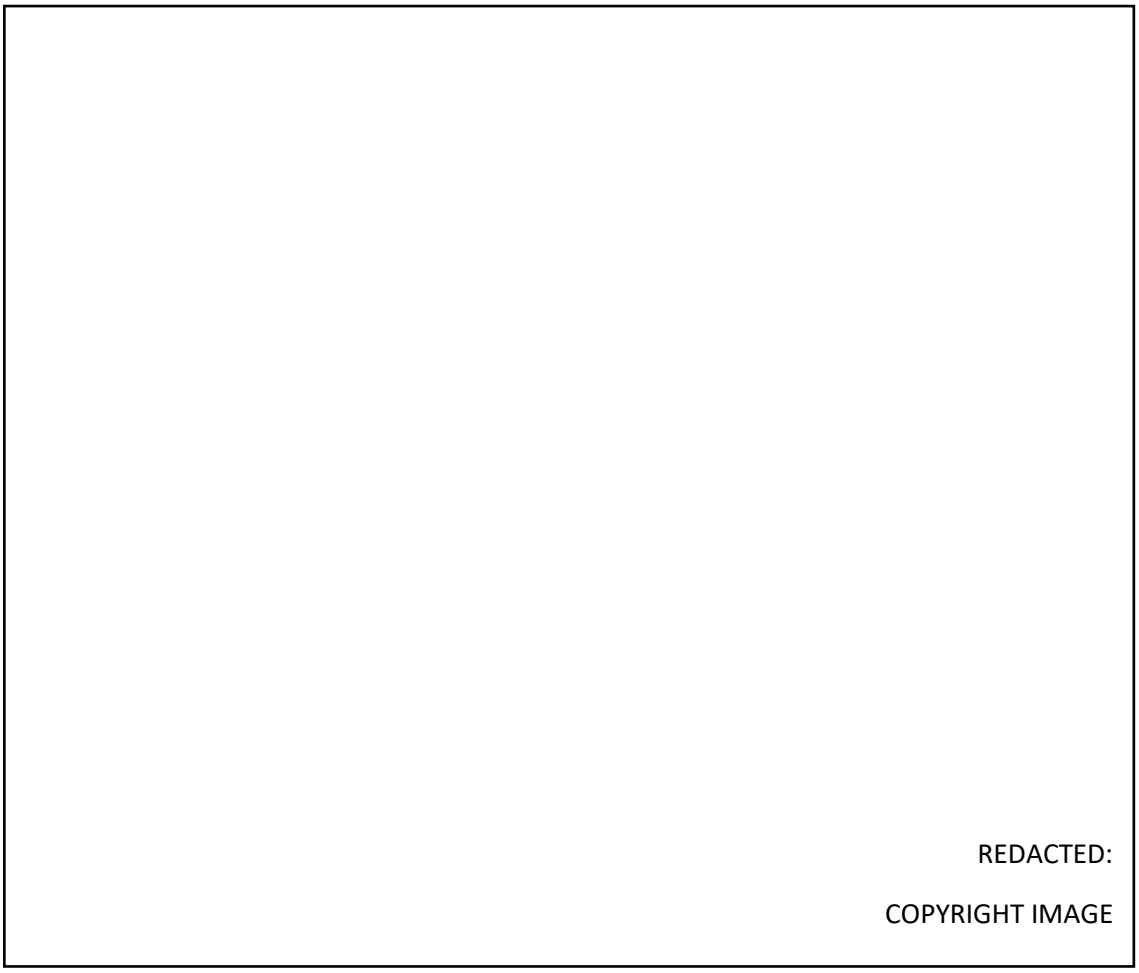


Figure 3.23: Plan of architectural remains from a section of the site of Shengavit (after Simonyan and Rothman 2015, Fig. 4b).

Chapter Four: Cultures of the Transcaucasian Chalcolithic

Introduction

During the Chalcolithic period (c. 5000-3500 B.C.E), the Transcaucasus was characterised by the rise of several distinctive complexes which formed an extensive network of interaction throughout the region. Within the Transcaucasus, the main cultural complexes and assemblages included Chaff-faced ware, Sioni, and the Kura-Araxes **(*fig. 4.1*)**. The earliest recorded instance of Chaff-faced ware in the Transcaucasus occurs during the first half of the fifth millennium followed by Sioni at the end of the fifth millennium and the beginning of the fourth.[466] The appearance of the Kura-Araxes complex has been pushed back to the mid-fourth millennium and chronologically overlaps with several Chalcolithic complexes including that of Chaff-faced ware and Sioni.[467] Other contemporary complexes, located along the periphery of the Transcaucasus region, also participated within this network of interaction. These include Tilkitepe, located in the Lake Van region of eastern Anatolia and dated to the beginning of the fourth millennium, and the Maikop located in the northern Caucasus and placed within the middle to the second half of the fourth millennium.[468]

'Chaff-faced ware' is a technologically descriptive term referring to a group of ceramics that are found throughout the Caucasus region from the fifth to the mid-fourth millennium B.C.E.[469] The presence of Chaff-faced ware within the Transcaucasus is often considered as an intrusive element related to the Amuq F assemblage of northern

[466] Sagona 2014, 36-37; Lyonnet 2017, 145.
[467] Sagpna 2014, 28-29; Palumbi 2016, 8; Palumbi 2017, 113.
[468] Shishlina et al. 2003, 331; Marro 2008, 13-14; Rova 2018, 39.
[469] Lyonnet 2017, 147-148.

Mesopotamia first described by the Briadwoods in 1960.[470] The Chaff-faced assemblage demonstrates a wide distribution across the southern regions of Syro-Anatolia to the northern Caucasus, the territory of the Maikop.[471] The presence of Chaff-faced ware within the Transcaucasus is often attributed to a pre-Uruk network based on the procurement of wealth and natural resources to satisfy the demands of a developing elite class within the south. Alternatively, the appearance of Chaff-faced ware is viewed as the result of migration.[472] However, its early appearance within the Transcaucasus has led some to consider that, rather than being intrusive, the Transcaucasus formed part of the original heartland of the Chaff-faced assemblage.[473] During the sixth millennium B.C.E., chaff tempered ceramics are attested at Neolithic sites throughout Armenia, Azerbaijan, and the area of Nakhichevan.[474] Consequently, the possibility that the chaff tempered ceramics of the Chalcolithic period may have evolved from the local manufacturing traditions of earlier Neolithic communities cannot be discounted.

The Chaff-faced assemblage is defined by its ceramic repertoire which is characterised by distinctive chaff impressions on the surfaces of vessels. Ceramics of this type were first discovered by Narimanov in 1985 at the site of Leilatepe in Azerbaijan.[475] 'Leilatepe complex' is the term used to refer to the Chaff-faced component within the Transcaucasus dating to the early fourth millennium B.C.E. Other major sites include

[470] Braidwood and Braidwood 1960, 226; Helwing 2012, 204; Kavtaradze 2014, 16; Rova 2014, 48; Kavtaradze 2018, 81.
[471] Sagona 2014, 27.
[472] Narimanov 1985; Narimanov 1987; Akhundov 2007; Museibli 2007; Lyonnet 2009; Smith 2012b, 675; Kohl and Trifonov 2013, 1577-1579; Akhundov 2014, 11-12; Kavtaradze 2014, 14; Museibli 2014a, 103; Museibli 2014b, 5; Rothman 2016, 235; Kavtaradze 2017, 99; Akhundov 2018, 67; Baudouin et al. 2018, 50; Biagi and Nisbet 2018, 8; Kavtaradze 2018, 80; Rothman 2018, 125; Museibli 2019, 74-75.
[473] Palumbi 2007, 74; Marro 2011, 52; Palumbi 2016, 6; Kavtaradze 2017, 99-100.
[474] Badalyan et al. 2010a, 193; Lyonnet et al. 2012, 97; Nishiaki et al. 2015, 11; Lyonnet 2017, 141-143; Sagona 2018a, 112.
[475] Narimanov 1985; Helwing 2012, 204; Museibli 2014b, 5; Akhundov 2018, 52.

Beyuk Kesik and Soyuq Bulaq in Azerbaijan and Berikldeebi in Georgia.[476] An earlier but related manifestation of Chaff-faced ware, dated to the early fifth millennium B.C.E., is found at the sites of Mentesh Tepe and Ovçular Tepesi in Azerbaijan.[477] The chronological break, of approximately 500 years, between the two chaff tempered assemblages is poorly understood. However, ceramics from earlier sites, such as Mentesh Tepe and Ovçular Tepesi, demonstrate connections to the region of northern Mesopotamia and the previous traditions of the Aratashen-Shulaveri-Shomutepe.[478] Later, the chaff tempered ceramics of the Leilatepe tradition demonstrate a ceramic production geared towards specialisation in the context of increasing socio-economic organisation, social stratification, and mobility as a result of the intensification of the movement of people, goods, and ideas across the region.[479]

The Kura-Araxes complex is the most studied cultural assemblage of the Transcaucasus. It is often attributed to the Early Bronze Age. However, the recent discovery of new sites and secure radiocarbon dating have pushed the development of the Kura-Araxes to the mid-fourth millennium B.C.E., making it contemporary with several of the Late Chalcolithic complexes of the Transcaucasus.[480] Although discovered in the 19th century in Azerbaijan, the significance of the Kura-Araxes complex was demonstrated by the works of Kuftin in the 1930s and 1940s.[481] Kuftin developed the term 'Kura-Araxes' as the sites were collectively found within the Kura and Araxes river

[476] Museibli 2014b, 10; Museibli 2016a, 283.
[477] Bakhchaliyev et al. 2010, 84; Lyonnet et al. 2012, 86; Lyonnet 2017, 147-148.
[478] Lyonnet 2017, 147-148.
[479] Lyonnet 2017, 147-148.
[480] Burney and Lang 1971; Batiuk 2013, 450; Rova 2014, 48; Sagona 2014, 27.
[481] Kuftin 1941; Kuftin and Field 1946, 340-360; Kiguradze 2000, 321; Smith et al. 2009, 24; Smith 2012b, 676; Palumbi 2016, 3; Akhundov 2018, 50.

basins. Today the complex is known for its wide distribution across nine countries including Georgia, Armenia, Azerbaijan, Russia, Turkey, Syria, Iran, Jordan, and Israel.[482]

The Kura-Araxes may be referred to as a 'cultural package' distinguished by its distinctive domestic arrangements including a central hearth and bench, portable, horse-shoe -haped hearths, clay horned animal figurines, and the small-scale production of arsenical copper tools.[483] However, the ceramic assemblage is the most widely recognised aspect of the Kura-Araxes culture. Kura-Araxes ceramics demonstrate the distinctive red and black colour scheme in addition to a group of monochrome ceramics fired to various shades of brown.[484]

Traditionally, the chronology of the Kura-Araxes has been subdivided into a tripartite system consisting of three phases including Kura-Araxes I, II, and III from c. 3500-2400 B.C.E.[485] Recently, a regional sequence of radiocarbon dates from sites in the Tsaghkahovit plain, Armenia, suggests a twofold periodisation occurring across three major groups with Kura-Araxes I corresponding to the Elar-Aragats group and Kura-Araxes II representative of the Karnut-Shengavit and Shresh-Mokhrablur groups.[486] The break between these two periods is placed at c. 2900 B.C.E., where a series of contemporaneous destruction levels are attested at several multi-layer Kura-Araxes

[482] Batiuk and Rothman 2007, 8; Greenberg and Iserlis 2012, 70; Batiuk 2013, 450; Kohl and Trifinov 2013, 1582; Kibaroğlu 2015, 221; Rothman 2016, 215; Kavtaradze 2017, 91; Palumbi 2017, 113; Altunkaynak et al. 2018, 75; Samei et al. 2019, 1.
[483] Sagona 1993, 453; Abay 2005, 115; Kibaroğlu et al. 2011, 3073; Smith 2012b, 676; Batiuk 2013, 450; Rothman 2016, 239-240; Palumbi 2017, 115; Samei et al. 2019, 1.
[484] Kohl 1992, 124; Kavtaradze 1999, 75; Kavtaradze 2004, 543; Sagona 2004, 478; Smith et al. 2009, 24; Ristvet et al. 2011, 19; Smith 2012b, 676; Sagona 2014, 28-29; Rothman 2015, 212; Rothman 2016, 219; Palumbi 2017, 115; Rothman 2018, 127.
[485] Sagona 2014, 28-29; Haroutunian 2016, 95; Kavtaradze 2017, 91; Passerini et al. 2018, 87; Sagona 2018a, 226.
[486] Palumbi 2016, Tab. 1; Badalyan 2018, 51; Manning et al. 2018, Fig. 10; Sagona 2018a, 226.

settlements indicative of a discontinuity in occupation.[487] According to Badalyan, the Kura-Araxes I corresponds to the period between 3600/3500-2900 B.C.E. and Kura-Araxes II to 2900-2600/2500 B.C.E.[488] However, for Palumbi, the period stretching between 3600 to 3350 B.C.E. represents a transitional phase in the development of the Kura-Araxes while it co-existed with earlier Chalcolithic traditions.[489] Important sites of the Kura-Araxes complex include Mentesh Tepe IV, Chobareti in Georgia, and Sos Höyük in north-eastern Turkey in addition to Gegharot, Horom, Aparan III, and Talin located in Armenia.

Other assemblages found along the periphery of the Transcaucasus are still part of this wider network of interaction. The site of Tilkitepe, also referred to as Shamiramalti, is a small site located near the eastern shore of Lake Van in eastern Anatolia. It is known through a series of excavations by Belck in 1899, then Reilly in 1937, and Lake in 1939.[490] Of interest is a small group of ceramics, known as Tilkitepe ware, found in Stratum I belonging to the early fourth millennium B.C.E. The ceramics are distinctive due to their decoration which consists of red painted vertical wavy and/or straight lines. Other motifs include polka dots, rows of dots, and line ornaments.[491] Tilkitepe ware has been discovered at the site of Yılıntaş, also within the Lake Van region.[492] Similar motifs were also discovered on ceramics from Tekhut in Armenia.[493]

[487] Badalyan 2018, 51.
[488] Badalyan 2018, 51.
[489] Palumbi 2016, 8; Palumbi 2017, 113.
[490] Belck 1899, 581-583; Belck 1902, 125-127; Reilly 1937, 82; Reilly 1940, 160; Lake and Lake 1982, 191-192; Korfmann 1982, 20.
[491] Belck 1902, 125-127; Reilly 1937, 82; Reilly 1940, 161; Burney 1958, 160-161; Korfmann 1982, 175-176; Lake and Lake 1982, 191-192; Todd 1983, 555; Marro and Özfirat 2004, 232; Özfirat and Marro 2004, 300; Kılıç 2006, 8; Marro 2007, 91; Marro 2008, 13-14; Özdemir et al. 2013, 976.
[492] Marro and Özfirat 2004, 232-233; Özfirat and Marro 2004, 300; Marro 2008, 13-14; Sagona and Zimansky 2009, 166; Özdemir et al. 2013, 976.
[493] Torosyan 1976, Pl. X.1-3; Kushnareva 1997, Fig. 13.13-14; Marro and Özfirat 2004, 232.

Aside from the sites mentioned, Tilkitepe ware is unknown outside of the Lake Van region. Tilkitepe ware represents a local development in the Van region that had very little influence amongst other contemporary horizons.

The Maikop are also included within this vast network of interaction. The Maikop occupied the western region of the northern Caucasus with the main distribution of sites located in the Kurban area extending to the Black Sea and the Sea of Azov.[494] Initially dated to c. 2500 B.C.E., recent radiocarbon dates situate the Maikop within the early to mid-fourth millennium B.C.E. making it contemporary with other Chalcolithic cultures from the Transcaucasus and eastern Anatolia.[495] The complex is distinguished by its distinctive burial mounds, known as kurgans, and the large amount of wealth interred within. The most famous is the Oshdad kurgan which was excavated by Veselovskii in 1897.[496] The Maikop complex is also known for its metal worked material including tools, weapons, vessels, and items of personal adornment. They demonstrate a highly developed metallurgical system including the smelting and alloying of copper, the use of the lost-wax technique, and the processing of sheet metal.[497] Maikop ceramics, however, are far less spectacular. Ceramics are chaff tempered and demonstrate parallels with the Chaff-faced material found throughout Transcaucasia.[498] Such parallels have led scholars to argue that the Maikop participated within the far-flung network extending through the Caucasus and Anatolian regions to Mesopotamia.

[494] Chernykh 1992, 67; Anthony 2007, 284; Ivanova 2007, 14.
[495] Rassamakin 1999, 163-164; Chernykh et al. 2000, 74-75; Rezepkin 2000; Trifonov 2001, 76-77; Shishlina et al. 2003, 331; Korenevskii and Rezepkin 2008, 109-127; Korenevskii 2004, 64-70; Korenevskii 2008, 85-86; Korenevskii 2012, 24; Belinskij et al. 2017, 13; Chernykh 2017, 480; Helwing 2017, 53; Korenevskii 2017a, 33; Korenevskii 2017b, 231; Rova and Tonussi 2017, 4; Rova 2018, 39.
[496] Anthony 2007, 67; Ivanova 2007, 7; Korenevskii 2012, 7.
[497] Shishlina et al. 2003, 331; Ivanova 2012a, 47-48; Hansen 2014, 401.
[498] Korenevskii 1992, 40; Korenevskii 2004, 37-38; Museibil 2007, 92; Korenevskii 2012, 14; Kohl and Trifonov 2013, 1578.

Chaff-faced Ware: Mesopotamian Influence in the Caucasus Region

The earliest manifestation of the Chaff-faced assemblage within the Transcaucasus occurs during the first half of the fifth millennium B.C.E. The earliest evidence comes from levels II and III of Mentesh Tepe, a multi-period site, located in the Tovus district of western Azerbaijan.[499] Radiocarbon dates place the Chalcolithic levels II and III within the first and second half of the fifth millennium **(*fig. 4.2*)**.[500] Ovçular Tepesi is another early Chaff-faced site located in western Nakhichevan in Azerbaijan.[501] Two layers are related to the Chalcolithic period and are contemporary with Mentesh Tepe. The earliest, Late Chalcolithic I, represents the best-preserved occupation level.[502] Radiocarbon dates for this period suggest a timeframe between 4350 to 4200 B.C.E.[503] The second Chalcolithic level, Late Chalcolithic II, dates from 4200 to 4000 B.C.E **(*fig. 4.3*)**.[504]

A later stage of the Chaff-faced assemblage is represented at Berikldeebi, Beyuk Kesik, Leilatepe, and Soyuq Bulaq forming part of the Leilatepe Complex. Berikldeebi is located north-west of Tbilisi in the region of Shida Kartli, Georgia.[505] Fourteen construction phases are discernible spanning over five chronological periods. Level V,

[499] Lyonnet and Guliyev 2010, 224; Courcier et al. 2012, 205; Lyonnet et al. 2012, 86; Guliyev and Lyonnet 2014, 25; Lyonnet et al. 2015, 189; Lyonnet et al. 2016, 172; Baudouin et al. 2018, 53.
[500] Lyonnet 2009, 43; Courcier et al. 2012, 205; Lyonnet and Guliyev 2012, 88; Lyonnet et al. 2012, 87; Courcier 2014, 595-596; Lyonnet et al. 2015, 189; Lyonnet and Guliyev 2017, 132-133.
[501] Chataigner 1995, 98; Bakhchaliyev et al. 2010, 84; Cucchi et al. 2013, 918.
[502] Bakhchaliyev et al. 2010, 86; Marro et al. 2011, 54-55.
[503] Bakhchaliyev et al. 2009, 55; Bakhchaliyev et al. 2010, 87; Marro 2011, 35; Berthon et al. 2013, 192; Marro et al. 2014, 131; Marro et al. 2015, 157.
[504] Bakhchaliyev et al. 2010, 87; Berthon et al. 2013, 192; Cucchi et al. 2013, 918.
[505] Zavaxisvili 1998, 7; Kiguradze 2001a, 18-19; Kiguradze and Sagona 2003, 44; Makharadze 2007, 126; Munchaev and Amirov 2014, 166; Sagona 2014, 15-16.

the earliest, represents a Chalcolithic settlement which is divided into two occupational phases, V1 and V2.[506] Both phases belong to the beginning of the fourth millennium.[507]

Contemporary with Berikldeebi, Beyuk Kesik is situated on the left bank of the Kura River in the Ganja-Gazakh region of Azerbaijan.[508] The site consists of four construction phases corresponding to the Late Chalcolithic period. Radiocarbon dates place the site within the first half of the fourth millennium.[509] Leilatepe is another important site located in the Karabakh region of Azerbaijan in the Agdam district.[510] Recent radiocarbon dates place the site around the early to mid-fourth millennium B.C.E.[511] Four construction levels have been identified.[512] Only two of the construction levels have been successfully excavated and relate to the Late Chalcolithic period.[513]

Lastly, Soyuq Bulaq is a necropolis located close to the Georgian border on an alluvial terrace on the left bank of the Kura River in Azerbaijan.[514] The site consists of 35 kurgans dating to the first half of the fourth millennium B.C.E **(*fig. 4.4*)**.[515] This discovery pushed back the appearance of kurgans within the Southern Caucasus by more than 1000 years.[516] More recently, the discovery of two kurgan, dated to the last quarter of the fifth millennium B.C.E., in Aknalitch, Armenia, suggests that the practise of

[506] Zavaxisvili 1998, 7; Kiguradze 2001b, 49; Kiguradze and Sagona 2003, 44; Makharadze 2007, 126.
[507] Munchaev and Amirov 2014, 166; Sagona 2014, 15-16.
[508] Akhundov 2007, 95-96; Museibli and Huseynov 2008, 6; Lyonnet and Guliyev 2010, 223; Munchaev and Amirov 2014, 161.
[509] Akhundov 2007, 95-96; Museibli 2007, 59; Museibli and Huseynov 2008, 46; Lyonnet and Guliyev 2010, 223; Museibli 2014a, 102.
[510] Kiguradze 2001b, 50; Akhundov 2007, 95-96; Munchaev and Amirov 2014, 161; Museibli 2014a, 102.
[511] Akhundov 2007, 121; Museibli 2009, 54; Lyonnet and Guliyev 2010, 222.
[512] Aliev and Narimanov 2001; Kiguradze 2001b, 50; Akhundov 2007, 95-96.
[513] Kiguradze 2001b, 50; Akhundov 2007, 95-96.
[514] Lyonnet et al. 2008, 28; Museibli 2008a, 6; Museibli 2014b, 10-11.
[515] Akhundov 2007, 97; Courcier et al. 2008a, 21; Lyonnet et al. 2008, 36; Museibli 2008a, 6; Lyonnet 2010, 359; Museibli 2014a, 102; Museibli 2014b, 10-11; Korenevskii 2017b, 237.
[516] Lyonnet et al. 2008, 42; Museibli 2008a, 21-23; Lyonnet 2009, 44; Lyonnet 2010, 359; Lyonnet and Guliyev 2010, 22; Kavtaradze 2017, 96; Kavtaradze 2018, 86.

constructing burial mounds was a well-established funerary tradition in the Transcaucasus during the Chalcolithic period.[517]

Architecture

Chaff-faced sites demonstrate a variety of architectural forms. Early sites, such as Mentesh Tepe and Ovçular Tepesi, have the most variation with rectilinear and semi-subterranean dwellings, refuse pits, post-holes, and hearths. The earliest Chalcolithic phase at Mentesh Tepe is characterised by scanty architectural remains. [518] The presence of post-holes and the absence of any discernible architectural plan indicates that structures were made from organic materials and that the site was likely occupied on a seasonal basis.[519] At Ovçular Tepesi, during the Late Chalcolithic I, single roomed, rectangular, semi-subterranean huts were predominant.[520]

During the later phases, the architecture at both sites was considerably reorganised. Throughout the first and second phases of Period III at Mentesh Tepe, there was a series of rectilinear, mudbrick structures each divided into several rooms.[521] During the first phase of Period III, structures had features including limestone door sockets, sunken jars, clay silos, and rectangular kilns fitted along the wall.[522] At Ovçular Tepesi, during the Late Chalcolithic II, free-standing, multicellular, mudbrick buildings, built with stone foundations, replaced the semi-subterranean structures of the previous

[517] Muradyan et al. 2014, 347.
[518] Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 97-91; Lyonnet and Guliyev 2017, 132-133.
[519] Lyonnet and Guliyev 2017, 132-133.
[520] Bakhchaliyev et al. 2009, 55-56; Bakhchaliyev et al. 2010, 86; Marro 2010, 42; Marro et al. 2011, 54-55; Berthon et al. 2013, 192; Bakhshaliyev 2014, 20; Bahşaliyev 2015, 30.
[521] Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 91; Lyonnet and Guliyev 2017, 132-133.
[522] Lyonnet and Guliyev 2017, 132-133.

period **(*fig. 4.5*)**.[523] Additional features include a series of flat circular work surfaces which were sunk into the floor. The surfaces were coated with a layer of *pisé* three to four centimetres thick and enclosed within an annular wall **(*fig. 4.6*)**.[524]

Later sites of Berikldeebi and Leilatepe, belonging to the Chaff-faced Leilatepe complex, are characterised by a series of organised, rectangular, mudbrick structures. Berikldeebi V2 is characterised by monumental mudbrick architecture **(*fig. 4.7*)**. Eighty metres of a mudbrick wall was preserved on the northern edge of the site.[525] A rectilinear mudbrick structure measuring 14.5 by eight metres was also discovered.[526] The "Temple" is oriented east-west, and its plan demonstrates a tripartite form. One component of the building consists of a hall measuring ten by six metres with a hearth in the centre.[527] Towards the eastern end of the building were two small rooms each measuring 2.75 by two metres and three by two metres (*fig. 4.8*).[528]

Monumental architecture is absent at Leilatepe, however, structures are more readily categorised according to function (*fig. 4.9*). Domestic structures are represented by constructions Two and Eight. Constructions One and Five represent storage facilities. Construction One represents a granary and Construction Five functioned as a warehouse.[529] Constructions Three and Four demonstrate evidence of small-scale metallurgical activities. Inside Construction Four, large amounts of clay and slag with

[523] Bakhchaliyev et al. 2009, 56; Bakhchaliyev and Marro 2009, 8; Bakhchaliyev et al. 2010, 87; Marro 2010, 42; Berthon et al. 2013, 192.
[524] Bakhchaliyev et al. 2009, 56; Bakhchaliyev et al. 2010, 88.
[525] Zavaxisvili 1998, 11.
[526] Zavaxisvili 1998, 11; Kiguradze 2001b, 49; Kiguradze and Sagona 2003, 44; Makharadze 2007, 127-128; Lyonnet 2009, 8; Munchaev and Amirov 2014, 166; Sagona 2014, 16.
[527] Zavaxisvili 1998, 11-12; Kiguradze 2001b, 49; Kiguradze and Sagona 2003, 44; Makharadze 2007, 127-128; Lyonnet 2009, 8; Sagona 2014, 16.
[528] Zavaxisvili 1998, 11-12; Kiguradze 2001b, 49; Kiguradze and Sagona 2003, 44; Makharadze 2007, 127-128; Lyonnet 2009, 8; Sagona 2014, 16.
[529] Akhundov 2007, 97; Lyonnet 2009, 8; Sagona 2014, 26.

small copper droplets were found mixed throughout the soil. Construction Three was built directly above the remains of Construction Four. Around the hearth, found in Construction Three, was metallurgical waste including slag deposits, crucibles, and metal artefacts indicating that the building continued to be used for small-scale metallurgical production.[530]

The architecture at Beyuk Kesik varies considerably with square and circular mudbrick huts in both regular and irregular plans **(*fig. 4.10*)**.[531] Phase Two contains the best-preserved architectural evidence. Structure One resembles an irregular square.[532] In contrast, the plan of Structure Two is oval.[533] The third structure is significantly more complex and consists of three parts. The first room is hemispherical in shape with an entrance flanked by two projections located towards the southern end of the wall. Another two projections of similar construction are located towards the northern end of the eastern wall. The room was divided by a low wall in the north-eastern corner. [534] Opposite to the entrance of the first room, is the entrance to the second room. Separating the second room from the third is a curved clay wall. The third room is roughly triangular with the entrance located in the western corner.[535]

Ceramics

Evidence for craft activities at the Chaff-faced sites is numerous. Ceramics make up the majority of the finds and differ considerably from other local productions. Those

[530] Akhundov 2007, 97; Sagona 2014, 26.
[531] Museibli and Huseynov 2008, 7; Munchaev and Amirov 2014, 161; Sagona 2014, 26.
[532] Akhundov 2007, 97-99; Museibli and Huseynov 2008, 8-12.
[533] Akhundov 2007, 99; Museibli and Huseynov 2008, 8-12.
[534] Akhundov 2007, 99-100; Museibli and Huseynov 2008, 8-12.
[535] Akhundov 2007, 99-100; Museibli and Huseynov 2008, 8-12.

of the Chaff-faced tradition are handmade using the slab or coil technique.[536] Pots from later sites were reputedly wheel-made as indicated by the symmetry of the vessels and the presence of small striations.[537] The fabrics are tempered with fine to medium chaff resulting in the characteristic chaff-pitted appearance.[538] Mixed tempered ceramics are also known from Mentesh Tepe and Beyuk Kesik.[539] The firing of the vessels was irregular as attested by the variation of surface colours, consisting of yellows, reds, and browns, and darkened cores indicating an incomplete oxidisation process.[540] In terms of surface treatment, some were slipped, smoothed, or burnished. At earlier sites, examples were comb-scrapped.[541]At Ovçular Tepesi, during the Late Chalcolithic II, pots were often coated in a cream or red slip. Others that were slipped were also burnished.[542] Later, at Beyuk Kesik, vessels were slipped in a pale green, pale pink, or pale yellow.[543] The clay of some ceramics at Beyuk Kesik had a lilac hue indicating that they were tempered with ochre.[544]

Morphologically, earlier sites demonstrate a restricted repertoire. The assemblage at Mentesh Tepe has been subdivided into three groups consisting of common ware, table ware, and kitchen ware.[545] The Chaff-faced component is

[536] Bakhchaliyev et al. 2009, 56; Bakhchaliyev et al. 2010, 92-93; Marro 2010, 42-43; Lyonnet et al. 2012, 98.
[537] Zavaxisvili 1998, 14; Kiguradze 2001b, 49-51; Akhundov 2007, 108; Museibli 2007, 68; Museibli 2015, 59.
[538] Bakhchaliyev et al. 2009, 56; Bakhchaliyev et al. 2010, 92-93; Marro 2010, 42-43; Lyonnet et al. 2012, 98; Museibli 2015, 59.
[539] Kiguradze 2001b, 51; Akhundov 2007, 108; Museibli 2007, 68; Museibli and Huseynov 2008, 21-22; Museibli 2009, 52; Lyonnet et al. 2012, 98.
[540] Zavaxisvili 1998, 14; Kiguradze 2001b, 51; Akhundov 2007, 108; Makharadze 2007, 128; Museibli 2007, 68; Bakhchaliyev et al. 2009, 56; Bakhchaliyev et al. 2010, 92-93; Lyonnet and Guliyev 2010, 224-225; Marro 2010, 42-43; Helwing 2012, 211; Lyonnet et al. 2012, 98.
[541] Lyonnet and Guliyev 2010, 224-225; Helwing 2012, 211; Lyonnet et al. 2012, 98; Museibli 2015, 58.
[542] Bakhchaliyev et al. 2010, 92-93; Marro 2010, 42-43.
[543] Kiguradze 2001b, 51; Akhundov 2007, 108; Museibli 2007, 68; Museibli and Huseynov 2008, 21-22.
[544] Akhundov 2007, 108; Museibli 2007, 68; Museibli and Huseynov 2008, 21-22.
[545] Lyonnet and Guliyev 2010, 224-225; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98.

represented in the common ware and table ware groups whereas kitchen ware comprises a local variation of the Sioni fabrics. The common ware category includes a variety of shapes including large and small jars, jugs, and large basins **(*fig. 4.11*)**. Jars are often characterised by straight or slightly everted necks. Jars without a neck and a slightly inverted rim are also known.[546] More care has been taken in the construction of vessels belonging to the table ware group. Shapes consist of open vessels of small dimensions such as plates, bowls, and beakers. Small jugs and juglettes with straight necks are also present **(*fig. 4.12*)**.[547]

At Ovçular Tepesi, forms in the Late Chalcolithic assemblage may be divided into two components consisting of bowls and jars.[548] Bowls demonstrate little variation in terms of morphology as production was standardised. In both phases, bowls consist of simple forms with straight or out-flaring walls **(*fig. 4.13*)**.[549] Jars demonstrate more variation. Throughout both phases, they consist of wide-necked jars with short, straight, or everted collars. Hole-mouthed jars are also present **(*fig. 4.14*)**.[550] A three-lugged narrow necked jar also occurs during the Late Chalcolithic I.[551]

Within the later assemblages, large, round-bodied, open-mouthed pithoi are predominant. Flared necks and sharply everted rims forming a pronounced angle between the juncture of the neck and the shoulder is a common feature of such jars.[552]

[546] Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98.
[547] Lyonnet and Guliyev 2010, 224; Lyonnet et al. 2012, 98-101.
[548] Marro 2010, 42-43.
[549] Bakhchaliyev et al. 2009, 56-57; Bakhchaliyev et al. 2010, 91-93; Marro 2010, 42-43.
[550] Bakhchaliyev et al. 2009, 56-57; Bakhchaliyev et al. 2010, 92; Marro 2010, 44; Bahşaliyev 2015, 29.
[551] Bakhchaliyev et al. 2009, 56-57; Bakhchaliyev et al. 2010, 92.
[552] Zavaxisvili 1998, 14; Kiguradze 2001b, 49; Akhundov 2007, 108; Makharadze 2007, 128; Museibli 2009, 52.

At Leilatepe, the large-bodied pithoi are characterised by rounded bottoms whereas at Beyuk Kesik the pithoi are known to have flat bottoms **(*fig. 4.15*)**.[553]

Other shapes within the assemblage include pots and pitchers. These share the same general form as the large pithoi except that they are somewhat smaller. Rims demonstrate more variation. On some vessels, there are between two and three grooves on the inside of the neck. Other types include rounded, simple cut, everted, and oblique rims **(*fig. 4.16*)**.[554]

Bowls and large basins are also common. At Leilatepe, they demonstrate rounded bottoms whereas at Beyuk Kesik they have flat bottoms.[555] Like the pots and the pitchers, bowls and basins demonstrate a variety of rims. Rounded, thickened, and tapered rims are attested.[556] Large hemi-spherical bowls are represented at Beriklideebi **(*fig. 4.17*)**.[557]

Cups, from the Beyuk Kesik assemblage, are hemispherical at the bottom and more cylindrical and concave at the top with an everted rim. Other forms of vessels at Beyuk Kesik include strainers, but they are rare. Double-mouthed jars were also recovered from Leiatepe and Beyuk Kesik.[558]

Evidence for decorative embellishments is more common amongst the earlier Chaff-faced assemblages. Decorative treatments at Mentesh Tepe and Ovçular Tepesi include incised and impressed motifs, painted decoration, and applied relief designs. At

[553] Kiguradze 2001b, 51; Akhundov 2007, 108; Museibli and Huseynov 2008, 22-27; Museibli 2009, 52.
[554] Akhundov 2007, 108-116.
[555] Akhundov 2007, 108.
[556] Akhundov 2007, 108-116.
[557] Zavaxisvili 1998, 14; Kiguradze 2001b, 49; Makharadze 2007, 128.
[558] Akhundov 2007, 108-116; Museibli and Huseynov 2008, 22-27; Lyonnet and Guliyev 2010, 221-22.

Mentesh Tepe, incised decoration includes chevrons or straight lines on the exterior surfaces of the vessel from the table ware group. Incised motifs on the interior of bowls are documented here and at Ovçular Tepesi.[559] Bowls at Ovçular Tepesi bear crudely incised motifs including geometric designs which combine a series of dots and/or lines.[560]

Painted ceramics are more frequent at Mentesh Tepe and are found throughout the common and table ware categories. Painted bitumen motifs are predominant amongst ceramics of the table ware category. On open vessel forms, painted motifs consist of chevrons or vertical bands crossing at the bottom. Dots and circular motifs are also associated with such bands. Closed vessels can have a horizontal band painted at the base of the neck or large dots painted on the shoulder.[561] Regardless of shape, nearly all vessels with painted decoration have a painted rim. Other, less common, motifs include waves, semi-circles, and/or stylised human figures with raised hands.[562] At Ovçular Tepesi, painted bitumen is found on bowls applied as a single band along the rim or as a festoon beneath the rim **(*fig. 4.18*)**.[563]

Both sites demonstrate evidence of applied relief decoration. At Ovçular Tepesi, the most common motif consists of annular coils in relief used to form snake motifs. Knobs or rows of knobs are also common.[564] Less common are jars decorated with animals in relief. Three such jars were recovered from Ovçular Tepesi, one from the Late

[559] Lyonnet and Guliyev 2010, 224-225; Lyonnet and Guliyev 2012, 88-89; Lyonnet et al. 2012, 98-101.
[560] Bakhchaliyev et al. 2010, 91-92; Marro 2010, 42-44.
[561] Lyonnet and Guliyev 2010, 224-225; Lyonnet and Guliyev 2012, 88-89; Lyonnet et al. 2012, 98-101.
[562] Lyonnet and Guliyev 2010, 224-225; Lyonnet et al. 2012, 98-101.
[563] Marro 2010, 44.
[564] Bakhchaliyev et al. 2009, 56-57; Bakhchaliyev et al. 2010, 91-92; Marro 2010, 42-43; Marro et al. 2011, 73.

Chalcolithic I and two from Late Chalcolithic II. Each depicts a frieze of caprids in confrontation along the shoulder and are technologically similar to the annular coil decoration **(*fig. 4.19 and 4.20*)**.[565]

Amongst later assemblages, the use of decorative embellishment decreases. There are five forms of decorative motifs which are attested including pressing, cutting, relief-mould, painting, and polishing.[566] At Beyuk Kesik, the most common decoration consists of impressed circles or grooves in varying directions that are often found on the rims of small pots and jars **(*fig. 4.21*)**. The pressing of fingernails into the clay to make "arch-form cross lines" and "grain-form" ornamentation occurs on jugs, pots, and burnished ceramics along the rim, around the neck, or near the bottom of vessels. Some were decorated with an encircling rope design along the rims of jugs and basins.[567]

Incised motifs are found among the "qualified" assemblage at Leilatepe. Motifs include straight lines, curved lines, or bands in combination with 'grain-form' impressions.[568] Six painted vessel fragments were also documented. The motifs included parallel, vertical stripes and combinations of straight and wavy lines in red, brown, or black paint.[569] Another two painted fragments were recovered from Beyuk Kesik, one from a jug and the other from a bowl. Two sherds from Beyuk Kesik demonstrate relief decoration and several sherds have a burnished motif consisting of several thin polished strips.[570]

[565] Marro 2010, 45-46.
[566] Museibli 2007, 69-70; Museibli 2016a, 283.
[567] Museibli 2007, 69-70; Museibli and Huseynov 2008, 27-28.
[568] At sites such as Leilatepe and Beyuk Kesik, the term 'qualified' is used to refer to a group of high quality, chaff tempered ceramics in contrast to coarse ware which is grit tempered. Museibli 2009, 52-53; Museibli 2015, 60.
[569] Kiguradze 2001b, 51.
[570] Museibli 2007, 69-70; Museibli and Huseynov 2008, 27-28.

Metallurgy

Metallurgy is widely attested at Chaff-faced sites. Among earlier assemblages, the majority of metallurgical artefacts come from Mentesh Tepe comprising two main types consisting of awls and ornaments.[571] Twenty-nine awls have been dated to the Chalcolithic period, many of which are of unalloyed copper.[572] In terms of ornaments, only one ring fragment, consisting of arsenical copper, has been attributed to the Chalcolithic period **(*fig. 4.22*)**.[573] Artefacts were also recovered from Ovçular Tepesi. A Late Chalcolithic jar burial was uncovered containing the remains of a neonate and three copper axes. Two flat axes and one shaft-hole axe hammer were found in the jar weighing over one kilogram **(*fig. 4.23*)**.[574]

Metallurgy continued to develop within the later Chaff-faced period. Awls were found at Beyuk Kesik, Leilatepe, Berikldeebi, and Soyuq Bulaq **(*fig. 4.24*)**. From Leilatepe came three tetrahedral copper awls, two of which were complete.[575] Similar awls have been recovered from Berikldeebi V1 and Soyuq Bulaq in Kurgan 4.[576] A copper flat axe also came from Berikldeebi V1.[577] Knives and daggers are also common. Two knives were discovered at Beyuk Kesik, including one complete example, and three daggers.[578] In Kurgan 1, at Soyuq Bulaq, along the south-eastern wall of the rectangular enclosure,

[571] Courcier et al. 2012, 210-211; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 115.
[572] Lyonnet et al. 2012, 115.
[573] Courcier et al. 2012, 210-211; Lyonnet et al. 2012, 115.
[574] Marro et al. 2011, 70; Helwing 2012, 212; Berthon et al. 2013, 192; Nicolas 2015, 14.
[575] Aliev and Narimanov 2001, 70-73; Kiguradze 2001b, 51; Akhundov 2007, 106; Kohl 2007, 69; Museibli and Huseynov 2008, 40-42; Museibli 2009, 52; Lyonnet and Guliyev 2010, 221-222; Kohl and Trifonov 2013, 1576-1577; Courcier 2014, 623.
[576] Kiguradze 2001b, 49; Courcier et al. 2008a, 21-28; Lyonnet et al. 2008, 36-38; Museibli 2008a, 9-10; Lyonnet 2009, 43; Lyonnet and Guliyev 2010, 224; Courcier 2014, 623; Sagona 2014, 27.
[577] Kiguradze 2001b, 49; Courcier 2014, 623.
[578] Akhundov 2007, 106; Museibli and Huseynov 2008, 40-42; Courcier 2014, 623-625; Museibli 2015, 59.

a dagger, 19 centimetres long, with a short hilt was discovered (***fig. 4.25***).[579] Analysis of the dagger demonstrates that it is composed of arsenical copper with only small amounts of arsenic.[580] At Beyuk Kesik, several needles and a small spherical piece of worked copper, possibly a pinhead, was recovered.[581] Lastly, miscellaneous metal artefacts recovered from Leilatepe include copper wire, a fragment of a curved plate, and a small copper casting or ingot.[582]

Items of personal adornment, mostly beads of various metals, come from the site of Soyuq Bulaq. W**ithin** the sieved soil of the intermediate level of Kurgan 1, 164 beads were recovered.[583] Thirty-three were of a silver alloy in barrel, ring, tubular, and biconical shapes (***fig. 4.26***). Analysis of the silver alloy beads found differing compositions including silver with small traces of copper, a silver-gold alloy, and a silver-gold-copper alloy.[584] The beads were made from a complex process where several thin sheets of the alloy were wrapped around a core and cold-hammered.[585] Twenty-three gold beads were also present (***fig. 4.27***).[586] Three silver alloy rings were found in Kurgan 4 further from the north-eastern wall of the rectangular enclosure. Two were composed from a silver-gold-copper alloy.[587]

[579] Courcier et al. 2008a, 21-22; Lyonnet et al. 2008, 30; Lyonnet 2009, 43; Museibli 2008a, 7-8; Lyonnet 2010, 360; Lyonnet and Guliyev 2010, 224; Sagona 2014, 27.
[580] Courcier et al. 2008a, 28; Lyonnet et al. 2008, 38; Museibli 2014b, 30-32.
[581] Akhundov 2007, 106; Museibli and Huseynov 2008, 40-42.
[582] Aliev and Narimanov 2001, 70-73; Kiguradze 2001b, 51; Akhundov 2007, 106; Kohl 2007, 69; Museibli 2009, 52; Lyonnet and Guliyev 2010, 221-222; Kohl and Trifonov 2013, 1576-1577; Courcier 2014, 623.
[583] Courcier et al. 2008a, 21-22; Lyonnet et al. 2008, 31; Lyonnet 2009, 43; Museibli 2008a, 7-8; Museibli 2014b, 30-32.
[584] Courcier et al. 2008a, 21-23; Lyonnet et al. 2008, 31; Museibli 2008a, 7-8; Lyonnet 2010, 360; Lyonnet and Guliyev 2010, 224; Museibli 2014b, 30-32; Museibli 2015, 59.
[585] Lyonnet et al. 2008, 38; Museibli 2008a, 7-8; Museibli 2014b, 30-32; Museibli 2015, 59.
[586] Courcier et al. 2008a, 21-25; Lyonnet et al. 2008, 31; Museibli 2008a, 7-8; Lyonnet and Guliyev 2010, 224; Museibli 2014b, 30-32; Museibli 2015, 59.
[587] Courcier et al. 2008a, 21-28; Lyonnet et al. 2008, 36-38; Museibli 2008a, 9-10; Lyonnet 2009, 43; Lyonnet and Guliyev 2010, 224; Museibli 2014b, 33; Sagona 2014, 27.

There is evidence to suggest that metallurgical activities took place on site at Mentesh Tepe, Leilatepe, and Beyuk Kesik. At Mentesh Tepe, a small amount of slag was discovered as a surface find.[588] Two crucible fragments have also been discovered. One of the fragments was used during metallurgical production as demonstrated by the presence of prills trapped in the pores of the sherd.[589] At Leilatepe, evidence of slag, copper prills, and copper oxide has been found amongst the ash and clay matrix of Construction Four.[590] One of the small ovens in the vicinity, Oven Nine, may have also been used for metallurgical activities.[591] At Beyuk Kesik, the presence of slag is evidence of local metal production.[592] Additionally, one of the ovens also had remains of copper oxide on a stone fragment.[593] Two clay moulds, used in the process of metal casting, were also discovered.[594]

Stone Tools and Lithics

Despite the production and use of metal implements, macrolithic and lithic assemblages continued to develop at Chaff-faced sites. The largest macrolithic assemblages come from Mentesh Tepe, Leilatepe, and Beyuk Kesik. The Mentesh Tepe assemblage encompasses a range of functions including grinding, pounding and crushing, polishing and abrading, scraping, and percussion.[595] Fifty-six grinding tools have been recovered. [596] Querns and grinders were predominantly used for the

[588] Courcier et al. 2012, 212.
[589] Courcier et al. 2012, 213; Helwing 2012, 212; Lyonnet et al. 2012, 112-113.
[590] Aliev and Narimanov 2001, 70-73; Kiguradze 2001b, 51; Akhundov 2007, 106-108; Kohl 2007, 69; Lyonnet and Guliyev 2010, 221-222; Helwing 2012, 212; Kohl and Trifonov 2013, 1576-1577; Courcier 2014, 623.
[591] Akhundov 2007, 106-108; Lyonnet and Guliyev 2010, 221-222; Courcier 2014, 623.
[592] Museibli 2007, 87; Museibli and Huseynov 2008, 40-42; Lyonnet and Guliyev 2010, 223.
[593] Akhundov 2007, 106-108.
[594] Museibli 2007, 72-73.
[595] Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 165-166.
[596] Lyonnet et al. 2012, 166.

processing of cereals and of plant and mineral colourings.[597] Pounding and crushing was an important activity at Mentesh Tepe as attested by the discovery of numerous cylindrical and tronconical pestles.[598] Several of the pestles were also used as hammer-stones, crushing tools, or hand-stones.[599]

Mentesh Tepe and Ovçular Tepesi also demonstrate evidence for a well-developed lithic assemblage. At Mentesh Tepe, the majority of the lithic material, 96.5 percent, is represented by obsidian.[600] Similarly, at Ovçular Tepesi, 92 percent of the lithic assemblage consists of obsidian **(*fig. 4.28*)**.[601] Flint is also represented in small quantities at both sites.[602] At Mentesh Tepe, a fine-to-rough chalcedonic flint was used for flake production. Other types include a fine jasper-like flint, a pinkish-red to brown flint, and a flint of fine mudstone texture which may be argillite.[603]

The lithic assemblage at Mentesh Tepe comprises a variety of tools including retouched flakes and blades/bladelets, backed bladelets, truncations, burins and burin spalls, end scrapers, side scrapers, denticulates, notches, drills, and pointed tools.[604] Sickle elements, made of obsidian or flint, were found inserted longitudinally into a haft made from another material, thereby, representing a composite tool.[605] The assemblage from Ovçular Tepesi primarily consists of blade blanks. Tools within the assemblage include backed blades, with the opposite lateral forming the cutting edge, blades with

[597] Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 166.
[598] Lyonnet et al. 2012, 166.
[599] Lyonnet et al. 2012, 166.
[600] Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 172.
[601] Marro et al. 2011, 81; Thomalsky 2017, 83; Purschwitz 2018, 18.
[602] Marro et al. 2011, 81; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 175; Thomalsky 2017, 83.
[603] Lyonnet et al. 2012, 175.
[604] Lyonnet et al. 2012, 172.
[605] Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 175.

unifacial retouched dorsal face, and thick blades with facial and steep edge retouches.[606] Tools were produced from a knapping sequence that involved the shaping of a core. At Mentesh Tepe, tools were produced on site as attested by a specialised workshop in which 94 waste flakes, weighing one kilogram, were found.[607] Lithics were also produced onsite at Ovçular Tepesi, however, the heterogeneous character of the assemblage suggests seasonal knapping while the absence of standardised blade cores demonstrate that lithic tools were not processed in specialised workshops.[608]

Evidence from Leilatepe and Beyuk Kesik indicate that the macrolithic assemblage continued to develop at later Chaff-faced sites. Macrolithic tools include querns, grinding stones, grinding slabs, grinding wheels, pestles, mortars, meulons, and spindle whorls **(*fig. 4.29 and 4.30*)**.[609] At Leilatepe, the most common artefacts include mortars and pestles followed by querns.[610] Pestles, common at Beyuk Kesik, were often intentionally selected river pebbles. Grinding stones, from Beyuk Kesik, were oval or narrow and oblong-shaped. Many of the grinding stones were reused for various functions such as step bearing stones and, more commonly, as pestles.[611] Mortars at Leilatepe come in several different shapes which are likely to be related to their specific function.[612] The querns are oval-shaped with one or two worked surfaces.[613] Stone spindle whorls were also found at Leilatepe and Beyuk Kesik.[614] Other miscellaneous objects include two flat 'wheels,' in the form of stone discs, from Leilatepe. Both wheels

[606] Marro et al. 2011, 81; Thomalsky 2017, 83.
[607] Lyonnet et al. 2012, 173.
[608] Marro et al. 2011, 81-82; Thomalsky 2017, 84.
[609] Kiguradze 2001b, 51; Akhundov 2007, 103; Museibli 2007, 77; Museibli and Huseynov 2008, 32-35.
[610] Akhundov 2007, 103.
[611] Museibli 2007, 77; Museibli and Huseynov 2008, 32-35.
[612] Akhundov 2007, 103.
[613] Akhundov 2007, 103.
[614] Akhundov 2007, 103.

have perforations in the centre measuring between three and six centimetres in diameter.[615]

At the later sites of Leilatepe and Beyuk Kesik, the lithic assemblages are predominantly flint.[616] At Beyuk Kesik, among the cutting tools, flint represents 89.6 percent of the assemblage compared to just 10.4 percent comprising of obsidian.[617] Tools from Leilatepe and Beyuk Kesik include sickle blades, knives, cutters, scrapers, flakes, and composite tools (***fig. 4.31 and 4.32***).[618] At Beyuk Kesik, knives were retouched and oblong in shape.[619] Knife-like tools, approximately ten centimetres in length, are also known at Leilatepe.[620] Sickle blades at Beyuk Kesik were retouched and haft in wood with bitumen forming a composite tool.[621] Similar flint tools from Leilatepe also bear traces of bitumen indicating that they formed part of a composite tool.[622]

Bone Tools

Bone artefacts are rare at Chaff-faced sites. Given the importance of metal during the Chalcolithic period, it is likely that the bone assemblage had already been replaced by the use of metal implements.[623] At Mentesh Tepe, only three bone artefacts have been recovered from the Chalcolithic levels.[624] Two of the artefacts were awls while the third was a shovel made from the scapula of a large ruminant, most likely a

[615] Akhundov 2007, 103; Museibli and Huseynov 2008, 32-35.
[616] Akhundov 2007, 103; Museibli 2007, 77-78; Museibli and Huseynov 2008, 35-57; Lyonnet and Guliyev 2010, 223.
[617] Museibli 2007, 77-78; Museibli and Huseynov 2008, 35-37.
[618] Kiguradze 2001b, 51; Akhundov 2007, 103; Museibli 2007, 77-78; Museibli and Huseynov 2008, 35-37; Lyonnet and Guliyev 2010, 223.
[619] Museibli 2007, 80; Museibli and Huseynov 2008, 35-37.
[620] Akhundov 2007, 103.
[621] Museibli 2007, 78-79; Museibli and Huseynov 2008, 35-37.
[622] Akhundov 2007, 103.
[623] Lyonnet and Guliyev 2010, 225; Courcier et al. 2012, 210; Lyonnet et al. 2012, 119.
[624] Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 119.

bovid **(*fig. 4.33*)**.[625] At later sites, such as Berikldeebi and Leilatepe, there is very little evidence to suggest a developed bone assemblage. At Berikldeebi**,** only bone awls were recorded.**[626]** Only four bone artefacts were recovered from Leilatepe including two awls, a spindle whorl, and a piece of deer antler.[627] Beyuk Kesik demonstrates the most developed bone industry amongst other contemporary Chaff-faced sites. More than 50 bone artefacts have been excavated.[628] The assemblage includes tools such as awls, needles, pins, spindle whorls, and zoomorphic figurines.

Awls made from the tubular bones of small cattle represent most of the bone assemblage at Beyuk Kesik. Thirty-four awls have been found **(*fig. 4.34*)**.[629] Pins and needles are also attested. Three pins were found in Area Two, ranging from five to 12 centimetres in length, with a smooth surface and one end that is flattened and pointed. Three other bone tools with pointed edges were also recovered from areas One and Two. It is likely that these artefacts were also used as pins, however, they are distinguished by their size which ranges from three to four centimetres.[630] Eyed needles are the same shape and size as the pins. Three were discovered in Area One and one unfinished needle was discovered in Area Two. Lastly, two spindle whorls, semi-circular in section, were found in areas One and Two.[631]

In addition to bone tools, there are several other artefacts that stand out from the assemblage. One artefact, which may tenuously be referred to as an arrowhead, was

[625] Lyonnet et al. 2012, 119-120.
[626] Kiguradze 2001b, 49.
[627] Akhundov 2007, 103.
[628] Museibli 2007, 81; Museibli and Huseynov 2008, 37-40.
[629] Akhundov 2007, 103; Museibli 2007, 81; Museibli and Huseynov 2008, 37-40; Lyonnet and Guliyev 2010, 223.
[630] Museibli 2007, 82; Museibli and Huseynov 2008, 37-40.
[631] Akhundov 2007, 94; Museibli 2007, 82; Museibli and Huseynov 2008, 37-40.

recovered from Area Two. The artefact demonstrates a round section that transitions to a rectangular-oval section towards the thicker end of the object. The end of the artefact is pointed. It has been suggested that it may represent a variant of an awl.[632] The remains of a bone knife were also recovered from Area One. The knife was made from the rib of small cattle. [633] Another bone artefact, whose function remains unclear, is decorated with five parallel lines incised around its diameter. Of special interest is the discovery of three zoomorphic figurines. Each were made from the tubular bones of small cattle and represents the head of an animal. The species of the animal is unknown, however, it is suggested that they depict the heads of dogs.[634]

Subsistence Strategies

Little can be said regarding the subsistence strategies of Chaff-faced communities. Evidence suggests that many settlements were occupied permanently with inhabitants practising a mixed farming subsistence strategy centred on cereal cultivation and stock breeding.[635] Very little archaeobotanical and faunal material has been published from the later sites such as Leilatepe, Berikldeebi, and Beyuk Kesik. Rather, much of the information is derived from the earlier sites of Metesh Tepe and Ovçular Tepesi. The latter was initially regarded as a non-permanent settlement. The stratigraphic and architectural evidence suggests that Ovçular Tepesi was occupied seasonally.[636] However, recent botanical and faunal evidence from domestic refuse pits

[632] Museibli 2007, 82-83; Museibli and Huseynov 2008, 37-40.
[633] Museibli 2007, 83; Museibli and Huseynov 2008, 37-40.
[634] Museibli 2007, 83; Museibli and Huseynov 2008, 37-40.
[635] Connor and Sagona 2007, 30.
[636] Bakhchaliyev et al. 2009, 55-56; Bakhchaliyev et al. 2010, 88; Marro et al. 2011, 55-56.

indicate that the settlement was permanent and that a mixed farming subsistence strategy, similar to that at Mentesh Tepe, was practiced **(*fig. 4.35*)**.[637]

At Mentesh Tepe, 30 taxa belonging to 18 botanical families have been identified.[638] Likewise, at Ovçular Tepesi, 31 taxa belonging to 11 botanical families have been recorded.[639] At both sites, cultivated cereals represent an important group. At Mentesh Tepe, barley and naked wheat are common **(*fig. 4.36 and 4.37*)**.[640] Cultivated species represent much of seeds at Ovçular Tepesi. The wheat cultivated at the site, *Triticum aestivum cf avestivum,* is a form of naked wheat. Pulses, such as *Lathyrus* (Vetchling) and *Pisum/Vicia* (Garden Pea/Common Vetch), also form a large component of the botanical assemblage.[641] Pulses are represented at Mentesh Tepe by *Lens culinaris* (Lentil) and *Lathyrus sativus* (Grass Pea). *Linum usitatissimum* (Flax) may have been used as a textile plant, for oil, or for both.[642]

Other botanical evidence includes wild plant taxa. At Mentesh Tepe, 15 wild plant taxa belong to eight botanical families.[643] Twenty-two wild plant taxa belonging to ten different families were recovered from Ovçular Tepesi.[644] Charcoal samples were taken from both sites. *Fraxinus* (Ash), *Populus* (Poplar), and *Salix* (Willow) were the most common species of wood identified at Mentesh Tepe indicating that a riparian forest was the main source of wood. Another source of wood was the Shibliak shrublands as indicated by the presence of *Rhamnus* (Buckthorn) and *Ulmus* (Elm).[645] Wood belonging

[637] Berthon et al. 2013, 191.
[638] Lyonnet et al. 2012, 160.
[639] Berthon et al. 2013, 195.
[640] Lyonnet et al. 2012, 176.
[641] Berthon et al. 2013, 196.
[642] Lyonnet et al. 2012, 160.
[643] Lyonnet et al. 2012, 162.
[644] Berthon et al. 2013, 196-197.
[645] Lyonnet et al. 2012, 162.

to the Salicaceae (Willow, Poplar, Aspen) family is the most predominant at Ovçular Tepesi. Both the river valley and the dryer foothills were exploited for wood sources. Trees from the river valley, such as *Populus*, *Salix*, *Tamarix* (Tamarisk/Salt Cedar), *Elaeagnus angustifolia* (Russian Olive), and *Fraxinus*, were most probably used for fuel and activities such as basketry and tool making.[646]

The faunal evidence from both sites indicates that animal breeding formed a major part of the subsistence strategy.[647] The faunal assemblages consist of domesticated *Ovis aries* (sheep) and *Capra aegagrus hircus* (goat).[648] Sheep and goat represent over 90 percent of the faunal assemblage at Ovçular Tepesi with sheep three times more abundant than goats.[649] Other domestic taxa, found in small quantities at both sites, include *Bos taurus* (cattle), *Canis familiaris* (dog), and *Sus* (pig).[650] However, there may have been a shift in herding strategies during the Late Chalcolithic II as indicated by the increase in the proportion of cattle, up to ten percent, within the assemblage.[651]

Wild taxa comprise only five and six percent of the faunal assemblages at Ovçular Tepesi and Mentesh Tepe.[652] Species at Ovçular Tepesi include *Castor fiber* (beaver), *Vulpes vulpes* (fox), *Cervus elaphus* (red deer), and *Sus scrofa* (wild boar). Small mammals, such as rodents of the Muridae and Cricetidae families, are also common. The remains of *Meriones* (jird), *Cricetulus migratorius* (grey hampster), *Avicolinae* (vole),

[646] Berthon et al. 2013, 198.
[647] Lyonnet et al. 2012, 154.
[648] Lyonnet et al. 2012, 154; Berthon et al. 2013, 194; Bakhshaliyev 2014, 20.
[649] Berthon et al. 2013, 194.
[650] Lyonnet et al. 2012, 154; Berthon et al. 2013, 194.
[651] Berthon et al. 2013, 195.
[652] Lyonnet et al. 2012, 155; Berthon et al. 2013, 194-195.

Suncus etruscus (Etruscan shrew)*, Crocidura* (white toothed shrew) have also been indentified.[653] Over 2500 fish bones were also discovered. Many of the remains belong to cyprinids (the carp family) while other taxa include *Silurus glanis* (cat fish) and *Stenodus leucichthys* (salmon).[654] Given the small portion of wild taxa found at both sites, hunting did not form a major subsistence activity for the inhabitants of Mentesh Tepe and Ovçular Tepesi.[655]

Funerary Practices

Chaff-faced funerary practices are predominantly characterised by infant jar burials.[656] Soyuq Bulaq remains the exception with both infant jar burials and kurgans.[657] The early sites of Mentesh Tepe and Ovçular Tepesi demonstrate limited burial evidence. There have been no burials recorded amongst the Chalcolithic levels at Mentesh Tepe. Eight jar burials were recorded at Ovçular Tepesi. In addition to the grave with three copper axes, three other burials contained little to no grave goods **(*fig. 4.38*)**. Another burial contained two copper bracelets and a few white beads, however, it was found out of context.[658]

At later sites infant jar burials demonstrate a standardisation of practice, particularly at Leilatepe and Beyuk Kesik. Four infant jar burials were found at Leilatepe

[653] Berthon et al. 2013, 195.
[654] Berthon et al. 2013, 195.
[655] Berthon et al. 2013, 199.
[656] Helwing 2012, 207; Museibli 2014b, 81; Museibli 2016a, 284.
[657] Museibli 2008a, 18-19; Museibli 2014b, 54; Poulmarc'h and Le Mort 2016, 189. Two pit graves, containing the remains of male adult individuals, were discovered at Poylu II. The site is located in the Agstafa district in western Azerbaijan and was excavated in 2005 in response to the construction of the Baku-Tbilisi-Ceyhan and South Caucasus pipelines. Currently, the discoveries at Poylu II represent the only known examples of pit graves within the Leilatepe complex. Museibli 2008b; Museibli 2014b, 59-60.
[658] Marro et al. 2011, 70; Helwing 2012, 207; Museibli 2014b, 61; Poulmarc'h and Le Mort 2016, 190; Marro and Yilmaz 2018, 33.

and six have been discovered at Beyuk Kesik **(*fig. 4.39*)**.[659] Several types of jars were used for the burials. At Leilatepe, bowls and large bodied jars were used while pitchers were favoured at Beyuk Kesik.[660] At both sites, the vessels used for burials were grit tempered. Often, the vessels were then sealed with sherds of 'qualified' ceramics.[661] The infants were placed on their side in a flexed position.[662] Orientation of the body varies depending on the site. At Leilatepe, the infant remains were placed at the mouth of the vessel with their heads facing north-east.[663] At Beyuk Kesik, infants were placed in the vessels facing north **(*fig. 4.40*)**. In nearly all cases, the burials concern infants with the exception of one grave at Beyuk Kesik where the remains of a young child, under the age of ten, was recovered.[664]

Not all infant jar burials conform to this standard pattern. At Beyuk Kesik burials Three and Four were found together at a depth of 70 centimetres and consisted of several pots placed vertically on top of each other **(*fig. 4.41 and 4.42*)**. In Burial Three the infant was placed on the right site with the skull oriented towards the west. The pot was then covered by a sherd from another large pitcher of the 'qualified' ceramics category with a ring base and a convex body.[665] In Burial Four, the infant was placed on its left side and facing north.[666] In Burial Five, found at a depth of 120 centimetres, six

[659] Kiguradze 2001b, 51; Akhundov 2007, 100; Museibli 2007, 65; Museibli and Huseynov 2008, 21; Museibli 2009, 53; Museibli 2014b, 50-52; Marro and Yilmaz 2018, 35.
[660] Akhundov 2007, 100; Museibli 2007, 65; Museibli and Huseynov 2008, 21.
[661] Akhundov 2007, 100; Museibli 2007, 67; Museibli and Huseynov 2008, 21.
[662] Akhundov 2007, 100; Museibli and Huseynov 2008, 21.
[663] Akhundov 2007, 100; Museibli 2014b, 49-50.
[664] Museibli 2007, 67; Museibli and Huseynov 2008, 21; Museibli 2014b, 51-52.
[665] Akhundov 2007, 100-101; Museibli 2007, 66; Museibli and Huseynov 2008, 21; Museibli 2014b, 51-52.
[666] Akhundov 2007, 100-101; Museibli 2007, 66; Museibli and Huseynov 2008, 21; Museibli 2014b, 51-52.

disarticulated bodies were placed on the floor of the pit and covered with a large, ring-based basin.[667] Burial Five may demonstrate a secondary burial practice.[668]

Soyuq Bulaq offers an insight into the mortuary architecture of the Chaff-faced tradition.[669] All the kurgans present the same architectural layout. Each consists of a raised rectangular enclosure placed in the centre of a circular wall or ring.[670] Both the rectangular enclosure and the outer circle vary in size and are constructed of large river pebbles cemented together with a clay mortar. The rings surrounding the rectangular enclosures vary from four to 15 meters in diameter. The rectangular enclosures range between one to 3.5 meters. The width of the walls of the enclosures also varied between 0.35 and one meter in thickness. The corners of the rectangular enclosure are oriented towards the cardinal points.[671] On some kurgans, a thin layer of gravel was also added in the space between the rectangular enclosure and the outer ring.[672] However, some kurgans could be distinguished by the presence of a funerary pit dug into a terrace.[673]

Kurgan 1 is the largest and best-preserved at Souyuq Bulaq (***fig. 4.43***). The outer ring was 15 meters in diameter.[674] Like the other mounds, a rectangular enclosure was built in the centre of the ring and oriented towards the cardinal points. Below the

[667] Akhundov 2007, 101; Museibli 2007, 66; Museibli and Huseynov 2008, 21; Museibli 2014b, 51-52.
[668] Akhundov 2007, 101; Sagona 2014, 26.
[669] For more information regarding kurgans 1 through to 21, which were excavated by an Azerbaijani team in 2005 and 2009 in response to the construction of the Baku-Tbilisi-Ceyhan and South Caucasus pipelines, see Museibli 2014b. Note that the numerical system, used to designate these kurgans, differs from that used by the French-Azerbaijani team who excavated a series of kurgans at Soyuq Bulaq in 2006 and whose findings are discussed in this chapter.
[670] Lyonnet et al. 2008, 28; Museibli 2008a, 19-20; Lyonnet 2010, 359; Lyonnet and Guliyev 2010, 223; Museibli 2014b, 30-34.
[671] Lyonnet et al. 2008, 28; Museibli 2008a, 19-20; Lyonnet 2010, 359; Lyonnet and Guliyev 2010, 223; Museibli 2014b, 30-34.
[672] Lyonnet et al. 2008, 28; Museibli 2008a, 19-20; Lyonnet 2010, 359; Museibli 2014b, 30-34.
[673] Lyonnet et al. 2008, 28; Museibli 2008a, 19-20; Lyonnet 2010, 359; Lyonnet and Guliyev 2010, 223; Museibli 2014b, 30-34.
[674] Courcier et al. 2008a, 21-22; Lyonnet et al. 2008, 28; Museibli 2008a, 7-8; Museibli 2014b, 30-32.

rectangular enclosure was a pit measuring 1.5 meters in depth and 2.5 meters wide by 3.5 meters long.[675] The pit may be divided horizontally into two distinct levels. A mudbrick wall, consisting of six rows, was found lining the bottom of the pit. On top of the bricks sat a wooden floor upon which the deceased was laid.[676] No traces of the wooden floor were detected within the kurgan, however, fragments of wood were discovered near the bottom of the pit. Above the mudbrick wall, a coating of gravel, mixed with clay, was applied around the silt deposit.[677] Another lateral tomb, was discovered under the northern part of the outer ring. Beneath the pebbles was a small pit measuring 1.20 by one metres tightly packed with large pebbles.[678]

Despite the large number of kurgans, very few human remains have been recovered from the site demonstrating varying states of preservation. The best-preserved remains come from Kurgan 1 in a mixture of pebbles within the lower part of the tomb. The skeleton was almost complete and belongs to one adult individual. However, their sex could not be be determined due to poor preservation.[679] Although the remains of the skeleton were not *in situ*, it is likely that it was oriented towards the south.[680] In Kurgan 3C, the remains of a young adult were found in the pit beneath the rectangular enclosure including the cranium, the upper part of the spine, and the right arm and hand still articulated.[681] Kurgan 4 contained no skeleton, however, adult teeth

[675] Akhundov 2007, 101-102; Courcier et al. 2008a, 21-22; Lyonnet et al. 2008, 30; Museibli 2008a, 7-8; Museibli 2014b, 30-32.
[676] Akhundov 2007, 101-102; Courcier et al. 2008a, 21-22; Lyonnet et al. 2008, 30; Museibli 2008a, 7-8; Museibli 2014b, 30-32.
[677] Lyonnet et al. 2008, 30; Museibli 2008a, 7-8; Museibli 2014b, 30-32.
[678] Lyonnet et al. 2008, 32; Museibli 2008a, 7-8; Museibli 2014b, 30-32.
[679] Akundov 2007, 102-103; Courcier et al. 2008a, 21-22; Lyonnet et al. 2008, 30; Museibli 2008a, 7-8; Lyonnet 2010, 360; Museibli 2014b, 30-32.
[680] Akundov 2007, 102-103; Museibli 2008a, 7-8; Museibli 2014b, 30-32.
[681] Lyonnet et al. 2008, 33; Museibli 2008a, 8-9; Museibli 2014b, 32-33.

and a distal fragment of the first metatarsus were found within the brick level. Small fragments of burnt bone were also discovered, although it is not apparent if they represent animal or human remains.[682]

The Kura-Araxes Complex: The Dawn of the Early Bronze Age and the Introduction of New Social and Cultural Dynamics throughout the Caucasus

Sites belonging to the earliest phases of the Kura-Araxes complex sit comfortably around 3500 and 3300 B.C.E.[683] Mentesh Tepe and Sos Höyük are amongst the earliest of the well-documented sites. Each of the sites are contemporary and radiocarbon dates place the Early Bronze Age deposits between 3500-2900 B.C.E.[684] At Mentesh Tepe, Period IV has been attributed to the Early Bronze Age, which may be further sub-divided into three phases. The earliest is the most relevant and corresponds to a collective burial found beneath a kurgan. [685] Sos Höyük is a multi-period tell situated in the village of Yiğittaşi in north-eastern Turkey.[686] Early Kura-Araxes domestic structures have been recovered from level VA, the earliest occupational deposit at the site.[687] The stratigraphy of Sos Höyük VA is characterised by a series of construction phases defined in relation to a large, curved stone wall which surrounds the core of the early Kura-Araxes

[682] Courcier et al. 2008a, 22; Lyonnet et al. 2008, 34; Museibli 2008a, 9-10; Museibli 2014b, 33.
[683] The recent application of Beyesian modelling to a number of radiocarbon dates from Kura-Araxes settlements has resulted in slightly later dates for some sites. In particular, modelled transitional dates for Sos Höyük place the beginning of period VA at 3370 to 3160 B.C.E. Passerini et al. 2018, Tab. 7.
[684] Sagona 2000, 332; Sagona and Sagona 2000, 58; Kiguradze and Sagona 2003, 45; Palumbi 2003, 92-93; Badalyan et al. 2008, 49-50; Palumbi 2008a, 64; Longford et al. 2009, 123; Sagona and Zimansky 2009, 164; Badalyan et al. 2010b, 265-266; Sagona 2010c, 42-43; Kibaroğlu et al. 2011, 3037; Lyonnet et al. 2012, 92-94; Smith 2012b, 676; Lyonnet 2014, 115; Poulmarc'h et al. 2014, 240; Sagona 2014, 39-40; Haroutunian 2015, 201; Jude et al. 2015, 2.
[685] Lyonnet et al. 2012, 92-94; Lyonnet 2014, 115; Poulmarc'h et al. 2014, 240; Lyonnet et al. 2015, 190.
[686] Sagona et al. 1995, 196; Sagona et al. 1996, 27; Sagona et al. 1997, 188; Hopkins 2001, 110; Howell-Meurs 2001, 5; Kobayashi 2007, 142; Palumbi 2008a, 64; Longford et al. 2009, 122; Sagona 2010c, 42; Kibaroğlu et al. 2011, 3037.
[687] Sagona 2000, 332; Sagona and Sagona 2000, 58; Kiguradze and Sagona 2003, 45; Palumbi 2003, 92-93; Palumbi 2008a, 64; Longford et al. 2009, 123; Sagona and Zimansky 2009, 164; Sagona 2010c, 42-43; Kibaroğlu et al. 2011, 3037; Sagona 2014, 39-40.

settlement. Four phases have been identified including a preconstruction phase, first construction phase, collapse phase, and, reconstruction phase.[688]

Slightly later in date, and roughly contemporary, are Horom, Aparan III, Talin, Chobareti, and Gegharot. Horom is located within the Shirak region of north-western Armenia 15 kilometres south-east of Leninakan/Kumairi.[689] Due to subsequent occupation of the site, the Early Bronze Age is known through a series of mixed layers and a single, collective stone cist tomb.[690] Radiocarbon dates place the construction of the tomb between 3360-2930 B.C.E.[691] Aparan III is located in central Armenia on the west bank of the Kasakh River on the south-eastern slope of Mount Aragats.[692] A limited excavation has revealed a domestic refuse pit and a single phase of occupation.[693] Radiocarbon samples taken from waste in the pit suggest that the site was occupied between 3340 to 2920 B.C.E.[694] Talin is a cemetery located on the south-western slopes of Mount Aragats 50 kilometres north-west of Yerevan.[695] Over 100 burials have been identified, four of which (burials 7, 10, 11, 12) date to the beginning of the Early Bronze Age.[696] Tomb 11 is the most relevant. A radiocarbon date places the construction of the tomb between 3300 and 2936 B.C.E.[697] Chobareti is located 1.2 kilometres to the north of the village of Chobareti in the Samtskhe-Javakheti region of Georgia.[698] Chobareti is

[688] Frangipane and Palumbi 2007, 249; Kobayashi 2007, 143.
[689] Badaljan et al. 1992, 31-32; Badaljan et al. 1993, 1; Palumbi 2008a, 187.
[690] Badaljan et al. 1993, 4.
[691] Badaljan et al. 1994, 14; Badaljan 1996, 14; Palumbi 2003, 97; Palumbi 2008a, 188.
[692] Badalyan and Avetisyan 2007, 57; Badalyan et al. 2008; Palumbi 2008a, 188; Hovsepyan 2010, 32; Iserlis et al. 2010, 249.
[693] Badalyan and Avetisyan 2007, 58; Iserlis et al. 2010, 249.
[694] Badalyan 2003, 21; Palumbi 2008a, 190; Hovsepyan 2010, 32.
[695] Avetisyan and Muradyan 1994; Palumbi 2003, 98; Badalyan and Avetisyan 2007, 242; Avetisyan et al. 2010, 161; Kalantarian 2011, 124.
[696] Kalantarian 2011, 124.
[697] Palumbi 2003, 98; Avetisyan et al. 2010, 163; Kalantarian 2011, 124; Hovsepyan 2013, 199-200.
[698] Kakhiani et al. 2013, 7; Sagona 2014, 37; Messager et al. 2015, 215.

a terraced site situated between two small hills with its occupational deposits distributed on the southern slopes.[699] Two Early Bonze Age occupational layers have been identified. Radiocarbon dates indicate that the earliest phase covers a period of 100 years spanning from 3300 to 3200 B.C.E. The later phase is dated from 3190 to 2900 B.C.E.[700] Gegharot is a multi-period site located in north central Armenia in the Tsaghkahovit plain.[701] Early Bronze Age deposits were discovered on its summit and upper terrace. The remains consist of shallow deposits located approximately 45 to 70 centimetres below the surface.[702] Despite this, two phases have been identified with the earliest attributed to the Kura-Araxes I period.[703]

Mention must also be made of Ovçular Tepesi and Areni-1, which represent chronological outliers amongst the group of early Kura-Araxes sites. Kura-Araxes material has been found within the Late Chalcolithic II of Ovçular Tepesi. Radiocarbon dates place this material between 4300 and 4000 B.C.E., approximately 700 years before the earliest known appearance of Kura-Araxes within the Transcaucasus.[704] Kura-Araxes sherds were also recovered from the Areni-1 cave in southern Armenia.[705] Radiocarbon

[699] Kakhiani et al. 2013, 7; Messager et al. 2015, 215.
[700] Kakhiani et al. 2013, 21-26; Sagona 2014, 37.
[701] Avetisyan et al. 2000, 27; Badalyan and Avetisyan 2007, 99; Monahan 2007, 380; Chataigner and Gratuze 2014b, 64; Smith and Leon 2014, 551; Jude et al. 2015, 2.
[702] Badalyan et al. 2008, 49-50; Badalyan et al. 2010b, 265.
[703] The recent application of Bayesian modelling to a series of radiocarbon dates from Gegharot has drastically reduced the occupational timeframe of the lower Early Bronze Age deposit. Initially dated between 3500-2900 B.C.E., a reevaluation of the radiocarbon dates suggests that the occupation of Stratum Ia occurred between c.3000-2900 B.C.E. As Bayesian modelling is applied to more radiocarbon dates, it seems likely that more sites will demonstrate narrower chronological timeframes. Badalyan and Smith 2008, 53-54; Badalyan et al. 2008, 49-50; Badalyan et al. 2010b, 265-266; Badalyan 2011, 64; Badalyan et al. 2014, 152; Jude et al. 2015, 2; Badalyan 2018, 52; Manning et al. 2018, 1547; Passerini et al. 2018, Tab. 9.
[704] Marro et al. 2011, 66-69; Marro et al. 2014, 132-137; Palumbi and Chataigner 2014, 250; Nicolas 2015, 13; Kavtaradze 2017, 94; Kavtaradze 2018, 84.
[705] Areshian et al. 2012, 128; Wilkinson et al. 2012, 28; Marro et al. 2014, 144; Kavtaradze 2018, 84.

dates from the site are slightly later than those from Ovçular Tepesi, ranging between 4100 to 3800 B.C.E.[706]

At both sites, no other artefacts characteristic of the Kura-Araxes cultural package have been found in association with these finds.[707] Eighteen incomplete Kura-Araxes vessels have been recovered from the Late Chalcolithic level at Ovçular Tepesi (***fig. 4.44***).[708] None of the ceramics demonstrate any parallels to the assemblages found at early Kura-Araxes sites. Instead, the vessels demonstrate fully developed traits of the Kura-Araxes assemblage more commonly known from the third millennium B.C.E.[709] The Kura-Araxes ceramics from Areni-1 share close affinities with the early Kura-Araxes materials (***fig. 4.45***).[710] The nature of the finds of Trench 2 is complicated by the complex stratigraphy characterised by numerous domestic layers interrupted by refuse pits and hearths. The stratigraphy was further compromised by the later medieval occupation of the cave.[711] Ovçular Tepesi and Areni-1 remain problematic and will not be discussed in relation to the early Kura-Araxes sites.[712] There is not enough secure data to warrant pushing the development of the Kura-Araxes back to the final quarter of the fifth millennium B.C.E. More research is needed before they can be convincingly recognised as early Kura-Araxes sites.

[706] Wilkinson et al. 2012, 28; Kavtaradze 2014, 19; Kavtaradze 2017, 94.
[707] Areshian et al. 2012; Wilkinson et al. 2012; Marro et al. 2014, 140; Palumbi and Chataigner 2014, 250.
[708] Marro et al. 2014, 144.
[709] Marro et al. 2011, 66; Marro et al. 2014, 140-141; Palumbi and Chataigner 2014, 250.
[710] Areshian et al. 2012, 128; Wilkinson et al. 2012, 28.
[711] Wilkinson et al. 2012, 27.
[712] Palumbi and Chataigner 2014, 250.

Architecture

Early Kura-Araxes settlements are characterised by a variety of architectural forms. Structures were built of wood, wattle-and-daub, mudbrick, and stone. Domestic structures were semi-subterranean, round, rectilinear, or terraced. Early architectural evidence is characterised by a series of floor levels and pits indicating that structures were built from organic materials. At Sos Höyük, the earliest occupational phase is characterised by a series of burnt floors marked by several large stones placed upon the sterile soil.[713] The use of mudbrick is also attested at Sos Höyük. Following the series of burnt floor levels, a multicellular, mudbrick domestic structure was built. The structure consisted of two rooms, each with a limestone plastered floor, and a central hearth located in the easternmost room.[714] The use of mudbrick architecture continued at Sos Höyük. After the collapse of the wall, a mudbrick roundhouse was built **(*fig. 4.46*)**. The house consisted of a hard-packed, clay floor with a central hearth. A post-hole, used for a large wooden support beam, was found to the left of the doorway on the western side of the structure.[715] A small domestic roundhouse, constructed from stone blocks, was uncovered at Horom.[716]

Stone architecture is a feature at several early Kura-Araxes sites. The early Kura-Araxes settlement at Sos Höyük is dominated by a large, curved stone wall that encircled the core of the settlement **(*fig. 4.47 and 4.48*)**.[717] The foundation was built from local

[713] Sagona and Sagona 2000, 58; Kiguradze and Sagona 2003, 48; Palumbi 2003, 93; Palumbi 2008a, 64; Sagona 2014, 39-40.
[714] Sagona and Sagona 2000, 58; Kiguradze and Sagona 2003, 48; Palumbi 2003, 93; Palumbi 2008a, 64; Sagona 2014, 39-40.
[715] Sagona and Sagona 2000, 61; Kiguradze and Sagona 2003, 47-48; Sagona 2014, 40.
[716] Badaljan et al. 1992, 37.
[717] Frangipane and Palumbi 2007, 249; Sagona 2014, 39-40.

fieldstones, filled with an inner packing of small stones and hard clay, and measured 2.5 metres across.[718] In some areas the wall is preserved up to eight courses high and measured over 1.75 metres.[719] Houses were also built with stone foundations. One was built up against the eastern face of the curved, stone wall. An unusual hearth installation was found built into the limestone plastered floor. The hearth was built on a raised mound of soil where a modified ceramic vessel was set into and surrounded by embedded stones. Another semi-circular structure, possibly the remains of an oven, was also found built into the floor.[720] Following the first collapse of the wall, another rectilinear domestic structure with stone foundations was built prior to the construction of the mudbrick roundhouse. It was characterised by a central hearth, set into the limestone plastered floor, and a bench along the back wall.[721]

Gegharot and Chobareti had domestic, stone architecture. At Gegharot a rectilinear structure, built from dry-stone masonry, with two rooms was uncovered **(*fig. 4.49*)**. The rooms were partitioned by a stone wall running through the centre of the structure.[722] The southernmost room is characterised by a compact clay floor two to three centimetres thick. A fixed hearth, with a small pit in the centre, was situated in the northern corner.[723] Two superimposed floor levels were identified in the northernmost room. On the first floor, were fragments of limestone flagstone four centimetres thick.

[718] Sagona et al. 1997, 187; Sagona 2000, 332; Sagona and Sagona 2000, 59; Kiguradze and Sagona 2003, 45-47; Sagona and Zimansky 2009, 164; Sagona 2014, 39-40.
[719] Sagona et al. 1997, 187; Sagona 2000, 332; Sagona and Sagona 2000, 59; Kiguradze and Sagona 2003, 45-47; Sagona and Zimansky 2009, 164; Sagona 2014, 39-40.
[720] Sagona and Sagona 2000, 58-60; Palumbi 2003, 94.
[721] Sagona and Sagona 2001, 61; Kiguradze and Sagona 2003, 47-48; Sagona 2014, 40.
[722] Badalyan et al. 2008, 50; Badalyan et al. 2010b, 265-266; Jude et al. 2015, 2.
[723] Badalyan et al. 2008, 52.

The second floor, found ten centimetres beneath the first, held a large, cylindrical, fixed clay hearth and a bell-shaped pit, 1.38 metres deep, in the south-eastern corner.[724]

To the north, another two rectilinear rooms, built from one to two course of dry-stone masonry, were discovered. The rooms are oriented along a north-south axis with the extant portions of the northern and southern rooms measuring 2.5 by 2.3 metres and 1.25 by 2.4 metres, respectively.[725] In the southern room, a floor level was uncovered with a two centimetre strip of clay along the base of the walls. From this level, rectangular clay blocks, flat stones, pottery sherds, and andiron fragments were discovered.[726] Other stone architecture includes a small trapezoid-shaped room with a clay hearth. The room was constructed from one to two courses of flat stone blocks. Along the eastern wall, a semi-circular construction of pebbles was found.[727]

Another six Early Bronze Age structures have been excavated at Chobareti. Structures 3 and 4 represent domestic structures. Structure 3 is a single-roomed terraced house, rectilinear in plan, with its northern wall built against the terrace **(*fig. 4.50*)**. The stone wall is 1.3 metres high and 3.8 metres in length.[728] A limestone carved bench lines the back wall and in the centre of the room was a fixed hearth.[729] Other features include a post-hole located between the back bench and the central hearth. A round stone platform was also discovered along the eastern wall. Pits were dug in the north-eastern and north-western corners.[730] Structure 4 was a large, terraced structure,

[724] Badalyan et al. 2008, 52-54.
[725] Badalyan et al. 2014, 161.
[726] Badalyan et al. 2014, 161.
[727] Badalyan et al. 2014, 161.
[728] Kakhiani et al. 2013, 12; Sagona 2014, 38.
[729] Sagona 2014, 38.
[730] Sagona 2014, 38.

measuring 15.3 metres in length (***fig. 4.51***).[731] Unlike the other structures, its northern wall is curved indicating that it may have been pear-shaped in plan.[732] The wall was constructed from fieldstones and measures up to 1.4 metres high. Two internal walls were used to divide the space.[733] A large amount of grain and basalt grinding stones were recovered from Structure 4 suggesting that it functioned as a food processing area.[734]

Pits are another feature of early Kura-Araxes settlements including Sos Höyük, Gegharot, Aparan III, and Chobareti. At Sos Höyük, after the abandonment of the mudbrick roundhouse, a pit was dug into the floor and filled with ash and pottery sherds.[735] Much of the material recovered from Aparan III was deposited into a single domestic refuse pit measuring one metre in diameter and 40 centimetres deep.[736] Eighteen pits have excavated at Chobareti (***fig. 4.52 and 4.53***). Many were not associated with any built structures, however, pits 11 and 13, were the exceptions. The pits varied in shape and size. Pear, drop, bell, and cylindrical-shaped pits are all attested ranging from 26 centimetres to 1.8 metres in depth. Grain, found at the bottom of many pits, suggests that they were initially utilised for storage purposes and were later re-used for waste disposal.[737] Some of the pits may also represent structured deposits. In Pit 4, five near complete vessels were recovered in addition to an obsidian projectile point and cattle bone fragments (***fig. 4.54***). A large amount of ash and charcoal pieces

[731] Kakhiani et al. 2013, 18.
[732] Kakhiani et al. 2013, 18; Sagona 2014, 38.
[733] Kakhiani et al. 2013, 18.
[734] Sagona 2014, 38.
[735] Sagona and Sagona 2000, 61; Palumbi 2008a, 64.
[736] Badalyan and Avetisyan et al. 2007, 58; Iserlis et al. 2010, 249.
[737] Kakhiani et al. 2013, 12; Messager et al. 2015, 215.

were also recovered. Another pit, Pit 12, was reused as a burial.[738] The pit excavated at Gegharot may also represent a structured deposit. Inside the pit were deposits of grain, fragments of limestone flagstones, and a large amount of ceramics in addition to andiron fragments, a ground stone, and several bone spindle whorls.[739] These finds imply that they may have held a deeper symbolic significance that extended beyond the functional purposes of storage and waste disposal.[740]

Ceramics

The ceramic assemblage is considered a hallmark of the Kura-Araxes complex. The early ceramics are characterised by three ware types including Monochrome ware, Red-Black Burnished ware, and Black Burnished ware.[741] Each are technologically and morphologically similar. Rather, the difference between them lies in the variation of colour scheme and surface treatment. During the early Kura-Araxes I period, Monochrome ware is predominant. Red-Black Burnished ware is present in lesser numbers but demonstrates a gradual increase as the period progresses.[742] The ceramic production methods of the early Kura-Araxes communities differ greatly to those of Chaff-faced ware. Kura-Araxes communities used labour intensive production methods whereas Chaff-faced pottery production focused on efficiency.

Early Kura-Araxes ceramics are handmade using the slab or coil technique.[743] The use of slab technique is common at sites such as Sos Höyük, Chobareti, and Talin. Sherds

[738] Kakhiani et al. 2013, 12; Messager et al. 2015, 215.
[739] Badalyan et al. 2008, 54; Badalyan et al. 2010b, 265-266; Jude et al. 2015, 2.
[740] Chapman 2000.
[741] Greenberg 2007, 257; Smith et al. 2009, 24.
[742] Sagona 1984, 97-98; Rova 2014, 52; Palumbi 2016, 12; Passerini et al. 2018, 96.
[743] Badaljan et al. 1992, 37; Sagona 1998, 22; Palumbi 2003, 92; Badalyan and Avetisyan 2007, 58; Smith et al. 2009, 43; Iserlis et al. 2010, 249; Kibaroğlu et al. 2011, 3082; Lyonnet et al. 2012, 103; Hovsepyan

from these sites can have textile impressions on the inner layer of the vessel fabric indicating that sand-filled, cloth sacks were used to mould the vessels **(*fig. 4.55*)**.[744] The coil construction technique is predominant at Aparan III and Gegharot with the slab technique reserved for vessels of larger dimensions.[745] Clay was locally sourced and varies greatly from site to site.[746] Mineral tempered pastes are prevalent. Clays were tempered with a combination of sand, grog, obsidian, and volcanic ash with naturally occurring inclusions such as plagioclase, clinopyroxene, quartz, and mica.[747] Mixed tempered ceramics are also known from Mentesh Tepe and Aparan III.[748]

The ceramics were hard-fired at low to medium temperatures in a reducing or oxidising atmosphere ranging from 600 to 850 degrees Celsius. Sections of sherds, demonstrating dark grey or black cores, indicate that the firing process was irregular and uneven, although some thin-walled examples from Chobareti and Sos Höyük are evenly fired.[749] Due to uneven firing, Monochrome ware demonstrates a variety of surface colours ranging from pinks, light brown to brown, reddish brown, and grey **(*fig. 4.56*)**.[750] The distinctive Red-Black Burnished ware demonstrates a fixed bi-chrome colour

2013, 205; Kakhiani et al. 2013, 30-31; Badalyan 2014, 73; Lyonnet 2014, 118-119; Kibaroğlu 2015, 221; Palumbi 2016, 11.

[744] Badalyan and Avetisyan 2007, 244; Smith et al. 2009, 43; Hovsepyan 2013, 205; Kakhiani et al. 2013, 30; Jalilov 2018, 104; Sagona 2018b, 285.

[745] Badalyan and Avetisyan 2007, 58; Iserlis et al. 2010, 249; Haroutunian 2015, 202; Iserlis et al. 2015, 21.

[746] Sagona and Sagona 2000, 62; Palumbi 2003, 91-92; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188; Iserlis et al. 2010, 250; Kibaroğlu et al. 2011, 3082; Kibaroğlu 2015, 222.

[747] Sagona 1984, 97-98; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188; Iserlis et al. 2010, 250; Hovsepyan 2013, 205; Kakhiani et al. 2013, 30-31; Haroutunian 2015, 202; Palumbi 2015a, 80; Palumbi 2016, 11; Palumbi 2017, 115.

[748] Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188; Iserlis et al. 2010, 250; Lyonnet et al. 2012, 103; Lyonnet 2014, 118-119; Kibaroğlu 2015, 222.

[749] Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188; Iserlis et al. 2010, 249; Kibaroğlu et al. 2011, 3074, 3082; Lyonnet et al. 2012, 103; Hovsepyan 2013, 205; Kakhiani et al. 2013, 30-31; Lyonnet 2014, 118-119; Kibaroğlu 2015, 222-223.

[750] Sagona 1984, 97-98; Badaljan et al. 1992, 37; Palumbi 2003, 91-92; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188; Smith et al. 2009, 43; Iserlis et al. 2010, 249; Lyonnet et al. 2012, 103; Kakhiani et al. 2013, 30-31; Badalyan 2014, 73; Lyonnet 2014, 118-119.

scheme with black exterior surfaces and light brown to red interior surfaces **(*fig. 4.57*)**.[751] Black Burnished ware is dark grey to black on the interior and exterior surfaces.[752] Exterior surfaces were often burnished. In some instances, monochrome vessels were left matt and simply smoothed.[753] Vessels were also slipped. At Sos Höyük, slip was reserved for Red-Black Burnished ware and Black Burnished ware. Monochrome vessels were slipped and burnished at Chobareti resulting in a leather-like appearance.[754] Interior surfaces were smoothed or left plain.[755]

The early Kura-Araxes assemblage consists of open and closed vessel forms. Closed forms are predominant and include cups, jarletts, jars, and pithoi. Conical cups, with one or more handles, and small cups with a sinuous profile are attested at Aparan III and Sos Höyük.[756] Small, cylindrical cups with flat bases have been recovered from Gegharot **(*fig. 4.58*)**.[757] Jarletts are small with ovoid bodies and cylindrical or outflaring necks.[758] Jars are the most common vessel type and come in a variety of different forms including an ovoid bodied jar with high shoulders and a short, cylindrical neck with handles positioned between the neck and the shoulder.[759] Tall necked jars with everted, rail-like rims or flattened rims and three-handled jars with a cylindrical neck and

[751] Palumbi 2003, 97; Palumbi 2008a, 187; Kibaroğlu et al. 2011, 3074; Badalyan 2014, 73; Palumbi 2015a, 80.
[752] Palumbi 2003, 91-92; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188; Iserlis et al. 2010, 249; Kibaroğlu et al. 2011, 3074.
[753]Badaljan et al. 1992, 37; Sagona and Sagona 2000, 62; Palumbi 2003, 97; Badaylan and Avetisyan 2007, 58; Palumbi 2008a, 188; Iserlis et al. 2010, 249; Kibaroğlu et al. 2011, 3074; Lyonnet et al. 2012, 103; Kakhiani et al. 2013, 30.
[754] Sagona and Sagona 2000, 62; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 58; Iserlis et al. 2010, 249; Kakhiani et al. 2013, 30.
[755] Sagona and Sagona 2000, 63; Palumbi 2003, 91-92; Palumbi 2008a, 66; Kibaroğlu et al. 2011, 3074; Lyonnet et al. 2012, 103; Kakhiani et al. 2013, 30.
[756] Sagona and Sagona 2000, 62; Palumbi 2003, 93-94; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188-190; Kibaroğlu et al. 2011, 3074.
[757] Badalyan et al. 2008, 52-54; Haroutunian 2015, 203.
[758] Sagona and Sagona 2000, 62; Palumbi 2003, 93-94; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188-190.
[759] Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188-190.

biconical profile were recovered from Chobareti and Talin Tomb 11.[760] At Sos Höyük, large jars with an out-flaring neck and looped handles in addition to swollen necked jars with flat bases and a biconical profile are also common **(*fig. 4.59*)**.[761] Hole-mouthed jars, more commonly associated with the Chaff-faced assemblage, are also attested at Sos Höyük and Chobareti **(*fig. 4.60 and 4.61*)**.[762] Pithoi, from Aparan III, are large with cylindrical and out-flaring necks and narrow bases. Rounded bodied pithoi with thick handles are common at Chobareti.[763]

Open forms are less common and include double handled bowls from Mentesh Tepe, hemispherical, carinated bowls from Sos Höyük, deep bowls with a sinuous profile from Horom, and large bowls with high shoulders, out-turned rims, and handles from Aparan III **(*fig. 4.62 and 4.63*)**. Other open forms include large pots, trays with flat bases, and flat, discoid lids with a central handle **(*fig. 4.64 and 4.65*)**.[764] Ovens, hearths, and andirons are also common. At Gegharot, a cylindrical, clay oven was found built into the floor of the northern room.[765] Fixed, circular hearths, with a central opening, are also attested at Sos Höyük.[766] Andirons and hearth supports were recovered from Gegharot, Sos Höyük, Horom, and Chobareti **(*fig. 4.66*)**. A variety of types were recovered including horse-shoe-shaped, twin horned, pyramidal, and rectangular andiorns with a central

[760] Badalyan and Avetisyan 2007, 244; Palumbi 2003, 99; Kakhiani et al. 2013, 30-31.
[761] Sagona and Sagona 2000, 62; Palumbi 2003, 93-94; Palumbi 2008a, 66.
[762] Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188-190.
[763] Kakhiani et al. 2013, 30-31.
[764] Badaljan et al. 1992, 37; Sagona and Sagona 2000, 63; Palumbi 2003, 97; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188; Iserlis et al. 2010, 249; Lyonnet et al. 2012, 103; Lyonnet 2014, 118-119; Haroutunian 2015, 202-203; Lyonnet et al. 2015, 190-191.
[765] Pkhakadze 2000, 15; Badalyan et al. 2008, 52-54.
[766] Palumbi 2008a, 70.

handle (***fig. 4.67 and 4.68***).[767] Other notable items also include a zoomorphic figurine found in Structure 4 at Chobareti (***fig. 4.69***).[768]

Kura-Araxes ceramics demonstrate a restricted decorative repertoire. A common form of decoration includes post-firing incisions found on the shoulder, neck, or the base of vessels (***fig. 4.70 and 4.71***). Motifs are based on geometric designs such as checked squares, lozenges, and triangles.[769] Examples include two Red-Black Burnished ware fragments from Sos Höyük decorated with a rectilinear motif and a series of small, hatched triangles.[770] The large, cylindrical clay oven, found in the northern room at Gegharot, was also decorated with an incised geometric motif.[771] Incised zoomorphic representations are attested at Aparan III and Gegharot, however, such motifs are less common.[772]

Other decorative forms include lugs, knobs, dimples, and circular impressions. At Gegharot, knobs and dimples, either singular or in pairs, were found positioned on either side of the handles of some vessels.[773] Flattened knobs, some with impressed dimples in the centre, are common at Chobareti and are found on the body of vessels or along the rim (***fig. 4.72***). One example of a vertical pierced lug is also attested.[774] Embossed

[767] Badaljan et al. 1992, 37; Sagona 1998, 22; Sagona and Sagona 2000, 60-62; Kiguradze and Sagona 2003, 48; Badalyan et al. 2008, 52; Kakhiani et al. 2013, 18; Sagona 2014, 39-40.
[768] Kakhiani et al. 2013, 18.
[769] Sagona and Sagona 2000, 62; Palumbi 2003, 94-95; Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188-190; Badalyan 2014, 73.
[770] Sagona and Sagona 2000, 62; Palumbi 2003, 94-95; Palumbi 2008a, 67.
[771] Badalyan et al. 2008, 52-54.
[772] Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188-190; Badalyan 2014, 74; Haroutunian 2015, 203.
[773] Badalyan 2014, 73.
[774] Kakhiani et al. 2013, 30-31.

oblique lines and geometric designs in relief are also known from Gegharot, however, such motifs are rare.[775]

Metallurgy

Very few metallurgical artefacts have been recovered at early Kura-Araxes sites in contrast to the material found at the earlier Chaff-faced sites. Metallurgical artefacts were recovered from Gegharot and Talin Tomb 11. At Gegharot, a leaf-shaped, bronze spearhead was found in the southern room of the rectilinear, stone building **(*fig. 4.73*)**. It has a well-defined central rib that leads into the shank. Below the small guard, is a tang, circular in section, which tapers to a narrow, slightly curved point. The spearhead is 30 centimetres long and weighs 176 grams. Similar spearheads have been found throughout the Transcaucasus. However, none are derrived from securely stratified contexts.[776] A tin bronze spiral ring, two centimetres in diameter, was recovered from Talin Tomb 11 **(*fig. 4.74*)**.[777] Analysis of the ring revealed that it contains a high tin content which constitutes more than ten percent of the alloy.[778] The scarcity of metallurgical artefacts recovered from early Kura-Araxes sites is difficult to explain. The dearth within the archaeological record may be due to the high value of metallurgical implements and the reuse and re-smelting of artefacts.

Stone Tools and Lithics

The evidence for a macrolithic assemblage at early Kura-Araxes sites is also poor. Much of the assemblage consists of basalt grinding stones. Saddle-shaped basalt

[775] Badalyan 2014, 73; Haroutunian 2015, 203.
[776] Badalyan et al. 2008, 54.
[777] Badalyan and Avetisyan 2007, 244; Avetisyan et al. 2010, 161; Meliksetian and Pernicka 2010, 42; Kalantarian 2011, 125.
[778] Badalyan and Avetisyan 2007, 244; Meliksetian and Pernicka 2010, 42; Meliksetian et al. 2011, 204.

grinding stones were found in Structure 4 at Chobareti (***fig. 4.75***).[779] Grinding stones were also recovered from Gegharot. One was found on the floor of the southern room close to the oven. Another was deposited at the bottom of the pit in the northern room.[780] Grinding stones were also recovered from Aparan III and Mentesh Tepe.[781] Other stone tools include two flat implements with polished surfaces from Aparan III. Their function remains unclear, however, they may represent polishing stones or hand-held stones.[782] A number of riverine pebbles, bearing signs of usage, were also found at Chobareti which likely served as burnishing tools.[783] A stone macehead was found in Talin Tomb 11.[784] Over 300 tiny white and black beads, of a high level of craftsmanship, were collected from the burial at Mentesh Tepe. The white beads were made of talc, fired at temperatures between 900 and 1200 degrees Celsius, while the black beads were made of serpentinite.[785]

Both flint and obsidian were utilised at early Kura-Araxes sites. Many flint sickle blades were recovered from Gegharot, 13 of which were recovered from the northern room. Four of the blades were fully articulated, composite tools with wooden handles (***fig. 4.76***). Another blade was found on the floor of the southern room together with the carbonised seeds.[786] Flint sickle blades were also recovered from Horom and Chobareti.[787]

[779] Kakhiani et al. 2013, 39-40.
[780] Badalyan et al. 2008, 52-54.
[781] Badalyan and Avetisyan 2007, 58; Hovsepyan 2010, 32; Poulmarc'h et al. 2014, 241-242.
[782] Badalyan and Avetisyan 2007, 58; Hovsepyan 2010, 32.
[783] Kakhiani et al. 2013, 39-40.
[784] Avetisyan et al. 2010, 161.
[785] Lyonnet et al. 2012, 94; Lyonnet 2014, 118-119; Poulmarc'h et al. 2014, 241-242.
[786] Badalyan et al. 2008, 52-54; Badalyan et al. 2010b, 267.
[787] Badaljan et al. 1992, 35; Kakhiani et al. 2013, 39-40.

Obsidian lithic tools are represented by fragments and flakes. At Gegharot, a small ceramic vessel containing 21 obsidian fragments was found on top of the wall near the south-eastern corner of the southern room. A large obsidian spearhead, 12 centimetres long and weighing 70 grams, was also found on the floor of the northern room **(*fig. 4.77*)**.[788] A refit of an obsidian pebble, consisting of 42 fragments, was found on the floor of the mudbrick roundhouse at Sos Höyük **(*fig. 4.78*)**.[789] A single obsidian arrowhead was recovered from the kurgan at Mentesh Tepe.[790] However, 34 blocks of obsidian, weighing between 460 grams and one kilogram, were found in Talin Tomb 11.[791] Very little obsidian has been recovered from Chobareti despite its proximity to the Chikiani outcrop. A single obsidian projectile point has been recovered from Pit 4 suggesting that a cultural or territorial barrier may have prevented access to the source.[792] Currently, there is no evidence to suggest the presence of a specialised lithic industry at any of the mentioned sites. No workshops have been found. At Sos Höyük, lithic production was carried out on a domestic scale using unrefined methods such as free-hand percussion. Specialist items, such as blades, were likely imported.[793]

Bone Tools

Very few bone implements have been recovered from early Kura-Araxes sites. A small assemblage was recovered from the rectilinear stone building at Gegharot. The assemblage consists of awls and spindle whorls **(*fig. 4.79*)**. Notable finds include a bone arrowhead found in the centre of the southern room amongst a concentration of

[788] Badalyan et al. 2008, 50-54.
[789] Kobayashi 2007, 141-146; Sagona and Zimansky 2009, 164; Sagona 2014, 40.
[790] Poulmarc'h et al. 2014, 241-242.
[791] Badalyan and Avetisyan 2007, 244.
[792] Kakhiani et al. 2013, 39-40.
[793] Sagona et al. 1998, 36; Kobayashi 2007, 141-146; Sagona and Zimansky 2009, 164; Sagona 2014, 40.

carbonised seeds, a spearhead, and a sickle blade.[794] A spindle whorl, recovered from the pit in the northern room, was also found and was decorated with incised, hatched lines.[795] Bone implements were also recovered from Mentesh Tepe and Sos Höyük. Ten hemispherical, perforated bone objects were found amongst the grave goods in the kurgan. Their function is unclear, however, they may represent buttons or spindle whorls.[796] From Sos Höyük, a bone point, with a polished tip, was recovered from the early Kura-Araxes occupational deposits (***fig. 4.80***).[797]

Subsistence Strategies

Early Kura-Araxes subsistence strategies have often been regarded as being centred on a transhumant lifestyle.[798] Recent evidence suggests that early Kura-Araxes communities practiced a mixed-farming subsistence strategy to minimise risks such as crop failure and food shortages.[799] Much of the evidence is derived from Gegharot, Sos Höyük, Horom, Aparan III, and Chobareti. In such cases, sites were occupied year-round. Burial sites with no associated settlements, such as Mentesh Tepe and Talin, suggest that at least part of the population may have been mobile.[800] During the transitional/early Kura-Araxes I period, there is a reduction in the variety of cultivated plants and cereals. Agriculture is based almost exclusively on cereal cultivation with an emphasis on *Hordeum vulgare* (Barley) and *Triticum aestivum* (Wheat).[801] Little

[794] Badalyan et al. 2008, 52.
[795] Badalyan et al. 2008, 54.
[796] Lyonnet et al. 2012, 119; Lyonnet 2014, 118-119; Lyonnet et al. 2015, 190.
[797] Sagona and Sagona 2000, 63, Fig. 19.1.
[798] Palumbi 2003; Rothman 2003; Smith et al. 2009, 26; Rothman 2016, 237-238; Samei et al. 2019, 2.
[799] Palumbi and Chataigner 2014, 253; Wilkinson 2014, 207; Iserlis et al. 2015, 10; Palumbi 2016, 17; Palumbi 2017, 115; Samei et al. 2019, 14.
[800] Avetisyan et al. 2010, 164; Kalantarian 2011, 125; Hovsepyan 2013, 202; Lyonnet 2014, 115; Rova 2014, 63; Palumbi 2016, 23; Tonussi 2017, 134.
[801] Rova 2014, 63; Hovsepyan 2015, 69; Palumbi 2016, 16; Rothman 2016, 237; Anderson and Negus Cleary 2018, 93; Rothman 2018, 132.

difference can be seen between the crop assemblages of each site. Differences are based on the ratio of wheat and barley due to the geographic variation in site location. Barely is predominant at sites of higher elevation while wheat is common at sites located at lower altitudes.[802]

At Gegharot and Aparan III barley is the most common cereal representing 90 and 56 percent of the macrobotanical assemblage, respectively **(*fig. 4.81 and 4.82*)**.[803] At both sites, two subspecies of barley have been identified including *Hordeum vulgare* subsp. *distichon* convar. *distichon* (Hulled Two-rowed Barley) and *Hordeum vulgare* subsp. *vulgare* convar. *vulgare* (Hulled Six-rowed Barley).[804] *Hordeum murinum* (mouse barley) was also identified at Aparan III.[805] Wheat is predominant at Sos Höyük and Chobareti. At Sos Höyük, two types of naked wheat have been identified including *Triticum aestivum* ssp. *vulgare* (Bread Wheat) and *Triticum* ssp. *Durum* (Durum Wheat).[806] *Triticum monococcum* (Einkorn), *Triticum turgidum* ssp. *dicoccon* (Emmer), and *Triticum aestivum/durum/turgidum* (Naked Wheat) are attested at Chobareti **(*fig. 4.83*)**.[807] *Triticum aestivum* ssp. *compactum* (Club Wheat) and *Triticum aestivum* ssp. *vulgare* are also attested at Aparan III and constitute 44 percent of the macrobotanical assemblage.[808] At Gegharot, wheat represents just over 8 percent of the assemblage. *Triticum aestivum* ssp. *Vulgare*, *Triticum aestivum* ssp. *Compactum*, *Triticum aestivum*

[802] Hovsepyan 2015, 77.
[803] Hovsepyan 2008, 99-100; Hovsepyan 2010, 33; Badalyan et al. 2014, 165.
[804] Badalyan 2003; Badalyan and Avetisyan 2007, 59; Hovsepyan 2008, 97-100; Palumbi 2008a, 188; Hovsepyan 2010, 32; Badalyan et al. 2014, 165.
[805] Badalyan 2003; Badalyan and Avetisyan 2007, 59; Hovsepyan 2008, 97-100; Palumbi 2008a, 188; Hovsepyan 2010, 32.
[806] Longford et al. 2009, 125.
[807] Kakhiani et al. 2013, 44; Messager et al. 2015, 220.
[808] Badalyan 2003; Badalyan and Avetisyan 2007, 59; Hovsepyan 2008, 97; Palumbi 2008a, 188; Hovsepyan 2010, 32.

ssp. *Sphaerococcum* (Round-Grained wheat), *Triticum aestivum* subsp. *spelta* (Spelt), and *Triticum monococcum* are attested.[809]

Ruderal and arable weeds represent a small percentage of the marcrobotanical assemblages. *Galium* (Bedstraw)*, Bromus* (Brome Grasses)*, Lolium* (Ryegrass)*,* and *Rumex* (Sorrel) are the most predominant **(*fig. 4.84*)**.[810] Charcoal samples from Gegharot, Sos Höyük, and Chobareti indicate that wood was collected from a variety of sources including open woodlands, forests, and mixed forest areas.[811] At Gegharot, nine taxa were identified. *Betula* (Birch) was the most common followed by *Fraxinus* and *Salix*. *Quercus* (Deciduous Oak), Pomoïdeae (wild fruit trees), *Acer* (Maple), and *Euonymus* (Spindle Tree) were present in small quantities.[812] Salicaceae, *Pinus* (Pine), and Fagaceae (Oak and Beech) were identified at Sos Höyük. [813] At Chobareti, *Pinus* is the most predominant among the taxa. *Carpinus* (Hornbeam), *Fraxinus*, *Corylus avellana* (Hazel), Ulmaceae (Elm and Zelkova), and *Ilex aquifolium* (Holly) were also identified.[814]

The faunal evidence from Gegharot, Sos Höyük, and Horom suggests that stock raising played a central role within the subsistence strategies of the early Kura-Araxes communities. Domesticates represent the bulk of the faunal assemblages. *Ovis aries* (sheep) and *Capra aegagrus hircus* (goat) were the primary stock raised at Gegharot and Sos Höyük. In both cases, sheep were predominant over goat. [815] *Bos Taurus* (cattle) were prevalent at Horom and constitute over 60 percent of the domestic, faunal

[809] Hovsepyan 2008, 99-100.
[810] Hovsepyan 2008, 100; Hovsepyan 2010, 33; Kakhiani et al. 2013, 44; Messager et al. 2015, 220.
[811] Longford et al. 2009, 129; Chataigner 2016, 2; Jude et al. 2015, 10; Messager et al. 2015, 220.
[812] Jude et al. 2015, 6.
[813] Longford et al. 2009, 129.
[814] Messager et al. 2015, 220.
[815] Sagona et al. 1997, 190; Howell-Meurs 2001, 48; Monahan 2008, 92-93; Badalyan et al. 2014, 163; Palumbi 2016, 16-17.

assemblage.[816] Mortality rates suggest that meat was the primary focus of the herding strategy with secondary products, such as milk and wool, exploited as by-products.[817] Other domesticates include *Sus* (pig), *Equus ferus caballus* (horse), *Equus africanus asinus* (ass), *Canis familiaris* (dog), and *Gallus gallus domesticus* (chicken).[818] The small number of remains recovered indicates that such domesticates played a minor role within the over-all subsistence strategy.

Wild taxa were also recovered from each of the sites. Species include *Cervus elaphus* (red deer), *Lepus europaeus* (brown hare), *Gazella* (gazelle), *Bison* (bison), *Bos primigenius* (auroch), *Sos scrofa* (wild boar), *Ursus arctos* (brown bear), *Vulpes Vulpes* (red fox), *Canis lupis* (wolf), Hyaenidae (hyena), and several species of *Aves* (bird).[819] *Cervus elaphus* (red deer) is the most predominant in each assemblage.[820] At Gegharot and Sos Höyük, small-scale hunting practices were used to supplement the subsistence strategy. At both of the sites, the variety of anatomical remains suggests that *Cervus elaphus* (red deer) were hunted for meat and antler.[821] At Sos Höyük, *Lepus europeaeus* (brown hare) is common and was likely exploited for meat and fur.[822] Wild species comprise a little over seven percent of the faunal assemblage at Horom indicating that hunting was of minor importance to the local subsistence strategy.[823]

[816] Badaljan et al. 1994, 20-21.
[817] Sagona et al. 1997, 190; Howell-Meurs 2001, 48; Monahan 2008, 92-93; Palumbi 2016, 17.
[818] Badaljan et al. 1994, 20-21; Sagona et al. 1997, 191; Howell-Meurs 2001, 21-22, 38-39; Monahan 2007, 384; Monahan 2008, 92; Badalyan et al. 2010b, 267.
[819] Badaljan et al. 1994, 20-21; Sagona et al. 1997, 191; Howell-Meurs 2001, 89; Monahan 2007, 384; Monahan 2008, 92; Badalyan et al. 2010b, 267.
[820] Badaljan et al. 1994, 20-21; Sagona et al. 1997, 191; Howell-Meurs 2001, 89; Monahan 2007, 384; Monahan 2008, 92; Badalyan et al. 2010b, 267.
[821] Sagona et al. 1997, 191; Howell-Meurs 2001, 89; Monahan 2007, 384; Monahan 2008, 92; Badalyan et al. 2010b, 267.
[822] Sagona et al. 1997, 191; Howell-Meurs 2001, 89.
[823] Badaljan et al. 1994, 20-21.

Funerary Practices

During the early Kura-Araxes period, a shift in burial practices is evident. Early Kura-Araxes funerary practices were widely varied and deviate from the previous traditions of the Chaff-faced complex. From c. 3350 B.C.E., stone cist tombs appear in the Transcaucasus.[824] Pit burials, horse-shoe-shaped tombs, and kurgans are also attested during this period. Such variability may correspond to regional traditions and contrasts greatly with the earthen pits and jar burials of the Chaff-faced communities.[825] During this period, collective burials were common and tombs were utilised over a long duration of time.[826] Prestige items are rarely interred with individuals and funerary assemblages become more homogenous over time. Emphasis is on the group as a collective rather than social stratification.[827]

Among early Kura-Araxes burials, stone cist tombs predominate and are commonly found throughout Georgia and Armenia.[828] Seven stone cist burials were uncovered at Chobareti.[829] Each consists of a rectangular pit in which the walls were lined with small, basalt fieldstones **(*fig. 4.85*)**. Many had an earthen floor, however, the floors of tombs 2 and 8 were also lined with pottery sherds **(*fig. 4.86 and 4.87*)**. The tombs were sealed with short wooden beams which supported the weight of two large stone slabs.[830] Access to the tombs was via an entrance on the eastern or southern side

[824] Palumbi and Chataigner 2014, 249; Poulmarc'h et al. 2014, 233; Altunkaynak et al. 2018, 76.
[825] Palumbi and Chataigner 2014, 254; Poulmarc'h et al. 2014, 235-238; Palumbi 2016, 24; Altunkaynak et al. 2018, 76.
[826] Palumbi and Chataigner 2014, 249; Palumbi 2016, 24-25; Altunkaynak et al. 2018, 76; Marro and Yilmaz 2018, 39.
[827] Ristvet et al. 2011, 19; Palumbi and Chataigner 2014, 249; Palumbi 2016, 24; Palumbi 2017, 115; Rova 2018, 43-45; Altunkaynak et al. 2018, 77; Marro and Yilmaz 2018, 40; Rova 2019, 13.
[828] Poulmarc'h et al. 2014, 233.
[829] Kakhiani et al. 2013, 14; Sagona 2014, 38; Messager et al. 2015, 214.
[830] Kakhiani et al. 2013, 15; Sagona 2014, 38.

of the cist which was sealed by another slab of stone. The tombs varied in size ranging from 1.3 to 2.5 meters in length by one to two meters in width. The tombs were 80 to 110 centimetres deep and were used for primary interment.[831] Only Tomb 2 showed evidence of reuse.[832]

In contrast, the stone cist tombs from Gegharot and Horom represent collective burials. Both are similar in construction and include a square or rectilinear chamber and dromos. The tomb at Gegharot was a square stone chamber with a dromos located along the southern wall (***fig. 4.88 and 4.89***).[833] The chamber measured approximately 1.2 meters by one metre and was constructed from unworked granite. Large limestone blocks were used for the north-western and south-western corners. Similar slabs of stone were also used along the threshold of the dromos. Three flat stone slabs were used to seal the roof of the burial chamber and another was used to seal the entrance.[834]

The tomb at Horom had a rectilinear chamber oriented north-west to south-east (***fig. 4.90***). The floor was lined with red tuff and covered by a layer of burnt earth three centimetres thick indicating that a fire had taken place within the tomb. A large capstone was placed on top of the chamber. A dromos was located on the eastern side of the chamber and covered by a large stone. Similar to Gegharot, two stones were laid on the floor of the dromos and functioned as a threshold. The entrance to the chamber was also covered by a large stone slab.[835] Later, two partially worked, stone

[831] Kakhiani et al. 2013, 15; Sagona 2014, 38.
[832] Kakhiani et al. 2013, 15; Messager et al. 2015, 215-216.
[833] Badalyan et al. 2008, 54-55.
[834] Kalantarian 2007, 75; Badalyan et al. 2008, 54-55.
[835] Badaljan et al. 1993, 4.

anthropomorphic figures had been set into the walls of the chamber on either side of the entrance.[836]

Analysis of the human remains from Chobareti indicates that the burials were not restricted in terms of age or gender. The remains of 12 individuals have been uncovered. Three males and four females were identified. Five were under the age of 40 and three were found to be over. Three sub-adults were also recorded.[837] At Gegharot and Horom, the tombs were used over a period of time and human remains were reorganised with subsequent depositions. At Gegharot, the remains of two individuals had been pushed aside against the walls of the chamber. Their skulls were found in the north-western corner of the chamber and were positioned so that a large bowl sat between them. The third individual, presumably the most recently deposited, was found fully articulated on the chamber floor. The body lay on its left side with the head pointing east.[838] A similar situation was found at Horom where the remains of at least three individuals were found scattered along the northern, southern, and western sides of the chamber. Two skulls were found face down in addition to an isolated mandible fragment. [839] Grave goods were limited. Vessels represent most of the grave goods, however, beads were also recovered from the tombs at Gegharot and Horom.[840]

Kurgans continued to be used. Many are found throughout Azerbaijan and represent continuity with the earlier Chaff-faced funerary tradition.[841] Kurgans show no standardisation of building practice and were built with or without a central chamber

[836] Badaljan et al. 1993, 4.
[837] Messager et al. 2015, 215.
[838] Badalyan et al. 2008, 55.
[839] Badaljan et al. 1993, 4; Palumbi 2003, 97; Palumbi 2008a, 188.
[840] Badaljan et al. 1993, 4; Badalyan et al. 2008, 55.
[841] Palumbi and Chataigner 2014, 249; Poulmarc'h et al. 2014, 237; Lyonnet et al. 2015, 190.

and dromos, varying in size, shape, and mode of construction.[842] The earliest example comes from Mentesh Tepe IV (***fig. 4.91***). A large, quadrangular burial chamber, measuring six by five metres, was found dug into the previous occupational layers.[843] It was supported by a series of wooden posts which also supported a number of thin walls and partitions made from organic material.[844] Entry to the chamber was through a dromos, 1.2 metres wide, located on the eastern side.[845] Similar to Horom, two large volcanic stones were set on either side of the entrance of the dromos.[846] Later, the roof was capped with river pebbles.[847] Talin Tomb 11 is a mound 1.5 metres high and 20 metres in diameter (***fig. 4.92***).[848] Unlike Mentesh Tepe, the central chamber is circular in shape and constructed from stone with a dromos situated on the south-eastern side (***fig. 4.93***).[849]

Although the use of kurgans continued into the early Kura-Araxes period, burial customs demonstrate a departure from earlier Chalcolithic traditions. Unlike the kurgans from Soyuq Bulaq, Talin and Mentesh Tepe represent collective burials. The remains of five individuals were recovered from Talin Tomb 11. Two of the skeletons were interred on their left side, facing west, in the foetal position. Another individual was found lying on their back.[850] At Mentesh Tepe, at least 39 individuals were

[842] Poulmarc'h et al. 2014, 237; Lyonnet et al 2015, 190.
[843] Lyonnet et al. 2012, 92-94; Lyonnet 2014, 118; Poulmarc'h et al. 2014, 240; Lyonnet et al. 2015, 190.
[844] Lyonnet et al. 2012, 118; Guliyev and Lyonnet 2014, 26; Lyonnet 2014, 118; Poulmarc'h et al. 2014, 240; Lyonnet et al. 2015, 190.
[845] Lyonnet et al. 2012, 92-94; Guliyev and Lyonnet 2014, 26; Poulmarc'h et al. 2014, 240; Lyonnet et al. 2015, 190.
[846] Badalyan et al. 1993; Lyonnet et al. 2012, 92-94; Poulmarc'h et al. 2014, 240; Lyonnet et al. 2015, 190.
[847] Lyonnet et al. 2012, 92-94; Poulmarc'h et al. 2014, 240; Lyonnet et al. 2015, 190.
[848] Palumbi 2003, 98; Badalyan and Avetisyan 2007, 244; Avetisyan et al. 2010, 161; Kalantarian 2011, 125.
[849] Badalyan and Avetisyan 2007, 244; Kalantaryan 2007, 72; Avetisyan et al. 2010, 161; Kalantarian 2011, 125.
[850] Badalyan and Avetisyan 2007, 244; Avetisyan et al. 2010, 161; Kalantarian 2011, 125.

identified.[851] Similar to the burials at Gegharot and Horom, the human remains were found pushed towards the walls of the chamber and distributed in the form of an arch away from the entrance.[852] Twenty-seven adults and 12 juveniles were identified.[853] After a long period of use, the burial chamber was set alight using five evenly spaced hearths built into the floor. [854]

Evidence of fire has been observed in several contemporary kurgans including Borsunlu, Dashuz, Ganja, Hanlar di, Ozman Bozu, Uzun Rama, and Kurgan 8 on the Uzun Rama Plateau.[855] The burial chamber at Horom also demonstrates this practice. The use of ritual fire is unattested throughout the Transcaucasus and the practice does not share affinities with previous cultural traditions. Unlike Soyuq Bulaq, the funerary assemblages recovered from Mentesh Tepe and Talin lack prestige items. Grave goods are minimal and consist of ceramics.[856] Animal skulls were also recovered from Mentesh Tepe in addition to ten perforated bone implements.[857] From Talin Tomb 11, obsidian blocks and a stone macehead were found. A rare find of a single bronze spiral ring was also recovered.[858] No metallurgical artefacts were recovered from Mentesh Tepe, however, over 300 serpentinite and talc beads were found.[859]

[851] Guliyev and Lyonnet 2014, 26; Lyonnet 2014, 118; Poulmarc'h et al. 2014, 240-241; Marro and Yilmaz 2018, 39.
[852] Lyonnet et al. 2012, 92-94; Poulmarc'h et al. 2014, 240.
[853] Poulmarc'h et al. 2014, 240-241.
[854] Lyonnet et al. 2012, 92-94; Guliyev and Lyonnet 2014, 26; Poulmarc'h et al. 2014, 240; Marro and Yilmaz 2018, 39.
[855] Akhundov 1999; Akhundov 2001; Narimanov 2004; Jalilov 2011, 155; Jalilov 2012, 137; Poulmarc'h et al. 2014, 237-238; Jalilov 2018, 97; Marro and Yilmaz 2018, 39; Laneri et al. 2019, 152.
[856] Smith et al. 2009, 43; Lyonnet et al. 2012, 94; Hovsepyan 2013, 205; Lyonnet 2014, 118-119; Poulmarc'h et al. 2014, 241-242.
[857] Lyonnet et al. 2012, 94; Lyonnet 2014, 118-119; Poulmarc'h et al. 2014, 241-242.
[858] Badalyan and Avetisyan 2007, 244; Meliksetian and Pernicka 2010, 42; Meliksetian et al. 2011, 204.
[859] Poulmarc'h et al. 2014, 241-242.

Other forms of interment include pit graves and a single example of an infant jar burial. At Chobareti, Burial 5 was found deposited within Pit 12 **(*fig. 4.94*)**.[860] The bottom of the pit was lined with fragments of Monochrome ware under which was a meter of ashy soil.[861] The individual was a male in the crouched position with his head pointing north. No grave goods were found.[862] An infant jar burial was also discovered at Chobareti **(*fig. 4.95*)**. The burial was found beneath the floor of Structure 4, close to its north-eastern wall.[863] The burial consisted of a bichrome vessel.[864] The infant was found lying on its side, in a crouched position, with its head pointing north-west. There were no grave goods associated with the burial.[865] Infant jar burials are often associated with sites of the Chaff-faced complex. The tradition is considered intrusive and is not synonymous with locally developed cultural complexes. However, the discovery of an infant jar burial, within a Kura-Araxes context, integrates an intrusive Late Chalcolithic tradition within local funerary practices.[866]

Tilkitepe Cultural Complex: A Complex of the Lake Van Region

Cultures located along the periphery of the Transcaucasus also participated within the wider network of interaction. Tilkitepe is a small site located 900 meters from the eastern shore of Lake Van in eastern Anatolia.[867] The mound is 55 meters in diameter and six metres high.[868] Tilkitepe demonstrates a long period of occupation, from c. 5300

[860] Kakhiani et al. 2013, 16; Sagona 2014, 38; Massager et al. 2015, 215.
[861] Kakhiani et al. 2013, 16; Sagona 2014, 38.
[862] Kakhiani et al. 2013, 16; Messager et al. 2015, 215.
[863] Kakhiani et al. 2013, 16; Sagona 2014, 38; Massager et al. 2015, 215; Marro and Yilmaz 2018, 39.
[864] Sagona 2014, 38.
[865] Kakhiani et al. 2013, 16.
[866] Sagona 2014, 38; Marro and Yilmaz 2018, 39.
[867] King 1912, 198; Lake and Lake 1939; Hughes et al. 1940, 127; Pfeiffer 1940, 32; LeBlanc and Watson 1973, 119; Todd 1983, 555; Kılıç 2006, 5-6; Özdemir et al. 2013, 975.
[868] Kılıç 2006, 1; Özdemir et al. 2013, 975.

B.C.E., making it one of the earliest Neolithic sites in eastern Anatolia.[869] Of particular interest is a small group of ceramics, known as Tilkitepe ware, found in Stratum I, that is characterised by a distinctive painted motif in the form of red, wavy lines.[870] Scholars place the Tilkitepe complex at the beginning of the fourth millennium B.C.E.[871] This indicates that Tilkitepe was part of the network of interaction, stretching from the northern Caucasus to northern Mesopotamia, that included other contemporary Chalcolithic cultures such as Chaff-faced ware, Sioni, the Kura-Araxes, and the Maikop.

Excavations at Tilkitepe were undertaken by Belck in 1899.[872] Unfortunately, no results were published from this excavation. Given the discovery of at least 17 skeletons, Belck considered the mound to be a tumulus rather than a settlement.[873] Another two excavations were conducted by Reilly in 1937 and Lake in 1939.[874] During his excavations, Reilly discerned three levels of stratigraphy based on the ceramic evidence.[875] In the first, and most recent stratum, ranging from zero to 1.5 meters, Reilly attributed the distinctive Tilkitepe ware first identified by Belck in 1899.[876] In the second stratum, from 1.5 to six meters, Reilly attributed a crudely slipped and burnished reddish-buff ware.[877] In the third stratum, from six to eight meters, Reilly discovered an

[869] Palumbi 2010, 209; Özdemir et al. 2013, 975.
[870] Belck 1902, 125-127; King 1912, 202; Reilly 1937, 82; Reilly 1940, 159; Burney 1958, 160-161; Korfmann 1982, 26; Lake and Lake 1982, 191-192; Todd 1983, 555; Marro and Özfirat 2004, 232; Özfirat and Marro 2004, 300; Kılıç 2006, 8; Marro 2007, 91; Marro 2008, 13-14; Sagona and Zimansky 2009, 166; Özdemir et al. 2013, 976.
[871] Marro and Özfirat 2004, 232; Özfirat and Marro 2004, 300-301; Marro 2008, 13-14.
[872] Reilly 1937, 82; Koşay and Turfan 1951, 357; Korfmann 1982, 19; Lake and Lake 1982, 191; Özbek 1982, 213; Todd 1983, 555; Özdemir et al. 2013, 975.
[873] Belck 1899, 582-583; King 1912, 199-200; Korfmann 1982, 32-33; Kılıç 2006, 6.
[874] Reilly 1937, 82; Reilly 1940, 160; Dönmez and Brice 1949, 48; Braidwood and Braidwood 1953, 306-307; Korfmann and Schiele 1977, 173-175; Korfmann 1982, 20; Lake and Lake 1982, 191-192; Todd 1983, 555; Çilingiroğlu 1984, 129; Kılıç 2006, 6.
[875] Reilly 1937, 82; Reilly 1940, 160; Braidwood and Braidwood 1953, 306-307; Korfmann 1982, 26; Kılıç 2006, 6.
[876] Reilly 1940, 159-162; Korfmann 1982, 26.
[877] Reilly 1940, 159-162; Korfmann 1982, 26.

abundance of Halaf sherds making Tilkitepe one of the northern-most settlement sites the Halaf culture.[878]

In 1939, Kirsopp and Silva Lake conducted the third and final excavation at Tilkitepe. In contrast to Reilly, the Lakes identified four stratigraphic levels.[879] According to Lake, the first, and most recent stratum, comprises of Tilkitepe ware reaching a depth of two meters. The following stratigraphic layer, from two to four meters, is characterised by "miscellaneous" remains and its relationship to the other stratigraphic layers could not be determined. Following the second stratum, there was a break within the archaeological record. The third stratum, from four to 5.2 or 6.2 meters, was represented by a moderately burnished reddish-buff ware in addition to several ash layers.[880] Lastly, the fourth stratum, from six to 7.5 meters, was represented by Halaf sherds and a highly burnished red ware.[881]

Despite three successive excavations, no complete excavation report has been published. Korfmann has published a comprehensive study of the site after piecing together information from the excavations.[882] According to Korfmann, three levels of settlement strata may be identified at Tilkitepe. The stratigraphic divisions of Korfmann closely resemble the stratigraphy proposed by Reilly in 1940.[883] In regard to the stratification proposed by the Lake excavation, levels two and three have been amalgamated.

[878] Pfeiffer 1940, 32; Reilly 1940, 159-162; Braidwood and Braidwood 1953, 306-307; Mellaart 1965, 124-125; Korfmann 1982, 26; Kılıç 2006, 6.
[879] Braidwood and Braidwood 1953, 306-307; Korfmann 1982, 25.
[880] Korfmann 1982, 25.
[881] Korfmann 1982, 25.
[882] Korfmann 1982.
[883] Reilly 1940.

Tilkitepe I demonstrates few architectural remains. During the excavation of Reilly, the first building level was discovered at 1.5 meters. No floor plans were recorded and only a series of broken stone slabs, lying in disturbed soil, were found.[884] In contrast, at 1.30 meters, the excavations of Lake revealed destroyed traces of mudbrick. At 1.5 meters, two roughly laid courses of stone were discovered. The stones formed part of an oval foundation and possibly represents a small house or work area.[885] This has led Korfmann to suggest that the inhabitants of Tilkitepe I resided in mudbrick oval or round buildings.[886]

To the north of the oval stone foundation, three burials were uncovered with the individuals lying on their left side in a crouched position. Another five burials were discovered to the south of the oval building which also demonstrated the same manner of burial. Two separate discoveries of human remains were made at 1.3 meters, however, they are not considered to represent burials. None of the burials contained grave goods.[887]

Very little material was recovered from Tilkitepe I. However, its distinctive ceramic assemblage is technologically similar to the previous Tilkitepe II assemblage.[888] Tilkitepe I ceramics are handmade.[889] The paste is buff with mixed temper consisting of fine-to-medium chaff inclusions and fine gritty inclusions.[890] The ceramics are medium

[884] Reilly 1940, 160; Korfmann 1982, 31.
[885] Korfmann 1982, 31; Lake and Lake 1982, 191-192.
[886] Korfmann 1982, 223; Todd 1983, 555; Marro 2007, 91.
[887] Korfmann 1982, 33-34.
[888] Korfmann 1982, 175-176.
[889] Reilly 1940, 161; Korfmann 1982, 41-42; Lake and Lake 1982, 191-192.
[890] Reilly 1940, 161; Burney 1958, 160-161; Lake and Lake 1982, 192-193; Marro and Özfirat 2004, 232; Özfirat and Marro 2004, 300; Kılıç 2006, 8; Marro 2007, 91; Marro 2008, 13-14; Sagona and Zimansky 2009, 166.

fired and often demonstrate a darkened core.[891] The exterior surfaces are characterised by a creamy gloss finish resulting from careful polishing. Occasionally, this finish was also applied to the interior surface. Imprints of chaff are apparent on the surfaces, however, the imprints are partially sealed as a result of polishing.[892]

Morphologically, the assemblage demonstrates a restricted repertoire consisting of large necked jars, hole-mouthed jars, and bowls with simple rims.[893] Notably, many ceramics bear painted decoration (***fig. 4.96 and 4.97***). According to Reilly, 15 percent of the assemblage recovered in 1937 was painted.[894] The decoration consists of red painted vertical wavy and/or straight lines.[895] Other motifs, such as polka dots, rows of dots, and line ornaments, are also known but are rare.[896] Ornamentation is mostly confined to the exterior surfaces. However, on open forms, such as bowls, the interior and exterior surfaces were painted. Painting took place after the vessels were polished. As a result, the paint often flakes off causing difficulty in identifying motifs.[897]

Sherds of the same type have been discovered at Yılıntaş, a single sited settlement mound located 100 metres from the eastern shore of Lake Van.[898] Over 400 sherds were discovered at the site which can be divided into two groups of painted and unpainted wares.[899] A similar wavy line motif was discovered on the shoulders of two

[891] Reilly 1940, 161.
[892] Marro and Özfirat 2004, 232; Marro 2007, 91; Marro 2008, 13-14.
[893] Marro and Özfirat 2004, 232; Özfirat and Marro 2004, 300; Marro 2007, 91; Marro 2008, 13-14.
[894] Reilly 1937, 82; Korfmann 1982, 175-176.
[895] Belck 1902, 125-127; Reilly 1937, 82; Reilly 1940, 161; Burney 1958, 160-161; Korfmann 1982, 175-176; Lake and Lake 1982, 191-192; Todd 1983, 555; Marro and Özfirat 2004, 232; Özfirat and Marro 2004, 300; Kılıç 2006, 8; Marro 2007, 91; Marro 2008, 13-14; Özdemir et al. 2013, 976.
[896] Korfmann 1982, 26.
[897] Marro and Özfirat 2004, 232; Marro 2007, 91; Marro 2008, 13-14.
[898] Marro and Özfirat 2004, 232-233; Özfirat and Marro 2004, 300-301; Marro 2007, 91; Marro 2008, 13-14; Sagona and Zimansky 2009, 166; Özdemir et al. 2013, 976.
[899] Marro and Özfirat 2004, 232-233; Özfirat and Marro 2004, 300-301; Marro 2008, 13-14.

large-necked jars from Tekhut in Armenia.[900] However, Tilkitepe ware is virtually unknown outside of the Lake Van region and its geographical extent remains unknown.[901]

The Maikop Cultural Complex: Warfare, Prestige, and Conspicuous Consumption

The Maikop is a distinctive complex which borders the Kura-Araxes in the Upper Terek. It occupied the western region of the north Caucasus with the main distribution of sites located in the Kuban area and extending to the Black Sea and the Sea of Azov.[902] The complex is distinguished by its distinctive burial mounds and the large amount of wealth interred within. Since the discovery of the first Maikop kurgan towards the end of the 19th century, both the origin and chronology of the Maikop has been debated amongst archaeologists. It was not until the recent publication of calibrated radiocarbon dates that the beginning of the Maikop could be securely dated to the early to mid-fourth millennium B.C.E.[903]

Within the archaeological record, the Maikop complex is characterised by funerary practices. The architecture of the Maikop is best known for its elaborate funerary structures known as kurgans. The most famous is the Oshdad kurgan which was excavated by Veselovskii in 1897.[904] It represents the type site for the complex and is located in the town of Maikop in the Kuban region near the foothills of the north-

[900] Torosyan 1976, Pl. X.1-3; Kushnareva 1997, Fig. 13.13-14; Marro and Özfirat 2004, 232.
[901] Marro 2007, 91.
[902] Chernykh 1992, 67; Anthony 2007, 284; Ivanova 2007, 14; Hansen 2014, 389.
[903] Rassamakin 1999, 163-164; Chernykh et al. 2000, 74-75; Rezepkin 2000; Trifonov 2001, 76-77; Shishlina et al. 2003, 331; Korenevskii 2004, 64-70; Korenevskii 2008, 85-86; Korenevskii and Rezepkin 2008, 109-127; Courcier 2010, 79; Korenevskii 2012, 24; Smith 2012b, 673; Hansen 2014, 391; Belinskij et al. 2017, 13; Chernykh 2017, 480; Helwing 2017, 53; Korenevskii 2017a, 33; Korenevskii 2017b, 231; Rova and Tonussi 2017, 4; Chernykh 2018, 94; Rova 2018, 39.
[904] Anthony 2007, 66; Ivanova 2007, 7; Kohl 2007, 72; Kohl 2009, 91; Ivanova 2012a, 2-3; Ivanova 2012b, 72; Korenevskii 2012, 7; Smith 2012b, 669; Hansen 2014, 389; Chernykh 2018, 94.

western Caucasus.[905] The Oshdad kurgan was almost 11 meters high and more than 100 meters in diameter.[906] The main burial chamber was surrounded by a cromlech of large stones and was more than five meters long, four meters wide, and 1.5 meters deep.[907] The chamber was divided into three partitions with two northern chambers, divided into an eastern and western section, and a southern chamber.[908] The chambers were lined with timber and the bottom of the pit was lined with river shingle.[909] Each of the northern chambers contained an adult individual lying in a contracted position on their right side and oriented south-west.[910]

The primary occupant of the Oshad Kurgan was found in the southern chamber. The individual was an adult male, referred to as "the Chieftain **(*fig. 4.98*)**." He was positioned like the individuals in the northern chamber and accompanied by a wealthy burial assemblage **(*fig. 4.99*)**.[911] Within the chamber were eight red-burnished, globular ceramic vessels and two arsenical bronze cauldrons. Accompanying these was a polished stone cup with a sheet gold cover, two small cups of sheet gold, and 14 sheet silver cups found against the eastern wall. Two of the cups were decorated with impressions of an animal procession **(*fig. 4.100*)**.[912] There were also arsenical bronze weapons including a broad spatula-shaped metal blade, a sleeved axe, an axe-adze, a hoe-like adze, and two square-sectioned chisels.[913] The Chieftain was adorned in a tunic sewn with 68 golden lions and 19 golden bulls. Around his neck was a necklace consisting of thousands of

[905] Kohl 2007, 72; Kohl 2009, 91.
[906] Chernykh 1992, 67; Anthony 2007, 287; Ivanova 2012a, 4; Smith 2012b, 669; Hansen 2014, 389.
[907] Anthony 2007, 287; Ivanova 2012a, 4.
[908] Chernykh 1992, 67; Anthony 2007, 287; Ivanova 2012a, 4.
[909] Chernykh 1992, 67; Anthony 2007, 287; Hansen 2014, 389-390.
[910] Anthony 2007, 287; Ivanova 2012a, 4.
[911] Chenykh 1992; 67; Anthony 2007, 287; Ivanova 2012a, 4-5.
[912] Anthony 2007, 287; Kohl 2007, 72; Kohl 2009, 91; Smith 2012b, 669; Hansen 2014, 390.
[913] Chenykh 1992, 67; Anthony 2007, 287; Hansen 2014, 390.

beads, 60 of which were turquoise, 122 of gold, and 1272 of carnelian **(*fig. 4.101*)**. Beneath his skull was also a diadem with five golden rosettes. Next to the Chieftain were six or eight hollow silver rods, one metre in length, and six or eight wooden staffs. Slipped over four of the silver tubes were long-horned bulls, two of which were solid silver.[914] The wealthy burial assemblage of the Oshdad kurgan remains the most spectacular to date and has become the defining feature of the Maikop.

Since the discovery of the Oshdad kurgan, over 300 kurgans have been found and attributed to the Maikop.[915] The kurgans vary considerably in shape, size, construction, and wealth. Kurgans are rounded in shape and are constructed on a circular base. Examples in the shape of an oval embankment have been attested, such as Kurgan 11 at Klady, however, such kurgans are rare.[916]

The size of kurgans varies from one to 12 meters in height.[917] For example, a 'royal' kurgan excavated by Chechenov near Nalchik, comparable to the proportions of the Oshdad kurgan, measured over 100 meters in diameter and nearly ten meters high.[918] The kurgans consist of an inner burial chamber constructed of wood or stone. The chamber was sealed with stone and buried with earth to form a highly visible mound. At Novosvobodnaia, the kurgan consisted of a megalithic cist and a stone-built mound. It resembled a small house with a gabled roof and was constructed from five stone slabs.[919] Similarly, at Klady a kurgan, 4.5 meters in height and 60 to 63 meters in

[914] Anthony 2007, 287; Kohl 2007, 72; Kohl 2009, 91; Sagona 2010b, 689; Smith 2012b, 669; Hansen 2014, 390.
[915] Korenevskii 2011, 8-9.
[916] Korenevskii 2011, 10-11; Korenevskii 2017b, 237.
[917] Korenevskii 2011, 10-11.
[918] Chechenov 1973; Chernykh 1992, 71; Belinskij et al. 2017, 15.
[919] Chernykh 1992, 70-71; Korenevskii 2017b, 237.

diameter, contained a massive stone cist that was covered by a huge stone slab and covered with clay.[920] The kurgan, excavated by Chechenov in Nalchik, was constructed of 24 slabs of tufa and capped with six blocks of the same material.[921]

The burial chambers were divided into two or more partitions. The deceased were laid contracted on their side and were oriented south-west and south-east.[922] A deviation of this practice is seen in the Oshdad kurgan where the primary interment was found on his back with his legs bent at the knees and arms bent at the elbow.[923] Often individuals were placed on a bed of river pebbles and covered with a red pigment such as ochre or red lead.[924]

During the late 19th and early 20th centuries, archaeologists focused on kurgans which were expected to produce a rich assemblage. From the 1930s, Maikop settlements were excavated beginning with the settlement of Dolinskoe in the region of Nalchik. Later, more settlements of the Maikop came to light under the embankment of kurgans in the Nalchik region and under the kurgans of Ust'-Dzheguta. In the 1980s, archaeologists discovered the settlements of Bol'sheteginskoe, Sereginskoe, Uashitu, Psekupskoe, and Klady.[925] In the 1990s, archaeologists began to excavate Klady, a site corresponding to the Novosvobodnaia phase, followed by Ust'-Dzheguta and Psekupskoe.[926] Later, the sites of Natuhaevsko and Kirpichniy were also found.[927] Today,

[920] Chernykh 1992, 67-69.
[921] Chechenov 1973; Chernykh 1992, 71; Belinskij et al. 2017, 15-17.
[922] Korenevskii 2004, 54-57; Korenevskii 2011, 12; Korenevskii 2017b, 233.
[923] Korenevskii 2011, 12.
[924] Korenevskii 2011, 12; Korenevskii 2017b, 237.
[925] Korenevskii 2012, 8-9.
[926] Rezepkin and Lionne 2007, 5-73; Rezepkin 2008, 156-176; Korenevskii 2012, 8-9.
[927] Korenevskii 2007, 1; Shishlov et al. 2009, 443-446.

the most important sites of the Maikop include Dolinskoe, Ust'-Dzheguta, Galyugai I, Sereginskoe, Psekupskoe, and Bol'sheteginskoe.[928]

Thirty Maikop settlements have been recorded and cover an area of approximately 750 by 150 square kilometres.[929] Settlements are located in the northern Caucasus and Kuban regions in addition to western Transcaucasia (Georgia and Abkhazia).[930] Settlements situated in the lower river valleys are located close to the coast while settlements located within the foothills of the Caucasus are positioned on the plateaux of mountain slopes.[931] Maikop settlements are generally open sites, however, settlements are also found in caves, such as Khadzhokh, Vorontsovskaya, Mitshtulagtilaga, and Hajji.[932] The stratigraphy of the settlements is poor and multi-sited settlements are absent which indicates short occupation periods for each site.[933] Many settlements, such as those along the river valleys in the north Caucasus plain, have thin deposits ranging from ten to 40 centimetres in depth.[934]

Referring to architecture, Maikop houses are light, wooden framed structures reinforced with wattle-and-daub.[935] In the Kuban River Basin, wooden structures were also lined with clay. However, the use of clay for lining houses was absent in the Terek valley.[936] Houses could be round or rectilinear. In Krasnodar, 20 circular wattle-and-daub

[928] Kruglov and Podgaetskii 1941, 147-212; Nechitalio 1978; Lovpache and Ditler 1988, 140-145; Dneprovskii 1991, 3-17; Korenevskii 1992; Kaminskaya and Dinkov 1993, 7-15; Korenevskii 1995, 1-189; Korenevskii 2004; Nechitajlo 2007, 163-178; Korenevskii 2012, 8-9.
[929] Korenevskii 2004, 12; Kohl 2007, 74; Korenevskii 2012, 8-9.
[930] Chernykh 1992, 67.
[931] Korenevskii 2012, 9.
[932] Chernykh 1992, 72; Munchaev 1994, 174; Ivanova 2007, 14; Kohl 2007, 76; Kohl 2009, 95; Korenevskii 2012, 9.
[933] Ivanova 2007, 14; Kohl 2007, 76; Kohl 2009, 95.
[934] Korenevskii 2004, 13; Kohl 2007, 76; Kohl 2009, 95; Korenevskii 2012, 9.
[935] Chernykh 1992, 72; Kohl 2007, 76; Kohl 2009, 95; Korenevskii 2012, 9; Kohl and Trifonov 2013, 1579; Rezepkin 2017, 43.
[936] Korenevskii 2012, 9.

structures, some larger than six meters in diameter, have been excavated. Similar finds were aslo discovered at Galyugai, on the Middle Terek River, where roundhouses of similar proportions were found scattered ten to 20 meters apart.[937] According to Korenevskii, Maikop residential structures can range from six to 25 meters squared. In some cases, structures may be as large as seventy metres squared.[938] Maikop residential buildings contain a hearth and demonstrate evidence of intentional burning. The reasons for this remain unclear. Maikop settlements are characterised by pits which contain animal bones, fragments of stone mills, and clay cones. The character of these pits is unclear, however, it is possible that they may represent structured deposits.[939] Such settlements may have been occupied seasonally or for a short period of time.[940]

Evidence for craft activities is demonstrated through the ceramic and metallurgical assemblages. Maikop ceramics are relatively simple. Early ceramic parallels can be seen with the Chaff-faced horizon of Mesopotamia in assemblages such as Amuq F and Gawra XII-XI in Syria, Arslantepe VII and Hacinebi A and BI in eastern Anatolia, and Leilatepe and Berikldeebi in Transcaucasia **(*fig. 4.102*)**.[941] The majority of Maikop ceramics are tempered with fine chaff.[942] A small amount of vessels were also found to contain mineral temper such as sand, crushed stone, and grog. Coarse ceramics, often used for cooking, may contain both mineral and vegetal temper.[943] Ceramics are mostly handmade, however, vessels from the Bamut burial ground and the

[937] Anthony 2007, 209-291.
[938] Korenevskii 2012, 9.
[939] Korenevskii 2012, 9.
[940] Korenevskii 1995, 80-81; Kohl 2007, 76.
[941] Korenevskii 1992, 40; Korenevskii 2004, 37-38; Museibil 2007, 92; Korenevskii 2012, 14; Kohl and Trifonov 2013, 1578.
[942] Ivanova 2012a, 19-22; Korenevskii 2012, 13-14.
[943] Korenevskii 2012, 13-14.

Lugovskoe settlement in Checheno-Ingushetia were made on the slow wheel.[944] Maikop ceramics were fired at high temperatures using a kiln resulting in colours varying from red-orange to grey.[945] The exterior surfaces of the vessels were smoothed and polished.[946] Morphologically, the assemblage demonstrates simple forms consisting of globular, flat or rounded bottomed bowls, with or without handles, and elongated, rounded bodied pots with sharply everted rims.[947] Decorative motifs are rare, however, a row of pearl decoration beneath the rims of vessels is known. Later, Maikop ceramics demonstrate potter's marks indicating the development of craft specialisation.[948] This important discovery is often considered as evidence for the borrowing of technology and, therefore, evidence of direct interaction between Mesopotamia and the northern Caucasus.

Unlike the ceramic repertoire, the Maikop demonstrate a sophisticated metallurgical industry. Metal worked objects include tools, weapons, vessels, and items of personal adornment which demonstrate a highly developed metallurgical system including the smelting and alloying of copper, the use of the lost-wax technique, and the processing of sheet metal.[949] Chemical analysis of Maikop metal objects demonstrates that a high quality arsenical-bronze, containing one to five percent arsenic, was used.[950] The chemical composition of the arsenical bronze is similar to metal ore deposits within

[944] Chernykh 1992, 72; Anthony 2007, 290-291; Korenevskii 2011, 47; Ivanova 2012a, 19-22; Korenevskii 2012, 13-14; Kohl and Trifonov 2013, 1578.
[945] Anthony 2007, 290-291; Ivanova 2012a, 19-22; Korenevskii 2012, 13-14.
[946] Ivanova 2012a, 19-22; Korenevskii 2012, 13-14.
[947] Chernykh 1992, 72; Anthony 2007, 290-291; Korenevskii 2012, 13-14.
[948] Korenevskii 2004, 22-38; Korenevskii 2012, 14.
[949] Ivanova 2012a, 47-48; Hansen 2014, 400-401.
[950] Korenevskii 1984, 254-299; Chernykh 1992, 36-40; Korenevskii 2008, 93-97; Ryndina et al. 2008, 196-221; Korenevskii 2011, 15-20; Korenevskii 2012, 15.

Transcaucasia. According to Chernykh, the Maikop relied on copper ore sources within the Transcaucasus.[951]

The deceased were accompanied by weapons, tools, vessels, and items of personal adornment. Shaft-hole axes, hoes, chisels, and flat adzes with the blade sharpened on one side were found within Maikop kurgans **(*fig. 4.103*)**.[952] Tanged knives, with or without ribs, were also attested. At Klady, five different shaft-hole axes, adze, several forked objects, knife daggers, chisels, awls, and a large bronze sword, 63 centimetres long, were discovered.[953] Tools and weapons were constructed from bronze, however, precious metals, such as gold and silver, were used for ceremonial weapons. At the kurgan near Nalchik, silver daggers were discovered in addition to bronze daggers with handles wrapped in gold foil.[954] According to Avilova, Antonova, and Teneishvili, 7400 gold and 1000 silver artefacts have been recovered from Maikop-related kurgans in the north-western Caucasus.[955]

Metal vessels also formed part of the Maikop metallic repertoire. The most distinctive vessels within the assemblage include bronze cauldrons.[956] Cauldrons have been discovered in over ten Maikop kurgans including those from Novosvobodnaia, Nalchik, and Bamut.[957] The cauldrons were constructed from a single piece of hammered metal or from several hammered plates that were fastened together by rivets. The size and the volume of the cauldrons varied with a capacity up to 17 litres.

[951] Chernykh 1992, 73; Chernykh 2018, 97.
[952] Chernykh 1992, 77; Anthony 2007, 293; Kohl 2007, 80; Belinskij et al. 2017, 14; Korenevskii 2017a, 33; Korenevskii 2017b, 237.
[953] Chernykh 1992, 77.
[954] Chechenov 1973; Chernykh 1992, 71; Belinskij et al. 2017, 17-18.
[955] Kohl 2007, 79-80; Hansen 2014, 393; Chernykh 2017, 480.
[956] Chernykh 1992, 77; Anthony 2007, 293; Kohl 2007, 80.
[957] Chernykh 1992, 77; Belinskij et al. 2017, 14, 22.

However, a cauldron discovered at Nalchik could hold as much as 70 litres.[958] Individuals were also buried with items of personal adornment. Rings, pins, head dresses, and jewellery consisting of beads of gold, silver, lapis lazuli, carnelian, and rock crystal are commonly attested.[959]

The subsistence strategies of the Maikop are poorly understood. Given the thin occupation levels and light residential structures, most scholars argue for a subsistence strategy based on transhumance.[960] There is little macrobotanical evidence from Maikop settlements to suggest direct participation within agricultural activities.[961] However, a small number of grinding stones, flint sickle blades, and possibly bronze hoes have been found which indirectly suggest that agricultural field preparation and cultivation took place within the settlements.[962]

From the remains of animal bones, husbandry, specifically cattle hearding, served a primary function within the Maikop subsistence strategy.[963] At Galyugai I, *Bos taurus* (cattle) represent most livestock remains at 49.6 percent followed by *Ovis aries/Capra aegagrus hircus* (sheep/goat) at 44.6 percent. *Sus* (pig) is almost completely absent, representing only 3.3 percent of the faunal assemblage.[964] Similar statistics are seen at other Maikop settlements including Novosvobodnaia, where 2351 bone fragments were collected, and Pkhaguape.[965]

[958] Chernykh 1992, 77.
[959] Anthony 2007, 293.
[960] Kohl 2007, 78; Kohl 2009, 95; Kohl and Trifonov 2013, 1579.
[961] Kohl 2007, 76; Kohl 2009, 95; Kohl and Trifonov 2013, 1579.
[962] Korenevskii 1995, 62, 70; Kohl 2007, 76.
[963] Sagona 2018a, 152.
[964] Kohl 2007, 78.
[965] Ivanova 2013, 70; Sagona 2018a, 152.

Within the faunal assemblage, wild animals, such as birds and fish are poorly represented indicating that small-scale hunting may have played a minor role within the Maikop subsistence strategy.[966] There is a small amount of evidence to suggest that the Maikop were familiar with the horse, however, whether the horse formed part of the Maikop diet or were actually ridden remains unclear.[967]

Conclusion

The Transcaucasian Chalcolithic is defined by the development of several distinctive complexes echoing local and regional traditions. It is characterised by the intensification of interaction between different cultural spheres with the Transcaucasus forming an active constituent of a far-flung network of exchange from northern Mesopotamia to the northern Caucasus.

The appearance of the Chaff-faced assemblage at the beginning of the fifth millennium B.C.E. represents the onset of the Chalcolithic in the Transcaucasus.[968] Chaff-faced ware stands in stark contrast with other local assemblages. The development of the Chaff-faced horizon in the Transcaucasus likely emerged from a long tradition of interregional contact between the Transcaucasus and the Near East extending back to the sixth millennium B.C.E.[969]

[966] Korenevskii 2012, 12.
[967] Kohl 2007, 78; Korenevskii 2012, 12; Chernykh 2018, 98.
[968] Lyonnet and Guliyev 2010, 224; Courcier et al. 2012, 205; Lyonnet et al. 2012, 86; Lyonnet et al. 2015, 189.
[969] Narimanov 1985; Narimanov 1987; Akhundov 2007; Kohl 2007, 58; Museibli 2007; Lyonnet 2009; Cucchi et al. 2013, 926; Museibli 2014a, 103; Nishiaki et al. 2015, 2; Lyonnet et al. 2016, 171; Baudouin et al. 2018, 50; Helwing and Aliyev 2018, 66, 68; Herrscher et al. 2018, 9; Kavtaradze 2018, 79; Özdoğan 2018, 24; Ricci et al. 2018, 1446; Baudouin 2019, 118; Marro et al. 2019, 107.

In the Transcaucasus, the Chaff-faced tradition/Leilatepe complex is characterised by organised, rectilinear mudbrick architecture. The presence of monumental mudbrick architecture at Berikldeebi V2 represents some of the earliest examples in the Transcaucasus with the tripartite plan of the 'Temple' demonstrating clear parallels to the architectural traditions of northern Mesopotamia.[970] Additionally, the functional organisation of structures at Leilatepe demonstrate a shift towards increased socio-economic organisation.[971]

This is also reflected in the distinctive Chaff-faced ceramic assemblage. The production of the Chaff-faced assemblage is geared towards efficiency. The use of chaff temper, a short firing process, and a restricted morphological repertoire, at sites such as Mentesh Tepe and Ovçular Tepesi, demonstrates that, from early on, the standardisation and simplification of manufacturing techniques was a leading priority in daily ceramic production.[972] Later, at sites such as Berikldeebi, Leilatepe, and Beyuk Kesik, the introduction of the slow wheel, the simplification of decorative motifs, and the use of potter's marks indicates that ceramic production had become a specialised industry.[973] The shift towards standardisation and specialisation indicates that ceramics took on new social and economic functions within the Chaff-faced and Leilatepe Chalcolithic communities. The development of these assemblages is reflective of the emergence of new social and cultural practices surrounding the preparation,

[970] Zavaxisvili 1998, 11; Kiguradze 2001b, 49; Kiguradze and Sagona 2003, 44; Makharadze 2007, 127-128; Lyonnet 2009, 8; Sagona 2014, 16.
[971] Akhundov 2007, 97; Helwing 2012, 205; Sagona 2014, 26.
[972] Zavaxisvili 1998, 14; Kiguradze 2001b, 51; Akhundov 2007, 108; Makharadze 2007, 128; Bakhchaliyev et al. 2009, 56; Bakhchaliyev et al. 2010, 92-93; Lyonnet and Guliyev 2010, 224-225; Marro 2010, 42-43; Lyonnet et al. 2012, 98; Museibli 2015, 59; Kavtaradze 2017, 102.
[973] Zavaxisvili 1998, 14; Kiguradze 2001b, 49-51; Akhundov 2007, 108; Museibli 2007, 68; Palumbi 2010, 212; Museibli 2015, 59; Kavtaradze 2017, 97.

consumption, and distribution of food in response to the changes and new needs of the Chalcolithic communities. This occurred within the context of the intensification of exchange networks and the development of increasingly complex socio-economic organisation.

In the context of socio-economic development, the Chaff-faced horizon also saw the increasing sophistication of metallurgical production which coincided with the beginnings of social stratification. The on site production of metallurgical weapons, tools, and implements indicates that copper and other precious metals had become an important commodity and played a central role in the development of systems of prestige and social inequity.[974] This is demonstrated by the discovery of metal artefacts in funerary contexts.

Chaff-faced funerary practices are characterised by infant jar burials which is a tradition commonly attested in the ancient Near East.[975] The discovery of three copper axes in an infant jar burial at Ovçular Tepesi demonstrates that, from as early as the late fifth millennium B.C.E., social status may have been inherited.[976] Irrespective of wealth, the frequent occurrence of infant jar burials among Chaff-faced/Leilatepe sites may reflect wider changes in social organisation and values relating to the increasing importance of individual kin groups during this period.[977] The appearance of kurgans at Soyuq Bulaq, during the first half of the fourth millennium B.C.E., demonstrates that

[974] Aliev and Narimanov 2001, 70-73; Kiguradze 2001b, 51; Akhundov 2007, 106-108; Kohl 2007, 69; Museibli 2007, 87; Lyonnet and Guliyev 2010, 221-222; Courcier et al. 2012, 210-211; Helwing 2012, 214; Lyonnet et al. 2012, 115; Kohl and Trifonov 2013, 1576-1577; Courcier 2014, 623.
[975] Museibli 2014b, 5; Museibli 2016a, 284; Marro and Yilmaz 2018, 41-42.
[976] Marro et al. 2011, 70; Berthon et al. 2013, 192; Bakhshaliyev 2014, 21; Marro and Yilmaz 2018, 43.
[977] Brereton 2013, 242-243; Marro and Yilmaz 2018, 43.

processes of social stratification continued to intensify.[978] Select individuals were interred in conspicuous burial mounds and accompanied by prestige items including artefacts of copper, silver, and gold.

The Chaff-faced horizon in the Transcaucasus is characterised by the development of rectilinear, mudbrick architecture, the standardisation and specialisation of craft activities, the increasing sophistication of metallurgical production, and the development of social stratification based on a system of prestige and conspicuous consumption. With possible links to regions further south, the phenomenon of the Chaff-faced horizon in the Transcaucasus reflects the wider socio-economic and cultural dynamics taking place in northern Mesopotamia and Anatolia.

The emergence of the Kura-Araxes complex around 3600-3300 B.C.E. signifies a shift in the social and cultural dynamics of the Transcaucasus.[979] The development of the distinctive Kura-Araxes 'cultural package' represents a tradition that is fundamentally different to that of the Chaff-faced horizon. Early Kura-Araxes architecture is characterised by the development of regional trends encompassing semi-subterranean, round, rectilinear, and terraced buildings constructed from a variety of materials including wood, wattle-and-daub, mudbrick, and stone. The development of distinctive domestic arrangements, including fixed central hearths, benches, portable andirons, and zoomorphic figurines at sites, such as Gegharot and Chobareti, indicate

[978] Courcier et al. 2008a, 21; Lyonnet 2009, 44; Lyonnet and Guliyev 2010, 22; Museibli 2014b, 82.
[979] Rova 2014, 48; Sagona 2014, 27; Helwing 2017, 53; Palumbi 2017, 113.

that socio-economic organisation, in Kura-Araxes communities, was centred on the family unit.[980]

This is also reflected in the Kura-Araxes ceramic assemblage which was produced in a domestic context. Unlike the Chaff-faced tradition, Kura-Araxes communities chose to employ labour-intensive manufacturing techniques. Kura-Araxes ceramics were handmade and tempered with inorganic material.[981] Vessels also required a demanding firing process reliant upon alternating between a reducing and oxidising atmosphere in order to achieve the distinctive Red-Black colour scheme which would come to define the ceramic assemblage.[982] Finishing techniques were also labour-intensive and included highly burnished exterior surfaces and decorative motifs such as post-firing incised geometric and zoomorphic designs, attested at Gegharot and Sos Höyük, and lugs, knobs, dimples, and circular impressions found at Chobareti.[983]

The shift towards the household as the primary unit of socio-economic organisation is also reflected in funerary practices. Funerary practices become increasingly varied with the introduction of stone cist tombs from 3350 B.C.E. in addition to the use of pit graves and horse-shoe-shaped tombs.[984] The continued use of kurgans indicates that some cultural continuity existed between the Chaff-faced and Kura-Araxes

[980] Sagona 1993, 453; Abay 2005, 115; Badalyan et al. 2008, 50; Badalyan et al. 2010b, 265-266; Kibaroğlu et al. 2011, 3037; Kakhiani et al 2013, 12; Sagona 2014, 38; Jude et al. 2015, 2; Rothman 2016, 240; Palumbi 2017, 115; Rothman 2018, 135.
[981] Badaljan et al. 1992, 37; Sagona 1998, 22; Palumbi 2003, 92; Badalyan and Avetisyan 2007, 58; Smith et al. 2003, 43; Iserlis et al. 2010, 249; Kibaroğlu et al. 2011, 3082; Lyonnet et al. 2012, 103; Hovsepyan 2013, 205; Kakhiani et al. 2013, 30-31; Badalyan 2014, 73; Lyonnet 2014, 118-119; Kibaroğlu 2015, 221; Palumbi 2017, 115.
[982] Badalyan and Avetisyan 2007, 58; Palumbi 2008a, 188; Iserlis et al. 2010, 249; Kibaroğlu et al. 2011, 3074; Lyonnet et al. 2012, 103; Hovsepyan 2013, 205; Kakhiani et al. 2013, 30-31; Lyonnet 2014, 118-119; Kibaroğlu 2015, 222-223.
[983] Badalyan and Avetisyan 2007, 58; Badalyan et al. 2008, 52-54; Palumbi 2008a, 188-190; Kakhiani et al. 2013, 30-31.
[984] Palumbi and Chataigner 2014, 249; Poulmarc'h et al. 2014, 233-235.

traditions.[985] However, unlike the burials at Soyuq Bulaq, the kurgans at Mentesh Tepe and Talin emphasise the collective. Social stratification becomes less apparent as there is a decline in the deposition of items of prestige. The funerary assemblage becomes more homogenous with ceramics forming the bulk of the grave goods.[986]

This may explain the scarcity of metallurgical artefacts from Kura-Araxes contexts. Without a system of social stratification, metallurgical artefacts would have played a limited role in dictating the social and economic processes of early Kura-Araxes communities. As a result, the development of the Kura-Araxes complex represents a fundamental break from the social and cultural dynamics reflected in the Chaff-faced tradition. It demonstrates a shift from the sophisticated socio-economic organisation of the Chaff-faced horizon, based on resource and wealth procurement, to a system centred on the household as the primary social unit.

Other complexes, located along the periphery of the Transcaucasus, in particular Tilkitepe and the Maikop, also participated in this extensive network of interaction and exchange. Tilkitepe represents a small-scale local development confined to the Lake Van region of eastern Anatolia.[987] In the absence of stratified deposits and architectural remains, the Tilkitepe complex is known exclusively by its ceramic assemblage. In particular, the assemblage is characterised by its distinctive red painted decorative motifs consisting of vertical wavy or straight lines in addition to polka dots, rows of dots,

[985] Palumbi 2003, 98; Badalyan and Avetisyan 2007, 244; Avetisyan et al. 2010, 161; Kalantarian 2011, 125; Lyonnet et al. 2012, 118; Palumbi and Chataigner 2014, 249; Poulmarc'h et al. 2014, 237; Lyonnet et al. 2015, 190; Marro and Yilmaz 2018, 40.
[986] Ristvet et al. 2011, 19; Palumbi and Chataigner 2014, 249; Palumbi 2017, 115; Altunkaynak et al. 2018, 80; Laneri et al. 2018, 154; Rothman 2018, 137-138; Rova 2019, 13.
[987] King 1912, 198; Lake and Lake 1939; Hughes et al. 1940, 127; Pfeiffer 1940, 32; LeBlanc and Watson 1973, 119; Todd 1983, 555; Kılıç 2006, 5-6; Özdemir et al. 2013, 975.

and line ornaments.[988] Despite its distinctive appearance, there is little evidence to suggest that the Tilkitepe complex spread beyond the Lake Van region. The site of Tekhut in Armenia is the only known site to demonstrate parallels to the Tilkitepe complex outside of the region.[989] The limited distribution of the assemblage suggests that the Tilkitepe complex represents a cultural phenomenon that is local and confined to the region of Lake Van. It is likely that the Tilkitepe complex exerted little influence over the other contemporary Chalcolithic traditions and played a minor role in the network of interregional interaction and resource exchange.

The Maikop represent the furthest extent of the network of interregional interaction that characterised the Chalcolithic period.[990] The Maikop cultural assemblage is suggestive of a connection to regions further south including northern Mesopotamia and the Chaff-faced tradition of the Transcaucasus. In particular, the Maikop share close affinities with the Chaff-faced horizon and may represent a northern extension of this tradition resulting from processes of migration and exchange.[991] The Maikop followed a similar trajectory of socio-economic development to the Chaff-faced tradition and, likewise, mirrored the social and cultural dynamics evident in northern Mesopotamia and Anatolia.[992]

[988] Belck 1902, 125-127; Reilly 1937, 82; Reilly 1940, 161; Burney 1958, 160-161; Korfmann 1982, 175-176; Lake and Lake 1982, 191-192; Todd 1983, 555; Marro and Özfirat 2004, 232; Özfirat and Marro 2004, 300; Kılıç 2006, 8; Marro 2007, 91; Marro 2008, 13-14; Özdemir et al. 2013, 976.
[989] Torosyan 1976, Pl. X.1-3; Kushnareva 1997, Fig. 13.13-14; Marro and Özfirat 2004, 232.
[990] Chernykh 1992, 67; Shishlina et al. 2003, 340; Anthony 2007, 284; Ivanova 2007, 14; Belinskij et al. 2017, 13-14; Chernykh 2017, 481.
[991] Korenevskiii 1992, 40; Korenevskiii 2004, 37-38; Museibil 2007, 92; Korenevskiii 2012, 14; Kohl and Trifonov 2013, 1578; Akhundov 2014, 11-12; Kavtaradze 2014, 14; Munchaev and Amirov 2014, 157-158; Museibli 2015, 58; Museibli 2016a, 283; Rothman 2016, 237; Korenevskii 2017b, 231; Rezepkin 2017, 43; Akhundov 2018, 67; Kavtaradze 2018, 86; Rothman 2018, 125; Museibli 2019, 74-75; Trifonov et al. 2019, 70-71.
[992] Rezepkin 2017, 47.

Like the Chaff-faced tradition, the Maikop complex is characterised by the specialisation of craft activities. The similarities between the Chaff-faced and Maikop ceramic assemblages are evident in production techniques. Maikop ceramics were handmade using chaff tempered clay and a short firing process.[993] Maikop ceramics also demonstrate a restricted morphological repertoire and limited decorative motifs.[994] Evidence from later sites indicates that, through the use of the slow wheel and the introduction of potter's marks, ceramic production had developed into a specialised industry within Maikop communities.[995]

However, it is the development of a highly sophisticated metallurgical tradition that has come to represent a defining feature of the Maikop.[996] The discovery of the wealthy burial assemblages from sites such as the Oshdad kurgan, Kurgan 11 at Klady, and the 'royal' kurgan near Nalchik indicates that the Maikop had developed a system of social stratification based upon the accumulation of wealth and conspicuous consumption.[997] The prominence of such artefacts within Maikop funerary contexts demonstrates that, similar to the Chaff-faced tradition, arsenical copper and other precious metals had become an important commodity which played a central role in the communication and negotiation of social status and rank.

The emergence of complex systems of social stratification, driven by the accumulation of wealth and prestige, may have been a propulsive force behind the

[993] Anthony 2007, 290-291; Ivanova 2012a, 19-22; Korenevskii 2012, 13-14.
[994] Chernykh 1992, 72; Korenevskii 2004, 22-38; Anthony 2007, 290-291; Korenevskii 2012, 13-14; Museibli 2016a, 283.
[995] Korenevskii 2004, 22-38; Anthony 2007, 290-291; Korenevskii 2012, 14; Museibli 2016a, 283.
[996] Ivanova 2012a, 47-48.
[997] Chechenov 1973; Chernykh 1992, 71; Anthony 2007, 66; Ivanova 2007, 7; Kohl 2007, 72; Kohl 2009, 91; Korenevskii 2011, 10-11; Helwing 2012, 214; Ivanova 2012a, 2-3; Ivanova 2012b, 72; Korenevskii 2012, 7; Hansen 2014, 397; Belinskij et al. 2017, 15; Helwing 2017, 54; Korenevskii 2017a, 40; Korenevskii 2017b, 231.

intensification of networks of interaction during the Chalcolithic period. The Transcaucasus, rich in natural resources, particularly obsidian and copper ore, played a central role in facilitating and maintaining the development of highly stratified systems of social and political organisation throughout Mesopotamia, Anatolia, and the northern Caucasus. It is in this context that Sioni, a local ceramic tradition centred in eastern Georgia, emerged.

Chapter Four: Figures

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Figure 4.1: Map showing the overlapping cultural complexes of the Transcaucasian Chalcolithic (Courtesy of Antonio Sagona).

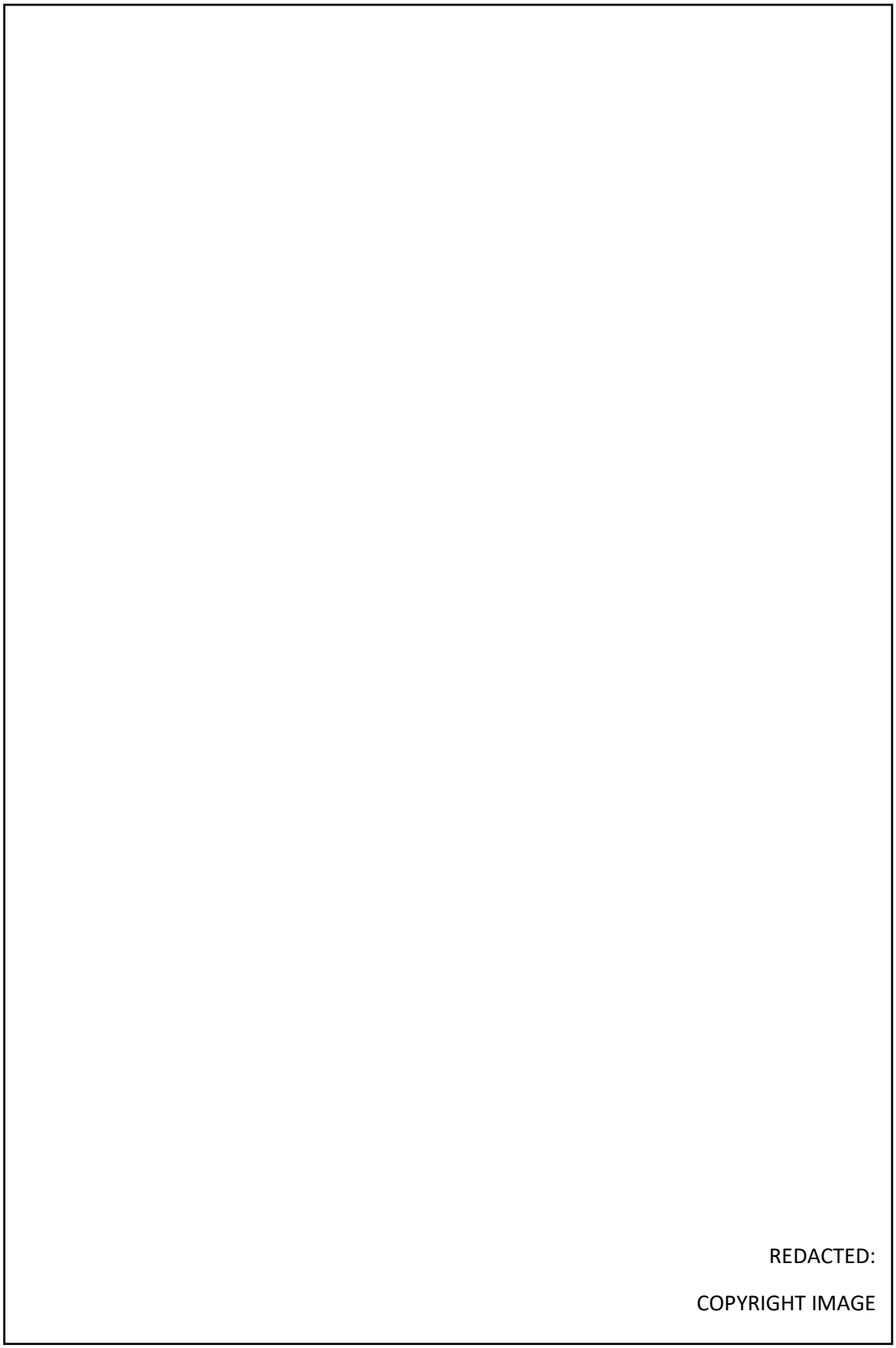


Figure 4.2: Mentesh Tepe – Period III (after Lyonnet et al. 2012, Fig. 132).

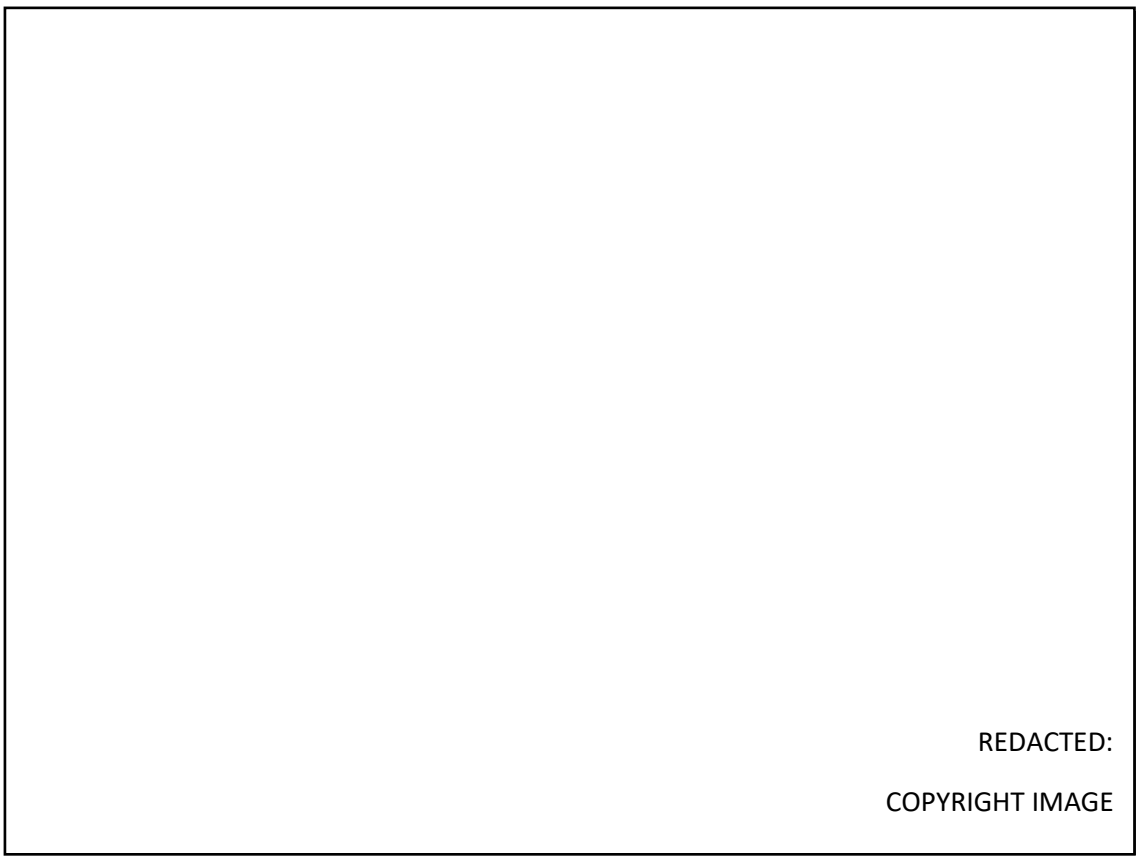


Figure 4.3: Aerial photograph of Ovçular, 2010 (after Marro et al. 2011, Photo 1).

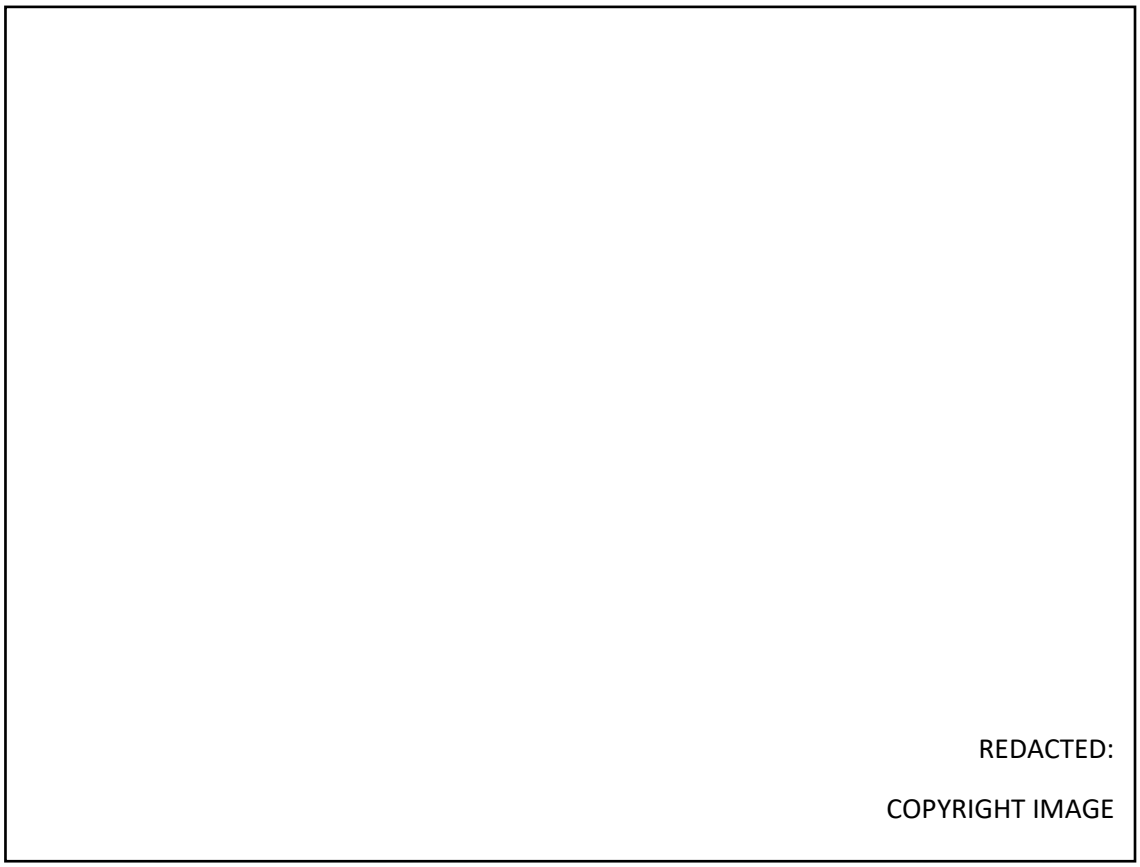


Figure 4.4: Plan of Soyuq Bulaq (after Lyonnet et al. 2008, Fig. 2).

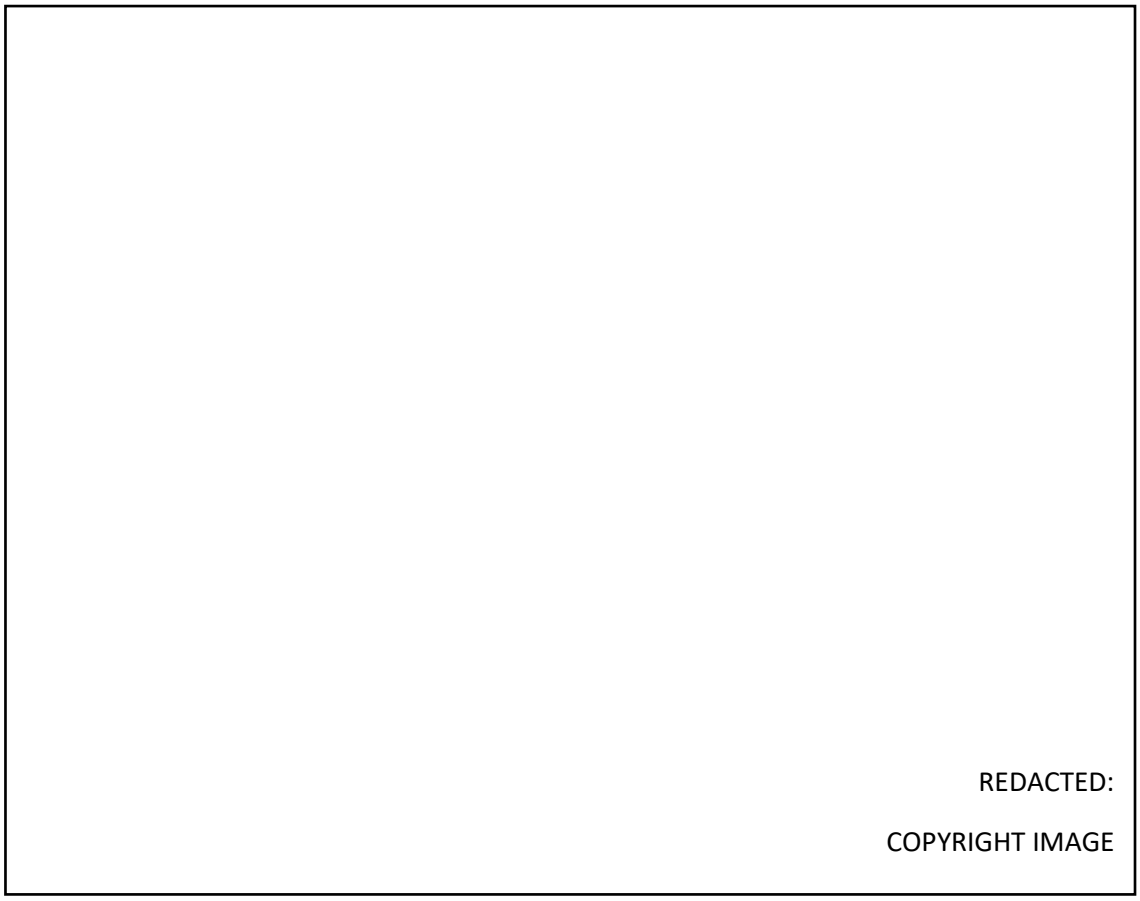
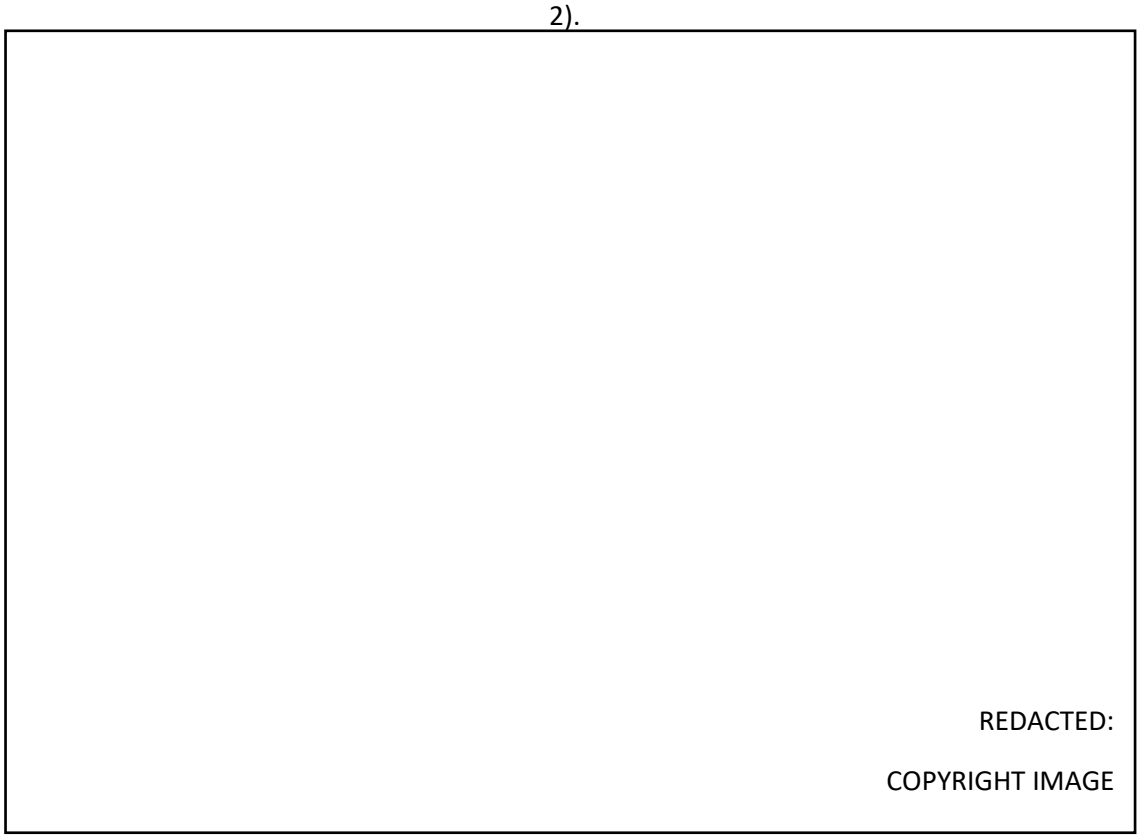


Figure 4.5: Plan of the Late Chalcolithic structures at Ovçular (after Marro et al. 2011, Fig. 2).



Bakhchaliyev et al. 2010, Photo 8).

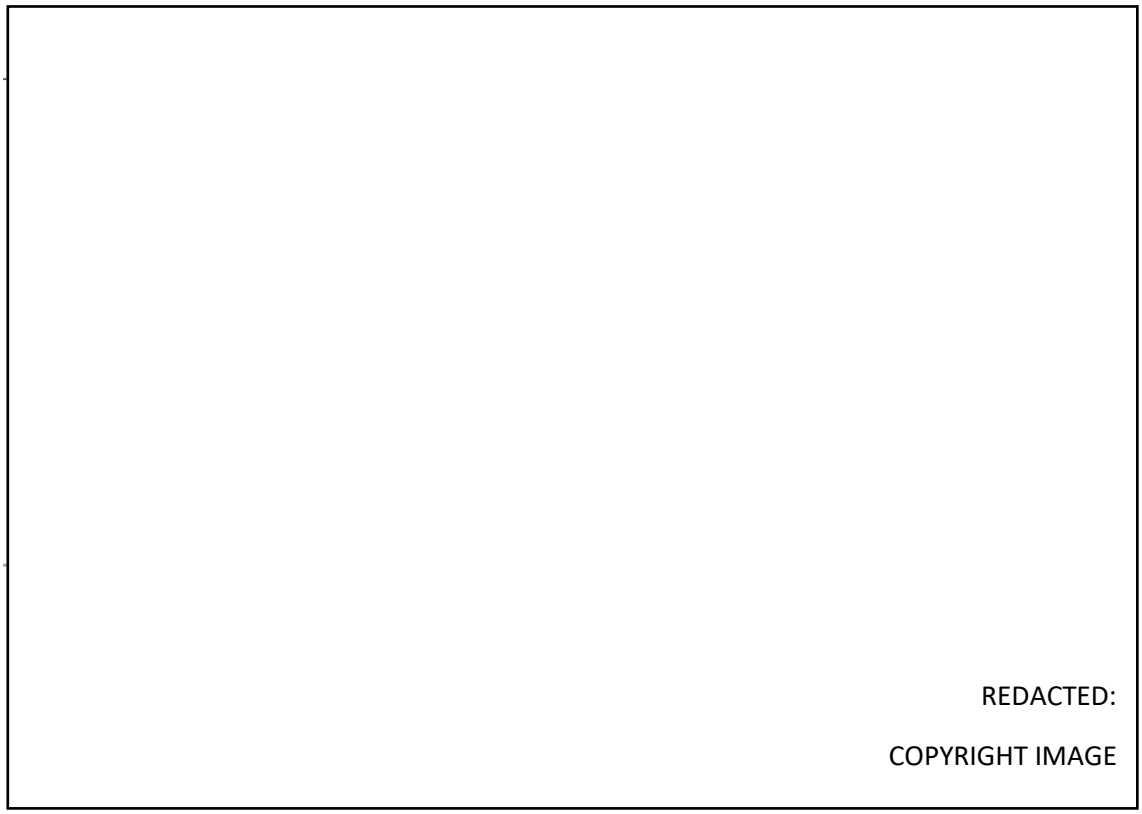


Figure 4.7: Plan of Berikldeebi V2 (after Makharadze 2007, Pl. III).

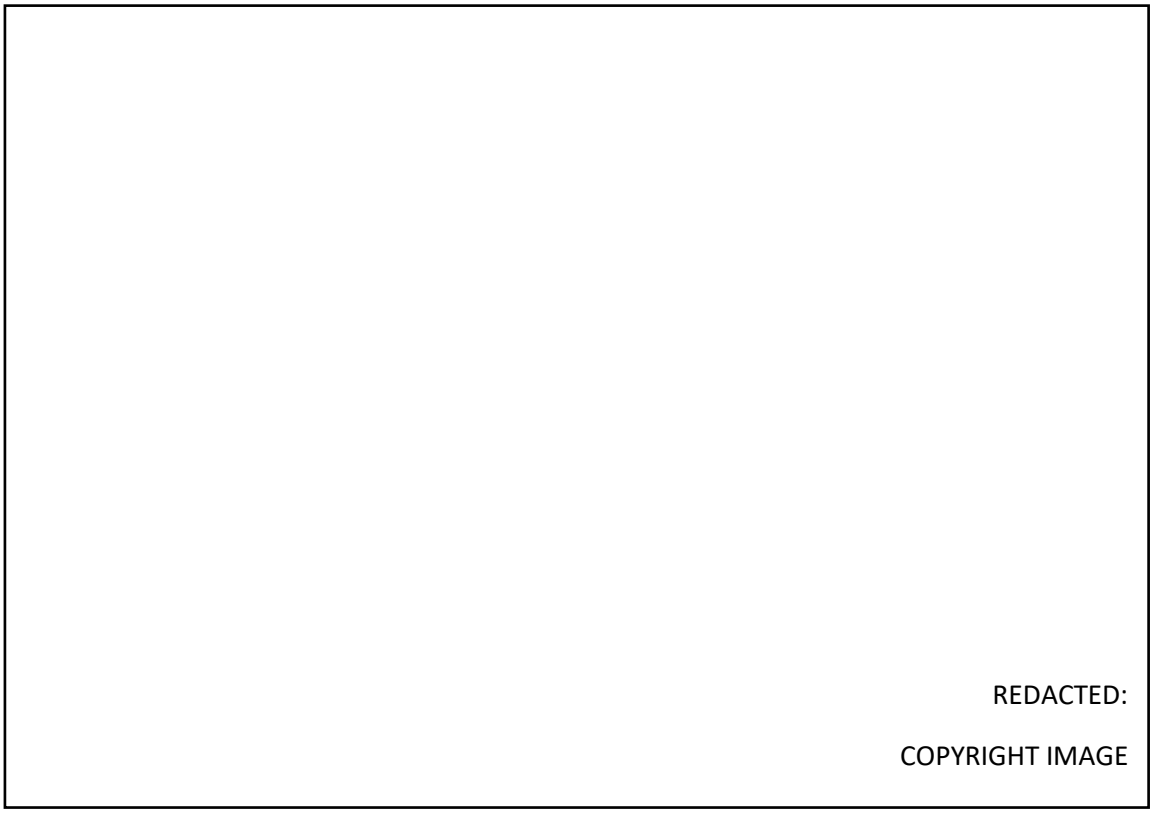


Figure 4.8: Plan of the 'Temple' from Berikldeebi V2
(after Kiguradze and Sagona 2003, Fig. 3.2).

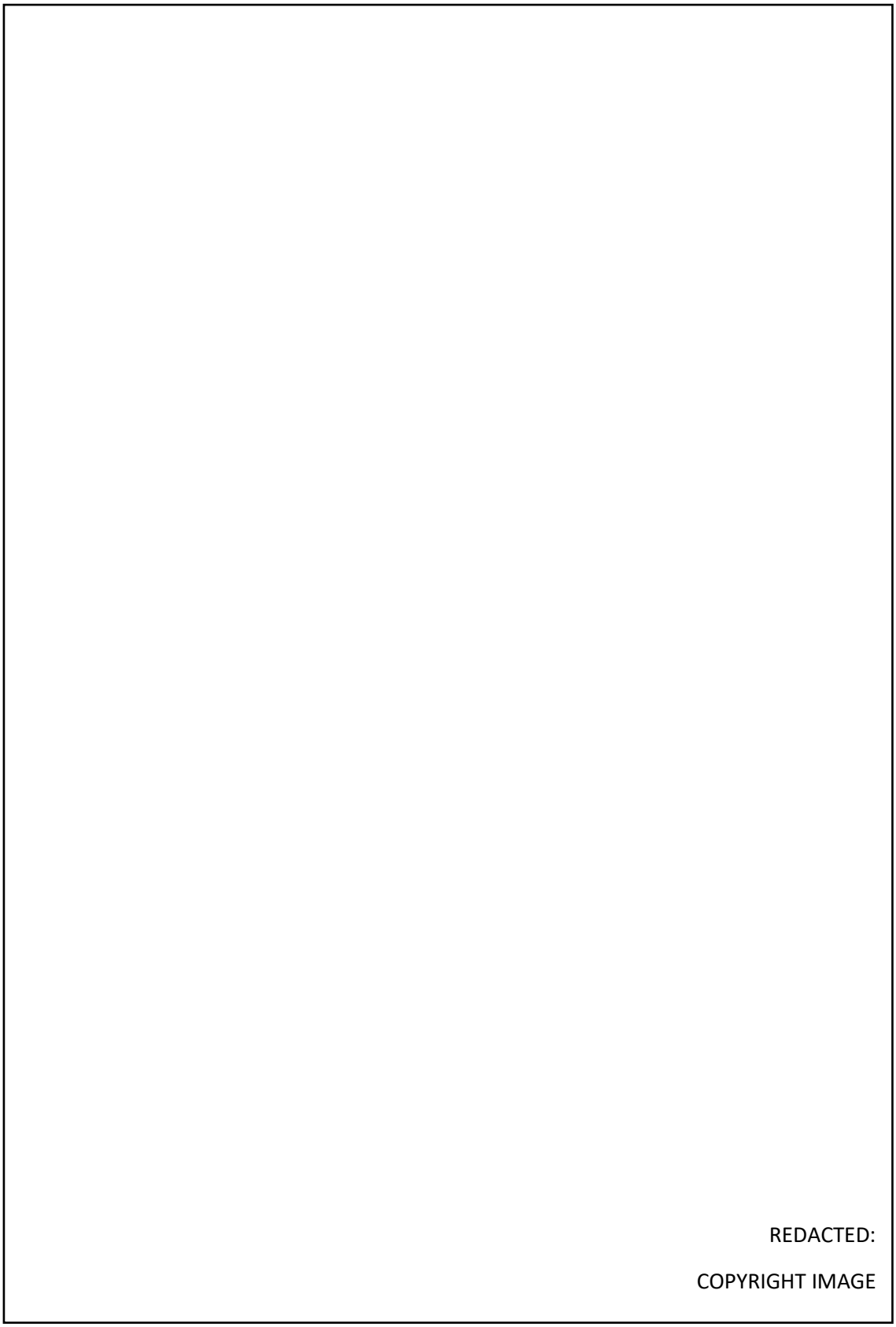


Figure 4.9: Plan of Leilatepe (after Akhundov 2007, Fig. 2).

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Figure 4.10: Plan of Beyuk Kesik (after Akhundov 2007, Fig. 3).

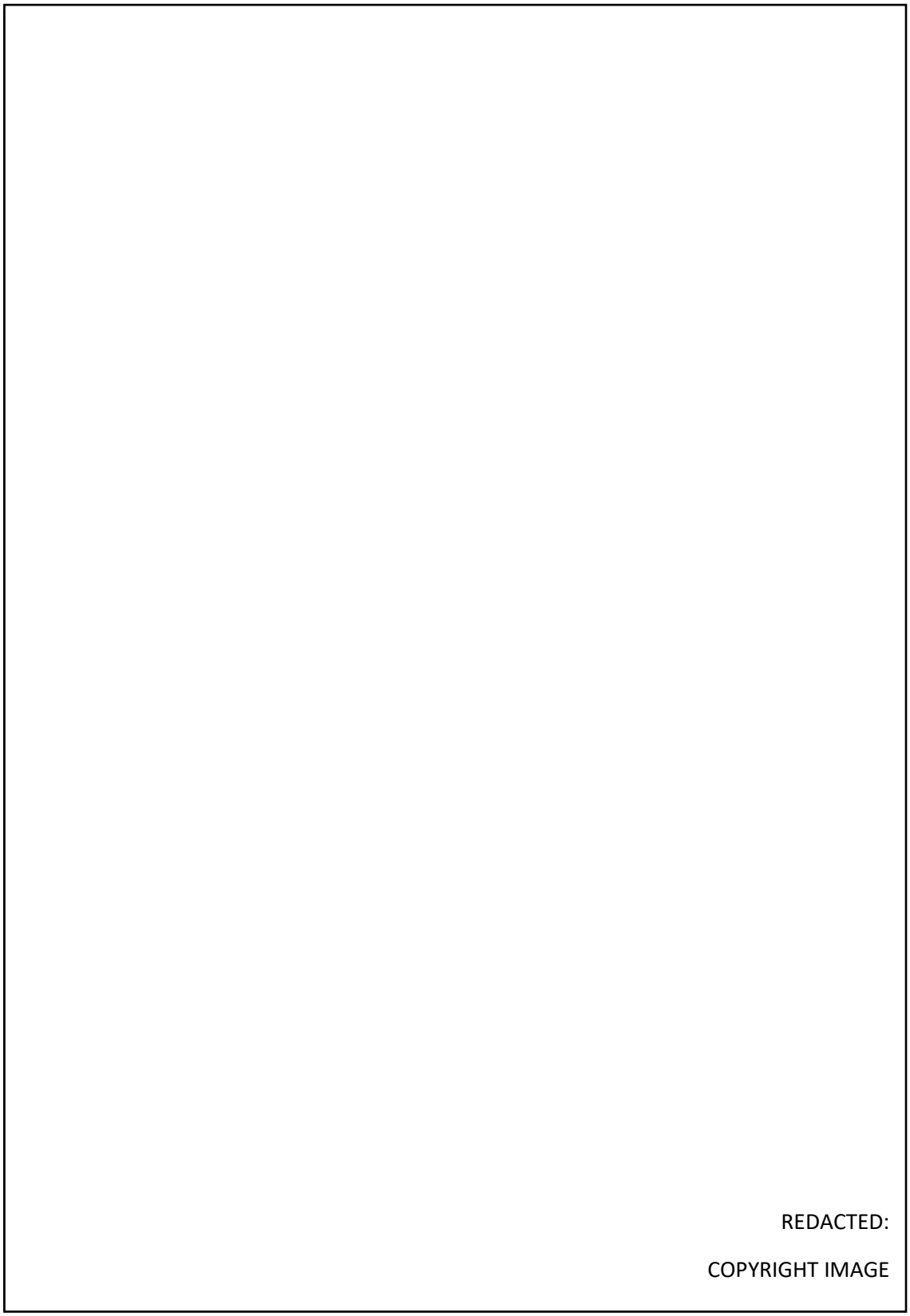


Figure 4.11: Examples of common ware jars from Mentesh Tepe (after Lyonnet et al. 2012, Fig. 143).

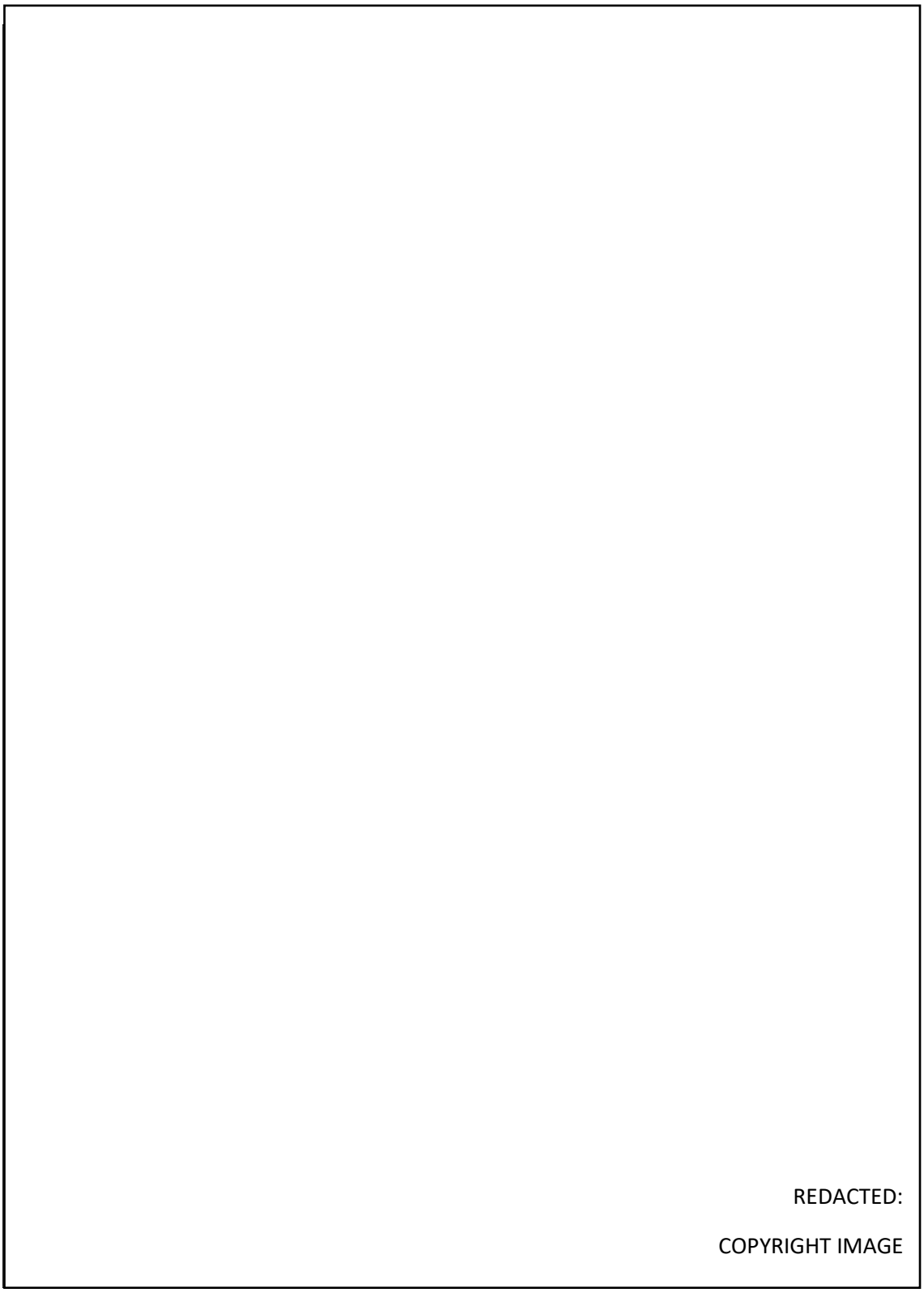


Figure 4.12: Table ware from Mentesh Tepe (after Lyonnet et al. 2012, Fig. 146).

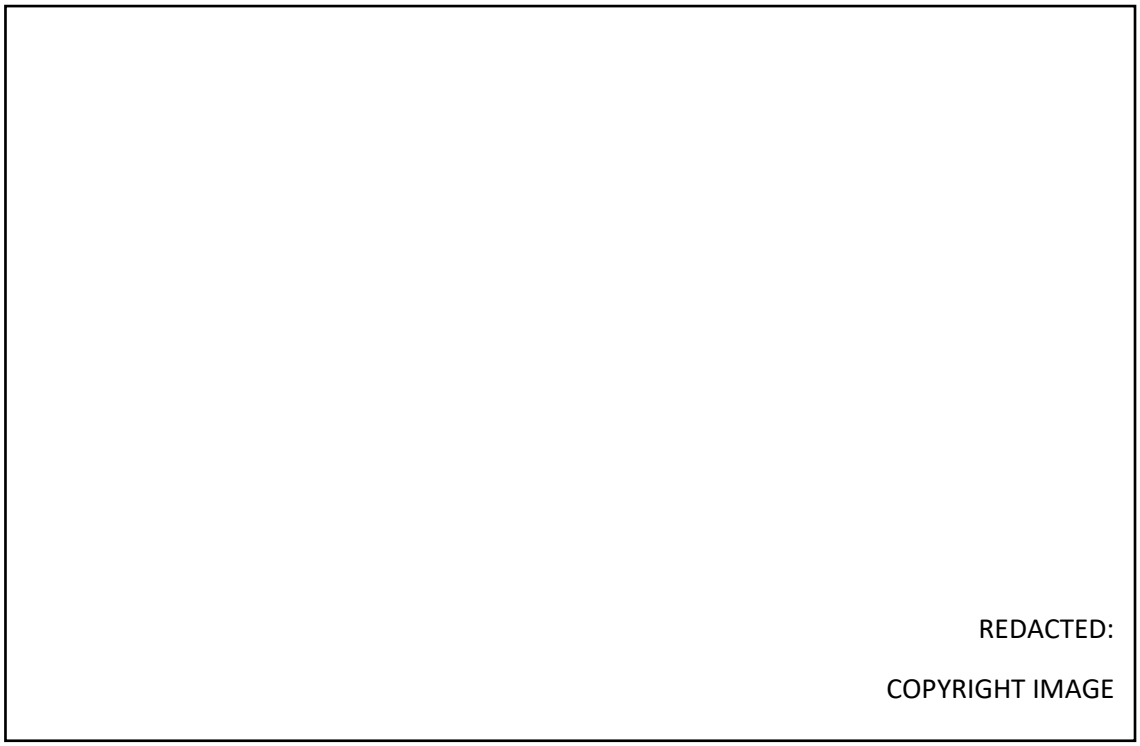


Figure 4.13: Main bowl types from Late Chalcolithic Levels I and II at Ovçular (after Marro 2010, Fig. 3).

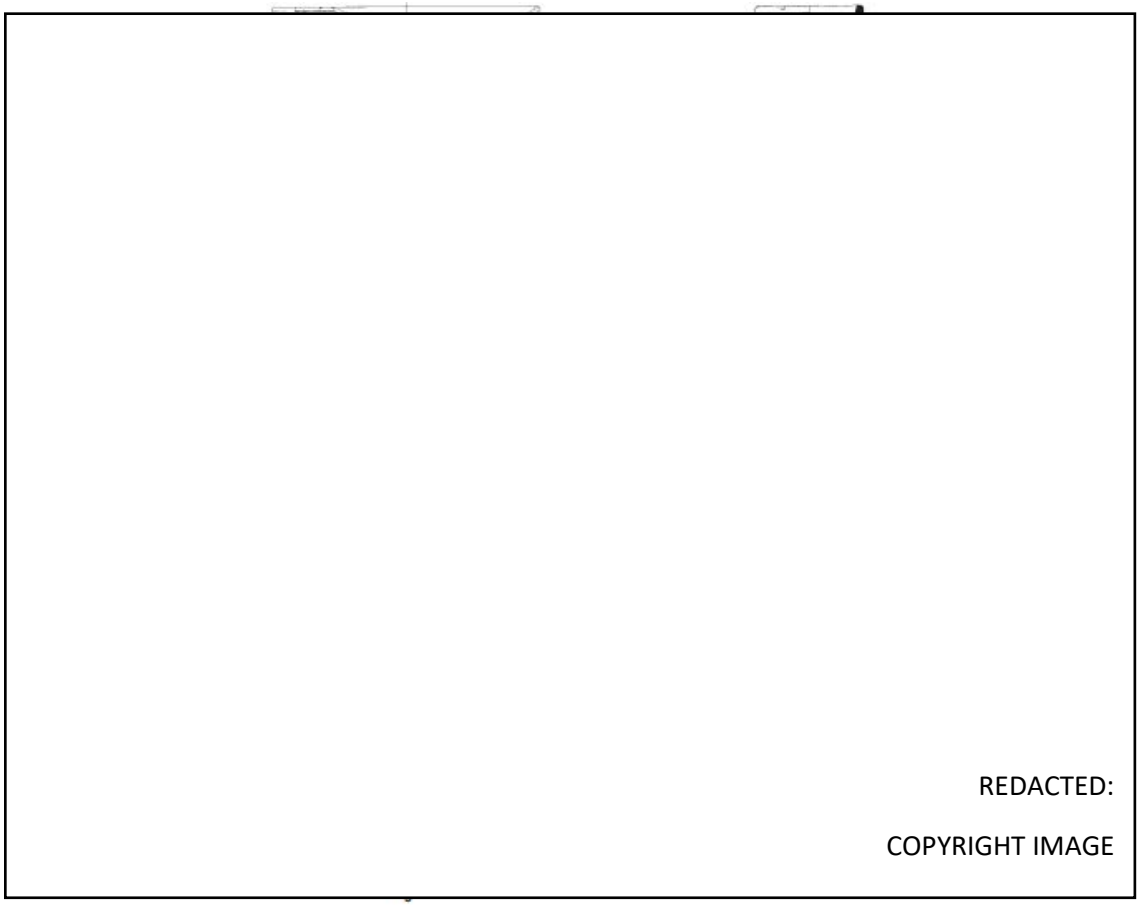


Figure 4.14: Main jar types from Late Chalcolithic Levels I and II at Ovçular (after Marro 2010, Fig. 8).

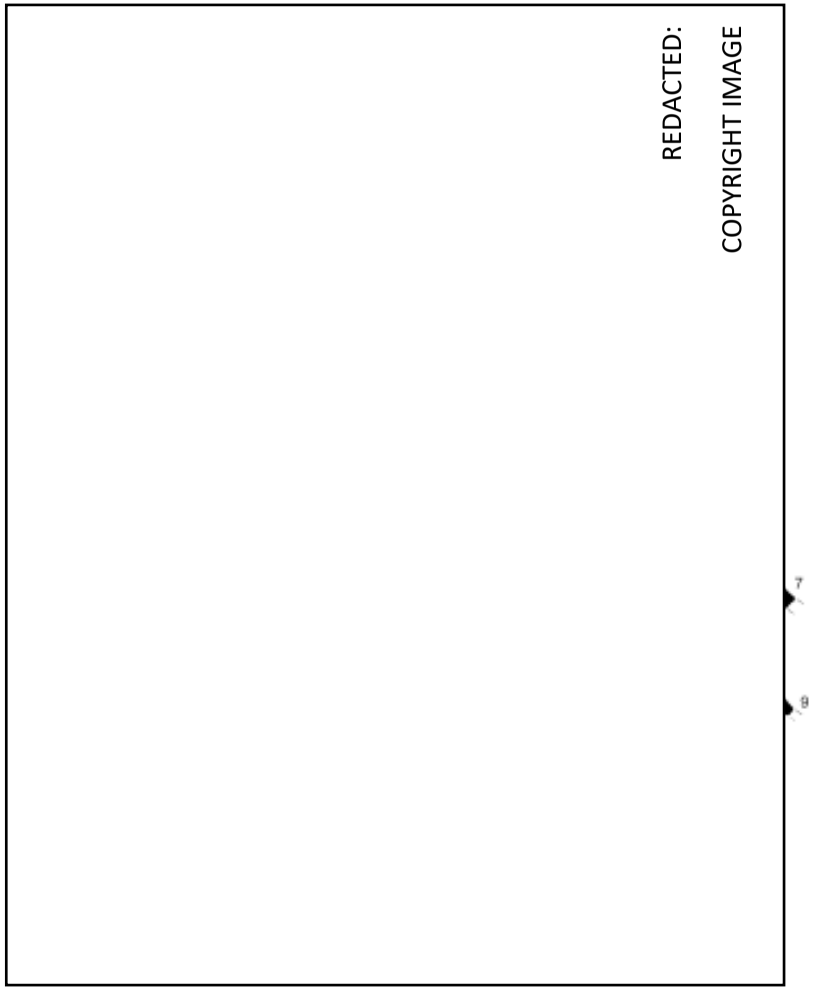


Figure 4.15: Examples of pithoi from Leilatepe and Beyuk Kesik (after Akhundov 2007, Fig. 9).

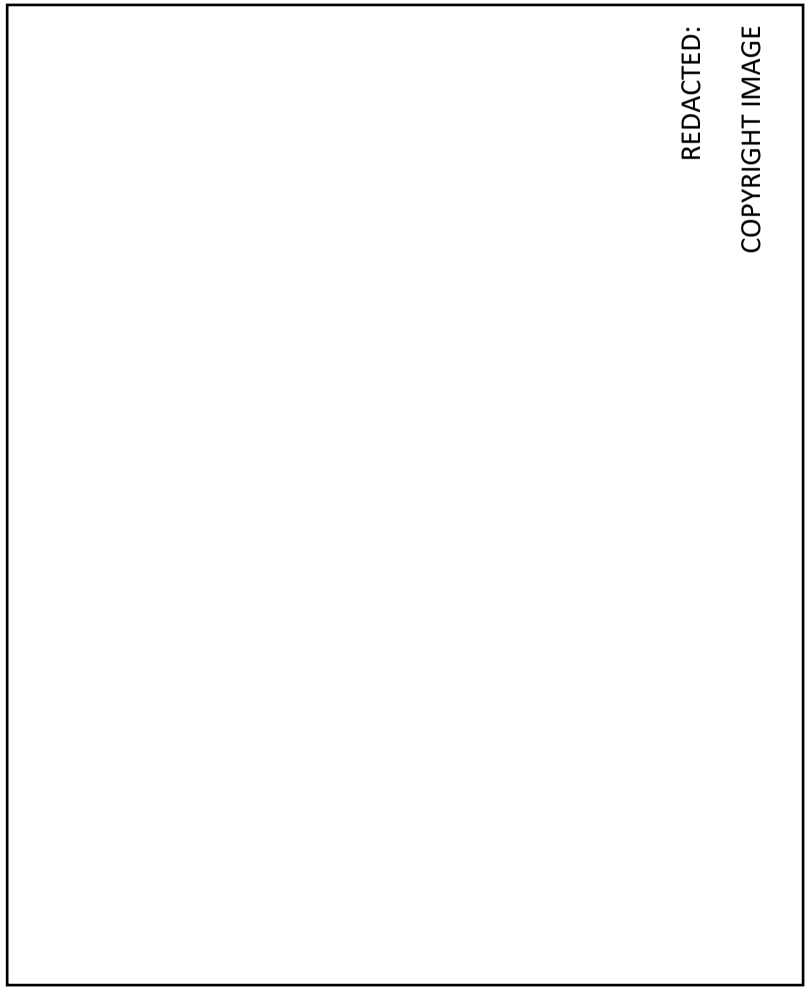


Figure 4.16: Examples of pots and pitchers from Leilatepe and Beyuk Kesik (after Akhundov 2007, Fig. 10).

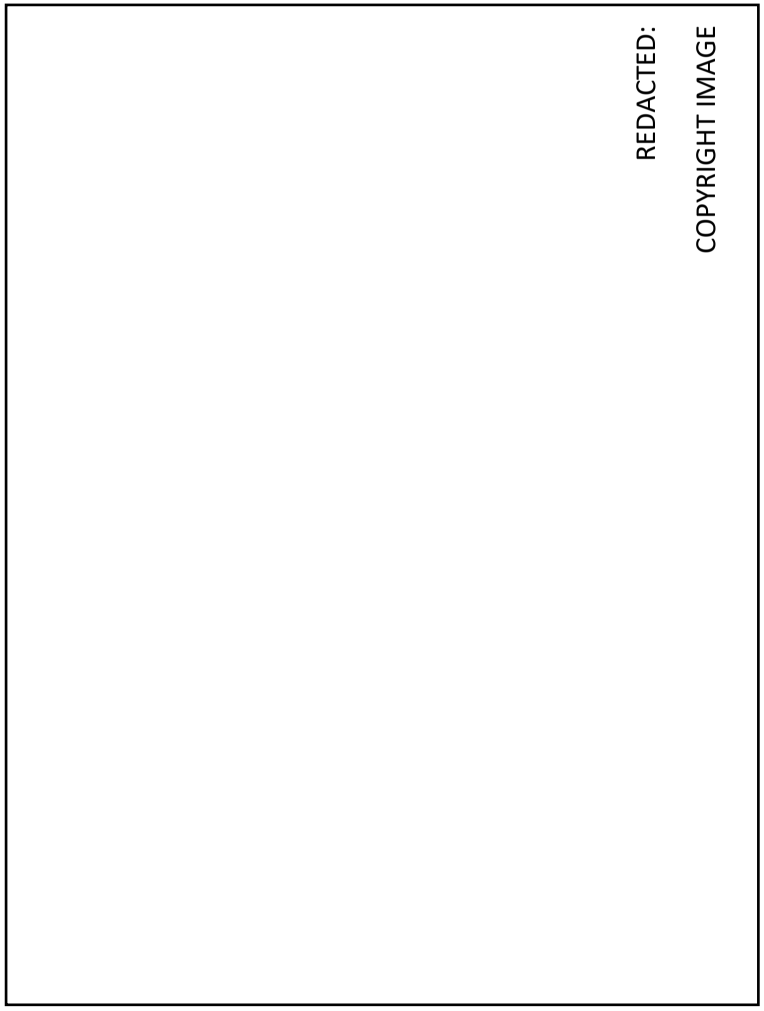


Figure 4.17: Ceramics from Berikldeebi V1 and V2 (after Makharadze 2007, Pl. IV).

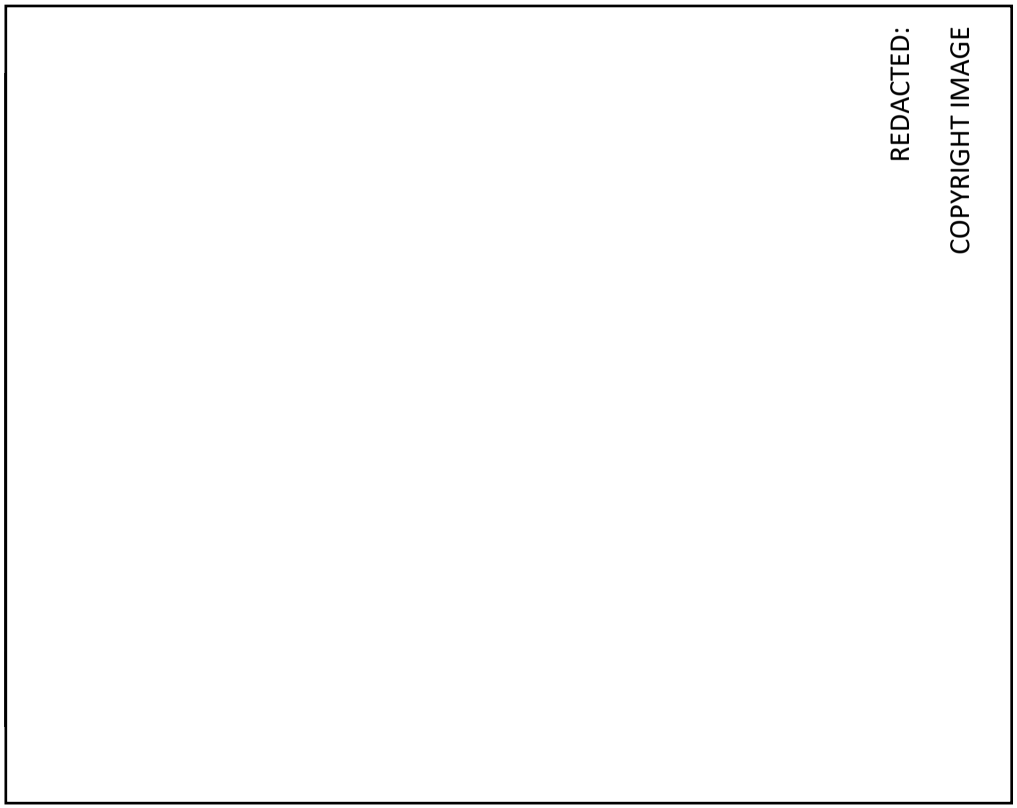


Figure 4.18: Painted bowls from Ovçular Late Chalcolithic II (after Marro et al. 2011, Photo 18).

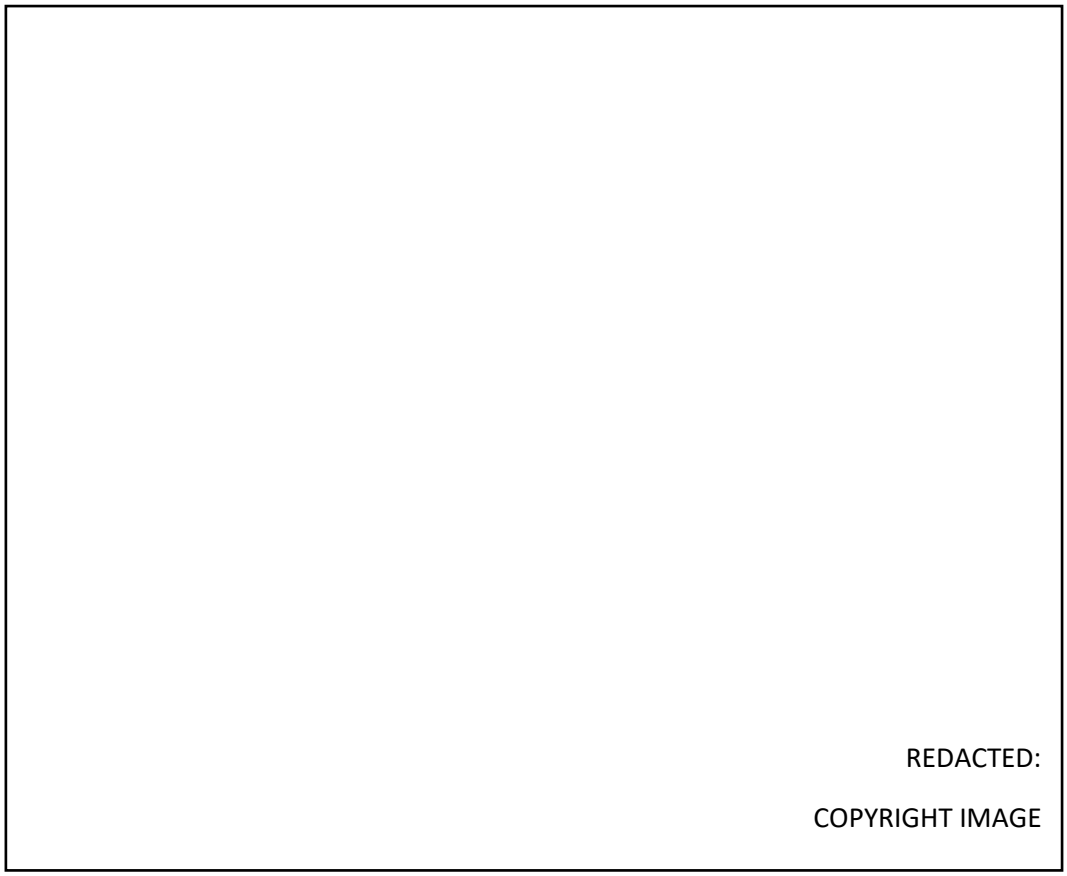


Figure 4.19: Late Chalcolithic vessel with animal relief design from Ovçular (after Marro et al. 2011, Pl. II).

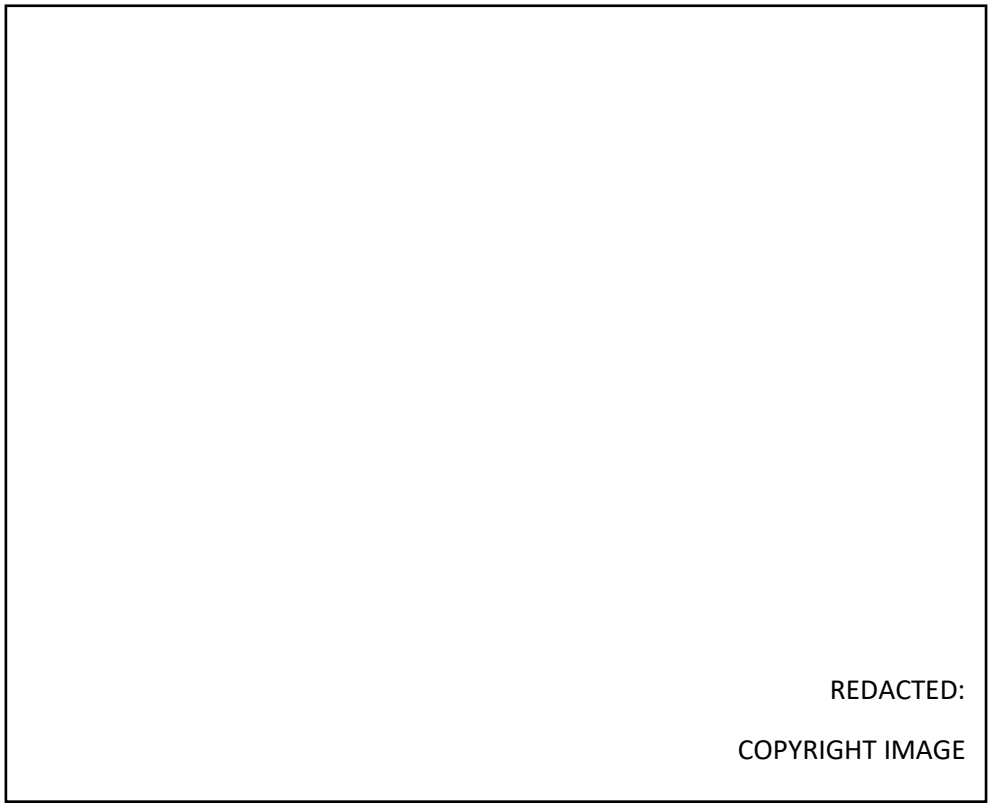


Figure 4.20: Late Chalcolithic vessel with animal relief design from Ovçular (after Marro et al. 2011, Pl. III).

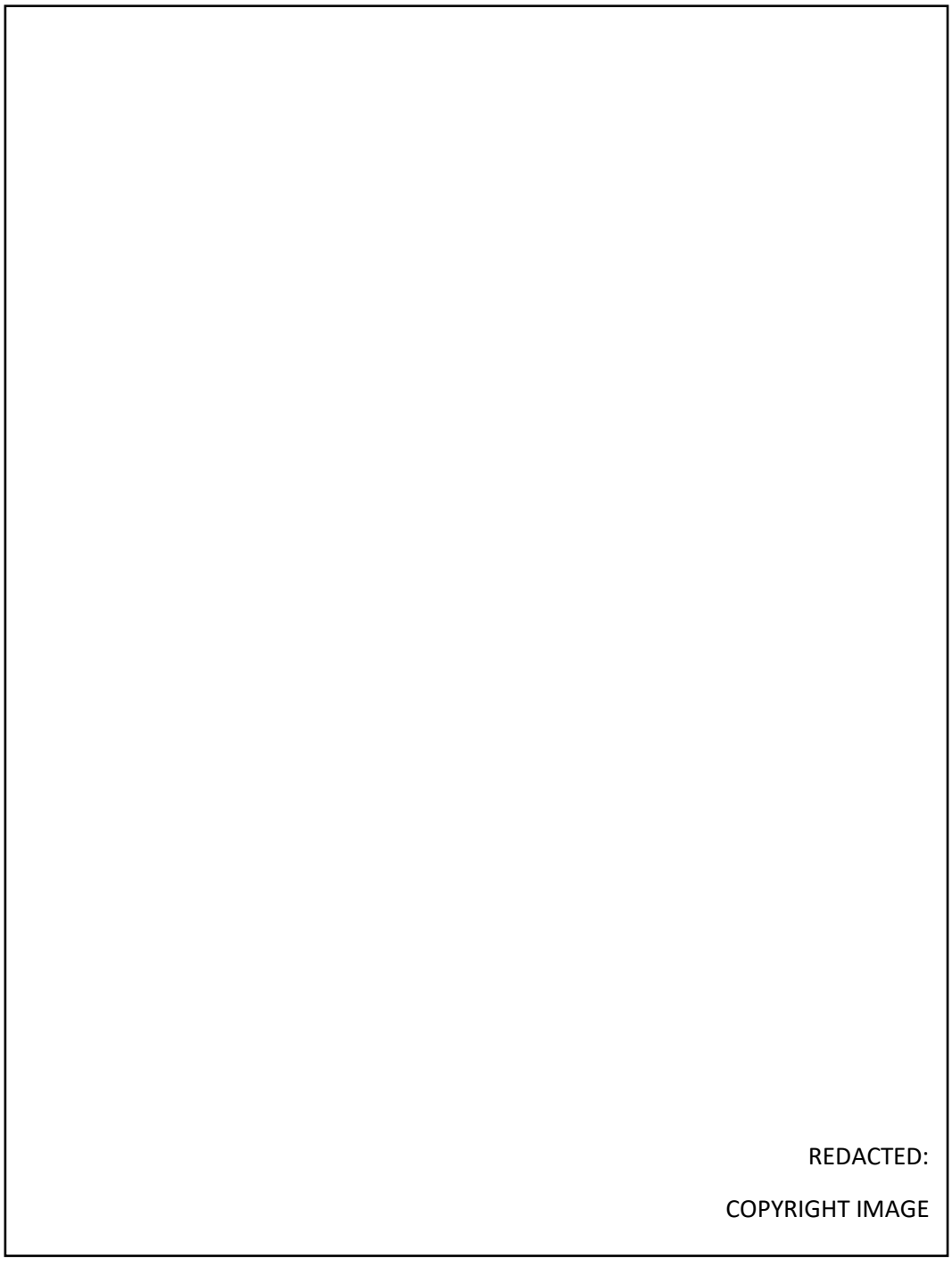


Figure 4.21: Incised ceramics from Beyuk Kesik (after Museibli 2007, Table XXI).

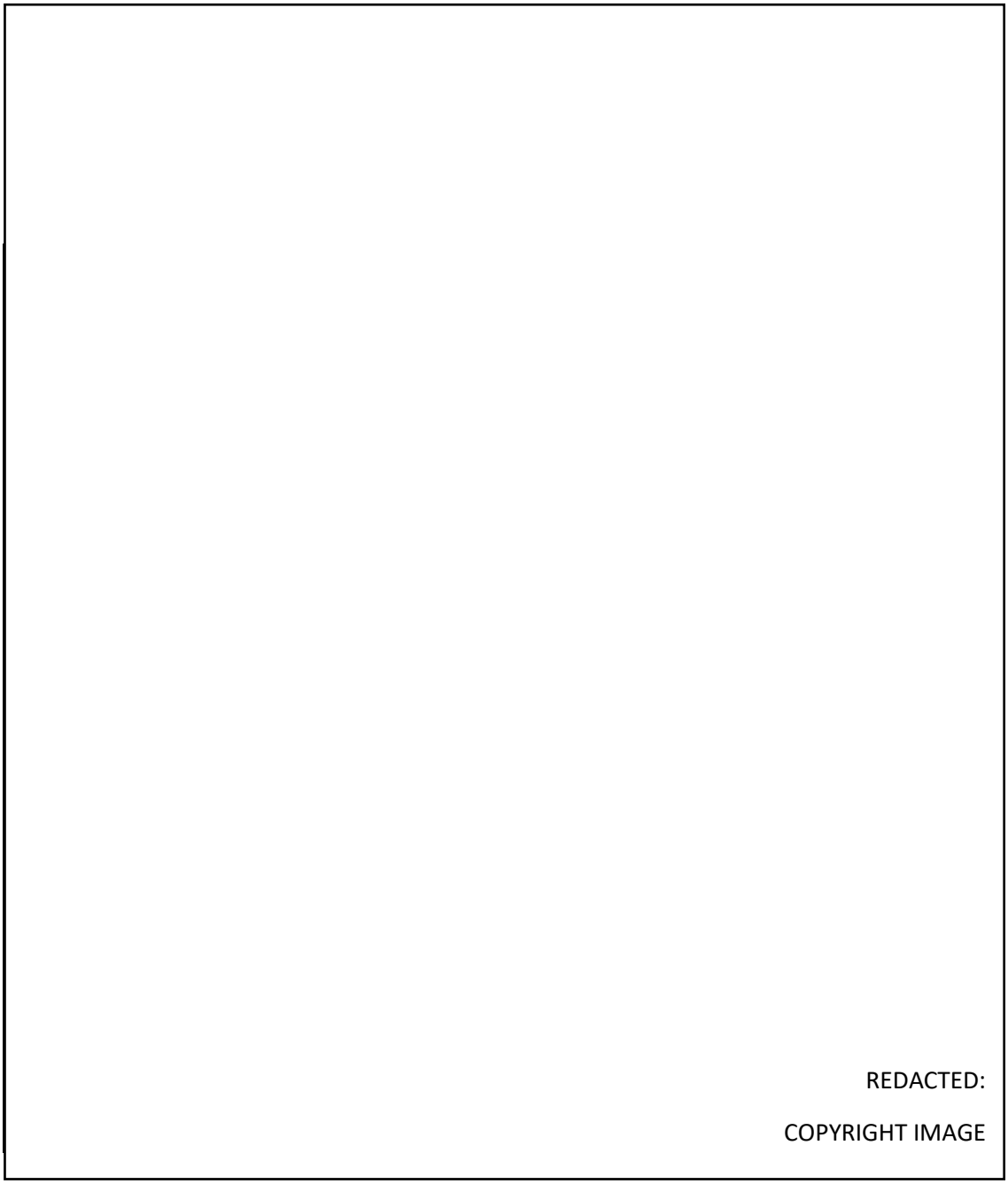


Figure 4.22: Metal artefacts from Mentesh Tepe (after Lyonnet et al. 2012, Fig. 156).

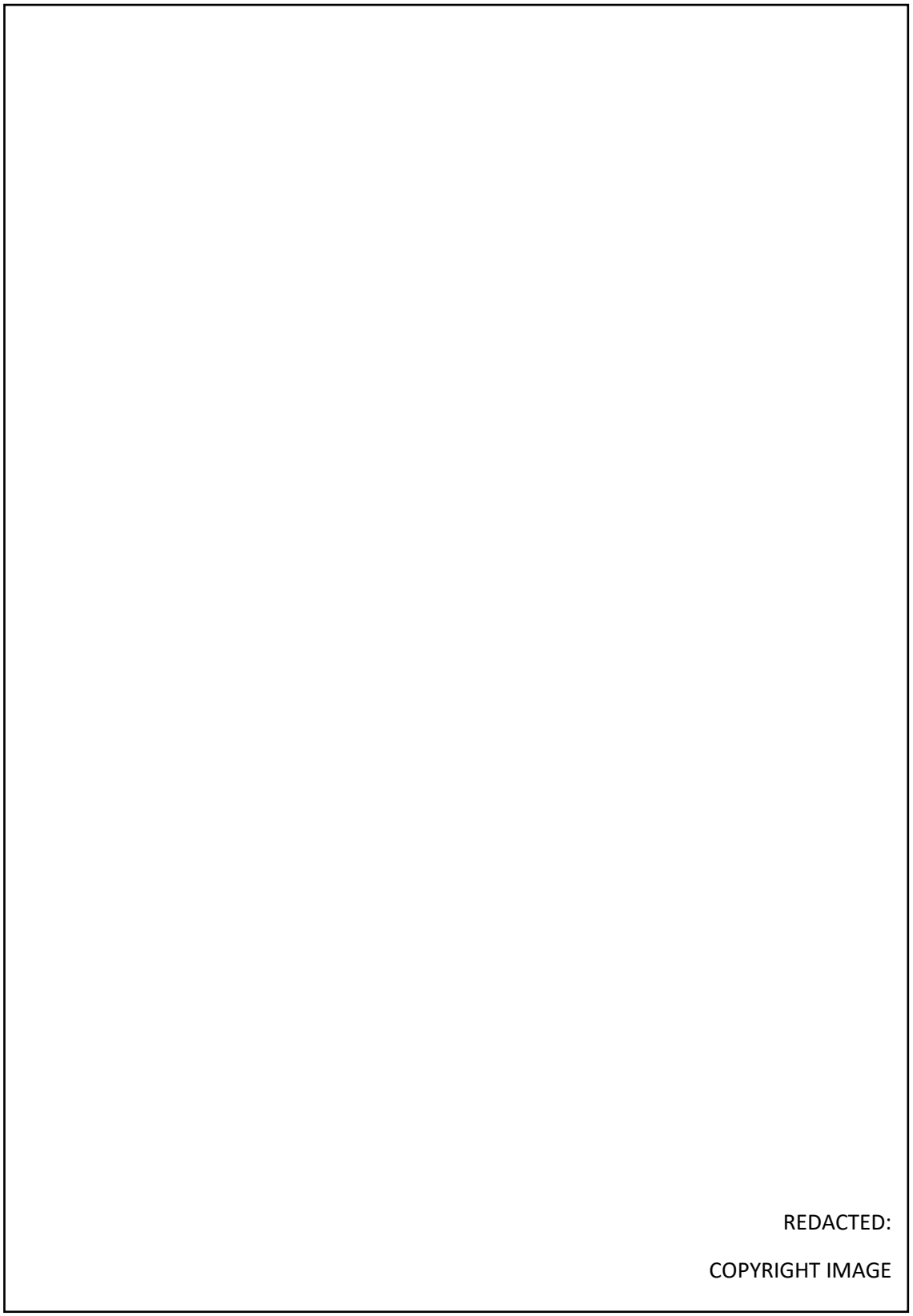


Figure 4.23: Copper axes found in a Late Chalcolothic jar burial at Ovçular (after Marro et al. 2011, Pl. X).

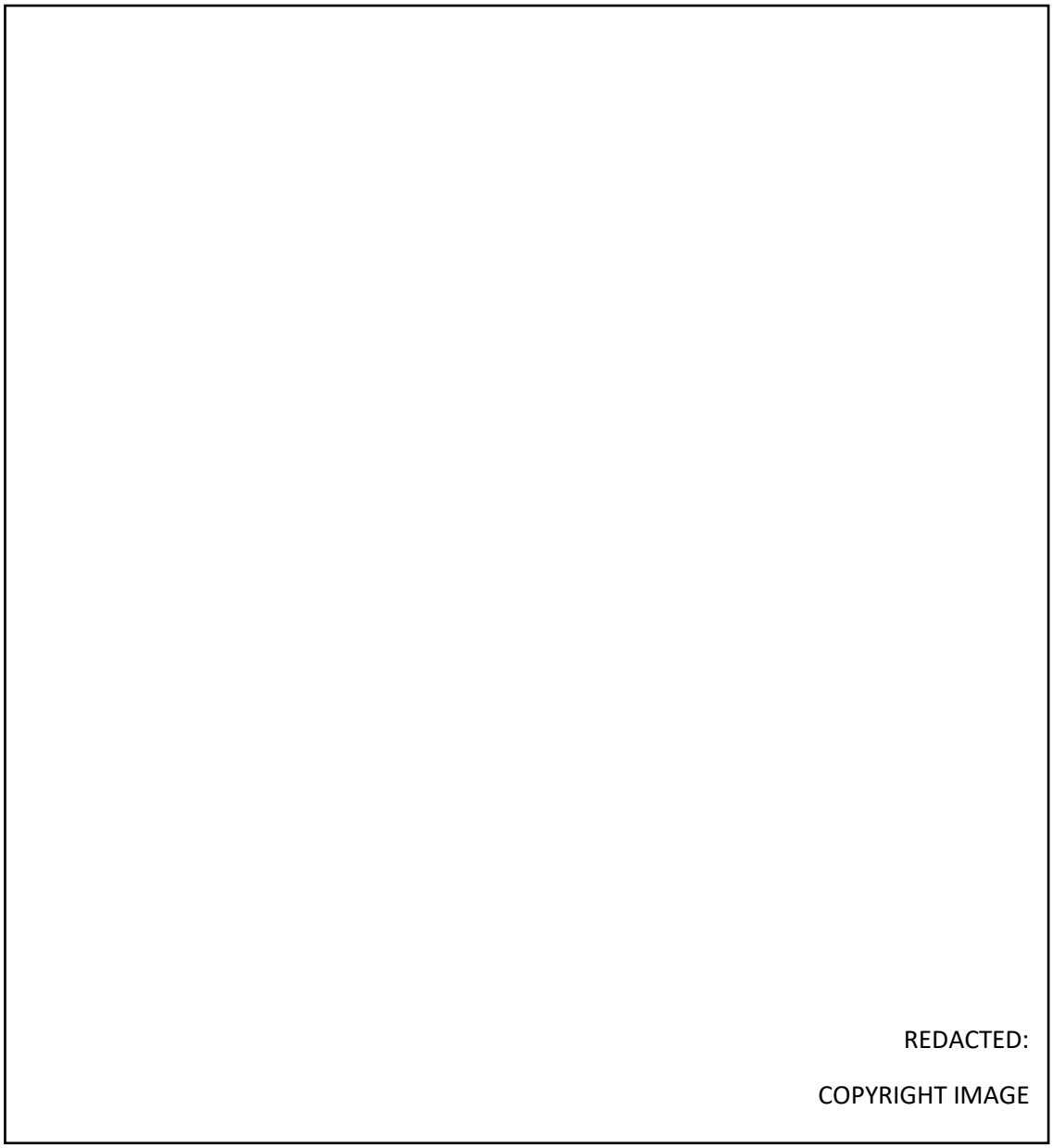


Figure 4.24: Metal artefacts recovered from Leilatepe and Beyuk Kesik (after Akhundov 2007, Fig. 8).

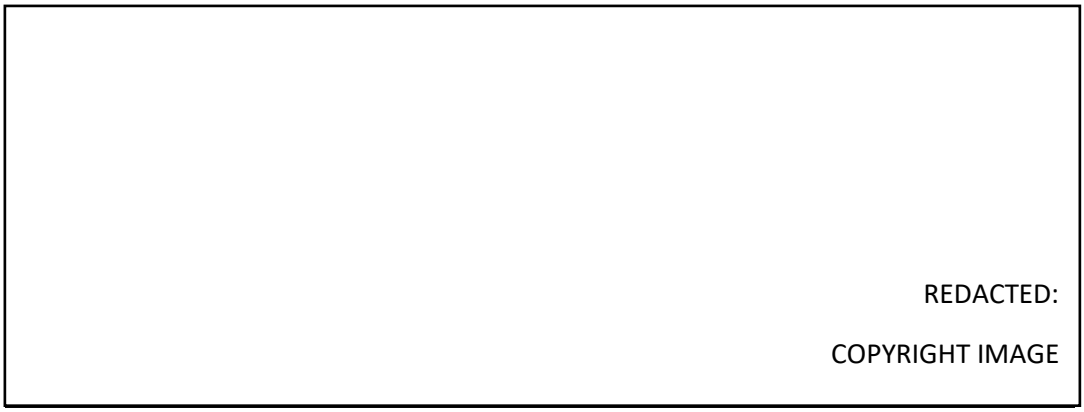


Figure 4.25: Copper dagger from Kurgan 1 of Soyuq Bulaq (after Courcier 2014, Fig. 22.28).

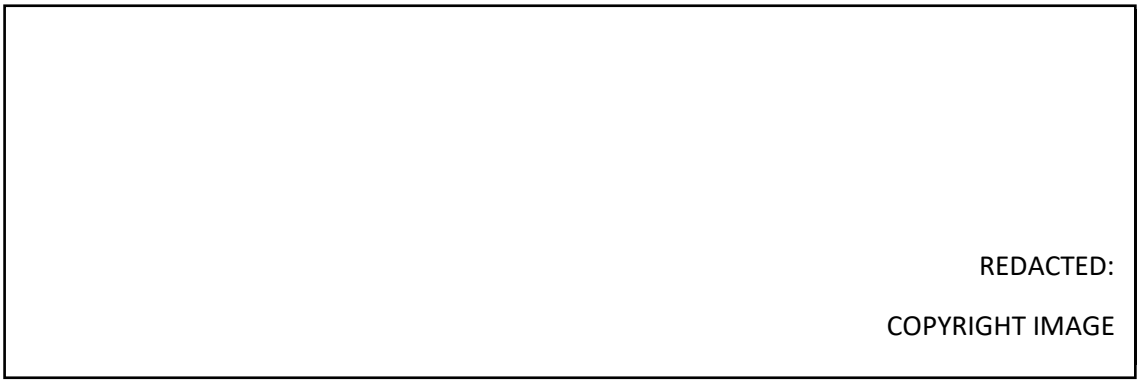


Figure 4.26: Silver beads from Kurgan 1 of Soyuq Bulaq (after Courcier 2014, Fig. 22.29).

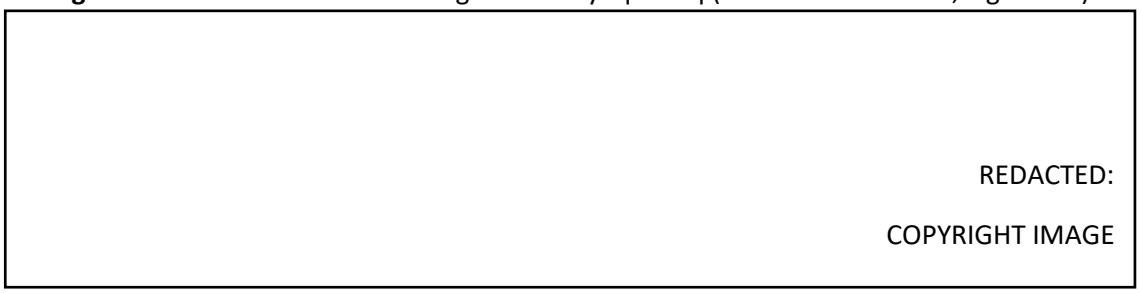


Figure 4.27: Gold beads from Kurgan 1 of Souyq Bulaq (after Courcier 2014, Fig. 22.30).

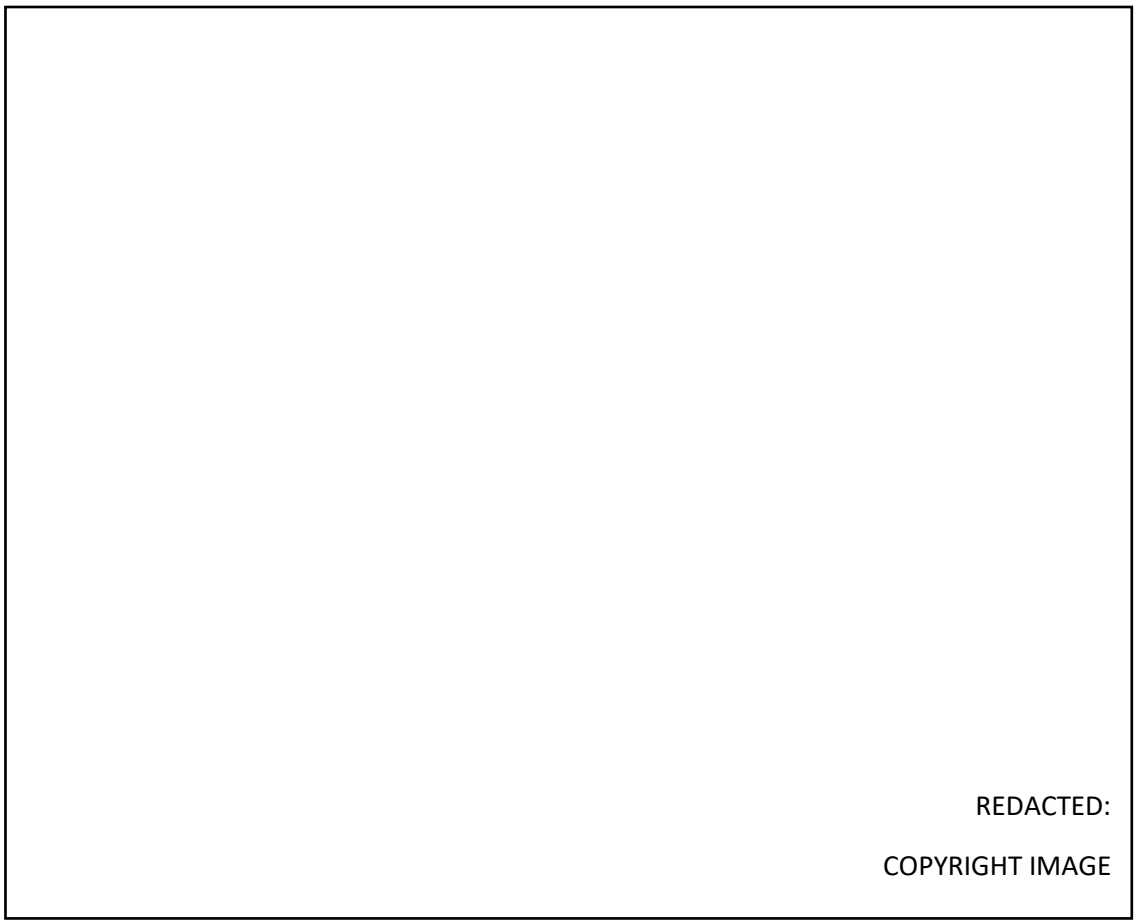


Figure 4.28: Lithic material from Ovçular (after Marro et al. 2011, Pl. XIV).

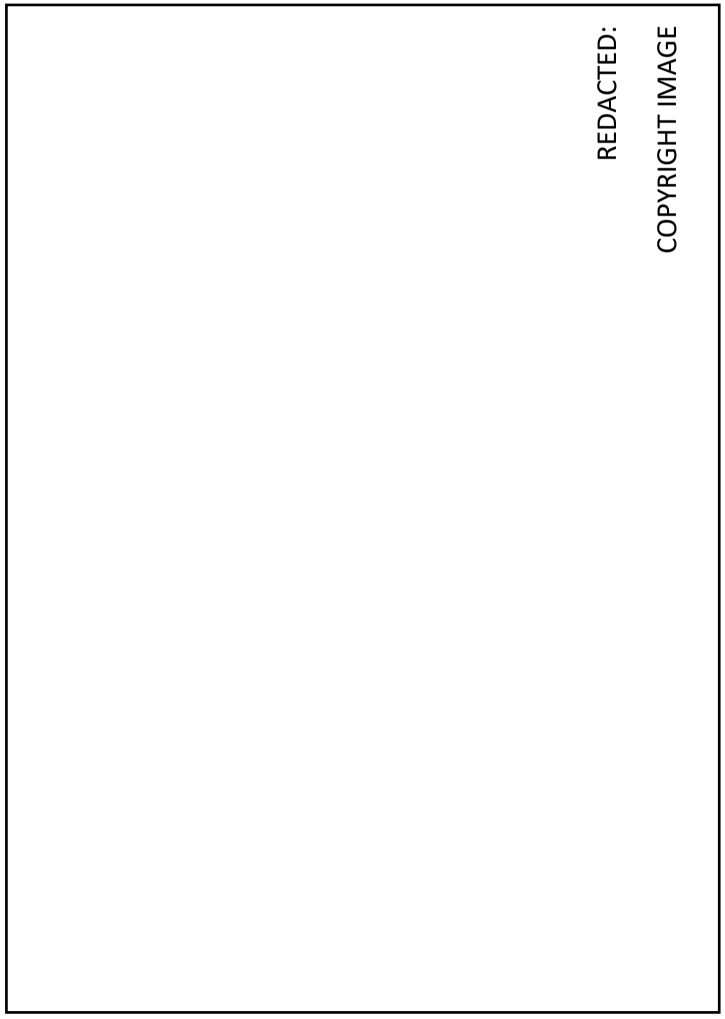


Figure 4.29: Macrolithic implements from Beyuk Kesik (after Museibli 2007, Table XXVIII).

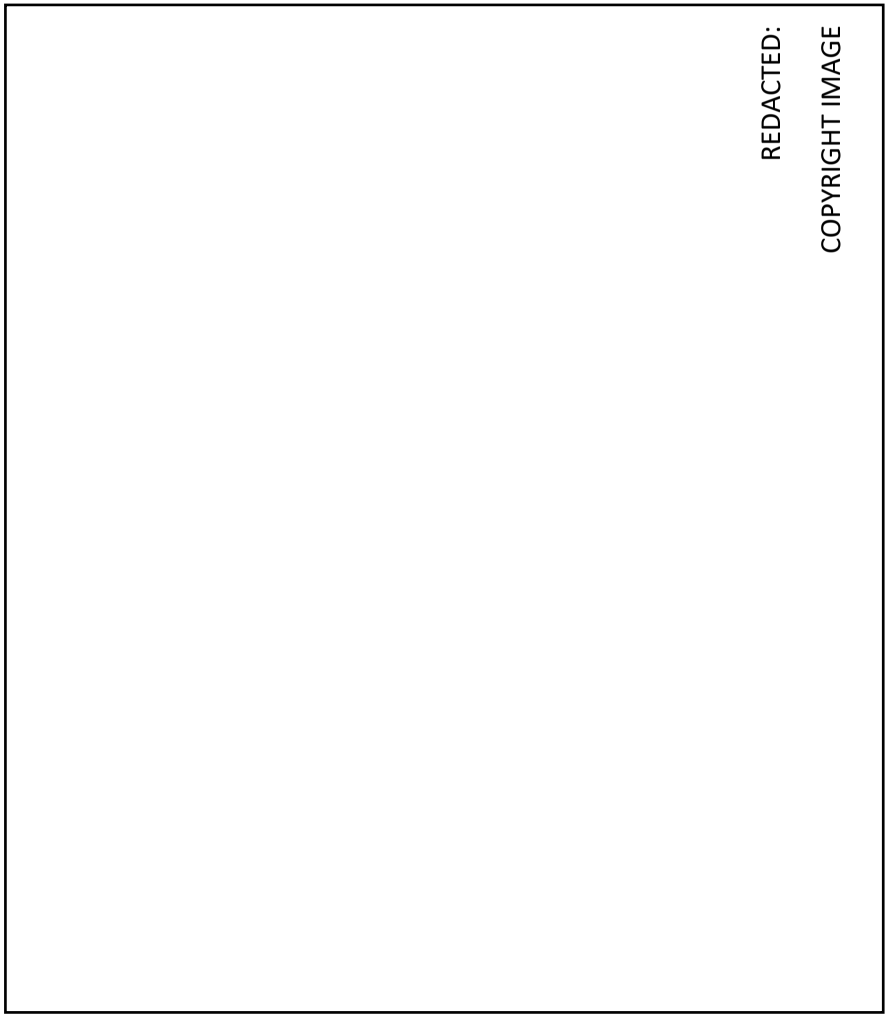


Figure 4.30: Macrolithic implements from Leilatepe and Beyuk Kesik (after Akhundov 2007, Fig. 6).

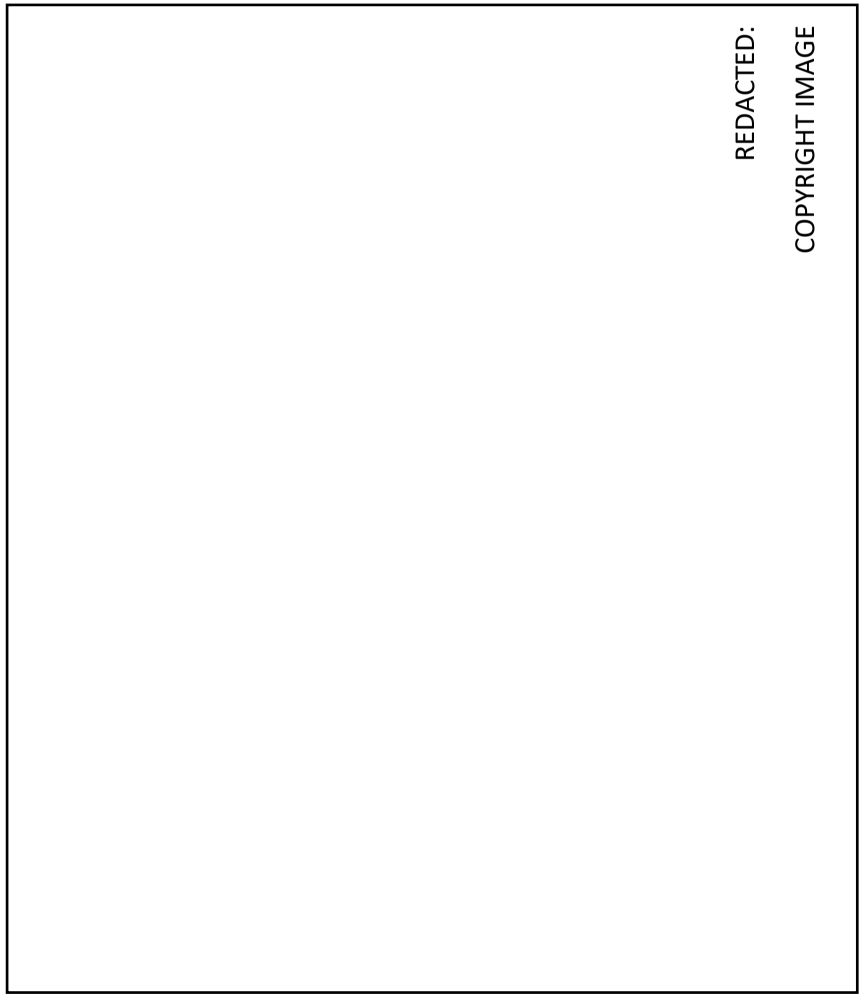


Figure 4.31: Lithic material from Leilatepe and Beyuk Kesik (after Akhundov 2007, Fig. 7).

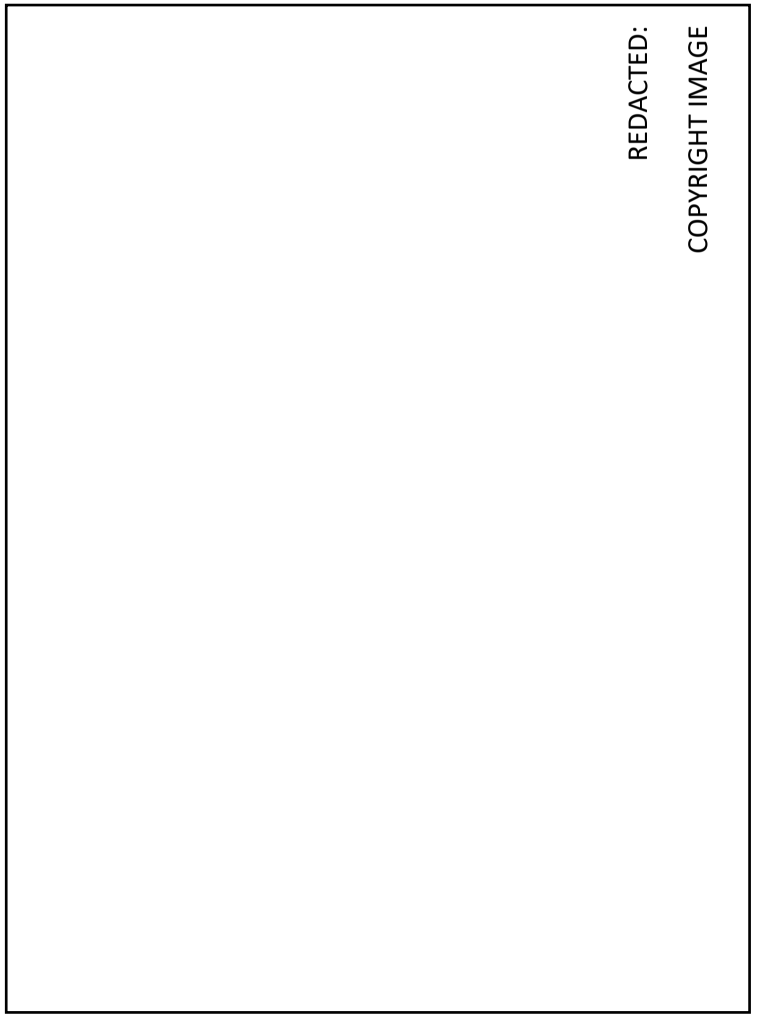


Figure 4.32: Lithic material from Beyuk Kesik (after Museibli 2007, Tab. XXXIII).

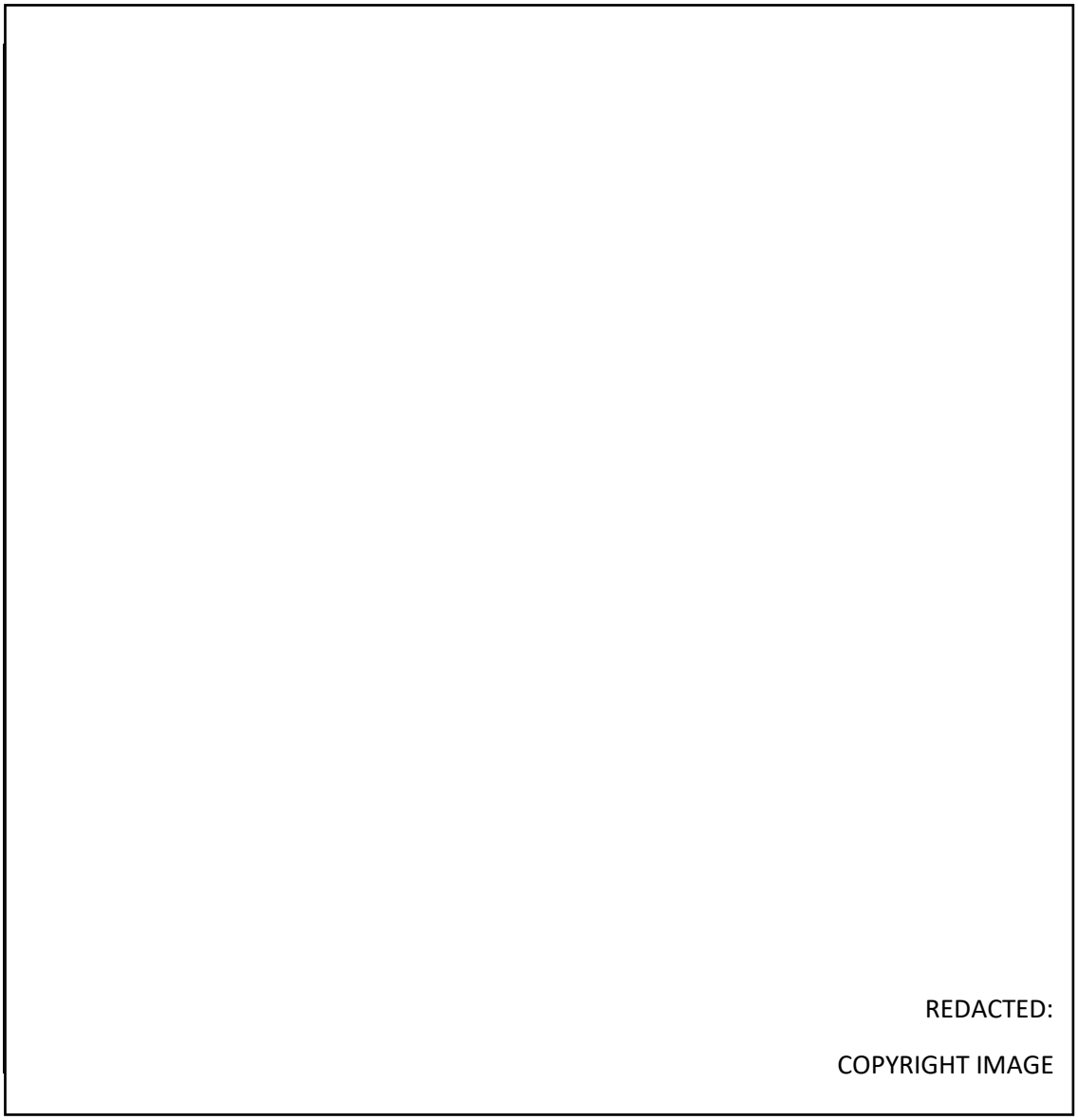


Figure 4.33: Bone implements from the Late Chalcolithic levels at Mentesh Tepe (after Lyonnet et al. 2012, Fig. 158).

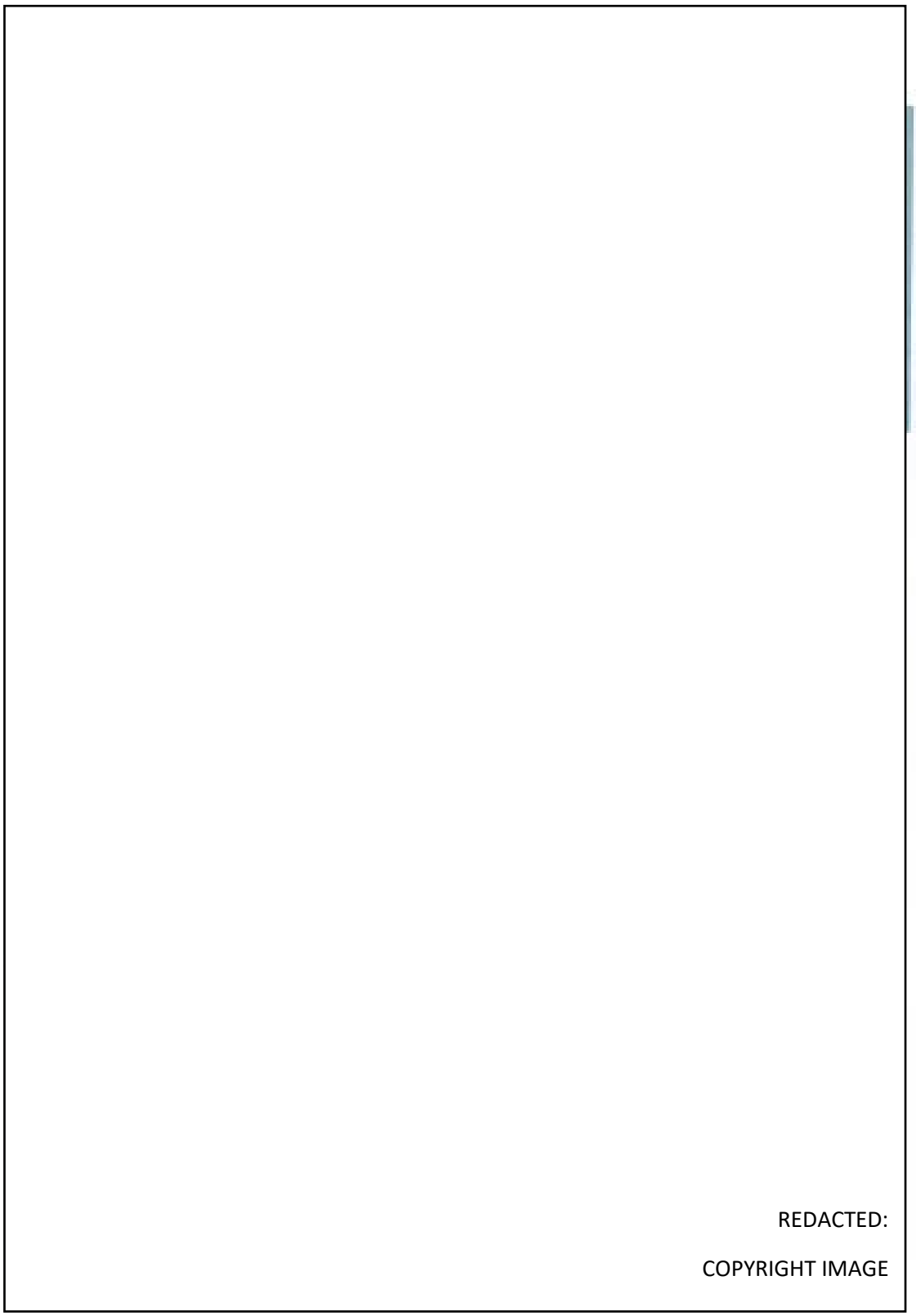


Figure 4.34: Bone implements from Beyuk Kesik (after Museibli 2007, Fig. 17).

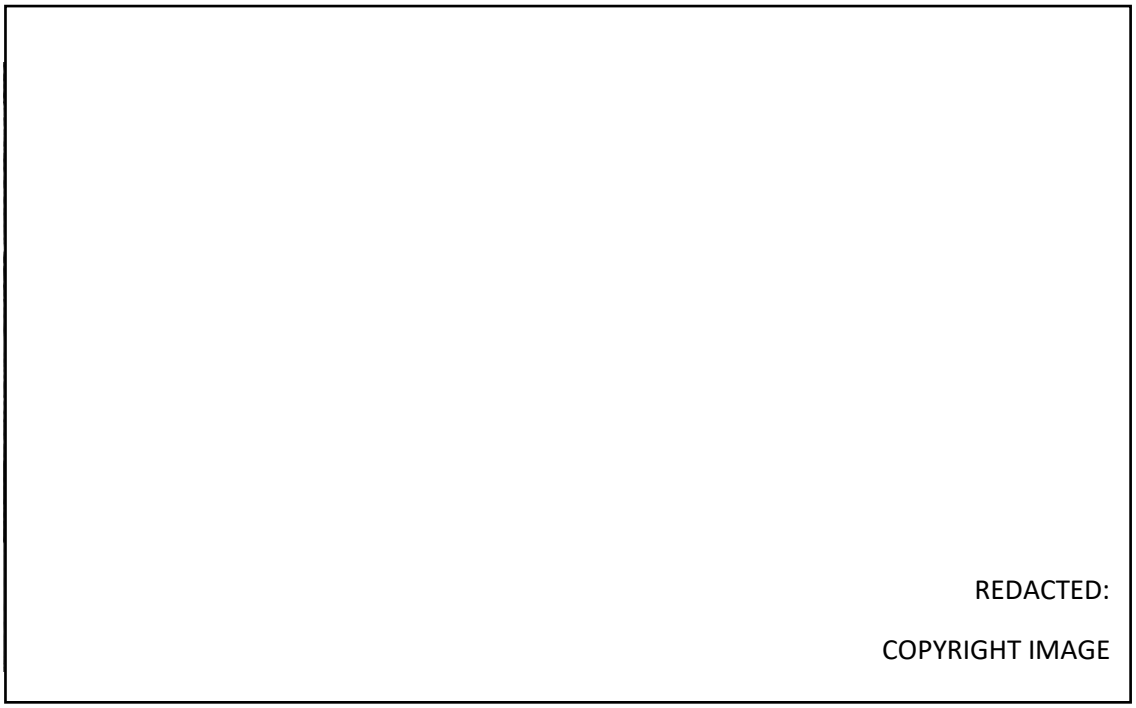


Figure 4.35: Aerial photograph of Ovçular showing the location of Chalcolithic pits (after Berthon et al. 2013, Fig. 2).

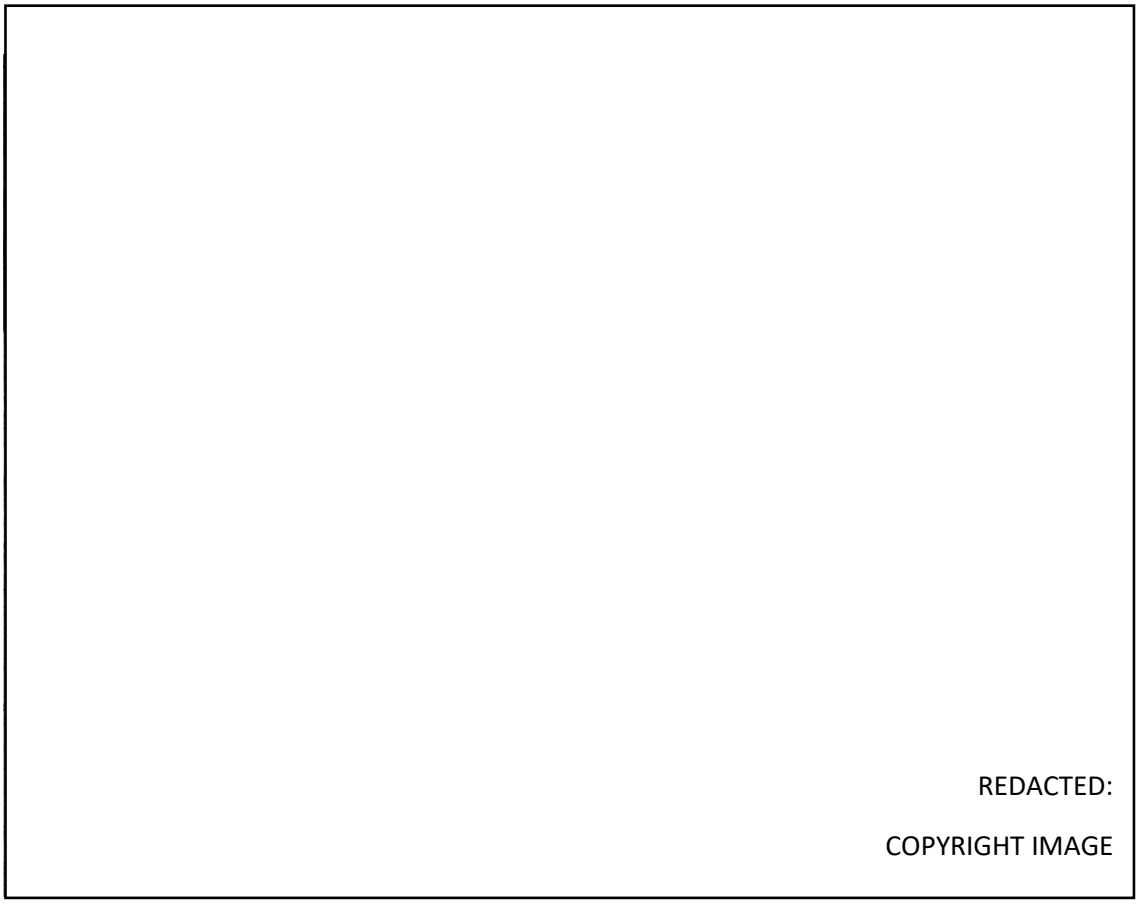


Figure 4.36: Silos at Mentesh Tepe (Period III) dug into hearths of an earlier phase (after Lyonnet et al. 2012, Fig. 133).

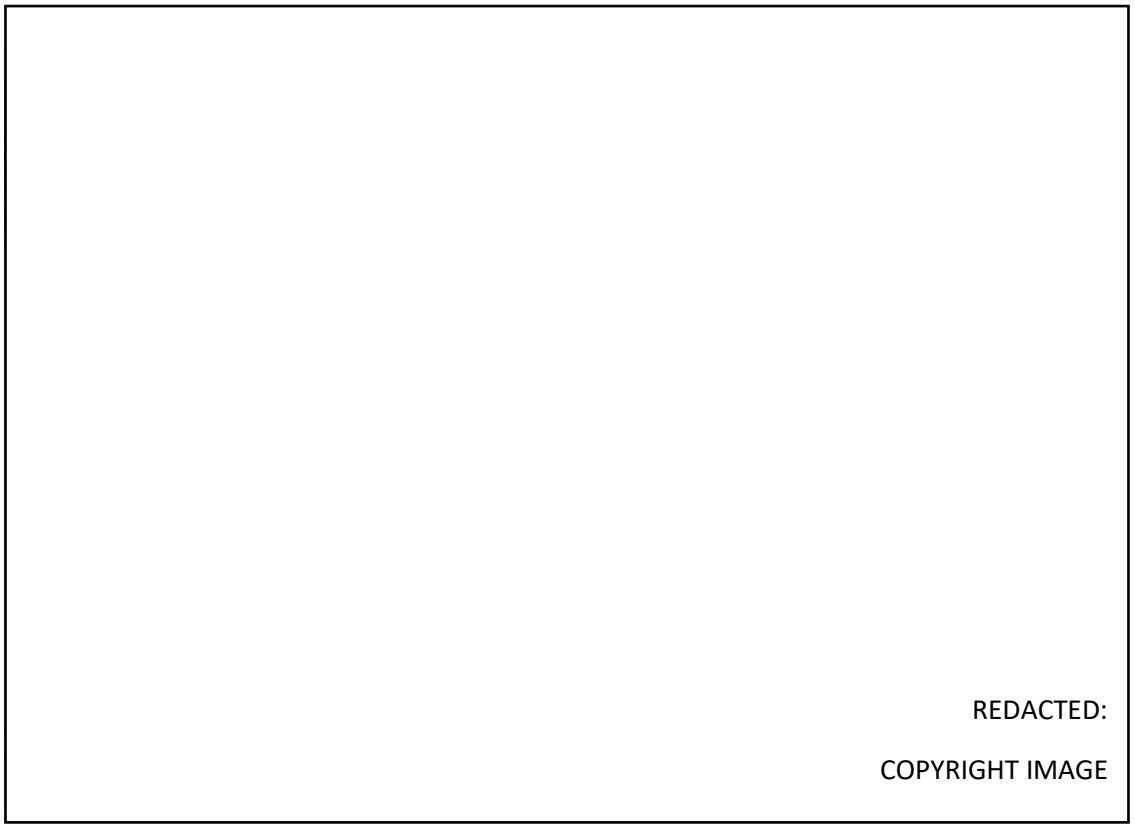


Figure 4.37: Domestic hearth from Mentesh Tepe Period III (after Lyonnet et al. 2012, Fig. 134).

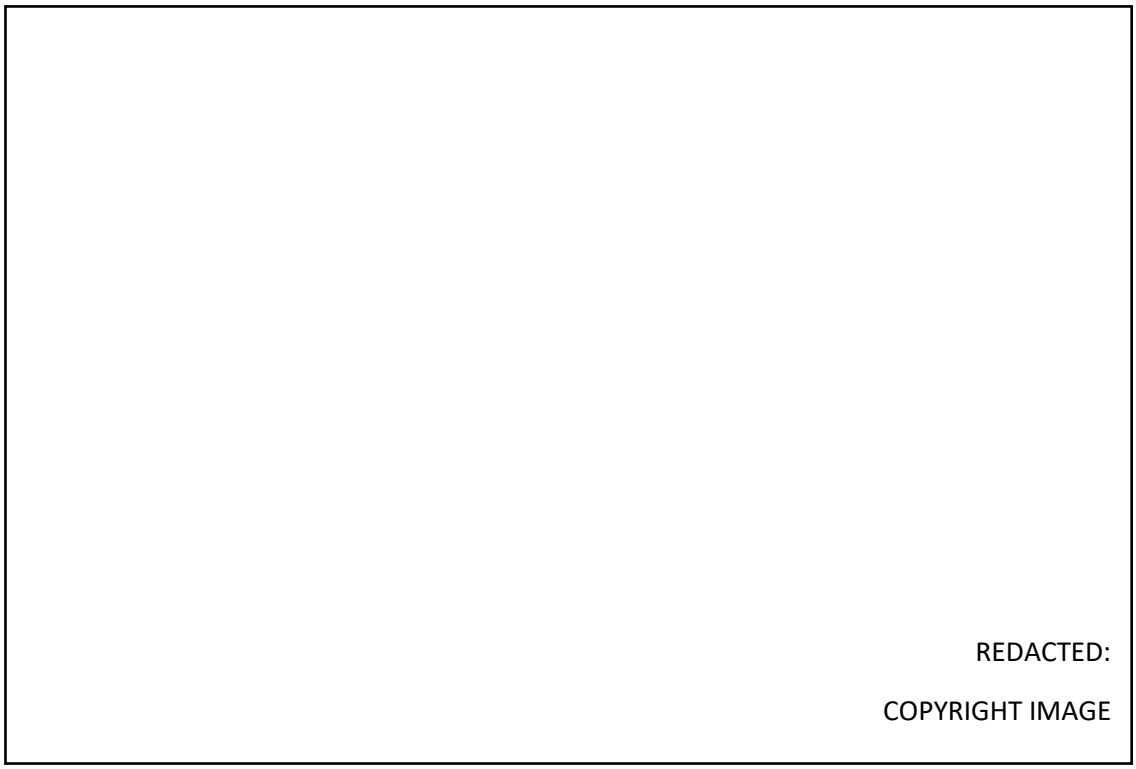


Figure 4.38: Jar burial from Ovçular with copper axes *in situ* (after Marro et al. 2011, Photo 14).

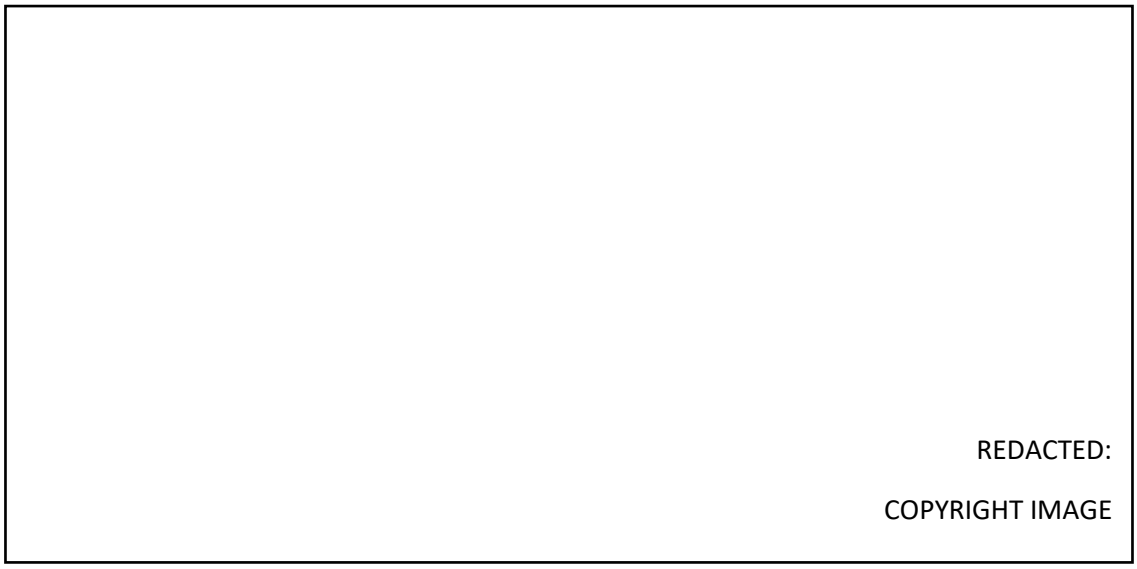


Figure 4.39: Infant jar burials from Leilatepe (after Akhundov 2007, Fig. 4).

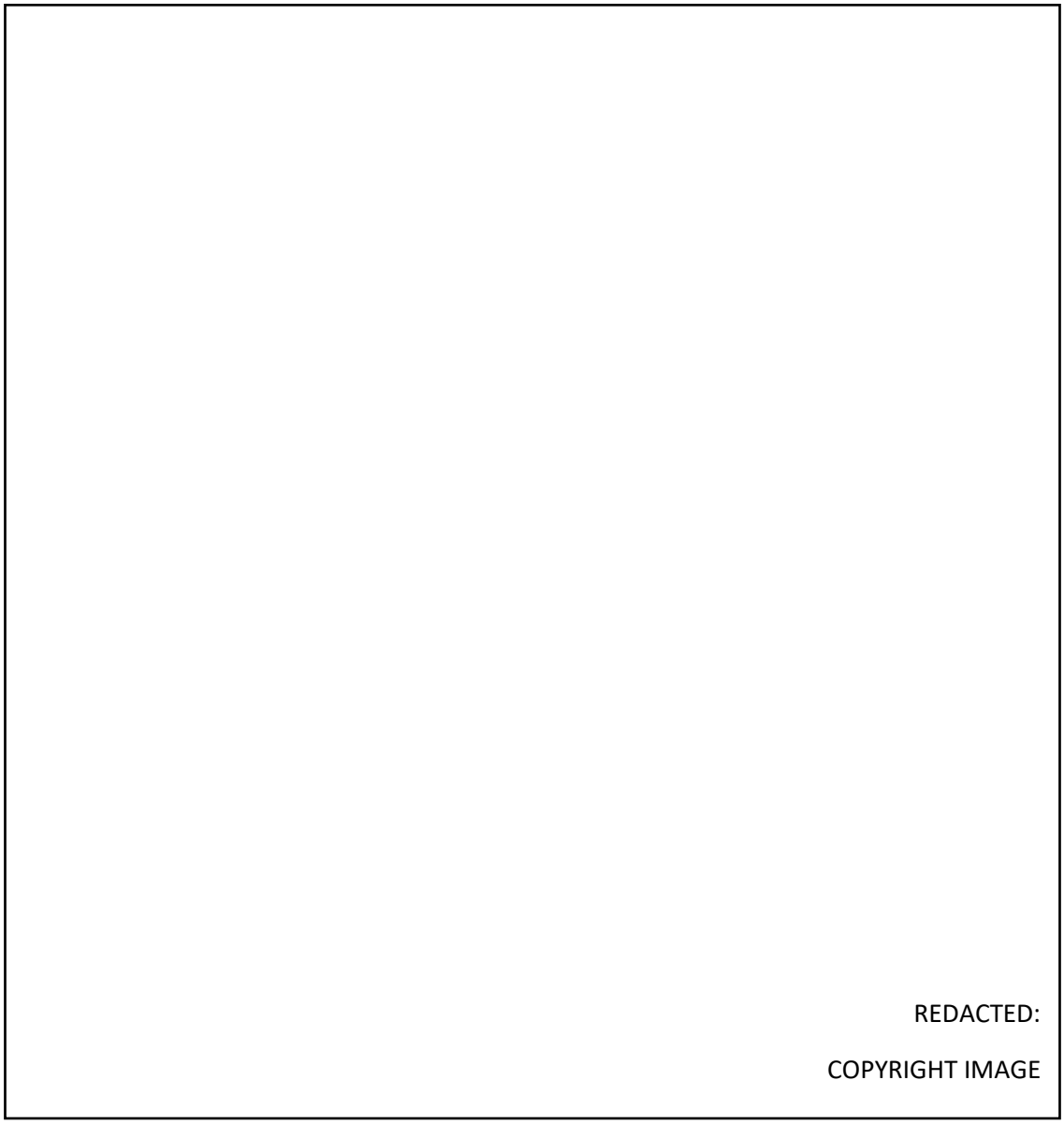


Figure 4.40: Infant jar burial number 6 from Beyuk Kesik (after Museibli 2007, Fig. 12).

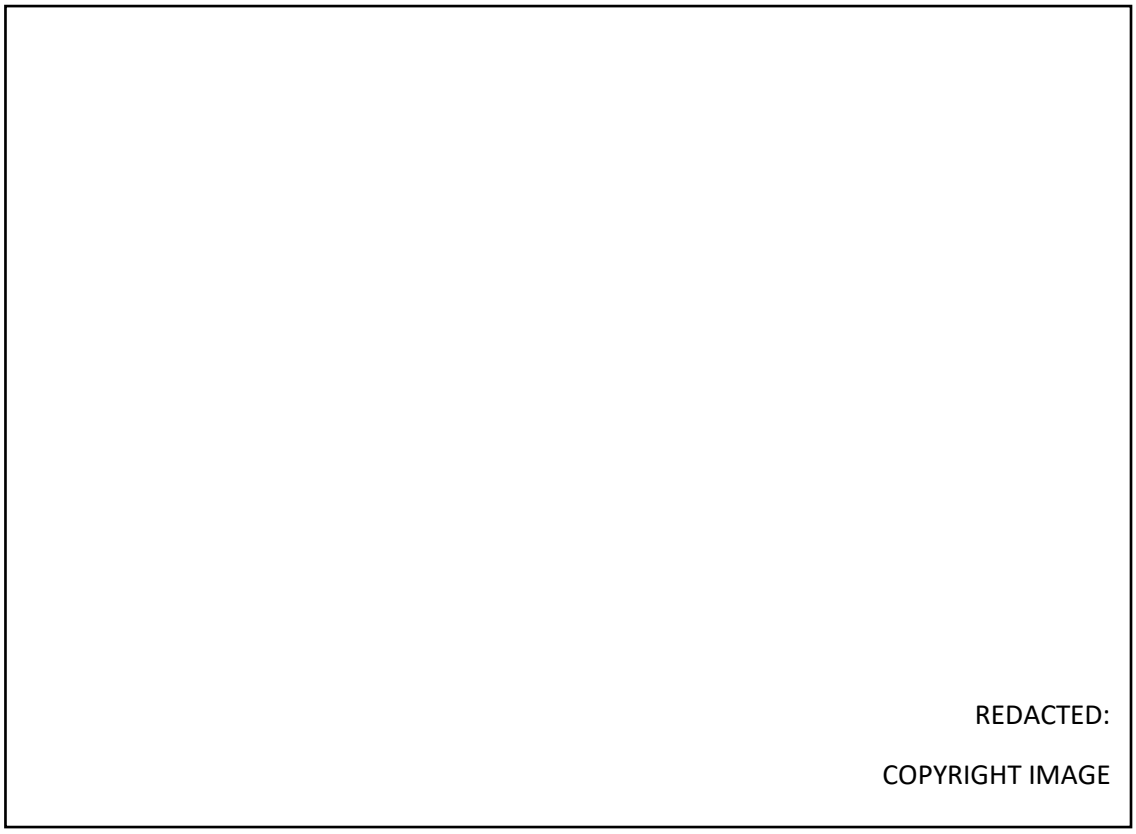


Figure 4.41: Infant jar burial number 3 from Beyuk Kesik (after Museibli 2007, Fig. 10).

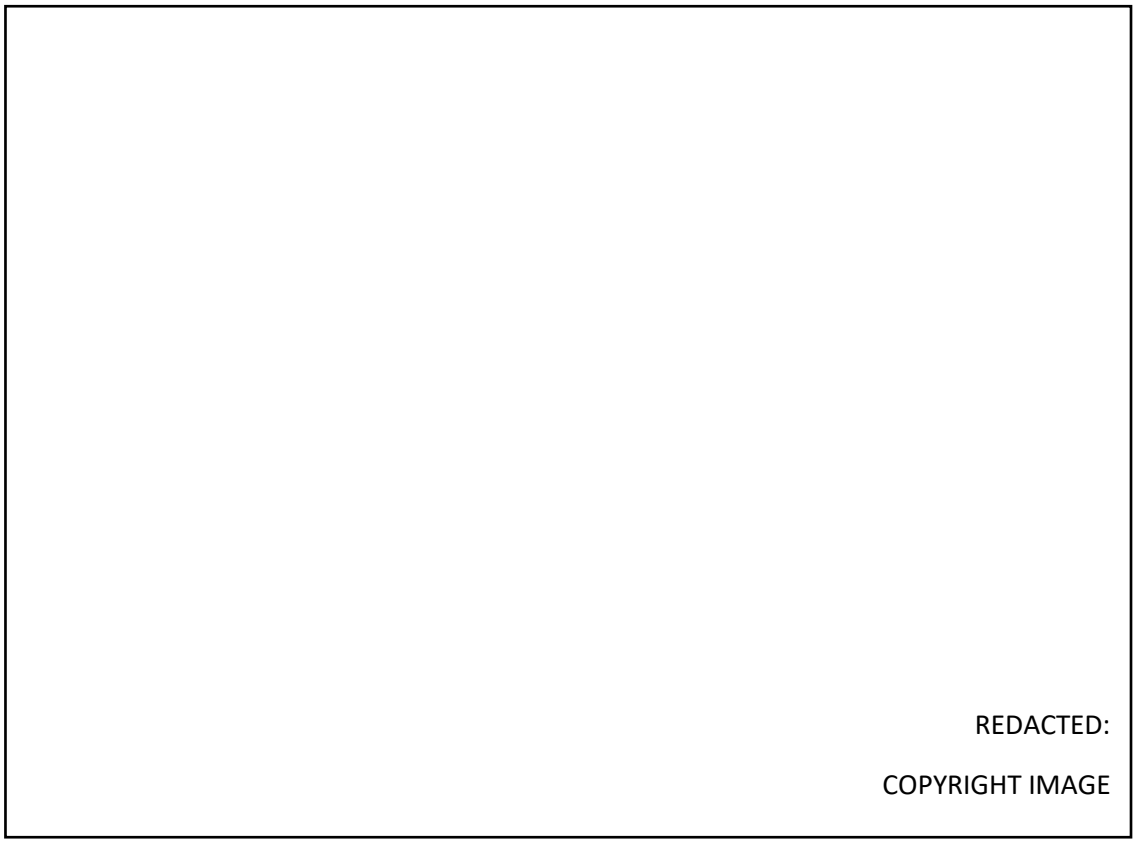


Figure 4.42: Infant jar burial number 4 from Beyuk Kesik (after Museibli 2007, Fig. 11).

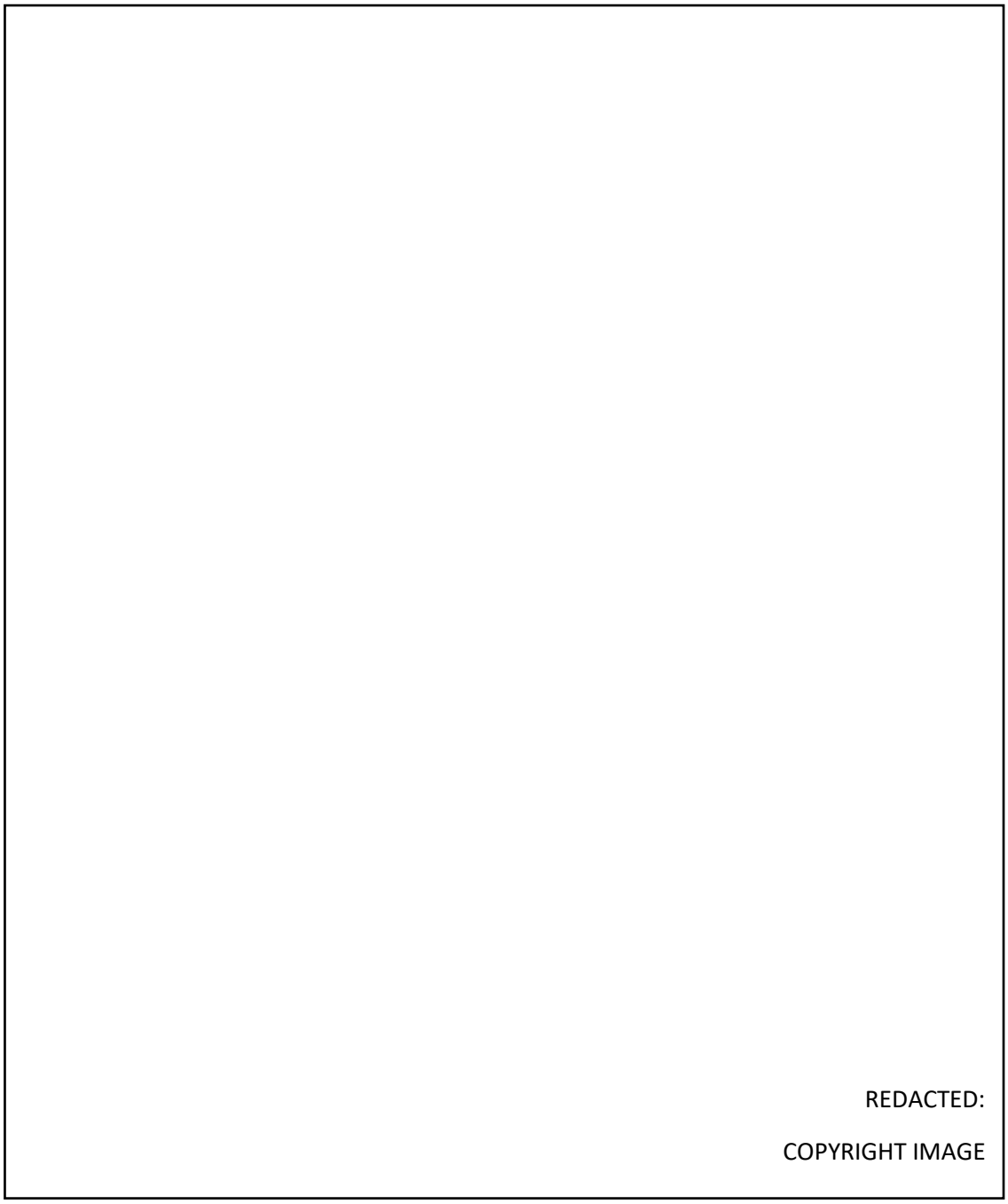


Figure 4.43: Plan of Kurgan 1 from Soyuq Bulaq (after Lyonnet et al. 2008, Fig. 3).

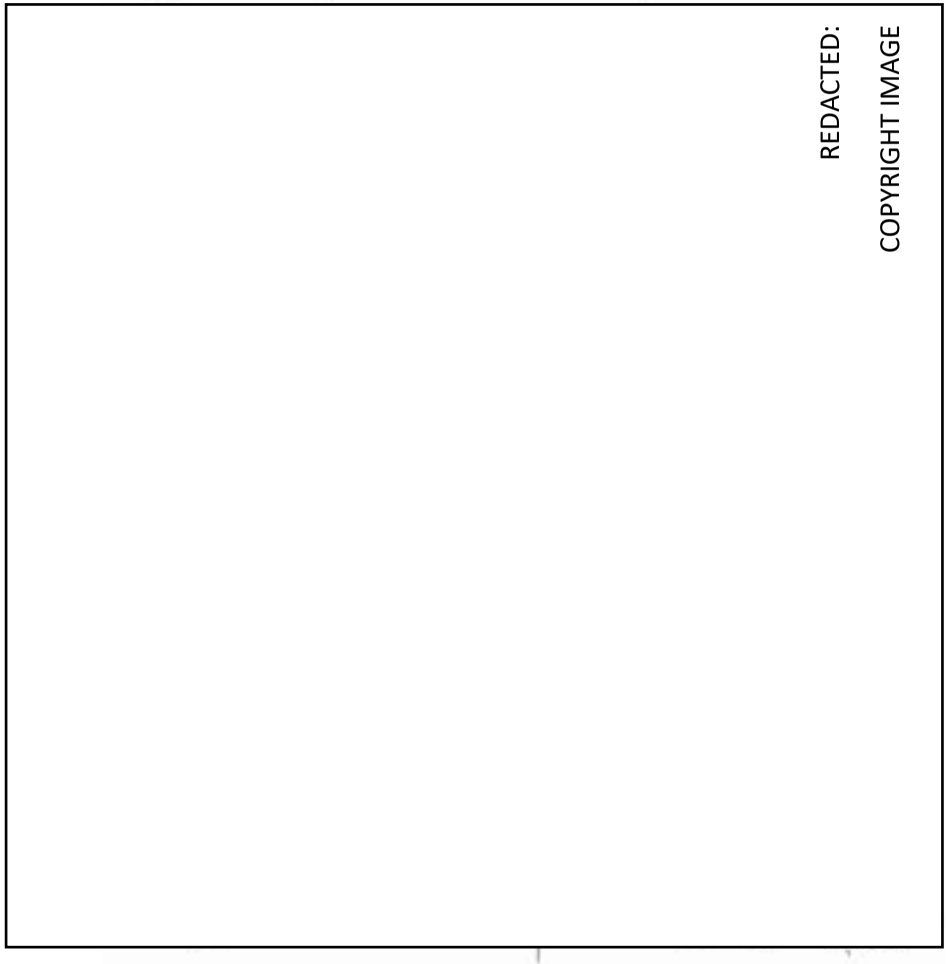


Figure 4.44: Kura-Araxes ceramics recovered from the Late Chalcolithic Phase II at Ovçular Tepesi (after Marro et al. 2014, Fig. 2).

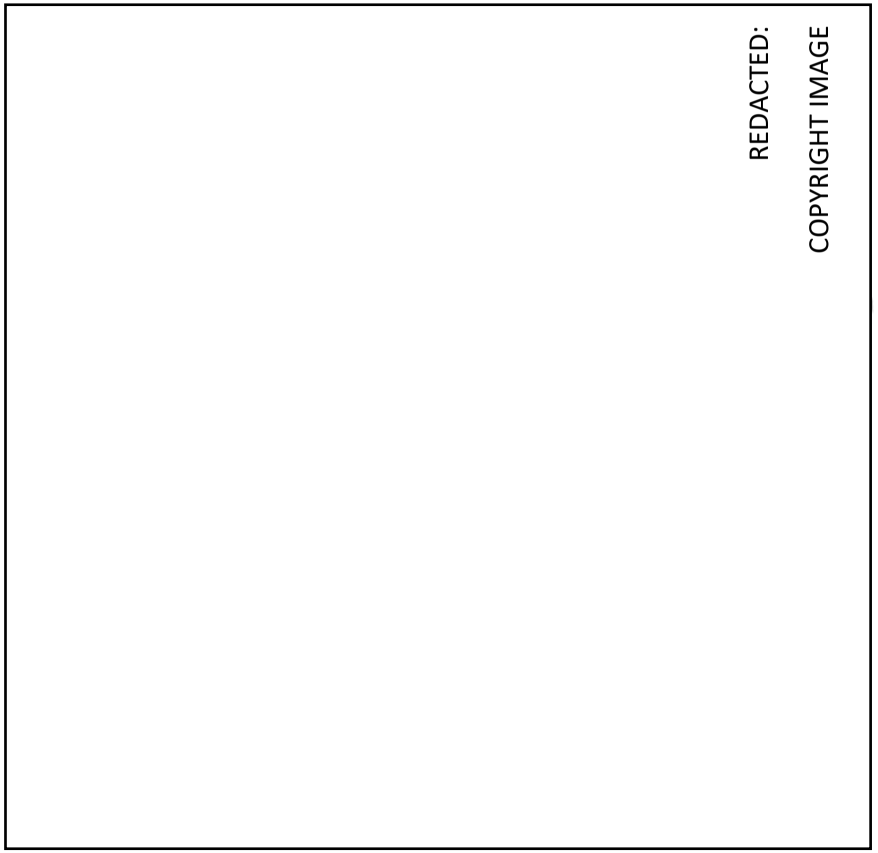


Figure 4.45: Goblet with a lug handle from Areni-1 demonstrating parallels to early Kura-Araxes ware (after Wilkinson et al. 2012, Fig. 7.10).

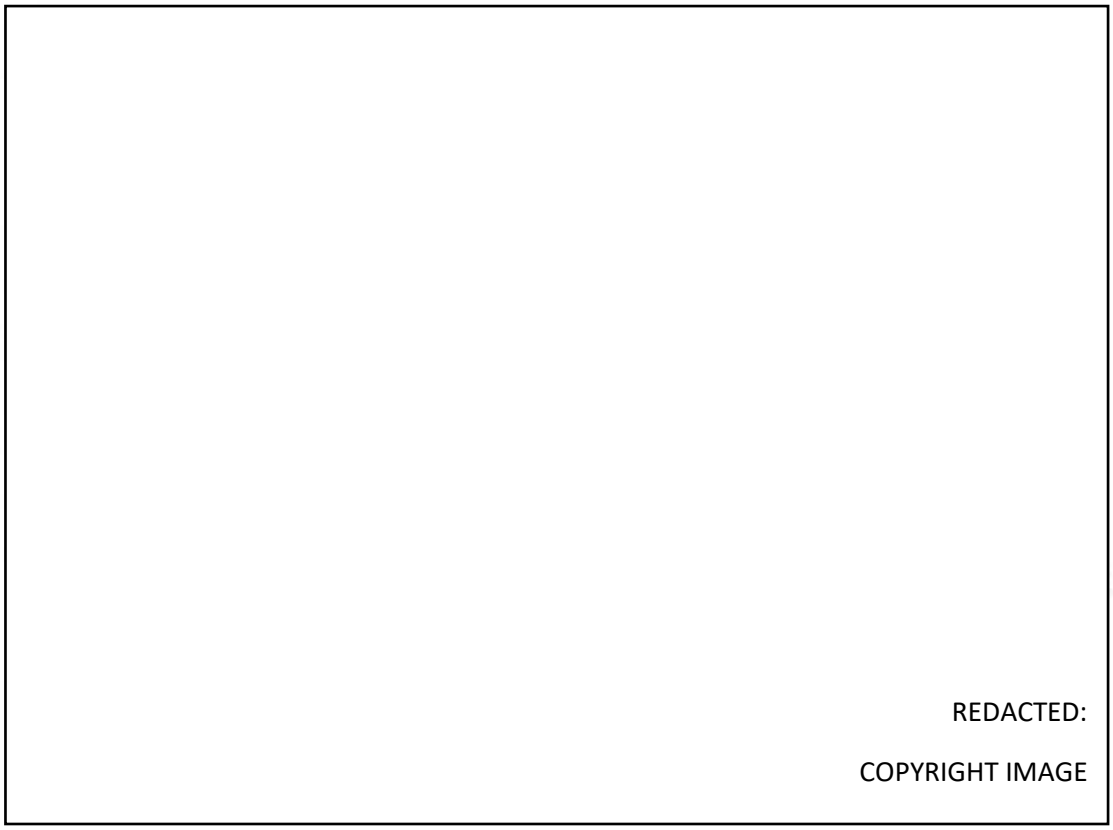


Figure 4.46: Plan of the mudbrick roundhouse from Sos Höyük VA (after Sagona and Zimansky 2009, Fig. 5.9.1).

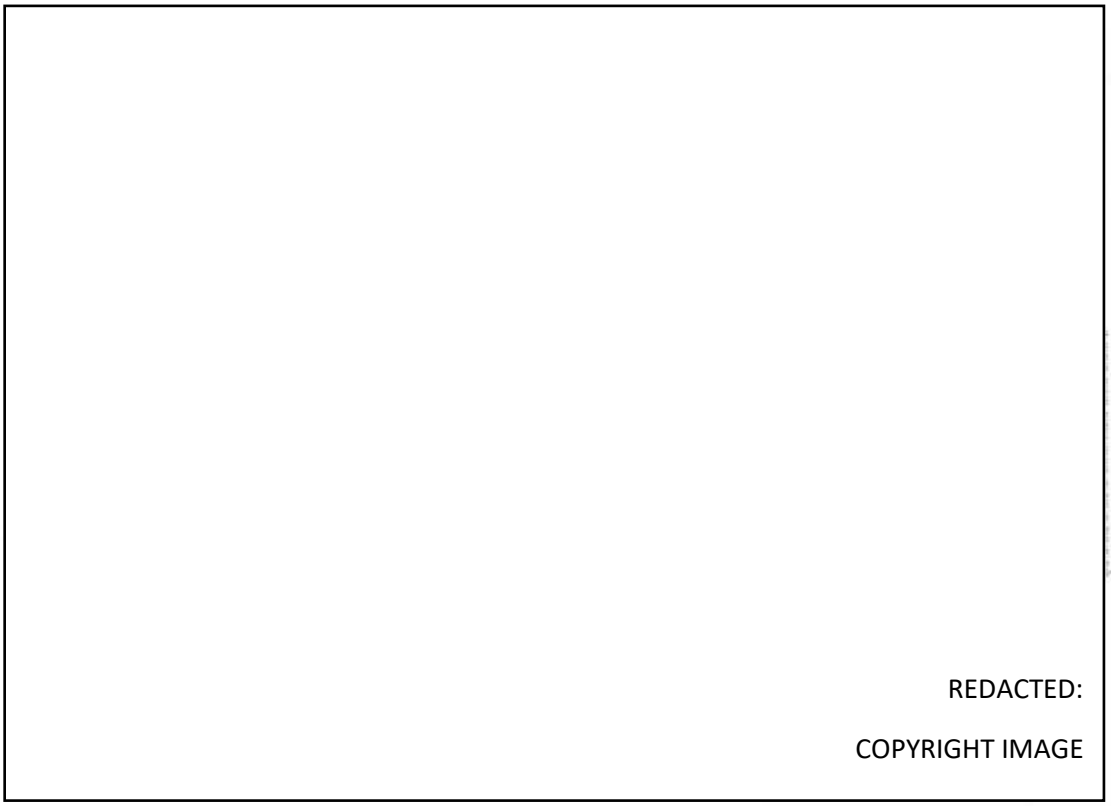


Figure 4.47: Plan of the curved stone wall that surrounded the settlement of Sos Höyük VA (after Sagona and Zimansky 2009, Fig. 5.9.2).

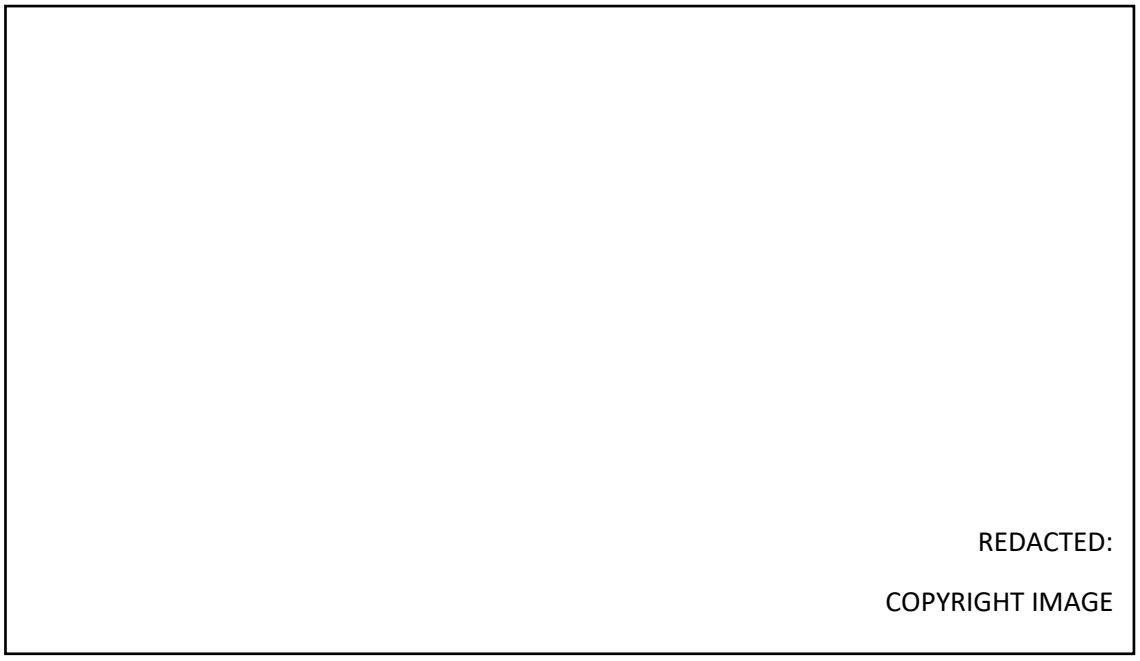


Figure 4.48: Photograph of the curved stone wall from Sos Höyük VA (after Sagona and Zimansky 2009, Fig. 5.9.3).

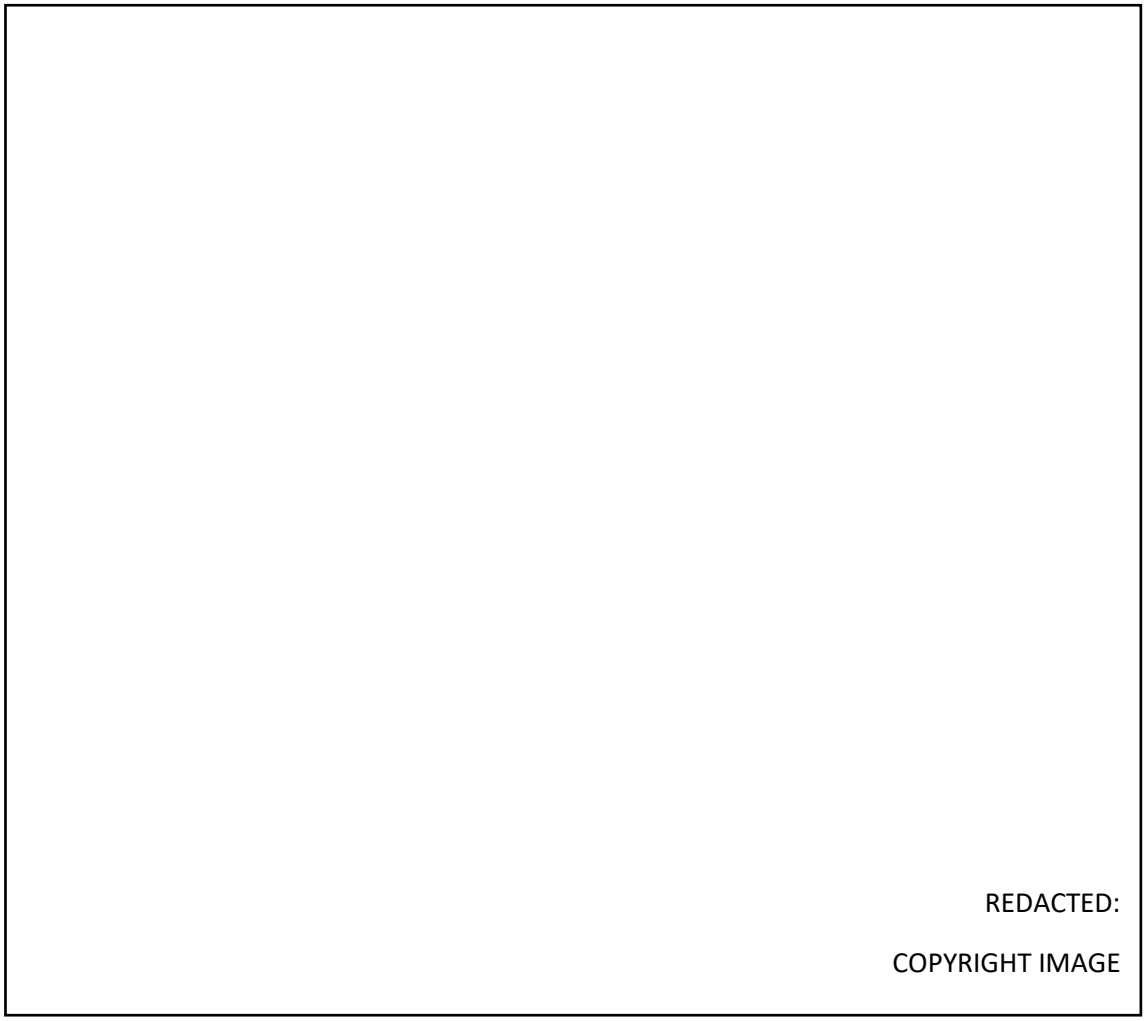


Figure 4.49: Plan of Operation T17 and T18 at Gegharot with the Early Bronze Age architecture shaded in grey (after Badalyan et al. 2008, Fig. 5).

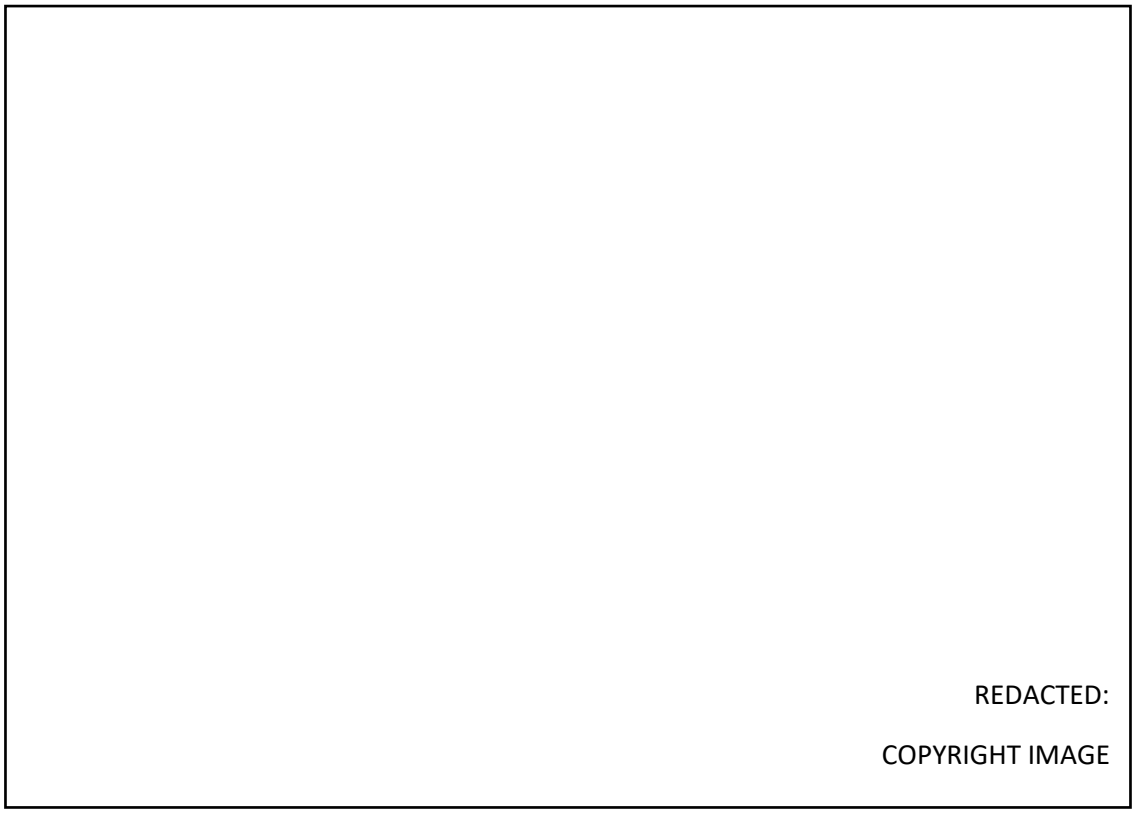


Figure 4.50: Structure 3 at Chobareti after the 2009 excavations (after Kakhiani et al. 2013, Fig. 6).

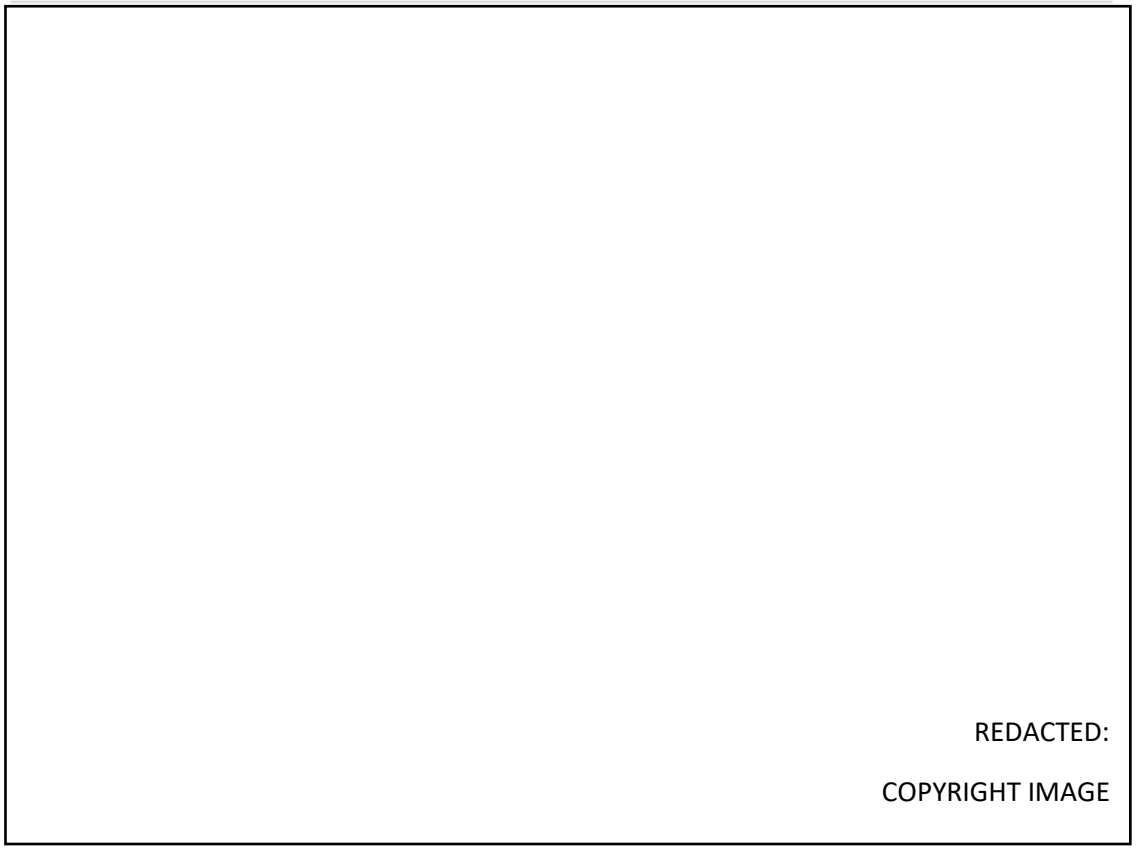


Figure 4.51: Structure 4 at Chobareti after the 2012 excavations (after Kakhiani et al. 2013, Fig. 22).

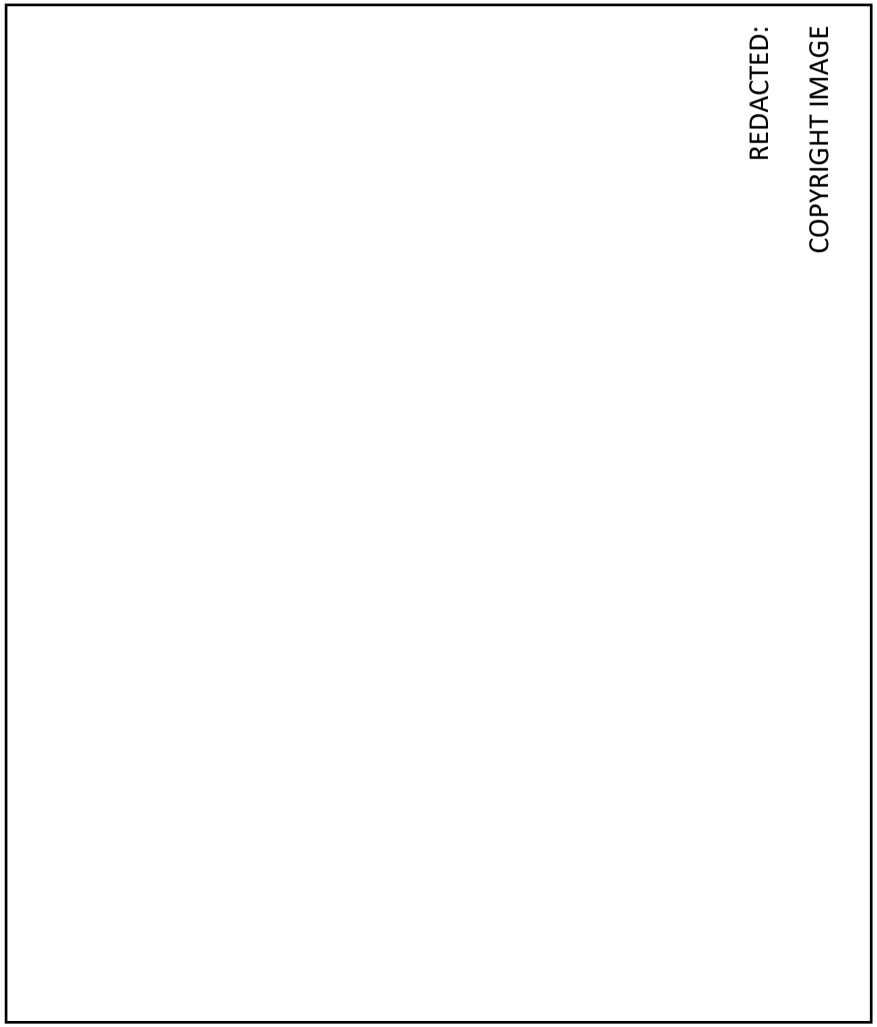


Figure 4.52: Refuse pits from Chobareti, Pits 1 to 3 (after Kakhiani et al. 2013, Fig. 7).

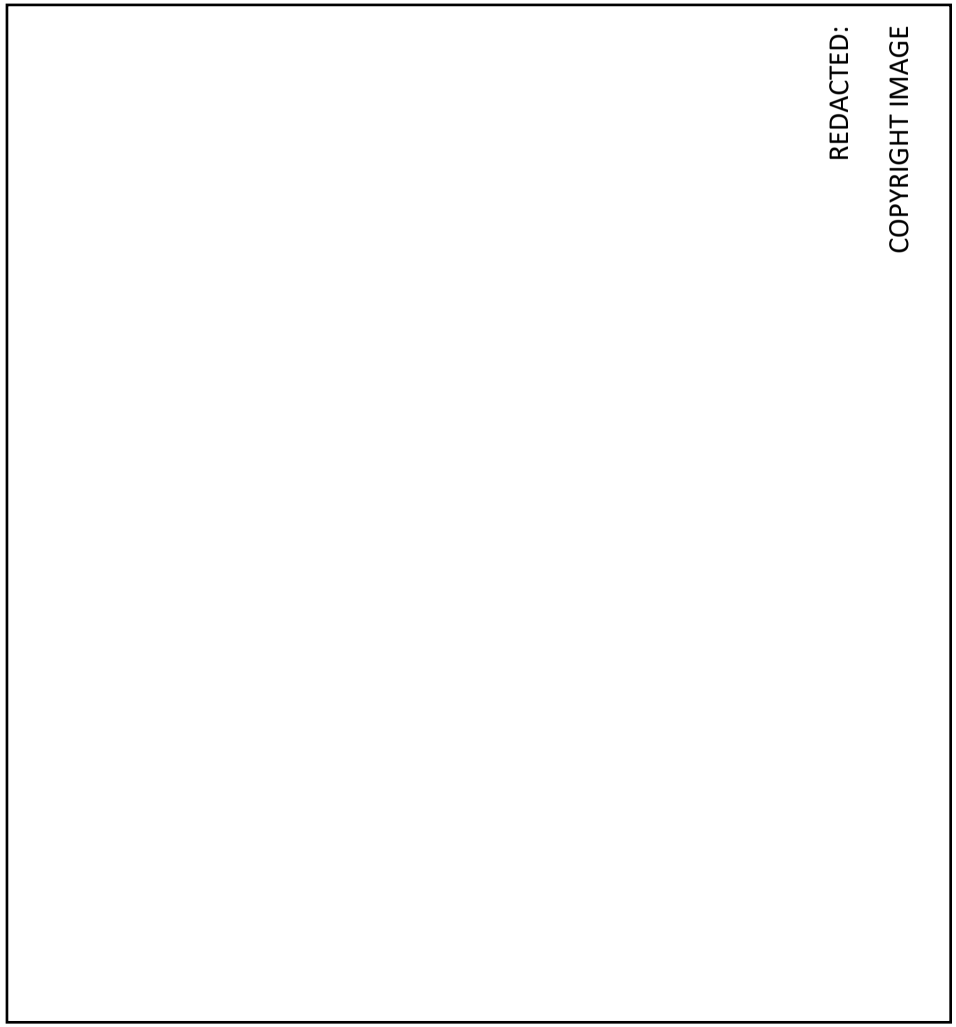


Figure 4.53: Refuse pits from Chobareti, Pits 9 to 12 (after Kakhiani et al. 2013, Fig. 10).

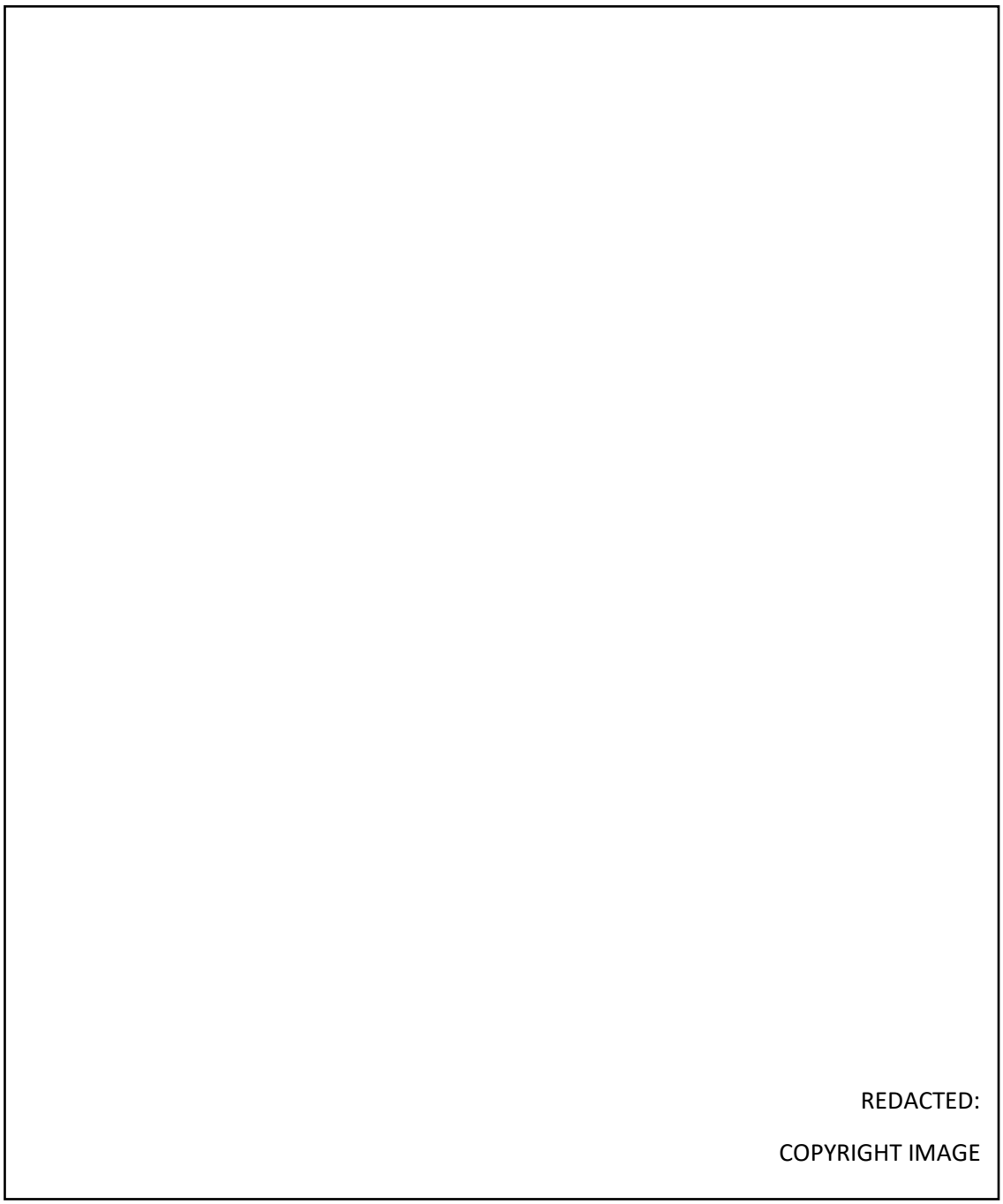


Figure 4.54: Refuse pits from Chobareti, Pits 4 to 6 (after Kakhiani et al. 2013, Fig. 8).

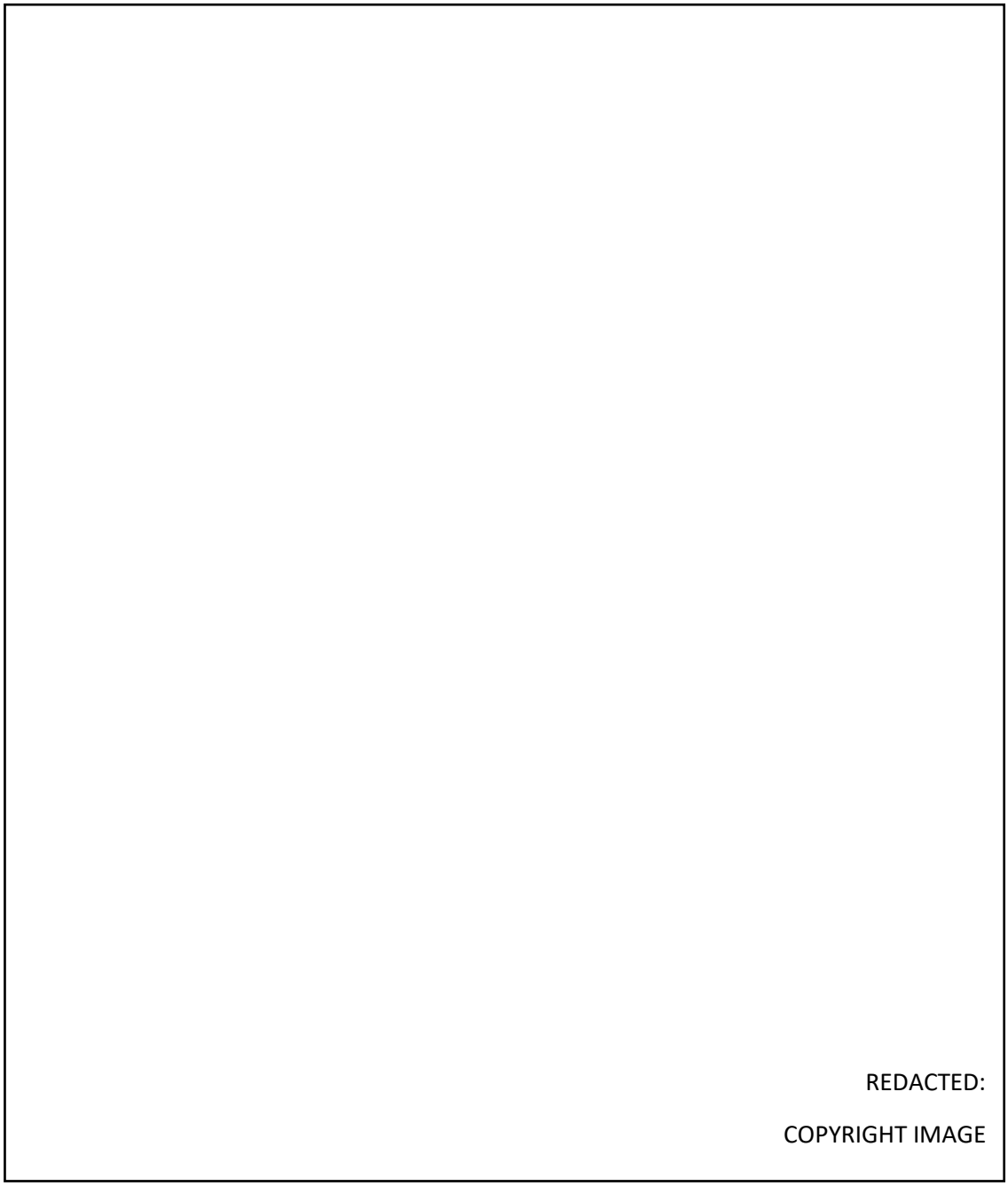


Figure 4.55: Sections of sherds from Chobareti demonstrating construction techniques (after Kakhiani et al. 2013, Fig. 52).

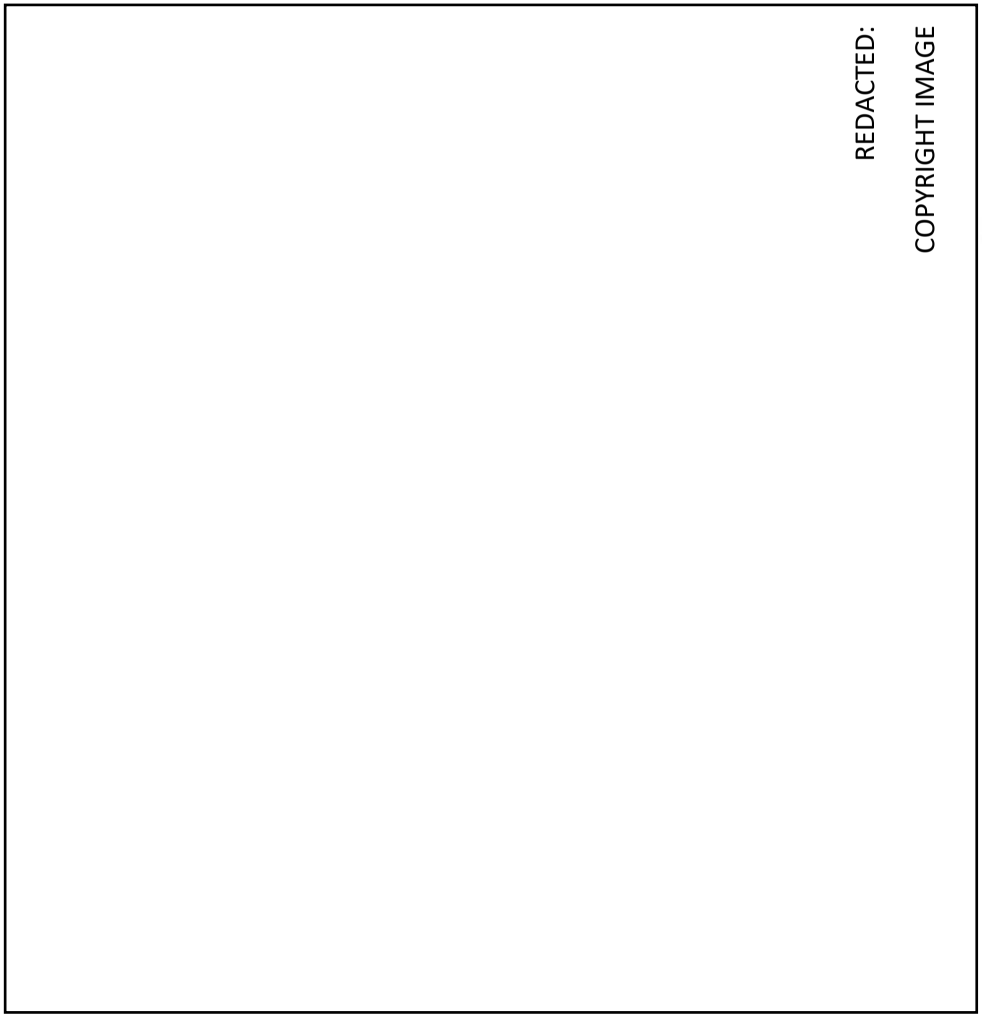


Figure 4.56: Examples of Monochrome ware from the collective kurgan at Mentesh Tepe (after Lyonnet et al. 2012, Fig. 150).

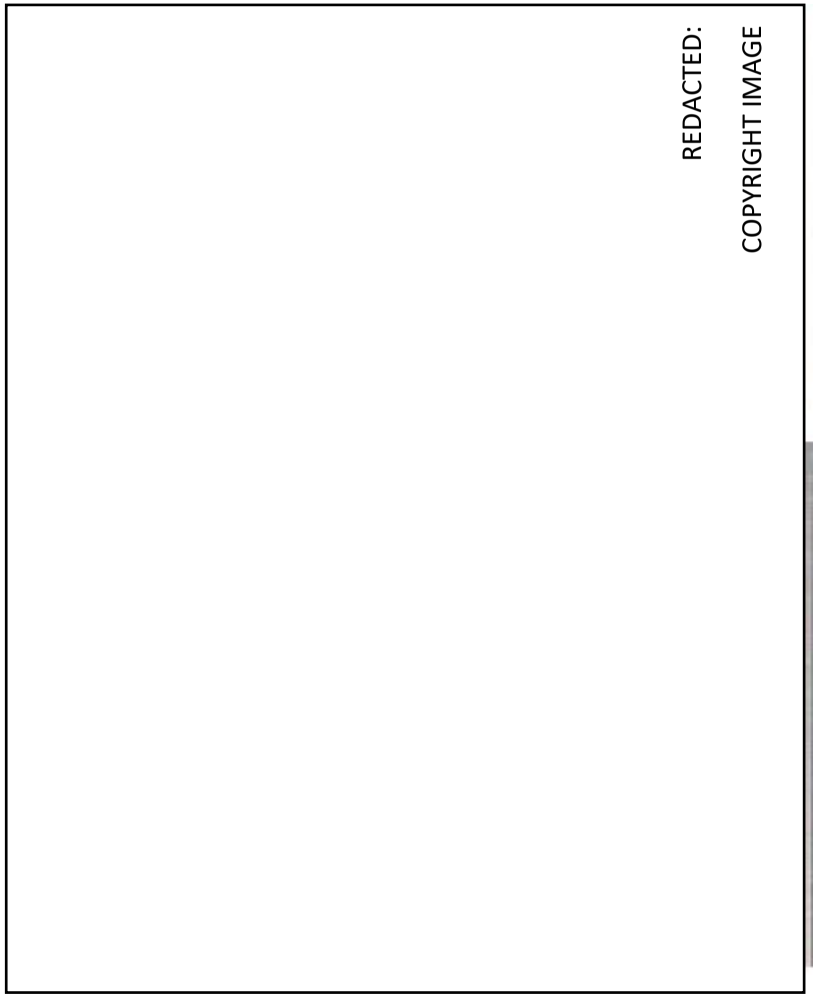


Figure 4.57: Examples of Red-Black Burnished ware from Aparan III (after Iserlis et al. 2010, Fig. 6).

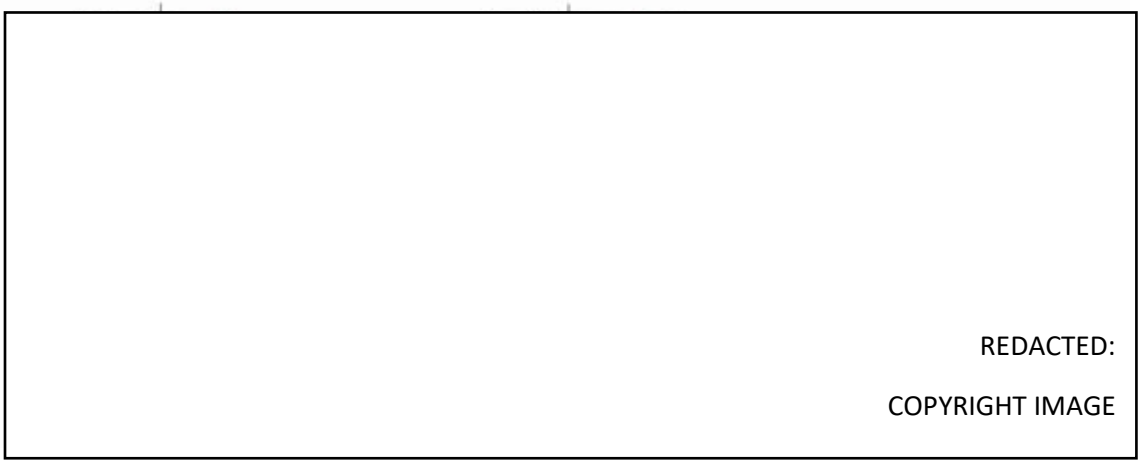


Figure 4.58: Examples of cups recovered from the Early Bronze Age levels at Gegharot (after Badalyan 2014, Fig. 2).

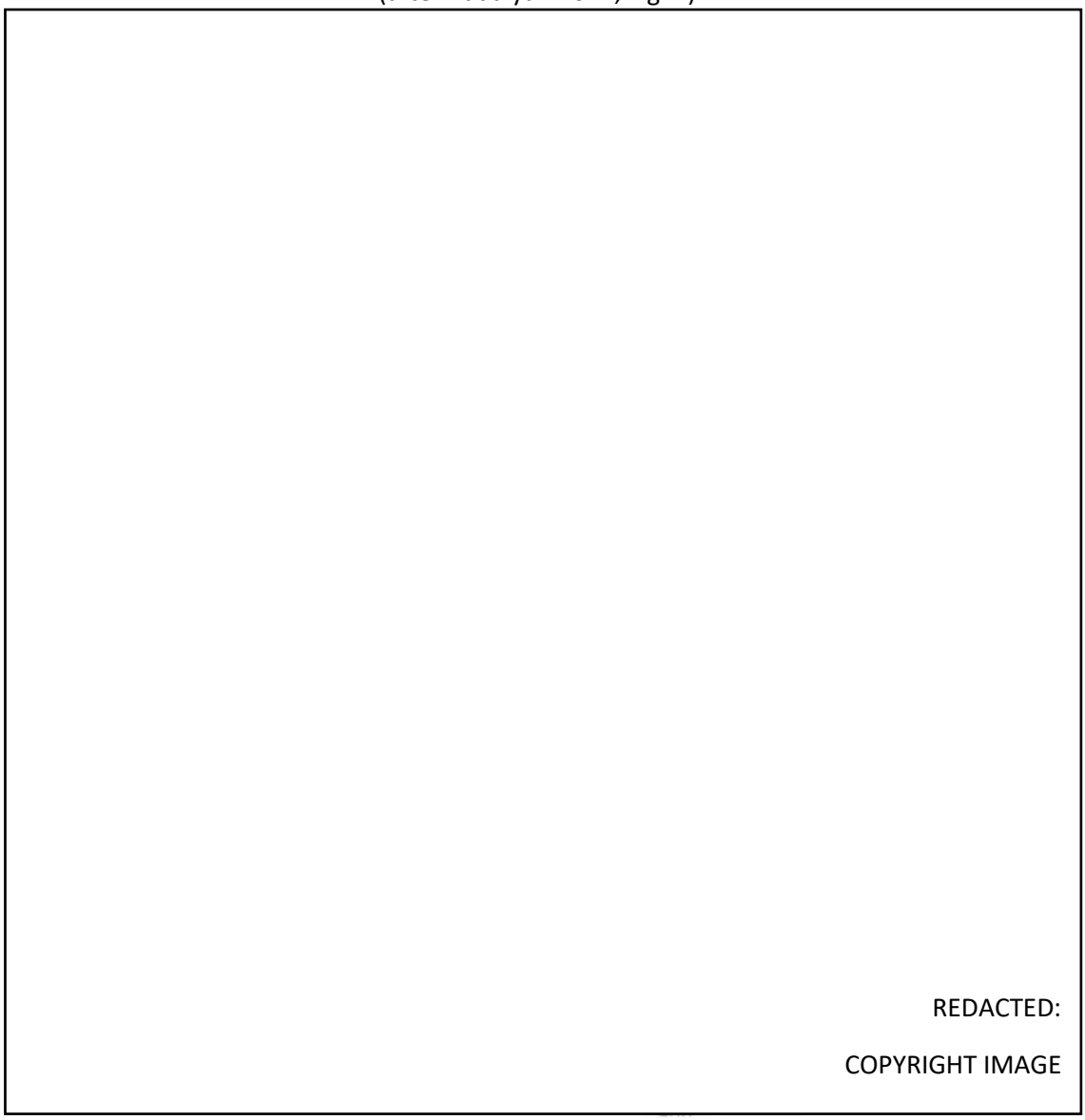


Figure 4.59: Examples of tall-necked jars recovered from Sos Höyük VA (after Sagona and Sagona 2000, Fig. 13).

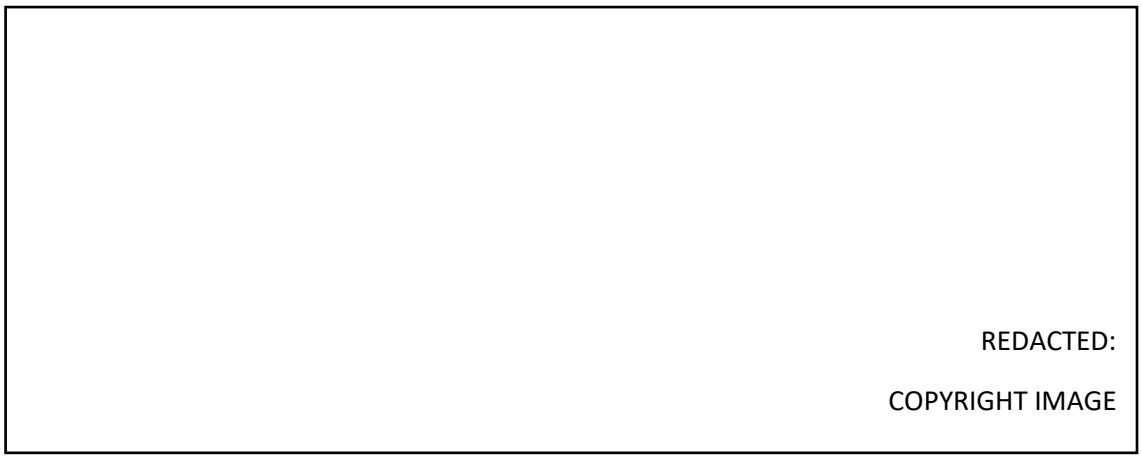


Figure 4.60: Hole-mouth jar recovered from Sos Höyük VA (after Sagona and Sagona 2000, Fig. 12).

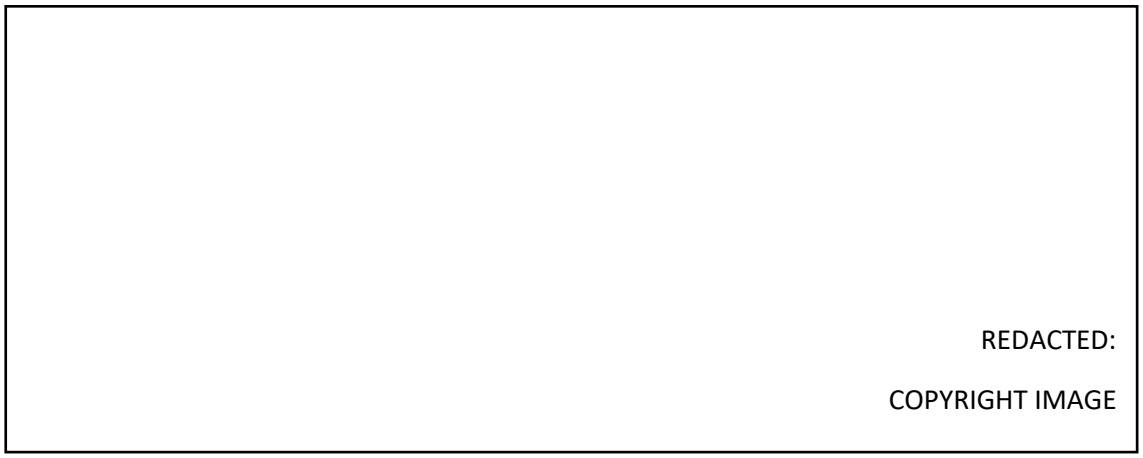


Figure 4.61: Hole-mouth jars recovered from Chobareti (after Kakhiani et al. 2013, Fig. 44).

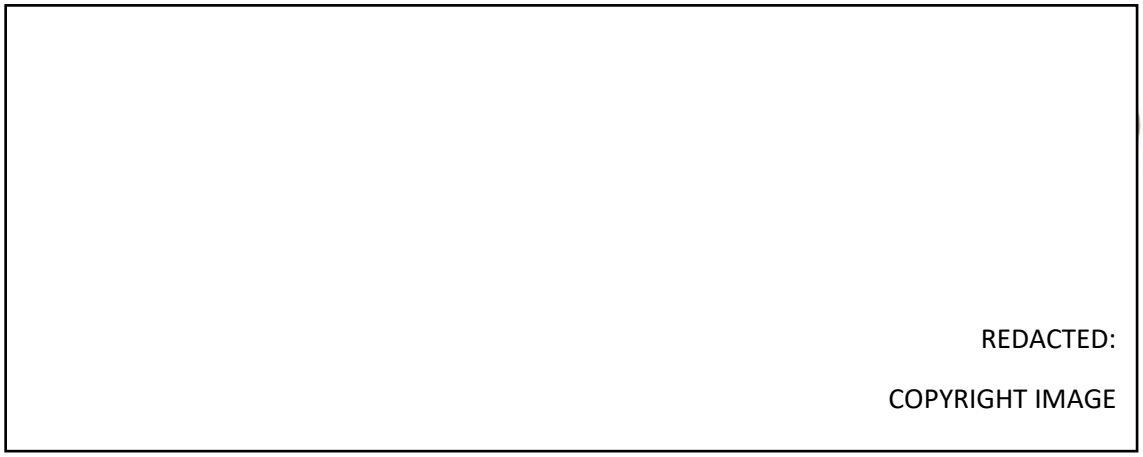


Figure 4.62: Bowls recovered from the collective kurgan at Mentesh Tepe (after Lyonnet et al. 2012, Fig 151.1-2).

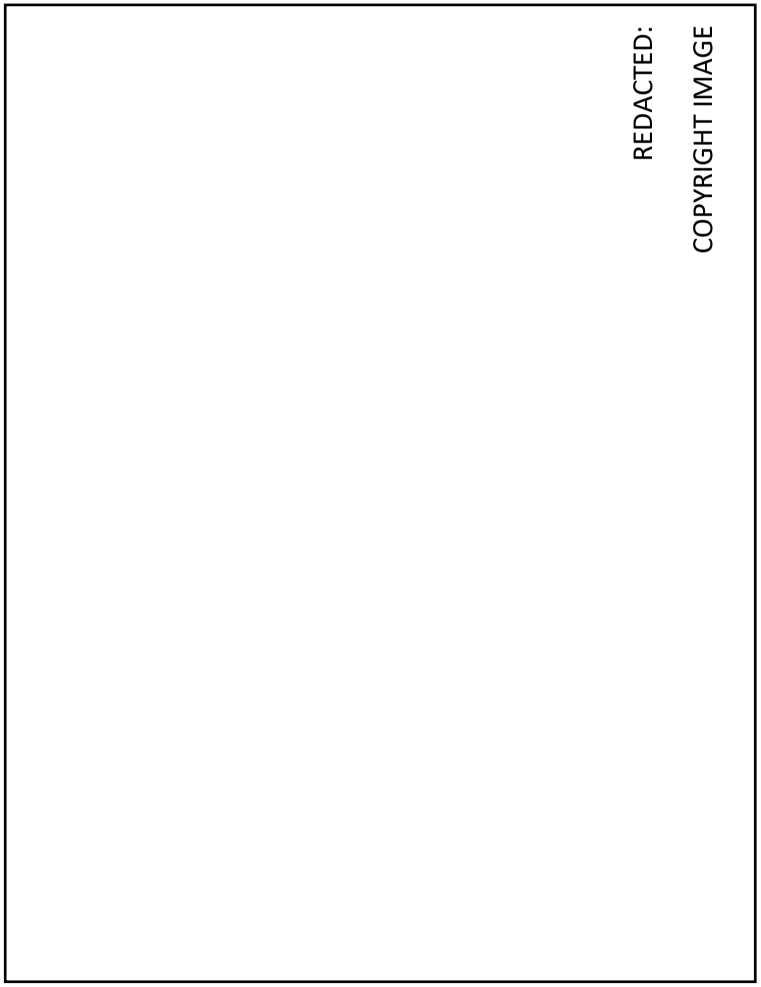


Figure 4.63: Bowls from Sos Höyük VA (after Sagona and Sagona 2000, Fig. 7).

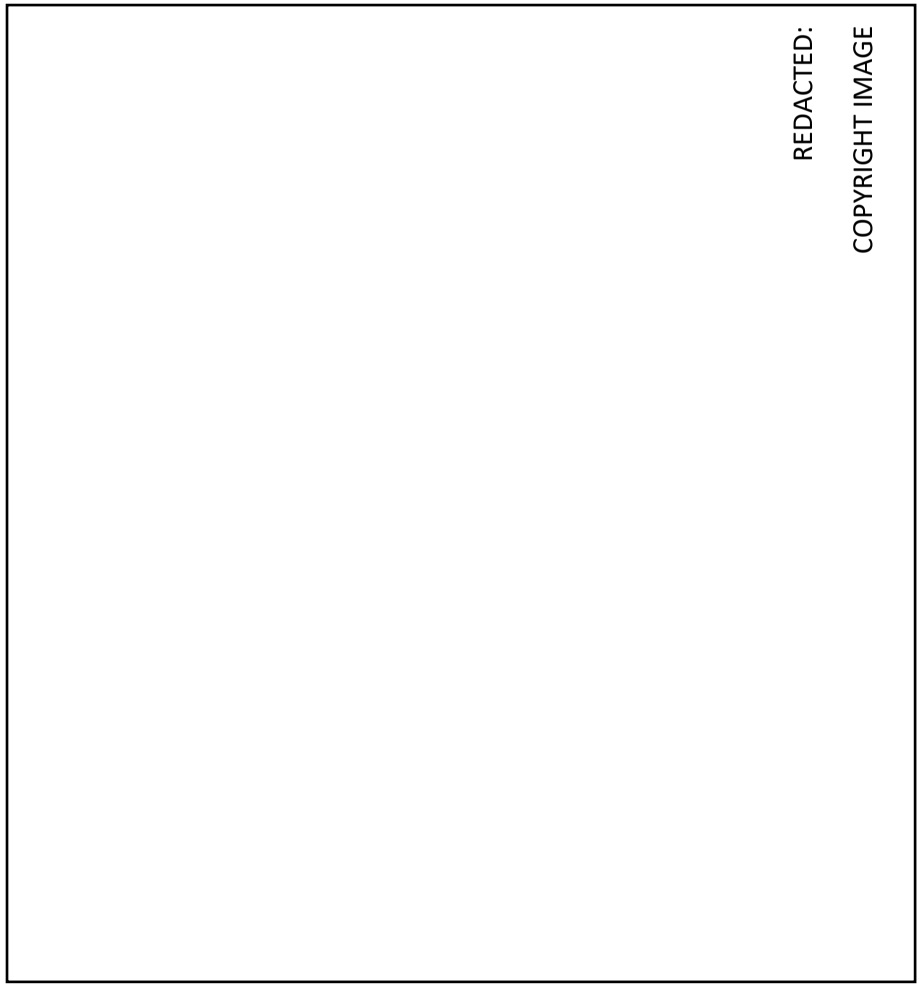


Figure 4.64: Trays from Sos Höyük VA (after Sagona and Sagona 2000, Fig. 12.1-4).

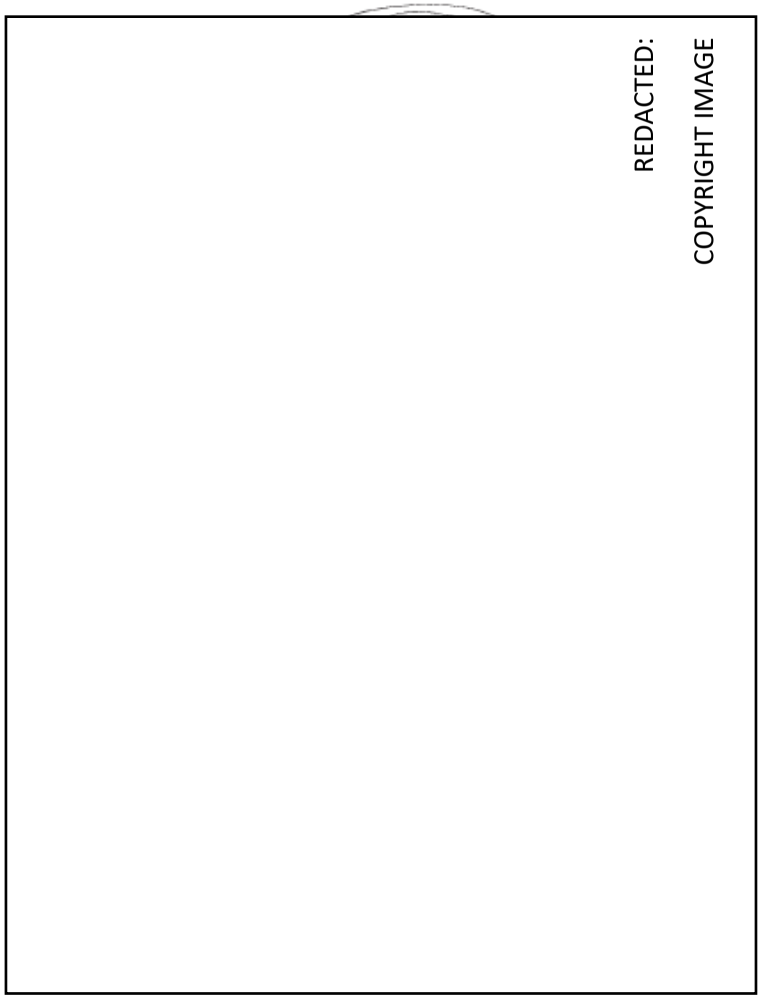


Figure 4.65: Lids from Sos Höyük VA (after Sagona and Sagona 2000, Fig. 9).

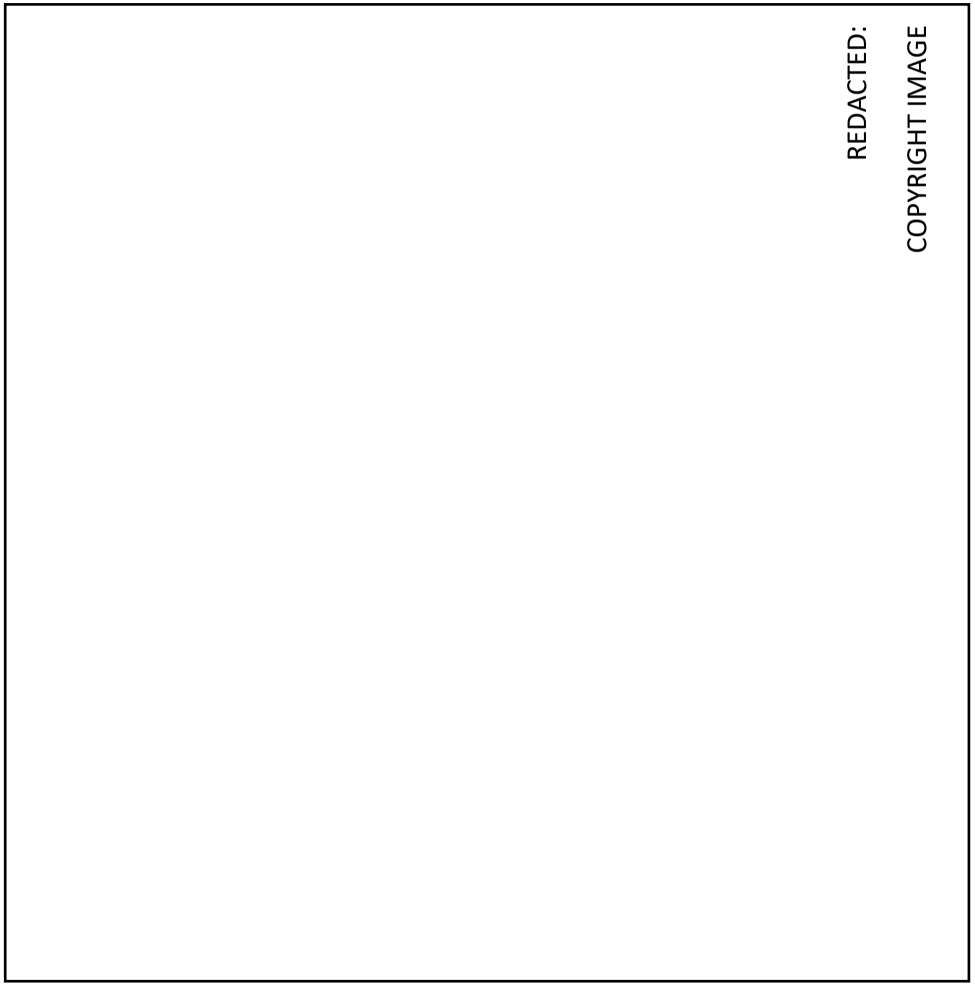


Figure 4.66: Hearth supports from Gegharot (after Badalyan et al. 2008, Fig. 6i-j).

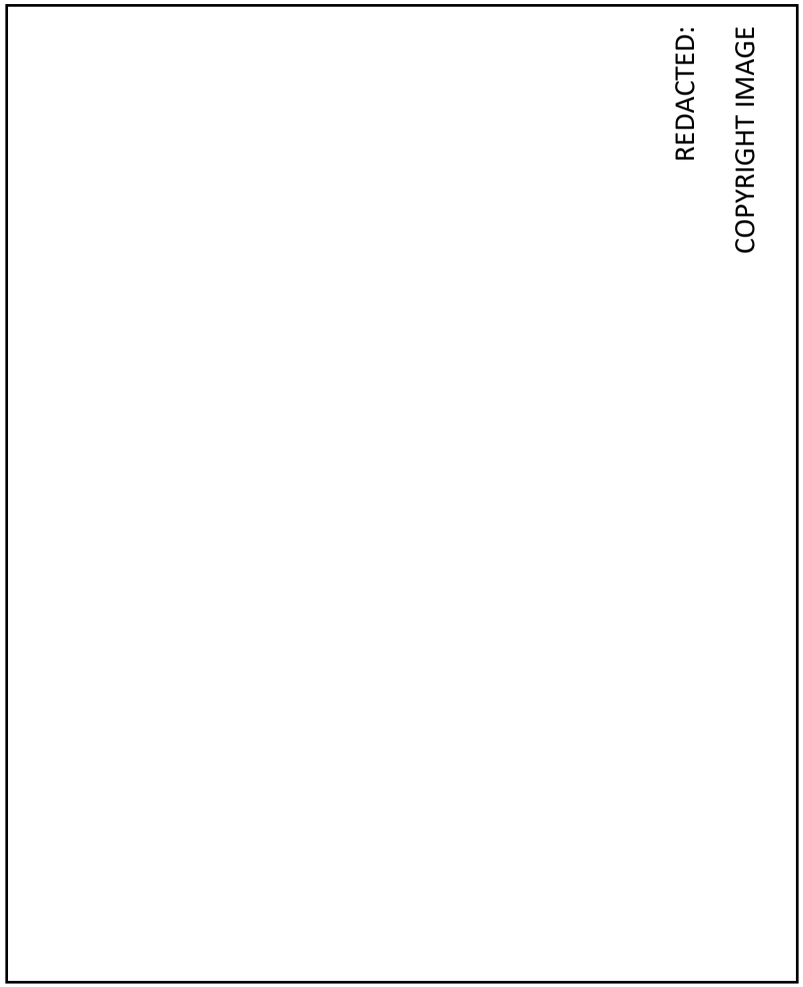


Figure 4.67: Horse-shoe shaped andiron from Chobareti Structure 4 (after Kakhiani et al. 2013, Fig. 28).

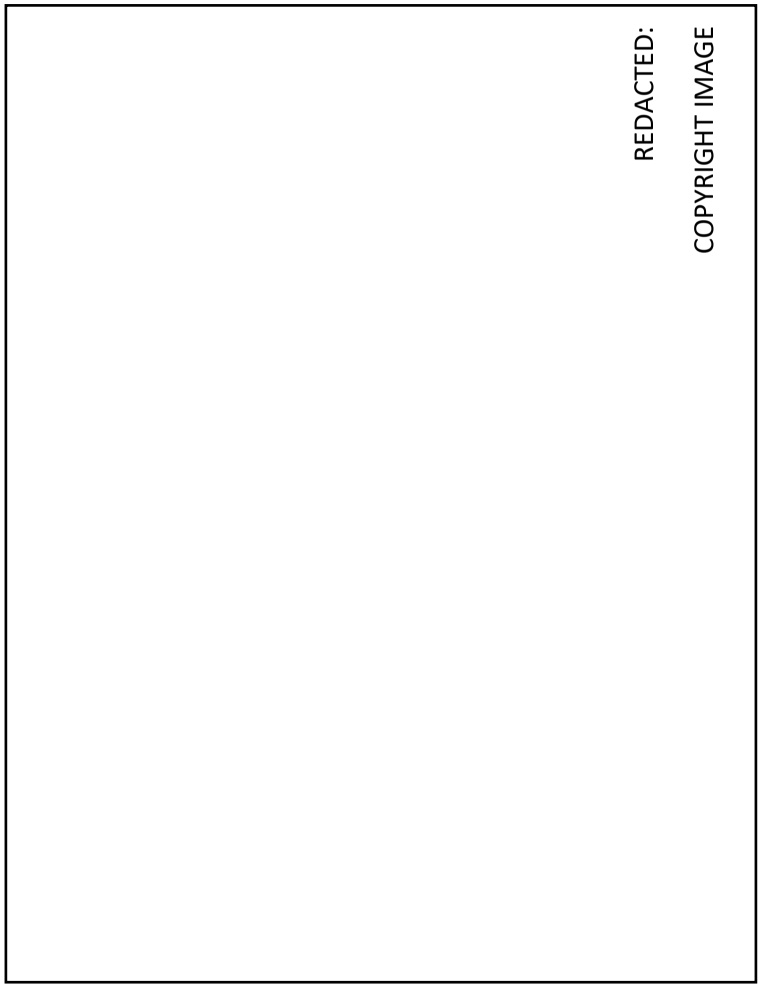


Figure 4.68: Twin horned andiron from Sos Höyük VA (after Sagona and Sagona 2000, Fig. 11).

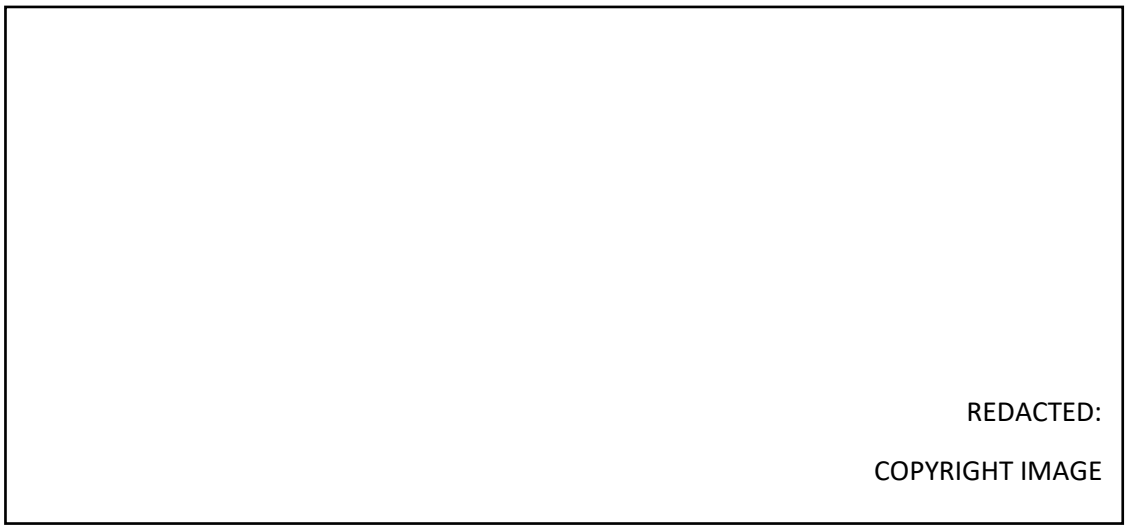


Figure 4.69: Zoomorphic figurine from Chobareti Strcture 4 (after Kakhiani et al. 2013, Fig. 29.2).

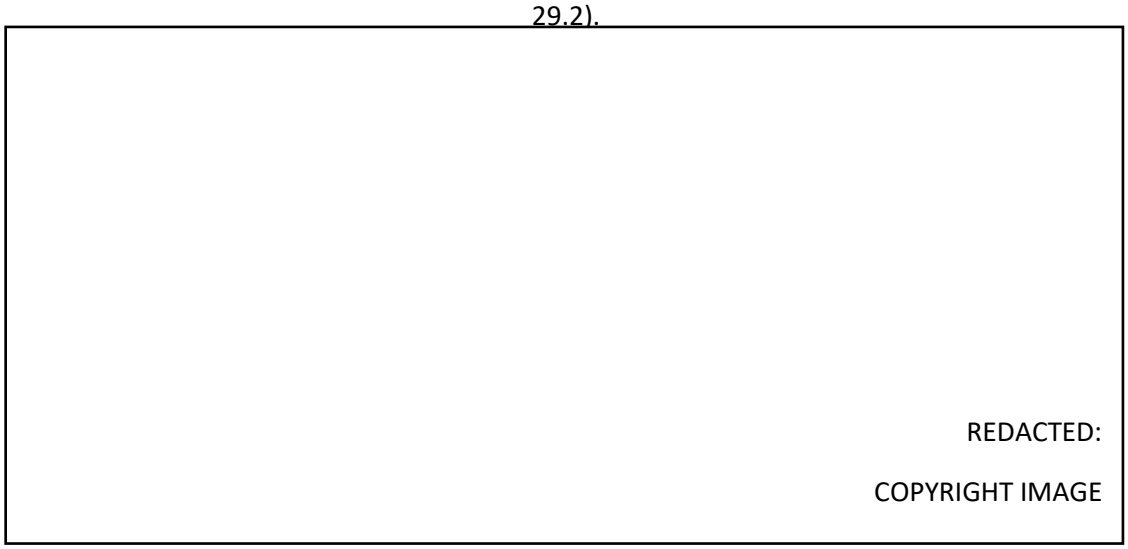


Figure 4.70: Decorative post-firing incisions on a body sherd from Sos Höyük VA (after Sagona and Sagona 2000, Fig. 8.4).

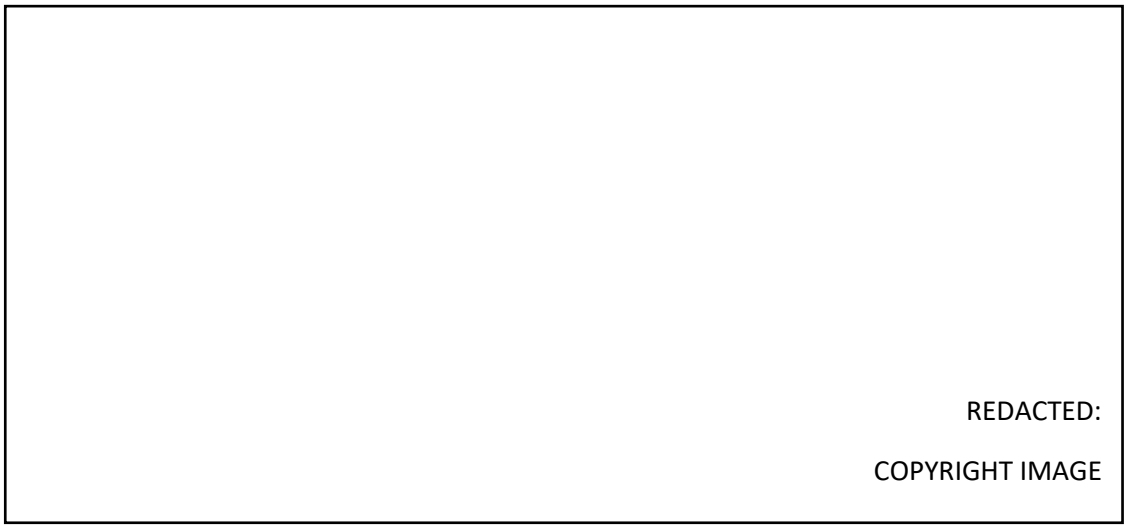


Figure 4.71: Decorative post-firing incisions on a rim sherd from Chobareti (after Kakhiani et al. 2013, Fig. 30.1).

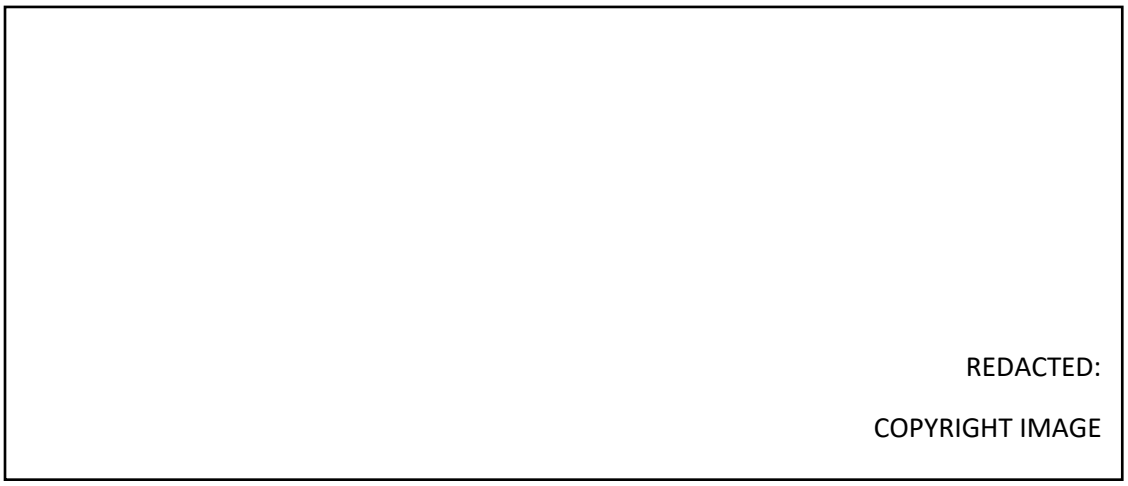


Figure 4.72: Body sherds from Chobareti structure 4 decorated with flattened knobs (after Kakhiani et al. 2013, Fig 42.6-9).



Figure 4.73: Bronze spearhead recovered from Early Bronze Age Gegharot (after Badalyan et al. 2008, Fig. 8).



Figure 4.74: Tin bronze spiral ring recovered from Talin Tomb 11 (after Kalantarian 2011, Fig. 15.1).

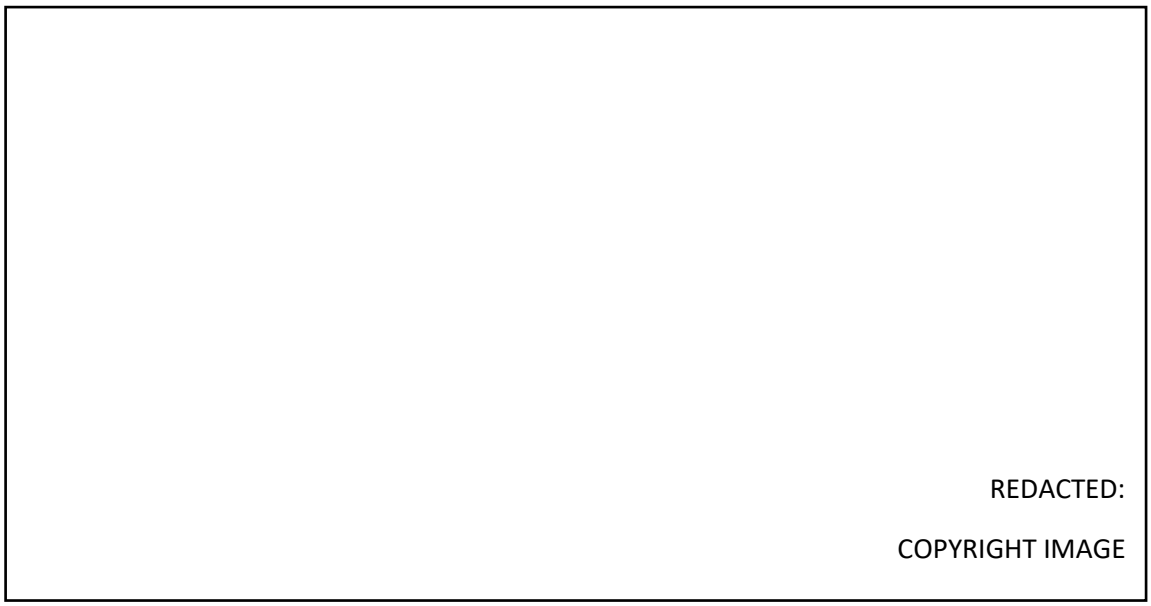


Figure 4.75: Basalt grinding stones recovered from Chobareti Structure 4 (after Kakhiani et al. 2013, Fig. 57.1-2).

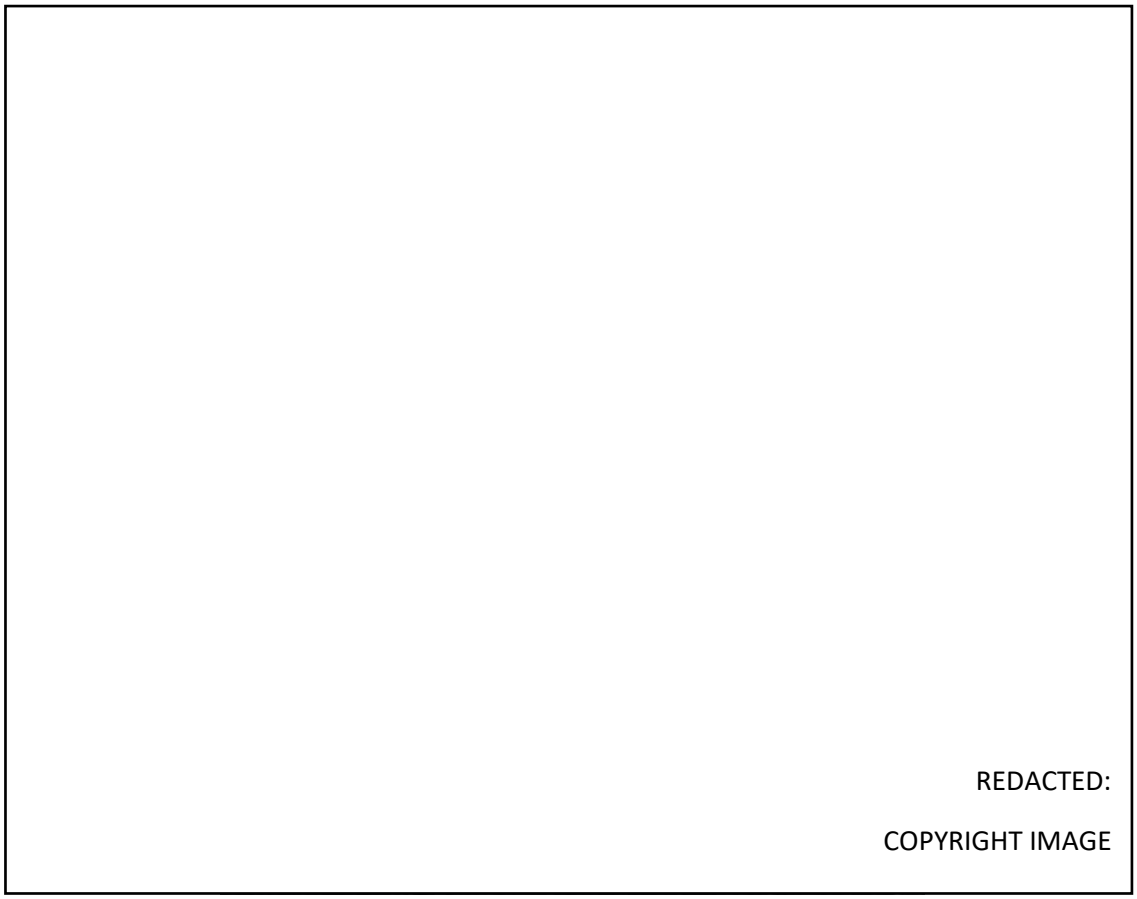


Figure 4.76: Flint sickle blades found *in situ* at Early Bronze Age Gegharot (after Badalyan et al. 2008, Fig. 7).

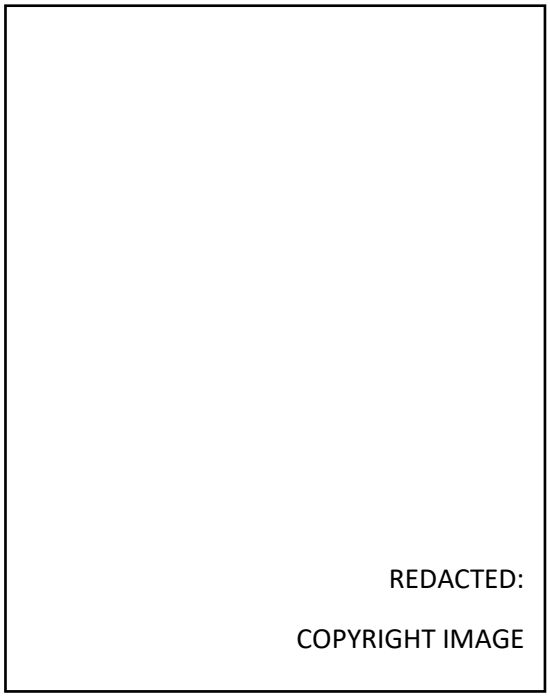


Figure 4.77: Obsidian spearhead recovered from Early Bronze Age Gegharot (after Badalyan et al. 2008, Fig. 6h).

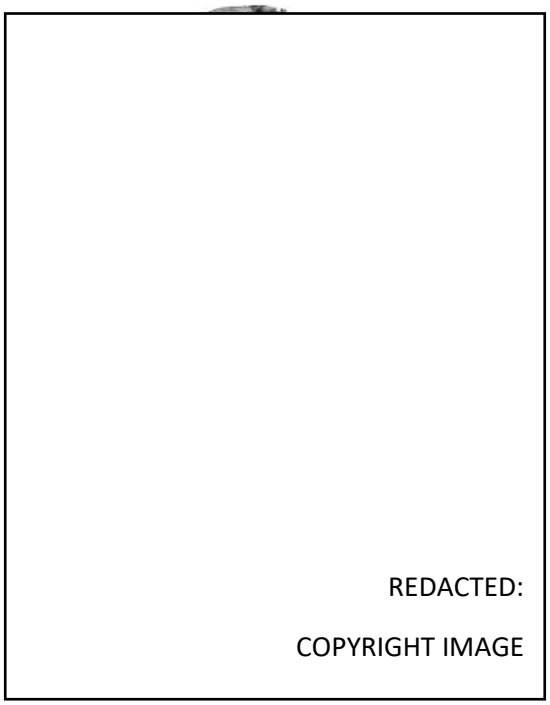


Figure 4.78: Refit of an obsidian cobble from Sos Höyük VA (after Kobayashi 2007, Fig. 3.1).

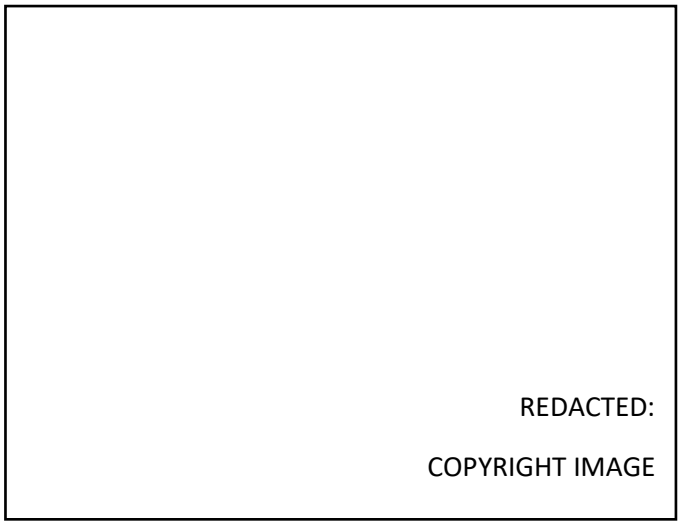


Figure: 4.79: Examples of bone awls recovered from Gegharot (after Badalyan et al. 2008, Fig. 6f).

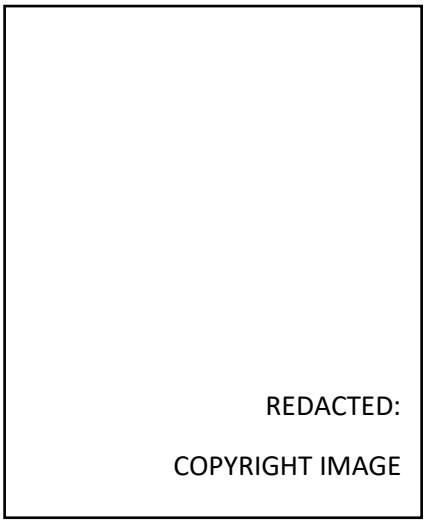


Figure 4.80: Bone point recovered from Sos Höyük VA (after Sagona and Sagona 2000, Fig. 19.1).

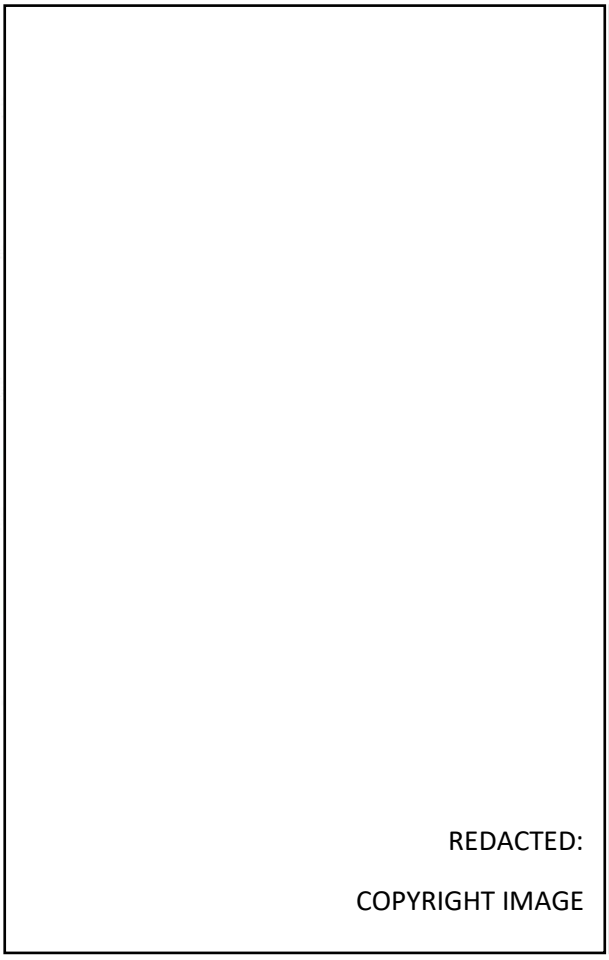


Figure 4.81: A variety of charred grains and seeds recovered from Gegharot including wheat, barley, and weeds (after Badalyan et al. 2008, Fig. 42).

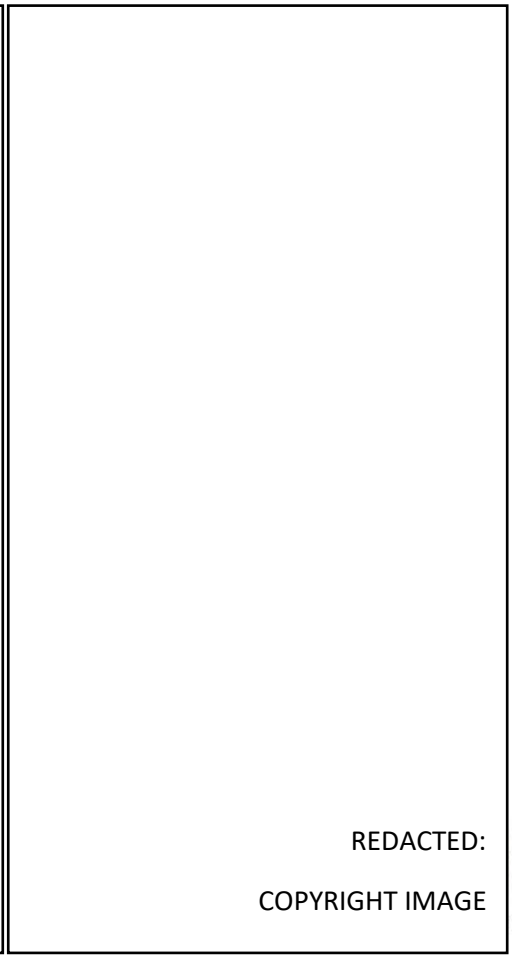


Figure 4.82: Charred grains recovered from Aparan III including wheat and barley (after Hovsepyan 2010, Fig. 2).

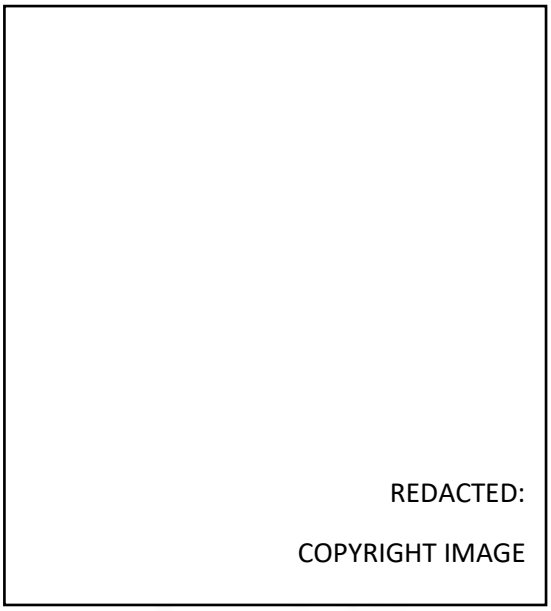


Figure 4.83: Charred grains recovered from Chobareti Structure 4 (after Kakhiani et al. 2013, Fig. 57.4).

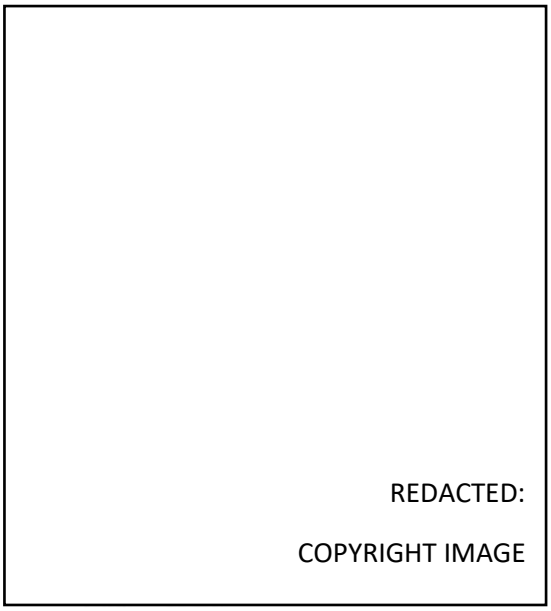


Figure 4.84: Weeds recovered from Aparan III including *Lolium* and *Rumex* (after Hovsepyan 2010, Fig. 3).

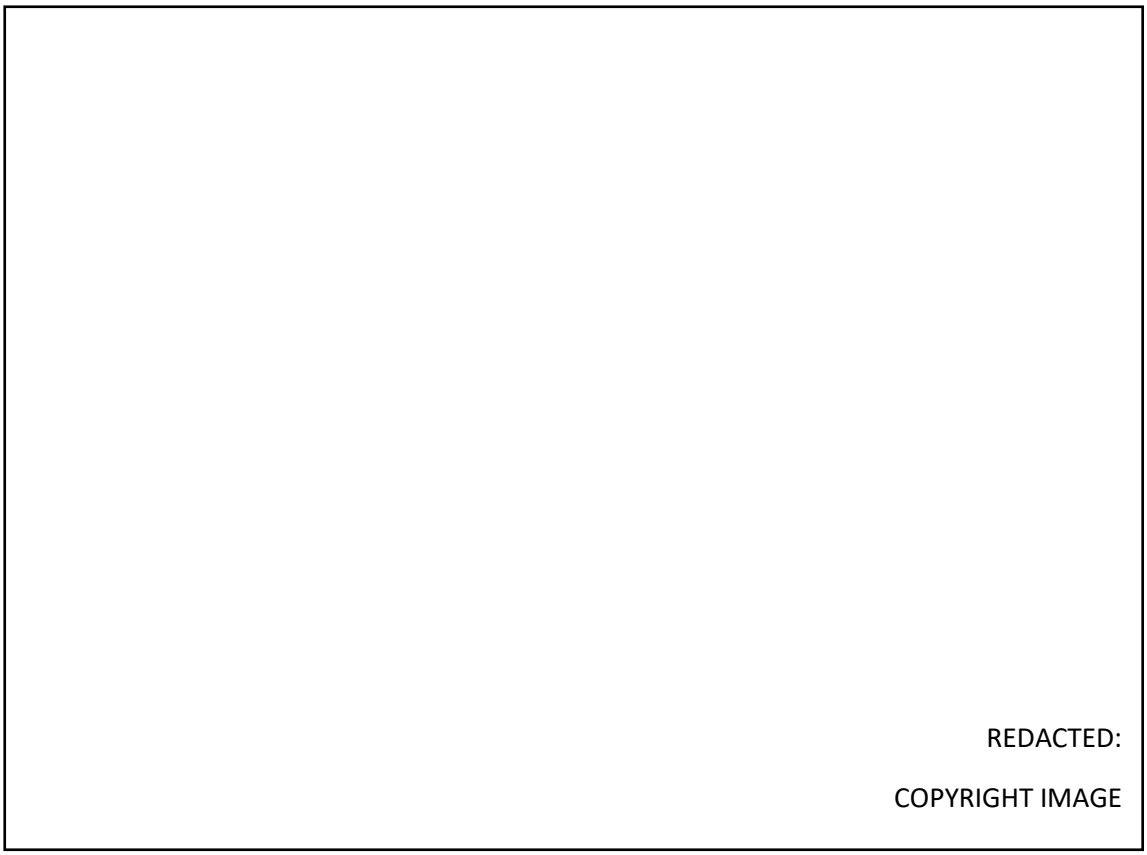


Figure 4.85: Photograph of stone cist burials 3, 4, and 5 from Chobareti (after Kakhiani et al. 2013, Fig. 14).

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Figure 4.86: Plan of stone cist burial 2 from Chobareti demonstrating a floor lined with vessel fragments (after Kakhiani et al. 2013, Fig. 13).

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Figure 4.87: Photograph of the ceramic floor of stone cist burial 8 from Chobareti (after Kakhiani et al. 2013, Fig. 18).

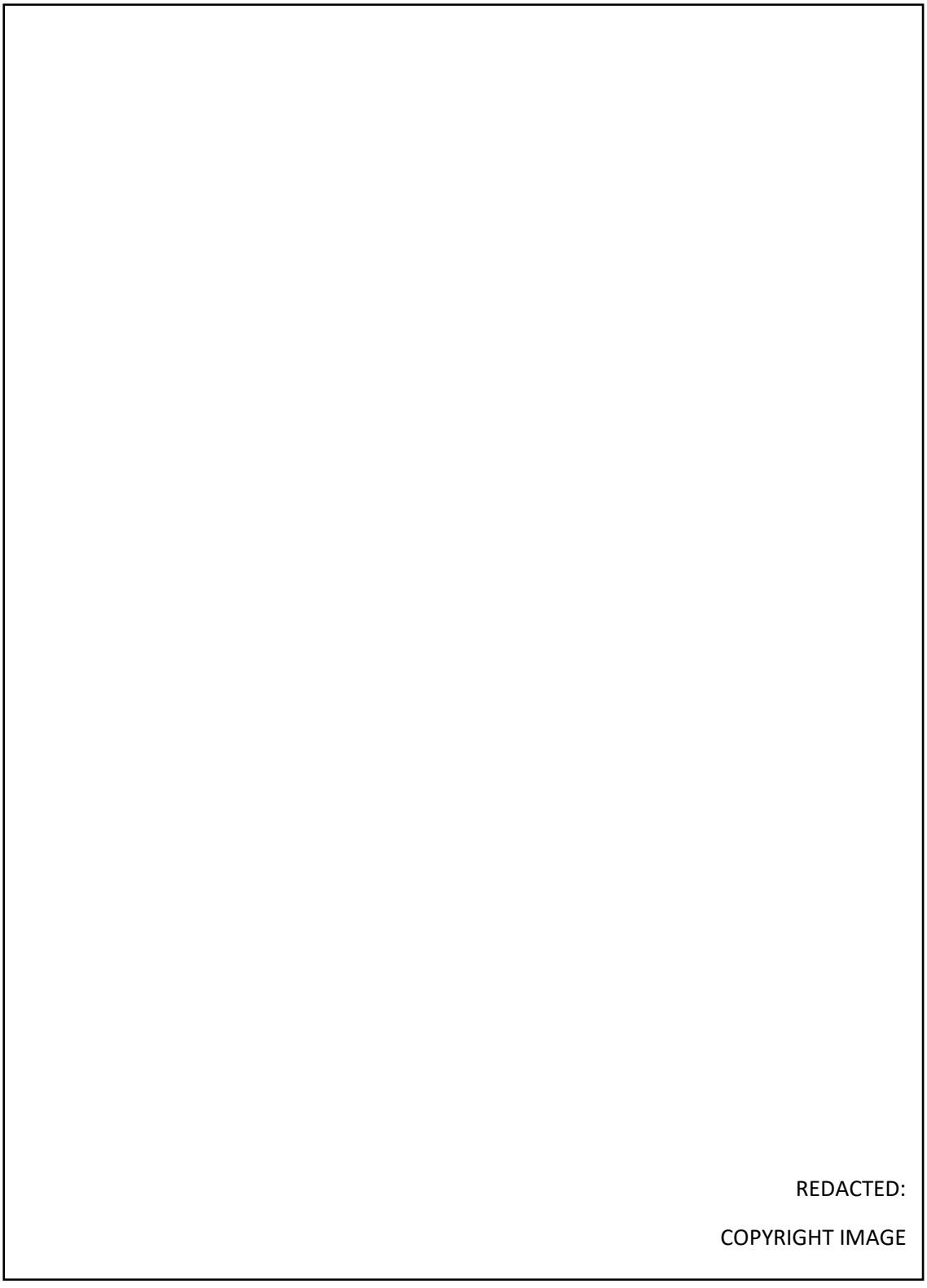


Figure 4.88: Plan of Operation T02E at Gegharot showing the location of the Early Bronze Age stone cist tomb (after Badalyan et al. 2008, Fig. 9).

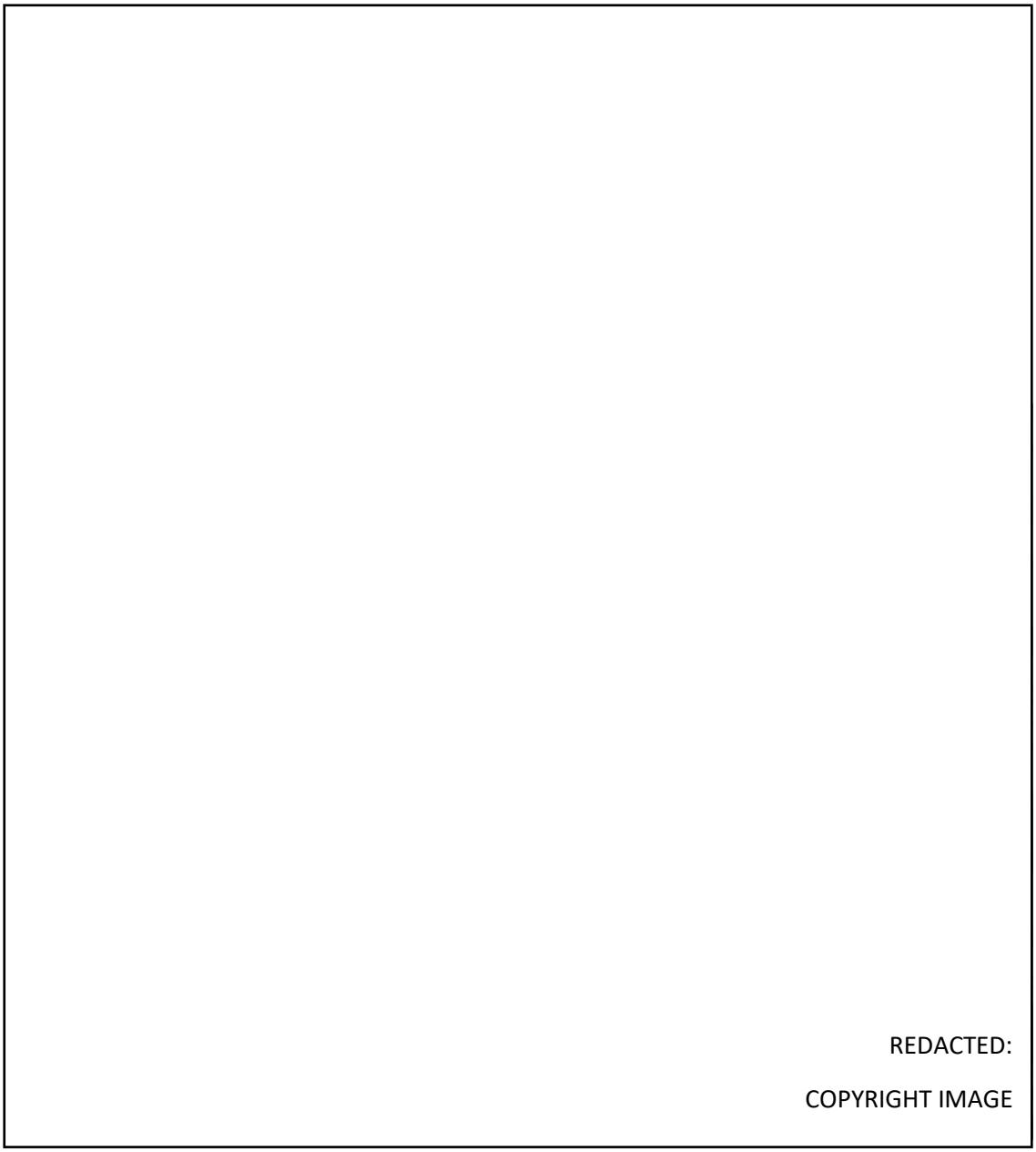


Figure 4.89: Photograph of the Early Bronze Age stone cist tomb at Gegharot (after Badalyan et al. 2008, Fig. 10).



Figure 4.90: Section of the site of Horom showing the location of the Early Bronze Age stone cist tomb (after Badaljan et al. 1994, Fig. 7).

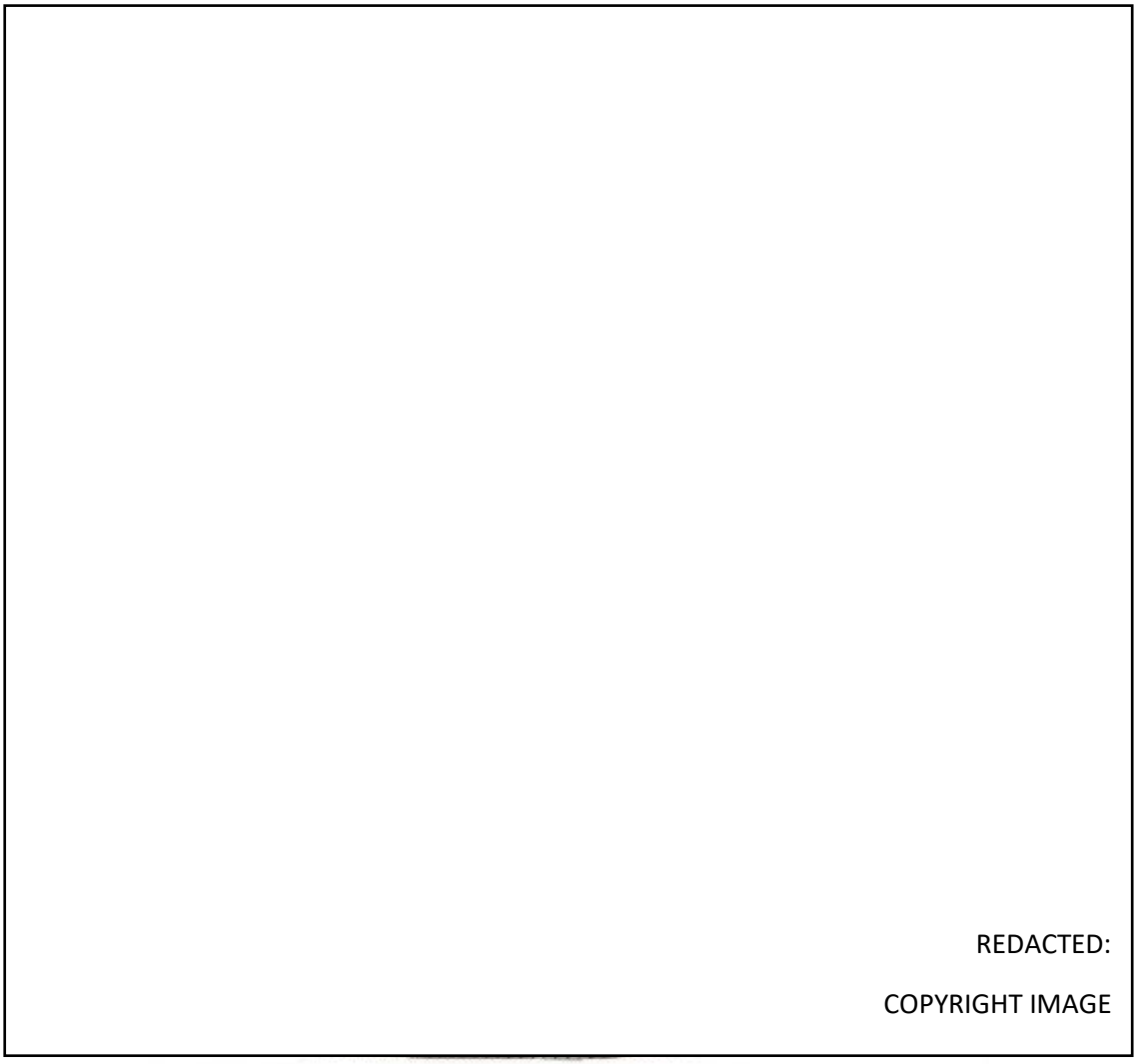


Figure 4.91: Plan of the collective kurgan from Mentesh Tepe IV (after Lyonnet et al. 2012, Fig. 137).

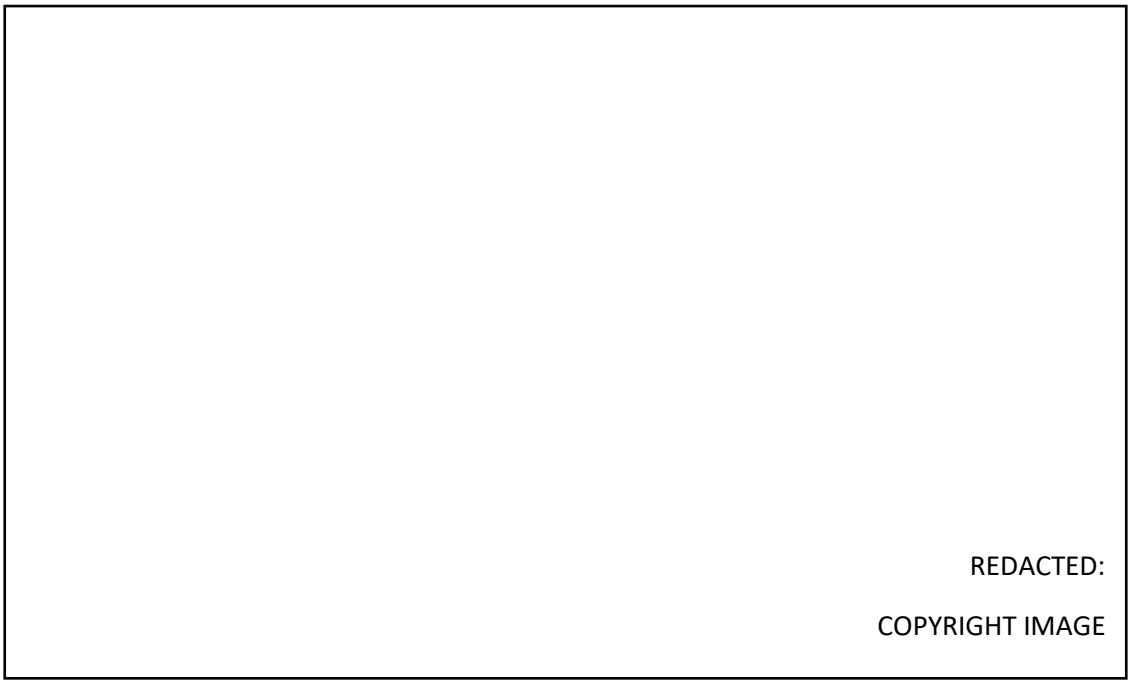


Figure 4.92: Plan of Talin Tomb 11 (after Kalantarian 2011, Pl. III).

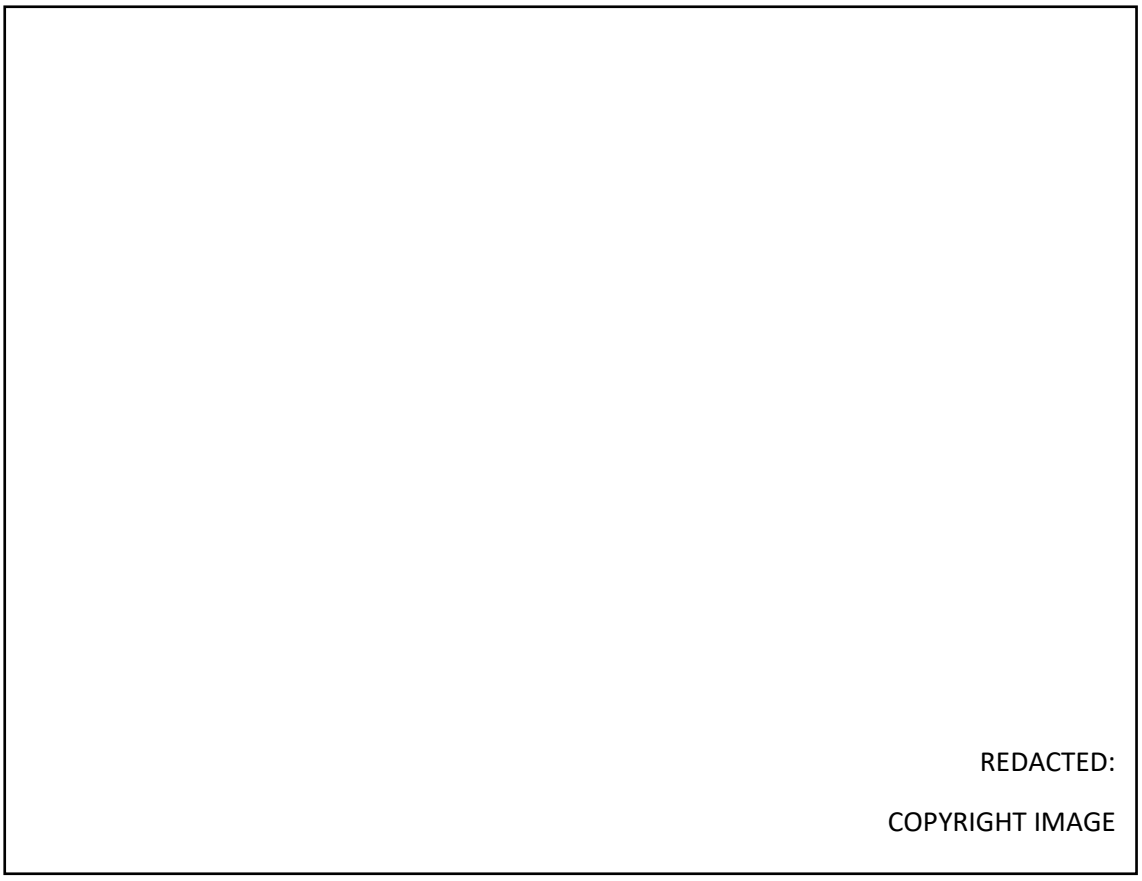


Figure 4.93: Photograph of the central chamber and dromos of Talin Tomb 11 (after Kalantarian 2011, Fig. 10).

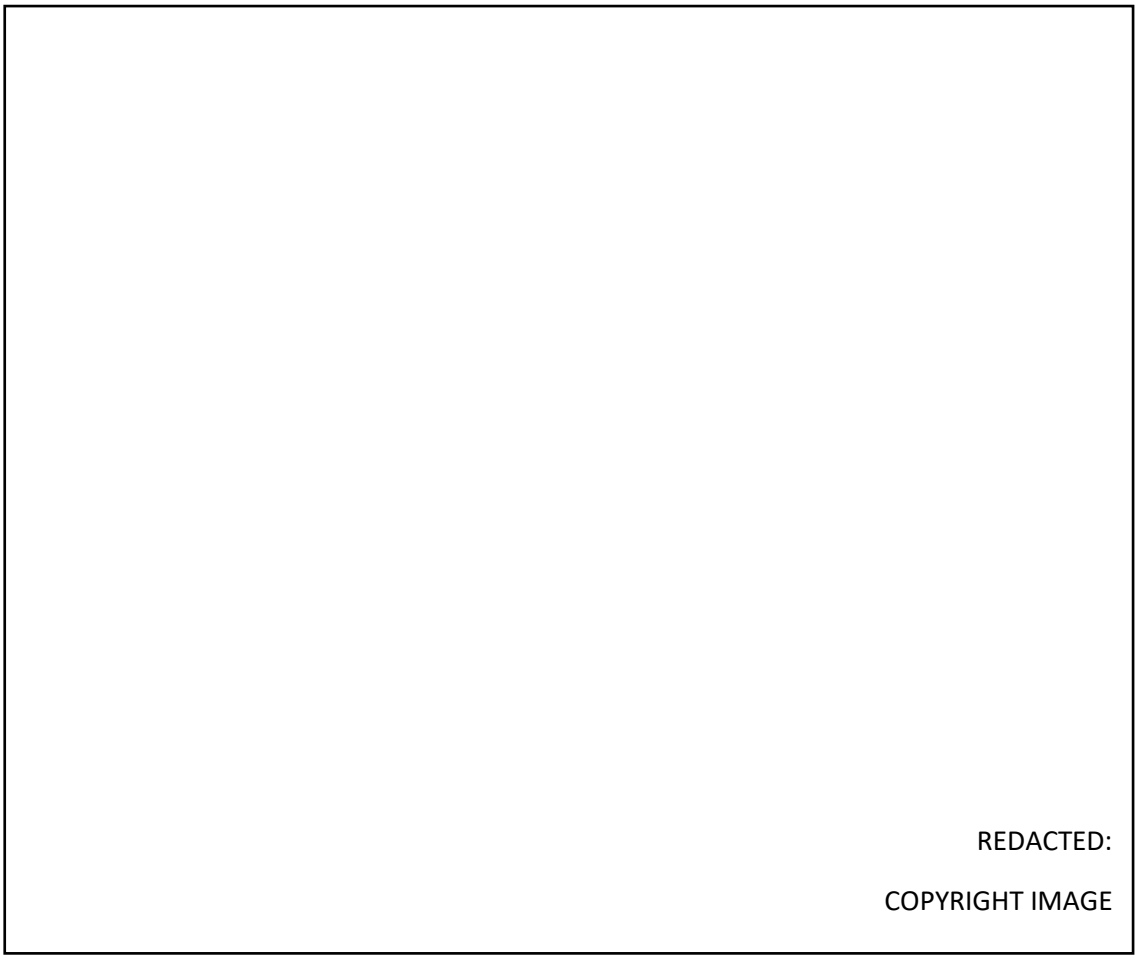


Figure 4.94: Plan of burial 5 at Chobareti (after Kakhiani et al. 2013, Fig. 15).

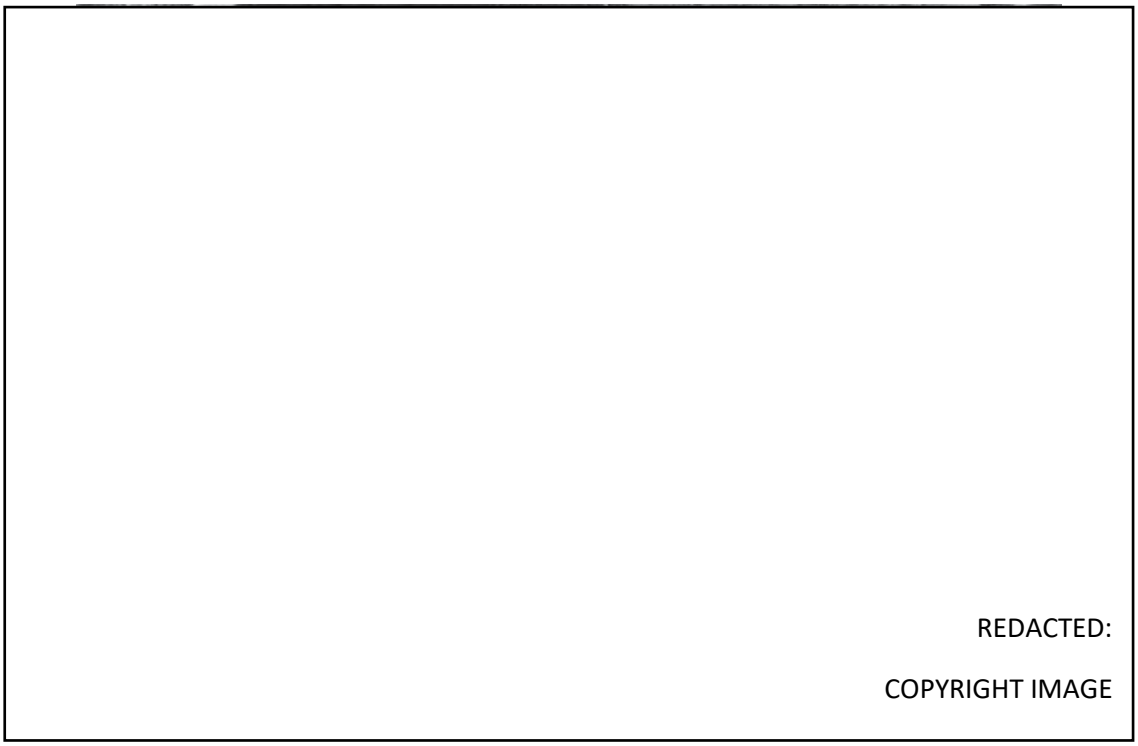


Figure 4.95: Infant jar burial discovered beneath the floor of Structure 4 at Chobareti (after Kakhiani et al. 2013, Fig. 19).

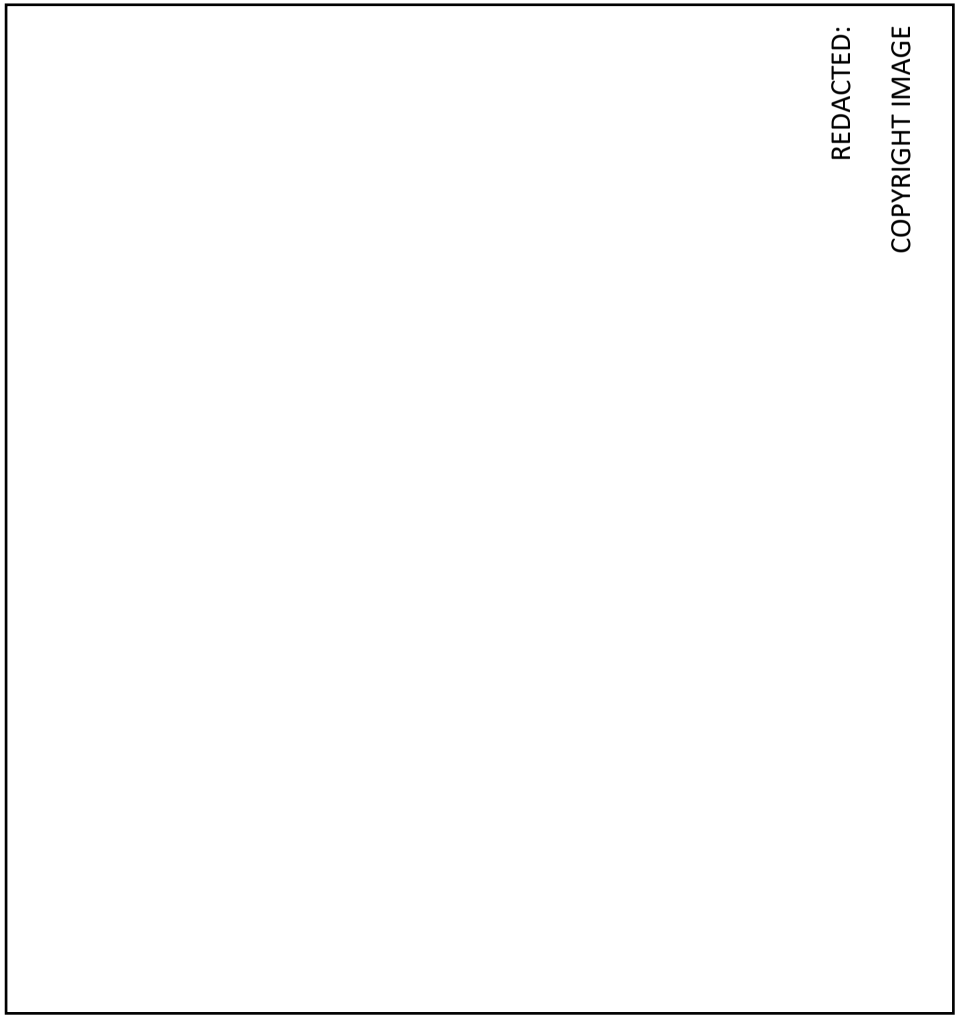


Figure 4.96: Painted examples of Tilkitepe ware (after Korfmann 1982, Fig. 10).

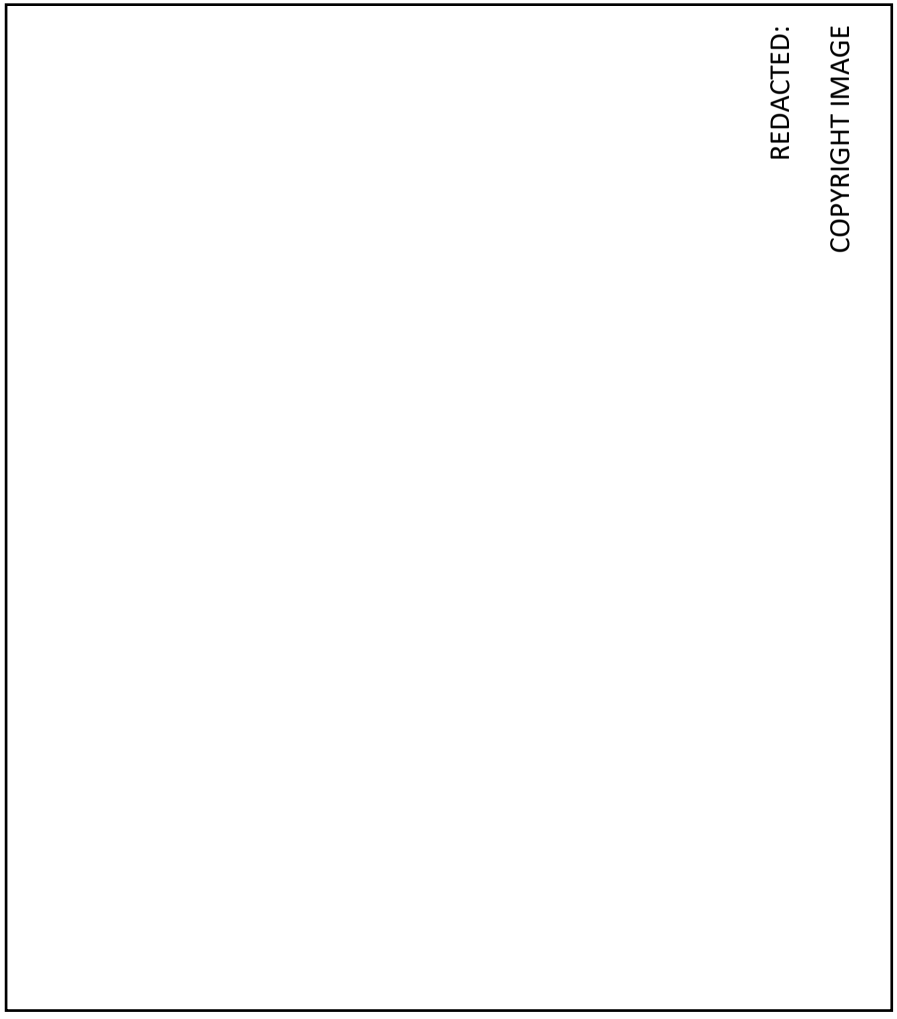


Figure 4.97: Painted examples of Tilkitepe ware (after Korfmann 1982, Fig. 11).

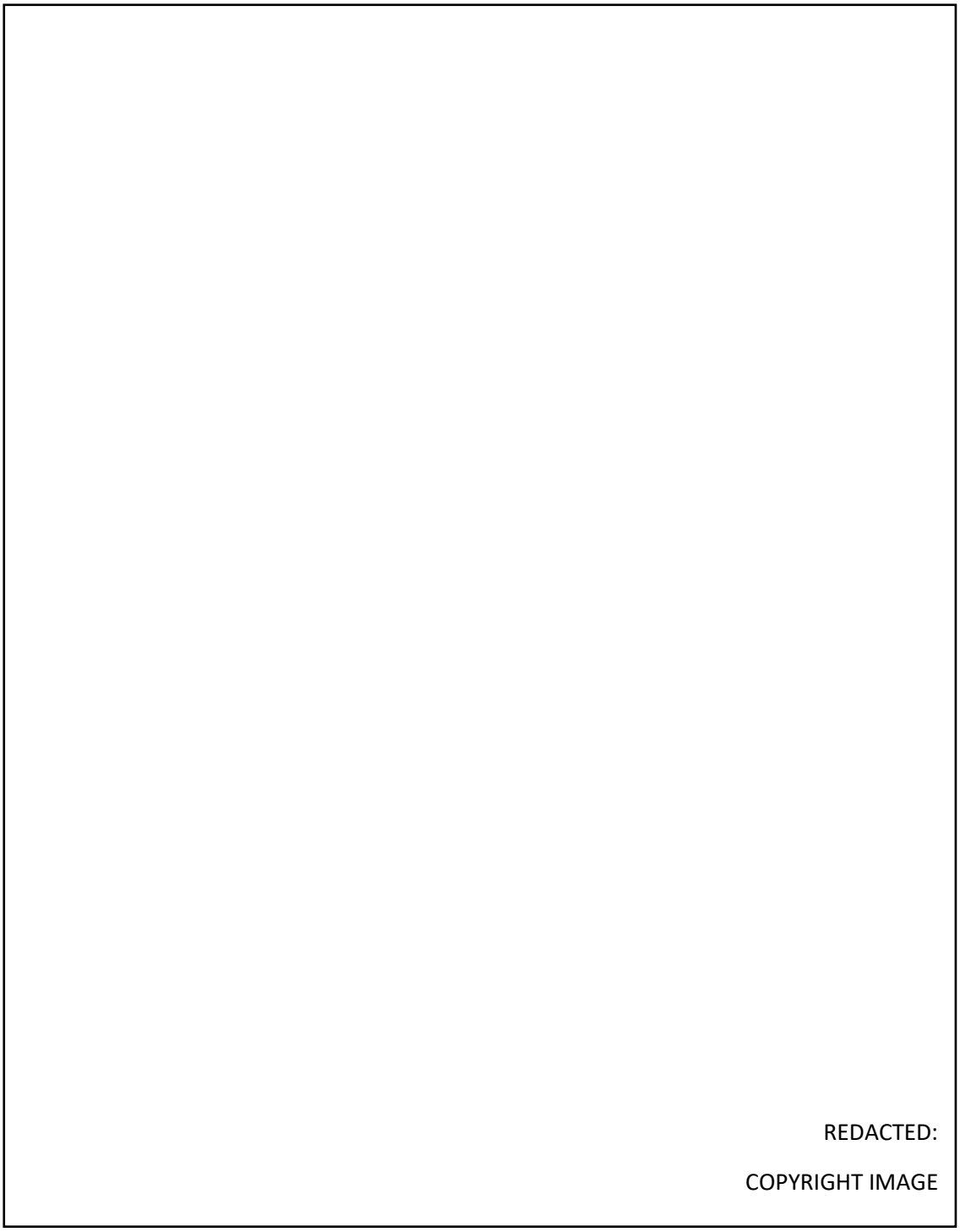


Figure 4.98: Sketch of the primary burial from the Oshdad kurgan showing the position of the 'Chieftain's' remains (after Veselovskii 1897 [1997], Fig. 7.6).

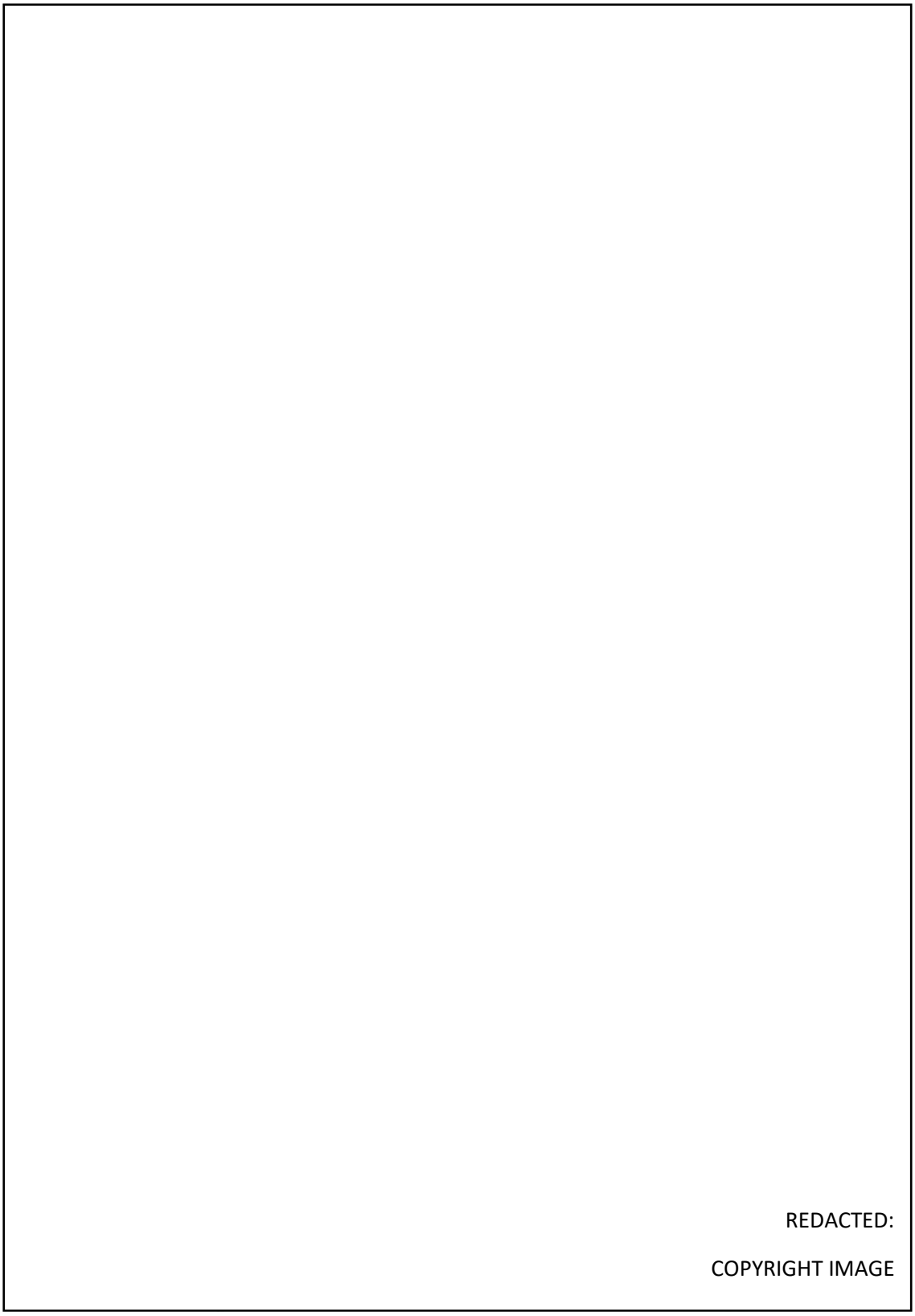


Figure 4.99: Silver and gold artefacts from the Oshdad Kurgan (after Courcier 2014, Fig. 22.24).

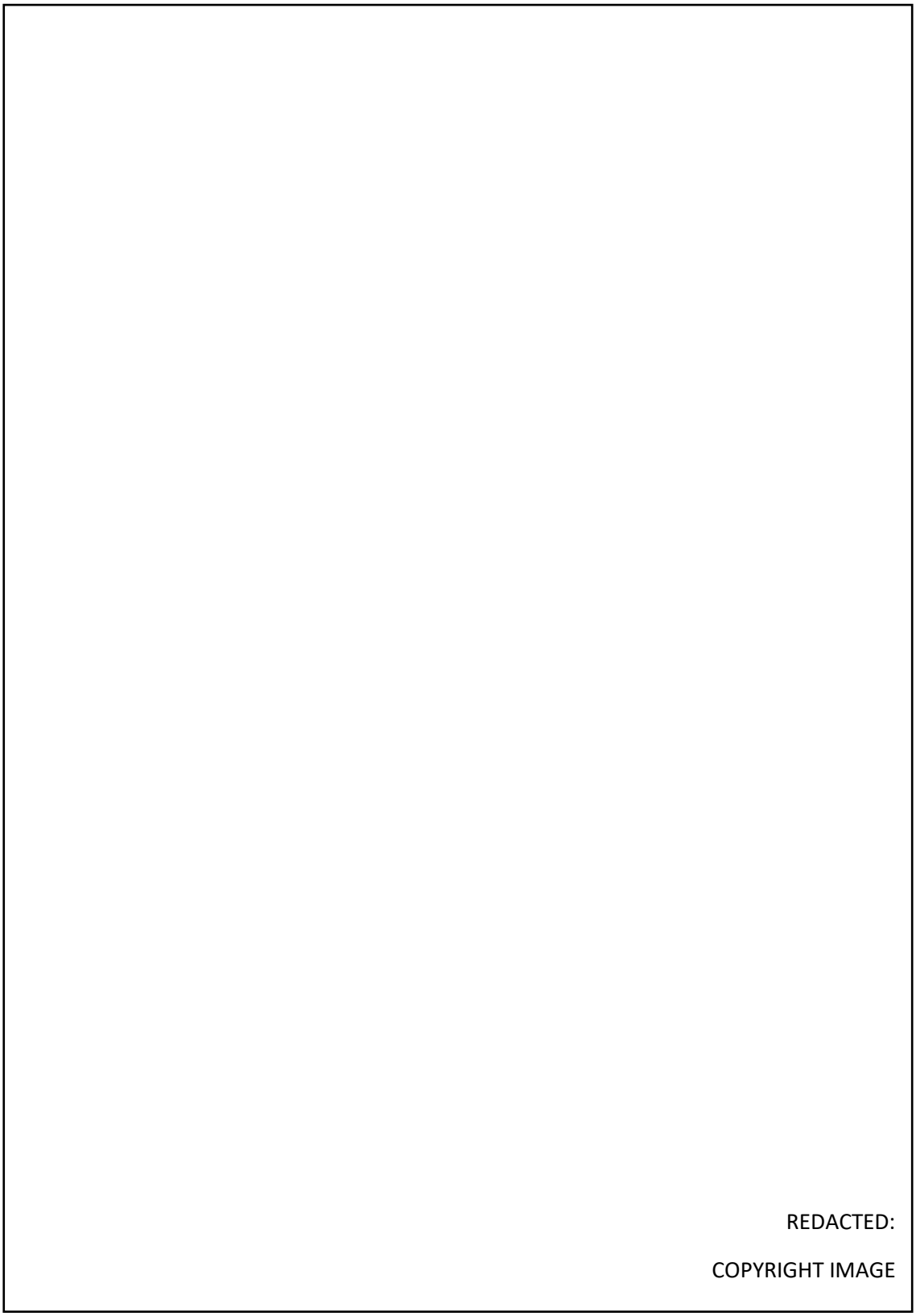


Figure 4.100: Animal motifs from the incised metal vessels of the Oshdad Kurgan (after Korenevskii 2004, Fig. 70).

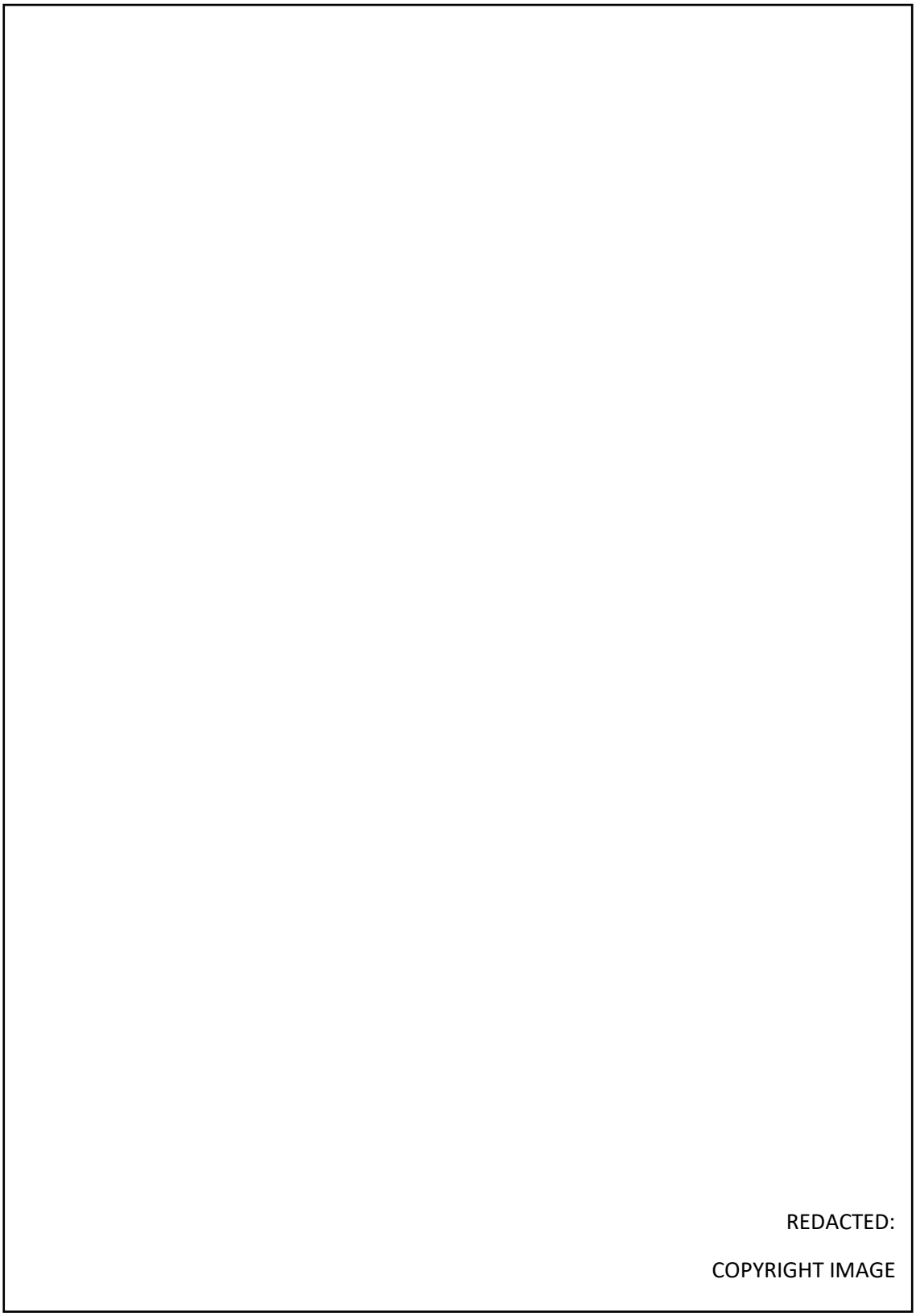


Figure 4.101: Gold beads from the Oshdad Kurgan (after the State Hermitage Museum http://www.hermitagemuseum.org/wps/portal/hermitage/digital-collection/25.+Archaeological+Artifacts/1212819/?lng=en).

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Figure 4.102: Examples of Maikop ceramics (after Lyonnet 2009, Fig. 4 and 5).

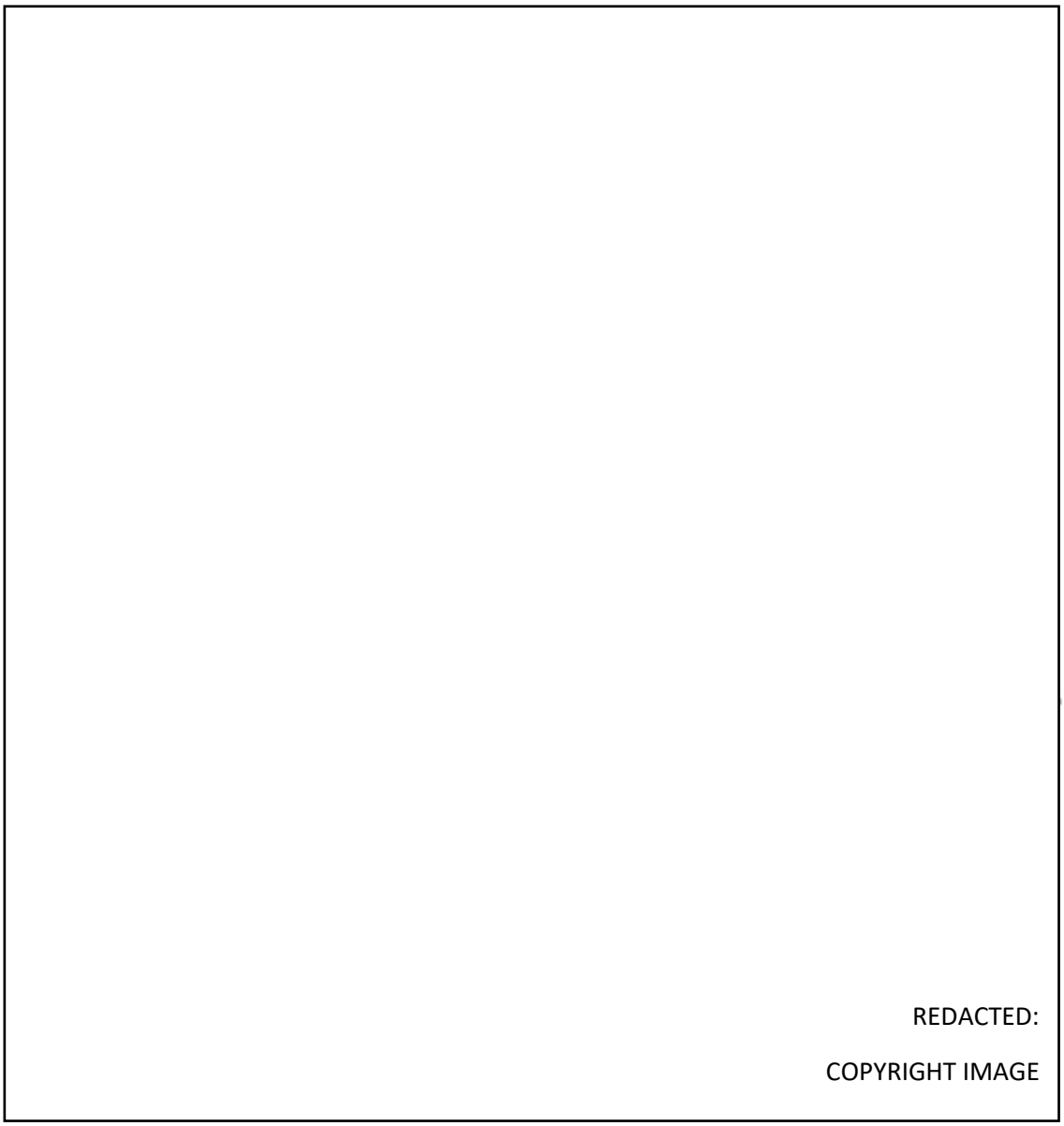


Figure 4.103: Daggers from Maikop and Novosvobodnaia related settlements (after Courcier 2014, Fig. 22.21).

Chapter Five: Sites of the Sioni Complex and the Transcaucasian Chalcolithic

Introduction

In the 1970s, the excavation of Sioni marked a turning point for the study of the Chalcolithic in the Transcaucasus. Situated between the Aratashen-Shulaveri-Shomutepe complex of the Late Neolithic and the Kura-Araxes of the Early Bronze Age, the discovery of Sioni led to the articulation of a local Chalcolithic tradition in eastern Georgia.[998] Almost 45 years later, the Sioni complex has become synonymous for the Chalcolithic period in the Transcaucasus. Characterised by its distinctive ceramic assemblage, Sioni culture, and its related features, is found dispersed across the region stretching from eastern Anatolia to the foothills of the Greater Caucasus Mountains.[999]

The Sioni complex can be traced via the distribution of its distinctive ceramic assemblage. Sioni settlements demonstrate a restricted distribution with many concentrated in the area of eastern Georgia, the *oikoumene* of the Sioni complex **(*map 1*)**.[1000] In eastern Georgia, Sioni settlements are found along the mountains and foothills, close to rivers and streams, at altitudes higher than 400 to 500 metres above sea level. The sites are open-aired, poorly stratified, and consist of a thin layer of occupation.[1001] They are characterised by a lack of architectural features. The discovery of postholes and fragments of plaster at some sites suggests that Sioni settlements were

[998] Menabde and Kiguradze 1981.
[999] Menabde and Kiguradze 1981, 14-17; Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 48-49; Sagona 2018a, 207-208.
[1000] Kiguradze and Sagona 2003, 40; Kiguradze and Menabde 2004, 362; Demetradze and Mirtskhukava 2010, 160; Sagona 2010b, 689; Sagona 2014, 30; Sagona 2018a, 203.
[1001] Kiguradze 2000, 321-322; Kiguradze 2001b, 45; Kiguradze and Sagona 2003, 40-42; Marro 2007, 10-11; Demetradze and Mirtskhulava 2010, 160; Sagona 2018a, 203-204.

characterised by lightweight, semi-subterranean, domestic architecture built from wattle-and-daub.[1002] The circular stone structure, discovered at Sioni, remains a notable exception. Rather, Sioni sites in eastern Georgia are characterised by pits, hearth remains, and ashy deposits. The material assemblages from such locations consists of grit tempered ceramics, distinctive to the Sioni complex, lithic material, stone and bone tools, and faunal remains.

Outside of Georgia, Sioni ware and its related features can be traced at Chalcolithic sites throughout Armenia, Azerbaijan, eastern Anatolia, north-western Iran, and the northern Caucasus.[1003] Here, the situation is more complex. Beyond eastern Georgia, Sioni material has been uncovered at sites in varying quantities and alongside other contemporary ceramic traditions. In particular, Sioni ware has been found together with ceramics of the Chaff-faced and the Leilatepe traditions.[1004] In such cases, Sioni ceramics form a small percentage of the ceramic assemblage which is predominantly chaff tempered. Unlike those in eastern Georgia, such sites are characterised by a diverse range of architectural features including semi-subterranean circular constructions and multi-cellular, round, and rectilinear mudbrick architecture.[1005] In the presence of mudbrick architecture and chaff tempered ceramics, such sites are attributed to the early Chaff-faced tradition and the Leilatepe complex.[1006]

[1002] Kiguradze and Sagona 2003, 40; Chikovani et al. 2010, Pl. III; Nebieridze 2010, 144-145.
[1003] Marro 2008, 11; Sagona 2018a, 203.
[1004] Narimanov 1987, 47-48; Aliev and Narimanov 2001, 18-19; Kiguradze 2001b, 51; Badalyan et al. 2004b, 405; Akhundov 2007, 116; Museibli 2007, Tab. XVII, Tab. XXII, Tab. XXIII; Palumbi 2007, 63; Museibli 2008b, 52; Museibli and Huseynov 2008, 26; Marro et al. 2009, 49; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 97-98; Sagona 2014, 26, 41; Palumbi et al. 2014, 45; Palumbi 2015b; Lyonnet 2017, 147; Palumbi et al. 2018, 124; Sagona 2018a, 203, 211; Lyonnet 2018, 563.
[1005] Narimanov 1987; Aliev and Narimanov 2001, 24-25; Kiguradze 2001b, 51; Kiguradze and Sagona 2003, 45; Huseynov 2007, 6; Huseynov and Jalilov 2007, 7-10; Museibli 2008b, 9; Lyonnet and Guliyev 2012, 85; Lyonnet et al. 2012, 98.
[1006] Museibli 2015, 61.

Although less common, Sioni material has also been discovered together with early examples of Kura-Araxes ware.[1007] At the transition between the Chalcolithic and Early Bronze Age, such ceramics may represent the tail-end of the Sioni tradition.

At many sites, a degree of hybridisation[1008] and shared attributes between the Sioni, Chaff-faced/Leilatepe, and other local ware types is clearly apparent.[1009] This complicates matters further as the boundary between these ceramic traditions has become blurred. This is seen in technological aspects, such as ceramics constructed from mixed tempered clay, and shared morphological forms including trays and necked jars with globular bodies. Surface treatment and decorative techniques are the most conspicuous of the shared features. Across the Caucasus, vessels are found comb-scraped with notched and impressed rims, lugs, and perforations.[1010] Such hybridised forms represent the material manifestation of long term local and regional interaction and the sophisticated cultural dynamics that intensified during the Chalcolithic period.[1011]

Sioni: The Excavation of the Type Site and the Discovery of a New Cultural Complex

Sioni is located along the northern outskirts of a village bearing the same name in the Marneuli district of eastern Georgia. The site is also known as "Parekhebi," which

[1007] Sagona and Sagona 2000, 59-60; Palumbi 2008a, 66; Palumbi 2008b, 40; Kakhiani et al. 2013, 27; Sagona 2018a, 204.
[1008] Here, 'hybridisation' is used in the literal sense to refer to ceramics which demonstrate a blending of technological, morphological, and/or decorative features which are attested across different contemporary traditions.
[1009] Sagona 2014, 30; Kavtaradze 2018, 84; Sagona 2018a, 211.
[1010] Akhundov 2007, 108; Museibli 2007, 68; Museibli and Huseynov 2008, 21-22; Marro et al. 2009, 52-53; Badalyan et al. 2010a, 194; Maziar 2010, 171; Lyonnet and Guliyev 2012, 89; Badalyan and Harutyunyan 2014, 163-164; Abedi et al. 2015, 325; Maziar 2015, 30; Lyonnet et al. 2017, 145; Lyonnet 2018, 554.
[1011] Sagona 2014, 23; Kavtaradze 2018, 84.

translates to "sheds," and is indicative of the recent use of the site for stock raising.[1012] Nestled amongst the foothills, Sioni is situated 600 metres above sea level and is located 60 kilometres to the south-west of Tbilisi, close to the Armenian border. Seven kilometres to the south-west is the Neolithic mound of Shulaveri which has, in part, given its name to the Aratashen-Shulaveri-Shomutepe complex.[1013] A small church is positioned atop a hill overlooking the site. In Georgian, 'Sioni' refers to "Mount Zion."[1014] 'Sioni' is a name given to many churches, cathedrals, and settlements throughout Georgia. It is likely that the small church played a role in the naming of the local village and the Sioni complex.

The First Season, 1974

Sioni was excavated between 1974 and 1979 by archaeologists Medea Menabde and Tamaz Kiguradze for the Georgian National Museum after a grave, containing ceramics, bronze pins, and a comb, was uncovered by chance.[1015] Situated along the left bank of the Khudistskali, a tributary of the Shulaveri River, the site had undergone considerable natural erosion.[1016] In 1974, archaeologists prepared for a salvage operation of a Late Bronze Age cemetery. The excavation began with a sounding trench measuring 32 square metres. The trench yielded one empty burial and two pit tombs (Late Bronze Age pit tombs 1 and 2) before there emerged quarried stone masonry in

[1012] Menabde and Kiguradze 1981, 9; Kiguradze 2001b, 52; Nebieridze 2010, 155; Sagona 2014, 30.
[1013] Kiguradze 2000, 321; Kiguradze 2001b, 52; Kiguradze and Sagona 2003, 40-41; Kohl 2007, 67; Nebieridze 2010, 155; Sagona 2010b, 685; Connor 2011, 234; Chataigner et al. 2014, 13; Courcier 2014, 587; Varoutsikos et al. 2014, 237; Sagona 2018a, 94; Baudouin 2019, 118.
[1014] N. Tskvitinidze pers. comm.
[1015] Menabde and Kiguradze 1981, 7, 43.
[1016] Menabde and Kiguradze 1981, 7; Kiguradze 2001b, 52; Kiguradze and Sagona 2003, 42; Nebieridze 2010, 155-156; Sagona 2014, 36.

the centre of the trench.[1017] Considering the feature to be connected to the burials previously uncovered, excavators removed five courses of stone before the wall demonstrated a rectilinear shape. The wall measured one metre wide and ran along the trench in a north-south direction.[1018] While excavating the stone feature, they encountered mixed deposits containing Chalcolithic ceramic and obsidian artefacts. Despite this, at the end of the first season, the function of the stone feature and the nature and origin of the Chalcolithic material remained unclear.[1019]

The Second Season, 1975

In 1975, the excavation was expanded and a second trench was opened (section "B") continuing to the west and to the east along the Khudistskali.[1020] It became apparent that Sioni was a multi-period site with its earliest deposits dating to the Chalcolithic period (***fig. 5.1***). After the Chalcolithic period, the function of the site shifted from settlement to cemetery and approximately 60 tombs, from the Middle Bronze Age to the early Medieval period, had been positioned directly over the Chalcolithic settlement.[1021]

A section of stone wall (Structure 1) came to light. The wall was four metres long and 80 centimetres to one metre wide. The structure was constructed of dry-stone masonry. Larger stones were used for the outer edges of the wall and the centre was filled with small stones and rubble. The wall was curved indicating that the structure was

[1017] Menabde and Kiguradze 1981, 7. Although not clearly indicated, the original sounding trench roughly corresponds to "A" on the site plan.
[1018] Menabde and Kiguradze 1981, 7. This wall is not depicted on the site plan. It is likely that it was removed during the first excavation, although this is not made clear.
[1019] Menabde and Kiguradze 1981, 7; Kiguradze and Sagona 2003, 42.
[1020] Menabde and Kiguradze 1981, 9.
[1021] Menabde and Kiguradze 1981, 7; Kiguradze 2001b, 53; Kiguradze and Sagona 2003, 42; Sagona 2014, 36.

round and ten to 12 metres in diameter **(*fig. 5.2*)**. Unfortunately, it was damaged by the Khudistskali and the southern and western portions had been completely eroded.[1022]

Along the northern section, the wall was cut by a Middle Bronze Age tomb (Tomb 4) measuring 2.25 metres in length by 1.15 metres in width at its widest point **(*fig. 5.3*)**. The pit was cut deeply into the Chalcolithic level with the floor of the tomb uncovered at 1.9 metres below the surface. A second interruption in the wall, along the north-eastern section of Structure 1, represents a doorway.[1023] A floor level was encountered, at 1.35 to 1.4 metres, as indicated by several pieces of rammed, limestone plaster flooring. In the centre of the structure, excavators uncovered a red baked area indicative of concentrated burning.[1024] Close to this hearth, [1025] to the north-east, is a circular pit lined with plaster walls **(*fig. 5.4*)**. The pit measured 2.3 metres deep with a structured deposit. The base of the pit was lined with pottery sherds upon which a bull's skull, complete with horns, was placed. The skull and the pottery sherds were sealed by a layer of small stones.[1026]

The Third Season, 1976

The excavations were extended to the north and south to encompass an area over 200 square metres. During this time, both trenches (sections "A" and "B") were gridded into sections measuring 20 by 20 square metres which were then subdivided

[1022] Menabde and Kiguradze 1981, 9-10; Kiguradze 2000, 322; Kiguradze 2001b, 53; Kiguradze and Sagona 2003, 42; Nebieridze 2010, 156; Sagona 2014, 36.
[1023] Menabde and Kiguradze 1981, 9, 33; Kiguradze 2001b, 53; Sagona 2014, 36.
[1024] Menabde and Kiguradze 1981, 9; Kiguradze 2001b, 53; Sagona 2014, 36. After the discovery of a second floor level in 1976, this floor is referred to as the upper floor level.
[1025] Although not stated in the excavation report, the red baked area has been labelled as a hearth (კერა) on the site plan.
[1026] Although indicated on the site plan (but not labelled), the discovery of the pit in Structure 1 is not mentioned in the excavation report. It is only mentioned in later publications. Kiguradze 2001b, 53; Sagona 2014, 36; Sagona 2018a, 206.

into smaller zones measuring two by two square metres.[1027] A stratigraphic sondage was made in an undisturbed area located in the south-eastern corner of Structure 1. At 0.5 to 0.6 metres were Medieval ceramic fragments followed by a boggy ash layer of mixed Medieval and Chalcolithic material measuring 0.2 to 0.3 metres thick. Following this layer, a layer of blackish soil, containing only Chalcolithic deposits, was attested.[1028]

The excavation of Structure 1 continued. Ten to 15 centimetres below the upper floor level, discovered in 1975, a second floor level was exposed at 1.5 metres. The lower floor also consisted of rammed limestone plaster fragments with a red baked area corresponding to the previous floor. A threshold stone discovered at 1.5 metres along the north-eastern section of Structure 1 confirmed that the second interruption along the course of the wall was a doorway.[1029] Comparing the two floor levels, the upper floor contained a large quantity of artefacts including animal bones, pottery sherds, and lithic material. The lower floor yielded fewer cultural remains. According to the excavators, both floor levels represent a single period with two occupational phases as the ceramic and lithic assemblages are homogeneous.[1030]

Attempts were made to articulate the western extent of Structure 1. The trench was extended westward, however, excavators were unable to reveal the western portion of the structure which had been damaged by the Middle Bronze Age tomb and the Khudistskali. Instead, a different type of stone masonry, unrelated to Structure 1, was discovered.[1031]

[1027] Menabde and Kiguradze 1981, 9.
[1028] Menabde and Kiguradze 1981, 9-10.
[1029] Menabde and Kiguradze 1981, 10; Kiguradze 2001b, 53; Nebieridze 2010, 156; Sagona 2014, 36.
[1030] Menabde and Kiguradze 1981, 10-12; Nebieridze 2010, 156; Sagona 2014, 36.
[1031] Menabde and Kiguradze 1981, 10. No further information regarding this structure was given in the excavation report.

The Fourth Season, 1977

The original sounding trench, excavated in 1974, was extended to the north and east to reveal three more pit burials and additional quarried stone masonry.[1032] A second curved wall fragment, similar in construction to that of Structure 1, was discovered at 0.8 metres in the eastern test pit which was opened in 1975 and 1976 (Section "A") **(*fig. 5.5*)**. Structure 2 measured 0.8 metres wide and was oriented south-east. Only 6.20 metres of the wall was revealed. The foundations of the wall were set deeper when compared to Structure 1. Unfortunately, the upper section of Structure 2 had been destroyed. Structure 2 also yielded Chalcolithic ceramic and lithic artefacts in addition to faunal remains, however, in much lesser quantities when compared to Structure 1.[1033]

Another wall, Structure 3, was found running parallel and to the west of Structure 2. Measuring 0.4 to 0.5 metres wide, Structure 3 differs in construction to structures 1 and 2. The wall was built with large stones and smaller stones were used to fill the gaps.[1034] To the north, another wall was found, similar in construction, running from west to east. This curved stone fragment may be related to Structure 3, however, it was difficult to articulate this relationship as the wall was not completely excavated.[1035] Given the differences in construction, the excavators concluded that Structure 3, and the other associated wall, were not related to structures 1 and 2. Rather, Structure 3 and the other associated wall fragment belong to a different

[1032] Menabde and Kiguradze 1981, 10.
[1033] Menabde and Kiguradze 1981, 10-11; Kiguradze 2001b, 53; Sagona 2014, 36. Structure 2 spans grids A – 04, 05, 95, 96, and 86 on the site plan.
[1034] Menabde and Kiguraze 1981, 11. Structure 3 spans grids A – 05, 06, and 96 on the site plan.
[1035] Menabde and Kiguradze 1981, 11. This wall was not given a name in the excavation report. It can be seen running along the grids B – 17, A – 07, and 97.

period.[1036] During the excavations, no other architecture was discovered. In 1978 and 1979, the focus of the fieldwork shifted to the disturbed burials throughout the cemetery. During this time, 13 Iron Age burials were uncovered.[1037]

After six seasons of fieldwork, the Chalcolithic settlement at Sioni measured 80 by 35 square metres. It is impossible to articulate the full extent of the site due to natural erosion.[1038] The stratigraphy of the site also remains problematic. The Chalcolithic levels were badly damaged, punctuated by the tombs of the Middle and Late Bronze ages, which has resulted in areas of mixed deposits. Medieval and recent land use have also contributed to the deterioration of the site. Today, there sits a disused animal shed directly on top of the Chalcolithic settlement (***fig. 5.6 and 5.7***).[1039] The site is also positioned along a slope which complicates matters further. Due to the persistent force of gravity, deposits were found to be thinner to the north than those found at the bottom, along the Khudistskali, where Chalcolithic deposits were almost one metre thick.[1040]

Chalcolithic deposits were reported to extend below the lower floor level of Structure 1. It is possible that an earlier, undefined Neolithic layer existed beneath the Chalcolithic settlement. This may account for some of the oddities seen in the ceramic and lithic assemblages which have been linked back to the Aratashen-Shulaveri-

[1036] Menabde and Kiguradze 1981, 11.
[1037] Menabde and Kiguradze 1981, 73.
[1038] Menabde and Kiguradze 1981, 11; Kiguradze 2001b, 52-53; Kiguradze and Sagona 2003, 42; Sagona 2014, 36.
[1039] Menabde and Kiguradze 1981, 11; Kiguradze 2001b, 53; Kiguradze and Sagona 2003, 42; Nebieridze 2010, 155; Sagona 2014, 36. I would like to thank N. Tskvitinidze for taking me to Sioni. I am grateful for the opportunity to visit the type site.
[1040] Menabde and Kiguradze 1981, 11; Nebieridze 2010, 155-156.

Shomutepe complex.[1041] However, recent radiocarbon samples date the occupation at Sioni between 4245/3975 to 4055/3905 B.C.E.[1042] Regardless of the complexities, the discovery of Sioni marks an important point in Georgian archaeology. It has become the defining feature of the local Transcaucasian Chalcolithic in eastern Georgia and beyond.

Sites of the Transcaucasian Chalcolithic: Sioni Settlements in Eastern Georgia

The Kvemo Kartli Region

The Marneuli District

In Kvemo Kartli, Sioni settlements are found throughout the districts of Marneuli, Tetritskaro, Bolnisi, Dmanisi, and Rustavi. Sioni settlements within the Marneuli district include Tsopi, Arukhlo VI, and Tsiteli Sopeli. Chalcolithic deposits are also attested at Araplos Gora which were found stratified beneath an occupational layer of the Kura-Araxes complex.[1043] More recently, small quantities of Sioni ware were recovered from the Late Neolithic/Early Chalcolithic levels of Gadachrili Gora.[1044] Similar materials were also recovered from the upper levels of Shulaveris Gora.[1045] Recent surveys within the vicinity of these sites has also led to the identification of several new Chalcolithic settlements which are yet to be investigated.[1046] Of the sites, Tsopi is the most comprehensively studied.

[1041] Menabde and Kiguradze 1981, 11, 16; Kiguradze 2001b, 53; Kiguradze and Menabde 2004, 359-361; Nebieridze 2010, 157-158; Sagona 2014, 36, 42; Lyonnet 2018, 562.
[1042] Sagona 2014, 36.
[1043] Kiguradze 2000, 322.
[1044] Hamon et al. 2016, 155; Batiuk et al. 2017, 173; Baudouin et al. 2018, 53; Batiuk et al. 2019, 65-67; Maghradze et al. 2019, 2.
[1045] Batiuk et al. 2019, 62.
[1046] Batiuk et al. 2019, 62.

Tsopi – Located only six kilometres to the south-east of Sioni, Tsopi is situated upon a river terrace above the left bank of the Banoshistskali River. The site covers 2.8 square kilometres and consists of three stratigraphic layers.[1047] The upper layers were damaged due to natural erosion and modern agricultural activities. Much of the material remains were recovered from the third layer, 30 centimetres below the surface, which continued to a depth of one metre before reaching clay subsoil.[1048] No architectural features were found. However, the Chalcolithic occupation is characterised by 27 circular pits (***fig. 5.8***). The pits were dug at varying depths and measured one to two metres in diameter. The pits had rammed clay floors which were often found in association with large cobble stones. This has led some to suggest that the pits were related to semi-subterranean domestic structures with stone foundations. However, the discovery of plaster fragments from Pit 4 indicates that architecture was likely characterised by lightweight, wattle-and-daube constructions. The remains of hearth installations were also recovered from the pits suggesting that they were associated with a domestic context.[1049]

Similar discoveries were made at Arukhlo VI, situated at the confluence of the Khrami and Mashavera rivers, and at Tsiteli Sopeli. Both sites yielded no evidence of architectural features, however, the settlements were characterised by a series of domestic pits. In particular, 18 pits were uncovered at Tsiteli Sopeli.[1050]

[1047] Kiguradze 2000, 322; Kiguradze and Sagona 2003, 42; Nebieridze 2010, 144.
[1048] Nebieridze 2010, 144-145.
[1049] Kiguradze and Sagona 2003, 42; Marro 2007, 90; Chikovani et al. 2010, 98; Nebieridze 2010, 67, 144-146.
[1050] Chubinishvilli et al. 1979; Gogelia 1982; Gogelia and Chelidze 1992, 28; Kiguradze and Sagona 2003, 42, 89; Chikovani et al. 2010, 98; Nebieridze 2010, 169; Mirtskhulava and Chikovani 2014, 33; Sagona 2018a, 208. During the time spent in storage, the material from Arukhlo VI has become mixed making any meaningful study of the Chalcolithic assemblage difficult. K. Kakhiani pers. comm.

The Tetritskaro District

Nachivchavebi – To the north-west of the Marneuli district, Chalcolithic sites have been uncovered within the district of Tetritskaro. Nachivchavebi is a multi-period site with deposits dating to the Chalcolithic and Early Bronze Age. It was excavated between 2003 and 2004 as part of the Tetritskaro Expedition which focused on rescue archaeology in response to the construction of the Baku-Tbilisi-Ceyhan and South Caucasus pipelines. The Chalcolithic and Early Bronze Age levels were damaged during the construction of the pipeline and the right of way.[1051] Despite this, a large amount of archaeological material was recovered from the site.

Pits are a predominant feature at Nachivchavebi (***fig. 5.9***). Forty-nine pits were uncovered during the excavations. They yielded a large amount of archaeological material mixed with black soil. Most were found in the eastern sector of the site and were positioned 1.5 to four metres apart.[1052] Cylindrical and bell-shapes were documented; bell-shaped examples were prevalent. The pits were organised into three categories based on size: small pits measured 0.7 to 0.9 metres in diameter and 0.25 to 0.3 metres deep; medium-sized pits were 1.5 metres in diameter and 0.5 to 0.7 metres deep; the largest pits were 1.7 to 1.9 metres in diameter with bases reaching up to 2.5 metres in diameter.[1053]

A semi-subterranean domestic structure and a contemporary burial were also discovered. The dwelling was round and built from a lightweight organic material. A hearth was found in the western section of the interior. A pit (Pit 31), was also uncovered

[1051] Chikovani et al. 2010, 96.
[1052] Chikovani et al. 2010, 95, 100.
[1053] Chikovani et al. 2010, 95.

immediately outside of the structure to the south-west (***fig. 5.10***).[1054] The Chalcolithic burial comprised a pit beneath a small, stone mound. The pit was circular in shape and was found 0.71 metres below the surface. An adult individual was placed along the eastern section of the floor in a crouched position (***fig. 5.11***).[1055] The discovery of domestic structures and burial features is rare among east Georgian Chalcolithic sites, which marks the settlement at Nachivchavebi as exceptional.

Samshvilde – Samshvilde is synonymous for the discovery and excavation of an Early Bronze Age settlement and cemetery between 1968 and 1974.[1056] It is situated at the confluence of the Khrami and Chivchavi rivers, four kilometres south of Tetriskaro. Two Early Bronze Age layers were uncovered: Samshvilde I and II belong to the Kura-Araxes period, however, Chalcolithic pits are also attested.[1057]

The construction of the Baku-Tbilisi-Ceyhan Pipeline necessitated rescue excavations at Samshvilde. Site IV-209 is located 1.5 kilometres east of the village of Samshvilde. It sits 925 metres above sea level on the southern hillside of the Karknali Mountain, close to the confluence of the Khrami and Chivchavi rivers.[1058] The stratigraphy of the site was disturbed due to natural erosion, land use, and construction works. With no reliable stratigraphic sequence, archaeological features were attributed to cultural periods based upon typological comparisons and relative dating.[1059]

The Chalcolithic period is represented by Pit 5 discovered 1.4 metres below the surface. The upper portion had been destroyed due to modern agricultural activities,

[1054] Chikovani et al. 2010, 96, Pl. III.
[1055] Chikovani et al. 2010, 97, Pl. IV.
[1056] Mirtskhulava 1976.
[1057] Mirtskhulava 1976; Mirtskhulava et al. 2007, 22; Badalyan 2014, 77; Sagona 2014, 29.
[1058] Mirtskhulava et al. 2007, 6; Demetradze and Mirtskhulava 2010, 154.
[1059] Mirtskhulava et al. 2007, 17; Demetradze and Mirtskhulava 2010, 155.

but it was bell-shaped measuring 0.6 metres in diameter at its base and 0.25 metres along its uppermost portion. The contents of the pit were not deposited in a structured manner and ceramics and animal bones were mixed with charcoal and ash.[1060] Similar pits are attested throughout the Tetriskaro district at sites such as Abelia.[1061] Recently, others were discovered beneath two Medieval cemeteries, at KP 74 and KP 77, which were also excavated in association with the construction of the Baku-Tbilisi-Ceyhan Pipeline.[1062]

The Bolnisi District

Dzedzvebi – Important discoveries have been made at Dzedzvebi which is situated in a large settlement plateau in the Mashavera River Valley (***fig. 5.12***). This ancient mining settlement was connected to the nearby Sakdrisi gold mine located one kilometre to the south.[1063] Radiocarbon dates from Sakdrisi indicate that extractive metallurgical techniques were first employed at the site between the second half of the fourth and the beginning of the third millennium B.C.E. Recent excavations at Dzedzvebi indicate that the earliest occupations on the plateau were contemporary with the early mining activities at Sakdrisi.[1064]

In the southernmost area of the plateau, Dzedzvebi IV is dominated by a Late Bronze Age/Early Iron Age fortified settlement. It was superimposed over earlier occupation layers including a Kura-Araxes deposit and a Late Chalcolithic level (***fig.***

[1060] Mirtskhulava et al. 2007, 18-19; Demetradze and Mirtskhulava 2010, 155.
[1061] Mirtskhulava and Chikovani 2014, 33.
[1062] Mirtskhulava et al. 2007, 22.
[1063] Stöllner et al. 2008, 277, 280; Stöllner and Gambashidze 2011, 195; Stöllner and Gambashidze 2014, 108; Stöllner et al. 2014, 24; Stöllner 2016, 223.
[1064] Stöllner et al. 2008, 272, 276; Stöllner and Gambashidze 2011, 187; Hauptmann et al. 2013, 5; Stöllner and Gambashidze 2014, 106; Stöllner et al. 2014, 3, 7, Fig. 7; Tamazashvili 2014, 153; Okrostsvaridze 2016, 105; Stöllner 2016, 217; Stöllner et al. 2016, 24, 35-39; Chernykh 2017, 480; Stöllner and Gambashidze 2017, 120.

5.13).[1065] The Late Chalcolithic remains at Dzedzvebi IV represent the earliest occupation of the plateau marked by a preponderance of pits and a lack of architectural remains. The pits were filled with ceramics and domestic materials. A copper smelting crucible and casting mould recovered from one pit further reinforced the connection of the settlement to metalworking activities.[1066] Ceramics indicate that Dzedzvebi is associated with the Sioni complex (***fig. 5.14 and 5.15***).[1067] According to radiocarbon dates, the Chalcolithic occupation at Dzedzvebi IV may be dated to the late fifth and early fourth millennium B.C.E.[1068]

The Dmanisi and Rustavi Districts

Chalcolithic material has also been discovered at Grmakhevistavi and Djavakhi in the Dmanisi district and Vaziani in the Rustavi district.[1069] However, in the absence of reliable radiocarbon dates, the chronological and cultural attribution of some sites remains problematic.

Grmakhevistavi – Grmakhevistavi is located in the village of Vardisuban, 80 kilometres to the south-west of Tbilisi.[1070] With the discovery of a small amount of Chaff-faced ware, the earliest layers have been dated to the Late Chalcolithic and associated with the 'Proto-Kura-Araxes' and Sioni assemblages. However, recent chronological revisions place the early layers within the Early Bronze Age. With a ceramic assemblage

[1065] Stöllner and Gambashidze 2011, 196; Stöllner et al. 2014, 28-29; Gambashidze et al. 2016a, 70; Stöllner 2016, 218.
[1066] Stöllner and Gambashidze 2011, 196; Hauptmann et al. 2013, 20; Stöllner et al. 2014, 28-29; Gambashidze et al. 2016b, 114-115; Stöllner 2016, 218.
[1067] Stöllner and Gambashidze 2011, 196; Stöllner et al. 2014, 29.
[1068] Gambashidze et al. 2016b, 110; Stöllner 2016, 225.
[1069] Mirtskhulava et al. 1978, 13; Chikoidze et al. 2003, 11; Kiguradze and Sagona 2003, 42; Palumbi 2008a, 25; Chikovani et al. 2010, 96; Demetradze and Mirtskhulava 2010, 161; Mirtskhulava and Chikovani 2014, 33; Sagona 2018a, 203.
[1070] Mirtskhulava et al. 1978, 13; Kiguradze and Sagona 2003, 42; Palumbi 2008a, 25; Demetradze and Mirtskhulava 2010, 161.

that is characterised by a prevalence of Kura-Araxes Monochrome ware, the earliest finds from Grmakhevistavi fit comfortably within the Kura-Araxes I period rather than the Chalcolithic.[1071]

The Tbilisi Area

To the north east, Chalcolithic deposits are also attested at the sites of Delisi, Didube, and Treli in the Tbilisi area.[1072] Given the disturbed nature the sites and lack of reliable radiocarbon dates, their chronological and cultural affiliation with Sioni remains dubious.

Delisi – Delisi, located close to the Tbilisi city centre, was discovered in 1972 during construction along Vasha Pshavela Avenue, which destroyed much of the site. The continual occupation of the area and recent building activities resulted in mixed deposits: Middle Bronze Age artefacts, mixed with Chalcolithic/Early Bronze Age material.[1073]

Most of the material was recovered from the excavations in 1972, but in 1976, two occupation layers, separated by 20 centimetres of sterile soil, were identified five metres below the surface. Each layer measured 15 centimetres thick, however, both were damaged during construction.[1074] The lower layer was characterised by a large amount of charcoal and ash. No architectural plan was discerned. However, the discovery of over 100 posthole and fragments of wattle-and-daub is suggestive of lightweight structures.[1075] Despite the disturbed nature of the site, the discovery of

[1071] Abramishvili et al. 1980, Pl. 11.105; Kiguradze and Sagona 2003, 42; Palumbi 2008a, 25-26, 46; Badalyan 2014, 77; Sagona 2014, 27.
[1072] In 2017, I viewed a sample of the materials from Delisi, Didube, and Treli. I am very grateful to M. Abramishvili for sharing them with me.
[1073] Abramishvili 1978, 28-29; Kiguradze and Sagona 2003, 42; Mirtskhulava and Chikovani 2014, 33.
[1074] Abramishvili 1978, 28-29; Kiguradze and Sagona 2003, 42.
[1075] Abramishvili 1978, 28-29; Kiguradze and Sagona 2003, 42.

handmade ceramics, tempered with grit and obsidian, have been associated with the Sioni complex.[1076]

Didube – Didube was also discovered due to construction works close to the Tbilisi city centre. It was excavated in the 1930s revealing a settlement and a cemetery. Little has been published, however, the earliest levels consist of a series of pits.[1077] Much of the material from Didube has been attributed to the early stages of the Kura-Araxes, however, material from the Chalcolithic period has also been attested.[1078] On a relative chronological basis, the site has been dated to the late fourth millennium B.C.E. and radiocarbon dates confirm this, placing the site between 3300 to 3060 B.C.E.[1079]

Treli – Treli is situated along the northern outskirts of Tbilisi in the southern region of the Dighomi massif and along both banks of the Dighmura River. Excavations began in 1969 due to the reconstruction of the Georgian Military Highway uncovering a Late Bronze Age to Early Iron Age settlement and cemetery.[1080] However, the site has experienced an intense level of human activity over a prolonged period of time. The earliest levels have been typologically dated to the beginning of the Early Bronze Age around the mid-fourth millennium B.C.E. Burials dating to the Middle Bronze Age, the Classical period, and the Medieval period are also documented.[1081]

[1076] Palumbi et al. 2014, 47.
[1077] Kiguradze and Sagona 2003, 42; Palumbi 2008a, 38.
[1078] Kuftin 1941, 89-90; Kuftin 1943, 357; Palumbi 2008a, 38; Badalyan 2014, 77; Sagona 2014, 29.
[1079] Koridze 1955; Kiguradze and Sagona 2003, 42, Note 1.
[1080] Abramishvili and Gotsiridze 1978, 34-37; Kiguradze and Sagona 2003, 42; Palumbi 2008a, 28; Puturidze et al. 2012a; Puturidze et al. 2012b.
[1081] Abramishvili and Gotsiridze 1978, 34-37; Kiguradze and Sagona 2003, 42; Puturidze et al. 2012a; Puturidze et al. 2012b.

Three stratigraphic levels, ten to 14 centimetres thick, were identified. The Early Bronze Age level was discovered three metres below the surface.[1082] Six domestic, bell-shaped pits were uncovered presenting evidence of burning. Postholes, fragments of wattle-and-daub, plaster flooring, and hearth fragments were also found. The corner of a structure with stone foundations was also discovered but not fully excavated.[1083] Of the 252 burials, only three (burials 26, 54, and 236) were dated to the Early Bronze Age. The burials were disturbed owing to the continual use of the site as a cemetery in later periods.[1084]

The chronological and cultural affiliation of Didube and Treli remain problematic. The heavily disturbed nature of both sites and the prevalence of mixed deposits make it difficult to connect either site to Sioni.[1085] At Treli, the ceramic material from the earliest pits and graves is Kura-Araxes Monochrome ware. A small amount of Chaff-faced ware was recovered. However, Chaff-faced ware represents a small percentage of the assemblage and likely embodies the last vestiges of the Late Chalcolithic tradition.[1086] There is no evidence to suggest that the earliest levels discovered at Treli, or Didube, should be associated with the Sioni complex.

[1082] Abramishvili and Gotsiridze 1978, 34-37; Kiguradze and Sagona 2003, 42; Palumbi 2008a, 28; Puturidze et al. 2012a; M. Abramishvili pers. comm.
[1083] Abramishvili and Gotsiridze 1978, 34-37; Kiguradze and Sagona 2003, 42; Palumbi 2008a, 28; Puturidze et al. 2012a; M. Abramishvili pers. comm.
[1084] Abramishvili and Gotsiridze 1978, 34-37; Kiguradze and Sagona 2003, 42; Palumbi 2008a, 28; Puturidze et al. 2012a; Puturidze et al. 2012b; M. Abramishvili pers. comm.
[1085] Lyonnet 2018, 550. The materials collected from Treli and Delisi were stored in a facility which was partially destroyed during an electrical fire in 1998. Much of the material was destroyed and what remains of the collection is heavily mixed. M. Abramishvili pers. comm.
[1086] Abramishvili and Gotsiridze 1978, 34-37; Kiguradze and Sagona 2003, 43; Palumbi 2008a, 28; M. Abramishvili pers. comm.

The Kakheti Region

To the north-east, a cluster of Chalcolithic settlements were discovered in the Kakheti region along the Alazani and Iori river basins. Excavated during the late 1970s and early 1980s, sites were found along the main course of the Alazani River and its tributaries. In contrast, sites in the Iori River Basin occupy a different ecological niche along the foothills.[1087]

Alazani III – Chalcolithic material was discovered at a series of low-lying mounds referred to as Alazani I, II, III, and IV. Little is known of Alazani I and II, which were destroyed during the 1950s.[1088] At Alazani IV, a series of pits were discovered.[1089] Alazani III, also known as Kviriastskali, is the best studied of the sites. It is located close to the villages of Tsitelgorebi and Tamariani and is positioned along the bank of the Kviriastskali River, a left tributary of the Alazani River. The site was discovered in 1976 with excavations beginning in 1977.[1090]

Alazani III is a low mound measuring 70 metres in diameter at its base. Along its eastern side, the mound reaches a height of one metre before tapering to the level of the valley floor along its northern and western sides. It has been damaged due to natural erosion and anthropogenic activities. The site had been ploughed regularly over the years and the surface is also cut by a drainage canal measuring over two metres deep.[1091]

[1087] Varazashvili 1992, 17.
[1088] Kiguradze and Sagona 2003, 42-44.
[1089] Gogelia and Chelidze 1992, 62-63; Kiguradze and Sagona 2003, 42-44.
[1090] Varazashvili 1992, 18; Kiguradze and Sagona 2003, 42-44; Nebieridze 2010, 170; Mirtskhulava and Chikovani 2014, 33.
[1091] Varazashvili 1992, 19; Kiguradze and Sagona 2003, 42-44.

The distribution of surface finds suggests that, in addition to the mound itself, the Chalcolithic settlement extended over an area of 200 by 150 square metres to the south. The mound represents the remains of a kurgan, dating to the Bedeni period, which had been superimposed over the Chalcolithic occupation. The kurgan comprises a ring of stone covered with a mound of earth.[1092]

The Chalcolithic settlement is represented by a thin layer measuring 20 to 30 centimetres thick (***fig. 5.16***). Below the Chalcolithic deposit was a sterile, yellow clay subsoil. No architectural features were distinguished. The Chalcolithic occupation is represented by 13 pits cut into the subsoil. Six of the pits (pits 1, 2, 3, 4, 5, and 7) were uncovered at the top of the mound. The remaining seven pits were found 60 to 70 metres to the south of the mound.[1093]

The pits ranged from 0.40 to 1.20 metres in diameter and measured 0.50 to 0.80 metres deep. They were cylindrical, except for Pit 7 which was bell-shaped, and each had a rammed clay base. None of the pits were plastered. Pottery sherds, lithic material, stone and bone tools, and faunal remains were recovered from the fill. Two were filled entirely with ashy deposits.[1094]

The remains of a large ditch were also uncovered close to the southern wall of the drainage canal. The ditch measured five metres and was cut into the subsoil. It measured 1.20 metres wide and one metre deep. The fill of the ditch consisted of black

[1092] Varazashvili 1992, 19-20; Kiguradze and Sagona 2003, 42-44, Note 4; Nebieridze 2010, 170; Mirtskhulava and Chikovani 2014, 33; Lyonnet 2018, 557.
[1093] Varazashvili 1992, 20-21; Kiguradze and Sagona 2003, 42-44; Nebieridze 2010, 170.
[1094] Varazashvili 1992, 20-21; Nebieridze 2010, 170.

earth mixed with Chalcolithic artefacts.[1095] However, the function of the ditch remains unclear.

Mtserlebis Mitsa – One kilometre to the south-west of Alazani III is Mtserlebis Mitsa, a multi-layered settlement dated to the Chalcolithic period. It is flat with few features to distinguish the settlement from the surrounding valley floor. According to the distribution of surface finds, the Chalcolithic settlement is estimated to have covered an area of 120 by 150 square metres.[1096]

Test trenches were opened to reveal a thick occupational deposit characterised by pits, postholes, and consecutive layers of densely packed clay. In the second test trench, opened at the centre of the site, two pits were discovered 0.40 metres below the surface. They were cut into a thin layer of densely packed clay and continued into underlying ashy deposits to a depth of 0.90 metres. The opening of the pits, measuring one metre in diameter, were cut into the overlying layer of humus, 0.40 metres thick, to a dense layer of clay.[1097]

Ten metres from the second test trench, a third trench was opened to reveal five consecutive layers of densely packed clay, each measuring 0.30 to 0.40 metres thick.[1098] Below the lowest layer of clay, a rammed clay floor was discovered above sterile soil. Postholes were found in association with this floor level in addition to a thin layer of ash and slag. Including the five clay layers, six building horizons were identified in the third test trench, which exceeded 1.70 metres in depth.[1099] In a fourth test trench, 30 metres

[1095] Varazashvili 1992, 35.
[1096] Varazashvili 1992, 48; Nebieridze 2010, 170; Chikovani 2011, 265-266; Mirtskhulava and Chikovani 2014, 33.
[1097] Varazashvili 1992, 48.
[1098] Varazashvili 1992, 48.
[1099] Varazashvili 1992, 48-49.

to the west, cultural deposits measured 1.20 metres thick. Pottery sherds, obsidian, and stone and bone tools were recovered from the occupational layers. The ceramics from Mtserlebis Mitsa are similar to those recovered from Alazani III.[1100]

Damtsvari Gora – Another well-studied site is Damtsvari Gora located two kilometres to the north-west of Alazani III. Discovered in 1977, this small mound, 40 metres in diameter, rises one metre above the valley floor. It dates to the Late Bronze Age when the site functioned as a burial ground for a nearby ancient settlement located 300 to 400 metres to the south-west.[1101] The burials were encountered along the summit of the mound where graves were cut into one another and superimposed above each other. The mound is distinguished by a layer of burnt, red earth which may be the result of funerary rituals involving fire.[1102]

Beneath the uppermost level, represented by the layer of burnt, red earth, were three stratigraphic units. The next layer comprised weathered soil and the burials of the Late Bronze Age. Under this Late Bronze Age cemetery was a thin layer of occupation, 25 to 30 centimetres thick, dated to the Chalcolithic period. Below the Chalcolithic occupation was a sterile layer of yellow clay subsoil.[1103]

The Chalcolithic deposit yielded no architectural remains. The settlement was characterised by three ditches and a series of pits cut into the subsoil (***fig. 5.17***). Ditch 1 was the largest and a section was uncovered along the eastern perimeter of the trench.

[1100] Varazashvili 1992, 49; Nebieridze 2010, 170; Chikovani 2011, 265-266; Mirtskhulava and Chikovani 2014, 33.
[1101] Varazashvili 1992, 32-33; Kiguradze and Sagona 2003, 44; Chikovani 2005, 65; Chikovani 2010, 89; Nebieridze 2010, 173; Mirtskhulava and Chikovani 2014, 33.
[1102] Varazashvili 1992, 33; Kiguradze and Sagona 2003, 44.
[1103] Varazashvili 1992, 34; Kiguradze and Sagona 2003, 44; Chikovani 2005, 65; Marro 2007, 90; Marro 2008, 10-11; Chikovani 2010, 89; Nebieridze 2010, 173; Mirtskhulava and Chikovani 2014, 33; Lyonnet 2018, 557; Sagona 2018a, 203.

Curvilinear in shape, the diameter of the ditch could not be determined, however, it may have encircled the entire settlement. The ditch measured 1.5 to 1.7 metres in width and reached a depth of 0.7 to 0.8 metres.[1104]

To the east, a second, smaller ditch was partly cut into the first. Ditch 2 was completely exposed and measured 13 metres in diameter and 1.2 to 1.3 metres wide. Ditch 3 was uncovered in the north-eastern area of the excavation and measured 1.2 metres wide and one to 1.2 metres deep.[1105] The function of the ditches remains unclear, but the largest ditch, Ditch 1, may have served a defensive purpose.[1106] The two smaller ditches may have served as animal enclosures.[1107] However, such suggestions remain tentative.

In time, the ditches were filled, and pits were dug throughout the area. Twenty-six pits were exposed ranging from 0.4 to 1.2 metres in diameter and 0.5 to 0.8 metres deep. Many were concentrated in the area between ditches 2 and 3 and several were found cut into one another or superimposed above each other.[1108] Two were found inside the circular ditches. Pit 26 was found close to the centre of Ditch 2. Pit 15 was found inside Ditch 3. Several pits were cut into the ditches and their fill. Pits 22 and 23 were cut into the sides of Ditch 1. Pit 3 was found cut into the interior edge of Ditch 2.[1109] The contents of Pit 3 were burnt *in situ.* The pits likely functioned within a domestic

[1104] Varazashvili 1992, 34; Kiguradze and Sagona 2003, 44.
[1105] Varazashvili 1992, 34; Kiguradze and Sagona 2003, 44.
[1106] Varazashvili 1992, 42.
[1107] Varazashvili 1992, 42.
[1108] Varazashvili 1992, 35-36, Tab. 2; Kiguradze and Sagona 2003, 44.
[1109] Varazashvili 1992, 35-35, Tab. 2.

context, however, without a detailed stratigraphy, it is difficult to ascertain if some of them were structured deposits.[1110]

Shavtskala – Located 600 to 700 metres to the west of Damtsvari Gora, Shavtskala takes its name from the Shavtskala river, which runs along the western edge of the settlement. It is a small mound, 50 to 60 metres in diameter, which rises slightly above the surrounding valley. Stretching from the east to the west, a drainage canal has been dug through the centre of the site resulting in disturbed cultural deposits.[1111] No architectural remains were exposed, however, at the summit of the mound, excavations along the drainage canal yielded three partially preserved pits. Half of the third pit had remained intact. The pit was cylindrical with a rammed clay floor. The pit measured one metre in diameter and 1.20 metres deep.[1112] Finds from the pits and the disturbed soil, removed during the digging of the drainage canal, include ceramics, obsidian lithics, bone tools, and faunal remains. The ceramics from Shavtskala bear close affinities with those from Alazani III.[1113]

Other related settlements in the Alazani and Iori river basins include Nadikari, nestled along the foothills of the Zivgomir Range 800 metres above sea level, and Goranamosakhlari 3, in addition to Tsitelgorebi 3, and Ul'yanovka in the Lagodekhi district.[1114]

[1110] Varazashvili 1992, 34-35.
[1111] Varazashvili 1992, 50.
[1112] Varazashvili 1992, 50.
[1113] Varazashvili 1992, 50; Nebieridze 2010, 173; Mirtskhulava and Chikovani 2014, 33.
[1114] Varazashvili 1992, 52; Kushnareva 1997, 30; Chikovani et al. 2010, 100; Nebieridze 2010, 173; Mirtskhulava and Chikovani 2014, 33; Sagona 2018a, 189, 203.

Mtskheta-Mtianeti and Shida Kartli Regions

To the north-west of Kakheti, Sioni settlements have been found in Mtskheta-Mtianeti and Shida Kartli. Many of the settlements, including Zhinvali, Kvemo Aranisi, Chinti, Bodorna, and Abanoskhevi, are positioned along the main course of the Aragvi River. The sites were excavated during the 1970s and 1980s as part of the Zhinvali Expedition in response to the construction of the Zhinvali Hydroelectric Dam.[1115]

Zhinvali – Zhinvali, also known as Khertvisi, is the most well-studied, multi-period site. Situated in the Dusheti district, the site takes its name from a nearby village and was positioned along the right bank of the Aragvi River. Today, the site is submerged beneath the Zhinvali Water Reservoir. Tombs dating to Late Antiquity were discovered during agricultural works. Beneath the Late Antique burials, and 0.9 metres beneath the surface, Chalcolithic deposits were discovered. The Chalcolithic layer measured 0.60 to one metre thick with two phases separated by a sterile layer 15 to 20 centimetres thick.[1116]

No architectural remains were uncovered, however, three circular, domestic pits were discovered. Ceramics recovered from these pits bear close affinities with the Sioni complex.[1117] A single radiocarbon sample was taken from the Chalcolithic deposit. The

[1115] Chikovani 1999, 19-20; Kiguradze and Sagona 2003, 44-45; Chikovani 2005, 64-65; Marro 2008, 10-11; Chikovani 2010, 89; Nebieridze 2010, 169; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 33; Rova 2014, 50; Shanshashvili and Narimanishvili 2014, 252; Sagona 2018a, 203.
[1116] Kiguradze and Sagona 2003, 44-45; Chikovani 2005, 64- 65; Nebieridze 2010, 169-170; Chikovani 2010, 89; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 22; Sagona 2018a, 208.
[1117] Kiguradze and Sagona 2003, 89; Chikovani 2005, 64; Marro 2007, 90; Marro 2008, 10-11; Nebieridze 2010, 180-181; Mirtskhulava and Chikovani 2014, 33.

calibrated date situated the settlement within the late sixth to early fifth millennium, from 5237 to 4636 B.C.E.[1118]

Not far from Zhinvali are the sites of Kvemo Aranisi, Chinti, and Bodorna. Kvemo Aranisi, also referred to as Akhali Zhinvali, is another multi-period settlement. Chalcolithic deposits, associated with Sioni, were found cut by pits and various architectural units of a Kura-Araxes settlement.[1119] Close by, taking its name from a nearby village, Chinti is situated on a slope along the right bank of the Aragvi River. No architectural features were uncovered, however, a large ditch was exposed. The assemblage, recovered from the fill of ditch, was relatively dated to the Chalcolithic and associated with the Sioni complex.[1120] Further south, not far from the Bulachauri Reservoir, obsidian tempered ceramics, with comb-scraped surfaces and rims decorated with oblique notches and circular impressions, were discovered at Bodorna.[1121]

Abanoskhevi – Abanoskhevi refers to a group of three sites located in a village bearing the same name. The sites are located along the banks of the Abanoskhevi River, a left tributary of the Aragvi River. The sites include 'Khishmiaant Mitsebi,' 'Nakalakari Khidarario,' and 'Mtsiturebis Mamuli.' Abanoskhevi-Mtsiturebis Mamuli, yielded evidence of a Chalcolithic occupation.[1122]

[1118] Kiguradze and Sagona 2003, Note 1; Nebieridze 2010, 170; Chikovani 2011, 266; Mirtshulava and Chikovani 2014, 34.
[1119] Kiguradze 2000, 322; Kiguradze and Sagona 2003, 44-45; Chikovani 2005, 64; Chikovani 2010, 89; Nebieridze 2010, 170; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 33; Rova 2014, 50; Shanshashvili and Narimanishvili 2014, 252; Sherazadishvili 2014, 168.
[1120] Chikovani 1999, 19-20; Kiguradze and Sagona 2003, 44-45; Chikovani 2005, 65; Chikovani 2010, 89; Nebieridze 2010, 169; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 33.
[1121] Ramishvili 1982, 25-46; Marro 2008, 10-11; Nebieridze 2010, 169; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 33; Palumbi et al. 2014, 47; Sagona 2018a, 203.
[1122] Chikovani 1999, 19-20; Kiguradze and Sagona 2003, 44-45; Chikovani 2010, 89; Nebieridze 2010, 169; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 33; Sagona 2018a, 203.

Abanoskhevi-Mtsiturebis Mamuli is a multi-period site. An early Kura-Araxes settlement was found directly above the Chalcolithic occupation. A sterile layer of clay, one to 1.6 metres thick, separated the Chalcolithic from the Early Bronze Age levels indicating a break in the occupation of the site. Material dating to the Chalcolithic period was found in a thin, organic layer 30 to 40 centimetres thick. No architectural remains were uncovered from the Chalcolithic level.[1123]

Nichbisi – Other Chalcolithic settlements include Nichbisi and Tandistkaro 1. The former is located in the Mtskheta district. The settlement is situated upon a terrace along the right bank of the Kura River.[1124] Chalcolithic deposits were discovered during the excavation of Late Bronze Age burials. Excavations began in 1988, when a trench, measuring 70 square metres, was opened.[1125] The Chalcolithic remains measured 0.70 metres deep and consisted of a single layer of occupation. Owing to the Late Bronze Age burials and the recent use of the site for the cultivation of orchards and vegetables, the Chalcolithic deposit had been badly disturbed. As a result, no discernible architectural plan or structural remains were discovered. [1126]

In the southern portion of the trench, an elongated hearth was discovered measuring one metre by 0.70 metres. Surrounding the hearth were flint and obsidian lamellae, pottery sherds, and animal bones. Four metres to the north of the hearth was a circular pit filled with burnt clay. The pit measured 0.40 metres in diameter and was 0.30 metres deep.[1127] Artefacts from Nichbisi include handmade, grit tempered

[1123] Kiguradze and Sagona 2003, 44-45; Nebieridze 2010, 180.
[1124] Chikovani 2001, 16; Kiguradze and Sagona 2003, 44; Nebieridze 2010, 172; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 33.
[1125] Chikovani 2001, 16.
[1126] Chikovani 2001, 18.
[1127] Chikovani 2001, 16.

ceramics, flint and obsidian lamellae, and large basalt stones. Tools made from horn and animal bone are also present. The ceramics are closely related to the Sioni complex.[1128]

Tandistkaro 1 – Tandistkaro 1 is located to the north-west of Tbilisi, in the district of Gori, and is situated one kilometre to the east of the village of Kheltubani. This small settlement was discovered in 1983 during the excavation of a Bronze Age kurgan. Excavations of the Chalcolithic occupation layer began in 1986.[1129] The Chalcolithic settlement is estimated to cover an area of 250 square metres consisting of a single layer measuring 0.50 to 0.55 metres thick. This level had been disturbed by anthropogenic activities including the construction of the Bronze Age kurgan, other Bronze Age tombs, and refuse pits of the Medieval Period.[1130] As a result, no discernible architectural plans or features were apparent in the Chalcolithic layer. In the centre of the settlement, fragments of plaster flooring were discovered, which had been disturbed during the construction of the Bronze Age kurgan. Five cylindrical and bell-shaped, domestic pits (pits 7, 8, 10, 11, and 13) were also found.[1131]

Pits 10 and 11 were noteworthy. Pit 10 was cylindrical measuring 70 centimetres in diameter and 30 centimetres deep. It contained a large volume of ceramics and 83 different stone tools.[1132] Pit 11 was a bell-shaped pit 65 centimetres deep. The upper diameter of the opening was 80 centimetres while the base measured 90 centimetres. The fill was blackened from traces of fire and the floor demonstrated evidence of fire indicating that the contents were burnt *in situ*. Inside the pit, broken stone tools and

[1128] Chikovani 2001, 16; Kiguradze and Sagona 2003, 44; Nebieridze 2010, 172; Mirtskhulava and Chikovani 2014, 33.
[1129] Chikovani 1999, 19; Kiguradze and Sagona 2003, 44; Nebieridze 2010, 171; Chikovani 2011, 265.
[1130] Chikovani 1999, 19; Nebieridze 2010, 171.
[1131] Chikovani 1999, 19; Nebieridze 2010, 171.
[1132] Chikovani 1999, 19.

ceramic vessels were found. Some of the vessels contained carbonised cereal grains including *Hordeum* (barley) and *Triticum* (wheat).[1133] Pit 11 may have been a structured deposit. Traces of fire and the presence of, perhaps intentionally, broken stone tools and vessels of grain is suggestive of ritualistic behaviour. Much like pits at other contemporary sites, some of the pits at Tandistkaro 1 may have had a symbolic function beyond activities of refuse disposal and storage.

Berikldeebi – Berikldeebi is an outlier amongst the Chalcolithic sites of eastern Georgia. Characterised by monumental, rectilinear mudbrick architecture, Berikldeebi stands in stark contrast to the thin occupational deposits, the lack of architectural remains, and the prevalence of pits that distinguishes Chalcolithic settlements throughout the rest of eastern Georgia. Originally attributed to the Sioni complex, only a small number of Sioni ceramics are present in an assemblage consisting of Chaff-faced ware.[1134] This is reflective of a wider pattern that emerges at sites outside of eastern Georgia, particularly in northern Azerbaijan, where features of the Sioni complex are found alongside those of the Chaff-faced and Leilatepe traditions.

The Samtskhe-Javakheti Region

Bavra Ablari – Beyond eastern Georgia, Chalcolithic settlements have recently been discovered in the Samtskhe-Javakheti region. Recent evidence comes from the Bavra Ablari rock shelter located close to the city of Akhalkalaki. The site is situated 1660 metres above sea level in a gorge at the confluence of the Paravanitskali, a tributary of

[1133] Chikovani 1999, 19.
[1134] Zavaxisvili 1998, 11, 15; Kiguradze 2000, 322; Kiguradze 2001b, 45, 49; Kiguradze and Sagona 2003, 44; Makharadze 2007, 127-128; Marro 2007, 79; Lyonnet 2009, 8; Nebieridze 2010, 174-175; Courcier 2014, 594-595; Sagona 2014, 16, 27; Museilbi 2015, 61; Lyonnet 2018, 550; Sagona 2018a, 193-194.

the Kura and Ablari rivers (***fig. 5.18***). The rock shelter sits on a terrace eight metres above the bank of the Paravanitskali River.[1135] The site measures 15 metres by eight metres, however, the site may have been up to 20 percent larger than what is currently preserved. Anthropogenic activity is responsible for the deterioration of the site. A decade ago, the construction of a road alongside the Paravanitskali River cut across the terrace resulting in the collapse of the base of the rock shelter.[1136]

Bavra Ablari is unique as it provides evidence for successive phases of occupation stretching over several millennia. However, cultural deposits within the shelter are heavily disturbed. Anthropogenic activities inside the cave have resulted in mixed upper deposits. Three Medieval burials, dating from the tenth to the 15th centuries, and two modern burials, belonging to the 19th and 20th centuries, were found cut into earlier deposits dating to the Early Bronze/Middle Bronze Age transition.[1137] Due to natural erosion, the shelter has experienced areas of collapse and a series of landslides. The development of a temporary water source in the south-western corner of the rock wall has resulted in leached sediments and mixed deposits. Processes of natural erosion are also likely to be responsible for the uneven distribution of cultural deposits throughout the shelter.[1138] Such processes would have determined the suitability of certain areas within the cave for human habitation.

[1135] Varoutsikos et al. 2012, 49; Varoutsikos et al. 2015, 4; Varoutsikos et al. 2014, 47; Varoutsikos et al. 2018, 239.
[1136] Varoutsikos et al. 2013, 62; Varoutsikos et al. 2014, 48-49; Varoutsikos et al. 2015, 6; Varoutsikos et al. 2018, 239.
[1137] Varoutsikos et al. 2012, 50; Varoutsikos et al. 2014, 47, 50-51; Varoutsikos et al. 2015, 4; Varoutsikos et al. 2018, 239.
[1138] Varoutsikos et al. 2013, 62; Varoutsikos et al. 2014, 48-49; Varoutsikos et al. 2015, 8.

Seven stratigraphic layers have been identified within the rock shelter (***fig. 5.19***). Layers 1 and 2 represent Chalcolithic occupational deposits. Ceramics recovered from theses layers are associated with the Sioni complex.[1139] Layer 1 represents the Late Chalcolithic. A radiocarbon date indicates that this phase belongs to the early fourth millennium from 3954 to 3789 B.C.E. Layer 2 belongs to the Early to Middle Chalcolithic period. Radiocarbon dates place this phase within the fifth millennium from 5000 to 4250 B.C.E.[1140]

Evidence of the Chalcolithic occupation has been uncovered throughout the entirety of the excavated area indicating that the Chalcolithic inhabitants made full use of the space available within the rock shelter.[1141] The assemblages from layers 1 and 2 are homogeneous and represent a continuous cultural unit. The distinguishing factor between the two layers is a sedimentary change. From the Early to Middle Chalcolithic occupation, a brown-grey clay matrix transitions into a dark brown-black deposit in the Late Chalcolithic level. Although subtle, the subdivision of these two layers is supported by the radiocarbon dates.[1142]

Understanding the Chalcolithic occupation at Bavra Ablari is difficult due to large slabs of stone and boulders overlying the occupational deposits. Nevertheless, concentrated foci of human activity and built installations were identified. The Early to Middle Chalcolithic occupation is the best-preserved. Layer 2 is 20 to 40 centimetres

[1139] Varoutsikos et al. 2012, 50-55; Varoutsikos et al. 2013, 63-66; Varoutsikos et al. 2014, 52-54; Varoutsikos et al. 2015, 4; Varoutsikos et al. 2018, 240, 246.
[1140] Varoutsikos et al. 2014, Tab. 1; Varoutsikos et al. 2015, Tab. 1; Varoutsikos et al. 2018, 240, Tab. 1.
[1141] Varoutsikos et al. 2014, 52; Varoutsikos et al. 2015, 8.
[1142] Varoutsikos et al. 2012, 50-51; Varoutsikos et al. 2013, 64-65; Varoutsikos et al. 2014, 53-54, Tab. 1; Varoutsikos et al. 2015, 5, Tab 1; Varoutsikos et al. 2018, 245, Tab. 1.

thick in which at least four phases of occupation have been identified.[1143] Human activities, represented by burnt faunal remains, lithic debitage, and ceramics, were found concentrated in the western area of the shelter, along the rock wall.[1144] Fixed installations include various types of hearths: simple, shallow fire pits, a pit lined with small stones, and a structure in which stones were positioned vertically. Depressions, which may represent postholes, suggest that lightweight constructions may have been built within the vicinity of the rock shelter.[1145] However, the presence of structural remains cannot be confirmed. Much like Layer 2, in Layer 1, human activity is attested by concentrations of artefacts along the walls of the shelter.[1146] No structural remains were present, however, hearths were found superimposed over those of the previous period.[1147] The material from Layer 1 has been disturbed by the activities of later periods (levels 0A and 0B).[1148]

From the deposits, it is clear that the rock shelter was occupied intensively during the Chalcolithic period. In Layer 2, during the Early to Middle Chalcolithic, the rapid accumulation and depth of the deposit suggests that the rock shelter may have served as a long term, semi-permanent settlement in the context of semi-nomadic transhumance. Given the absence of structural remains it seems more likely that the site was occupied repeatedly over a short period of time. This pattern of seasonal occupation continued into the Late Chalcolithic period as demonstrated by Layer 1.[1149]

[1143] Varoutsikos et al. 2012, 51; Varoutsikos et al. 2013, 64-65; Varoutsikos et al. 2018, 239.
[1144] Varoutsikos et al. 2012, 50-51; Varoutsikos et al. 2014, 53; Varoutsikos et al. 2018, 246.
[1145] Varoutsikos et al. 2012, 51; Varoutsikos et al. 2013, 65; Varoutsikos et al. 2014, 53; Varoutsikos et al. 2015, 8; Varoutsikos et al. 2018, 246.
[1146] Varoutsikos et al. 2014, 53; Varoutsikos et al. 2018, 245.
[1147] Varoutsikos et al. 2014, 53; Varoutsikos et al. 2018, 246.
[1148] Varoutsikos et al. 2012, 51; Varoutsikos et al. 2015, 6-7.
[1149] Varoutsikos et al. 2014, 53; Varoutsikos et al. 2015, 5; Varoutsikos et al. 2018, 246.

Orchosani – Several Chalcolithic settlements have also been uncovered in the district of Akhaltsikhe. The sites were discovered during the construction of the Baku-Tbilisi-Ceyhan and South Caucasus pipelines when cultural deposits were disturbed, prompting salvage excavations.[1150] Orchosani (IV-323 KP 249) is situated 1000 metres above sea level on a terrace stretching from north-east to south-west. Cultural deposits were discovered along the right bank of the Potskhovi River, 80 to 100 metres above the water's edge.[1151]

Excavations indicate that the site had been continuously occupied since the fourth millennium B.C.E.[1152] Excavations took place along the route of the Baku-Tbilisi-Ceyhan pipeline. Areas immediately to the north and south of the pipeline remained unexcavated and the full extent of the site was not determined. Despite this, two stratigraphic units were identified. The uppermost layer (Layer I) was discovered 0.2 metres below the topsoil. This layer measured one to 1.2 metres thick and was characterised by an Early to Late Medieval settlement and burial complex. The second layer (Layer II) measured 1.2 to 1.5 metres thick.[1153] This layer was punctured by a series of household pits dating to the Early Bronze Age and the Kura-Araxes complex.[1154]

In Area D, between 1.4 and 1.8 metres below the topsoil, 18 domestic pits were uncovered **(*fig. 5.20*)**. The pits were cylindrical or bell-shaped with flat or concave bases. The pits measured 0.8 to 3.4 metres in diameter and 0.32 to one metre in depth **(*fig. 5.21 and 5.22*)**. A small number of Chalcolithic sherds were also recovered from these

[1150] Baramidze and Pkhakadze 2007, 3-4; Baramidze et al. 2007, 2-3; Taylor et al. 2011, 162; Baramizde and Pkhakadze 2014, 461.
[1151] Baramidze et al. 2007, 5.
[1152] Baramidze et al. 2007, 27; Taylor et al. 2011, 162.
[1153] Baramidze et al. 2007, 4, 14.
[1154] Baramidze et al. 2007, 14; Taylor et al. 2011, 162.

pits together with Kura-Araxes material.[1155] It is unclear from which of the pits the Chalcolithic material was recovered. However, trays and vessels with vertical ledges, positioned beneath the rim, were recovered in addition to sherds with perforations and comb-scraped surfaces.[1156]

Chorati – Chalcolithic material was also recovered from Chorati (Site IV-261 KP 241+600). It is situated 1.5 kilometres to the north-west of the town of Vale and is positioned upon a terrace 70 to 100 metres above sea level. The terrace runs along the right bank of the Potskhovi River and covers an area measuring ten hectares.[1157]

Salvage excavations revealed two stratigraphic layers. The lowermost comprised a cemetery dating to the Classical period. The upper layer was characterised by an Early Medieval settlement consisting of several domestic structures and pits. Along the terrace, archaeological evidence indicates that the site was occupied continuously over an extended period of time. In the areas immediately adjacent to the north and south of the excavated area, material dating to the Lower Palaeolithic period was discovered. To the north, in a section running for 250 metres along the road, the remains of a Late Bronze Age cemetery were uncovered.[1158]

In the northernmost area of the terrace, a section revealed undisturbed occupational layers typologically dated to the Chalcolithic period. The Chalcolithic layers were blackish-grey and measured one to 1.2 metres thick. These yielded ceramics made from grit tempered clay with an admixture of coarse gravel. One vessel was found with

[1155] Baramidze et al. 2007, 17-18, 25-26; Taylor et al. 2011, 162.
[1156] Baramidze et al. 2007, 25-27.
[1157] Baramidze and Pkhakadze 2007, 3-5; Baramidze and Pkhakadze 2014, 461.
[1158] Baramidze and Pkhakadze 2007, 5; Baramidze and Pkhakadze 2014, 461.

vertical, oval projections along its surface.[1159] Within one kilometre of Choarti, another Chalcolithic settlement (KP 240) has been identified but remains unexcavated.[1160]

In addition to these sites, a handful of 'Late Sioni' sherds, classified as Hard Orange Drab ware, were recovered from Chobareti. The association of Hard Orange Drab ware with the Sioni complex remains tentative as none of the sherds bear the tell-tale characteristics such as decorated rims and perforations. However, this ware from Chobareti may represent the terminal expression of the Sioni complex during the second half of the fourth millennium B.C.E.[1161] Two kilometres from Chobareti, a small collection of grit tempered, Chalcolithic ceramics were recovered from Rabati. Chalcolithic pottery was found mixed with Early Kura-Araxes Monochrome ware.[1162] Comb-scraped surfaces, perforated vessel fragments, and forms, such as trays, suggest a connection to the Sioni complex.[1163]

Western Georgia

Across the Likhi-Surami Mountain Range, ceramic assemblages, bearing close affinities to Sioni, have been found at sites throughout western Georgia. These sites are situated along the foothills and river terraces of the karst zone of the Rioni River Basin and include open-aired settlements and rock shelters.[1164] Grit tempered, micaceous ceramics, decorated with notched impressions along the rim and perforations, were recovered from the Neolithic sites of Odishi, Anaseuli II, and Gurianta **(*fig. 5.23*)**. Similar

[1159] Baramidze and Pkhakadze 2014, 461.
[1160] Baramidze and Pkhakadze 2007, 14.
[1161] Kakhiani et al. 2013, 27-28; Anderson and Negus Cleary 2018, 87.
[1162] Bedianiashvili et al. 2019, 13.
[1163] Bedianiashvili et al. 2019, 13-16.
[1164] Kushnareva 1997, 19; Kiguradze 2001b, 42; Meshveliani 2013, 61.

ceramics were also recovered from rock shelters, dated to the Chalcolithic period, including Samele-Klde (Horizon II), Samertskhle-Klde, Darkveti (layers II and III), Sagvarjile (Layer II), Tetramits, Dzudzuana, and Kotias-Klde (Layer A).[1165]

Recent surveys and the re-excavation of several Neolithic sites has called into question the chronological and cultural affiliation of many west Georgian sites. Owing to natural erosion, caused by the subtropical conditions of the region and the acidity of the soil, very little organic material has been preserved. Therefore, radiocarbon dates are unavailable for many sites in western Georgia.[1166] The only reliable dates come from the upper level, Level A, of the Dzudzuana rock shelter. Five radiocarbon dates place the occupation of Level A within the seventh millennium B.P. **(*fig. 5.24*)**.[1167]

Additionally, open-aired settlements in western Georgia are characterised by heavily disturbed occupational deposits measuring three to five centimetres thick.[1168] The scanty nature of the cultural deposits at Anaseuli I and II, Kobuleti, Kistriki, Khutsubani, Gurianta, and Odishi suggests that such sites were not occupied on a permanent basis. According to Meshveliani, such temporary settlements contradict the sedentary lifestyle characteristic of the Neolithic period. Rather, these sites fit comfortably within the confines of the Late Upper Palaeolithic and Mesolithic periods.[1169] The chronological revision of the west Georgian Neolithic sites, in conjunction with the new evidence from Dzudzuana, suggests that many of the cave

[1165] Kushnareva 1997, 19; Kiguradze 2001a, 57; Kiguradze 2001b, 43; Kiguradze and Sagona 2003, 45; Kiguradze and Menabde 2004, 351; Nebieridze 2003, 99; Nebieridze 2010, 176, 181; Sagona 2014, 40; Sagona 2018a, 92.
[1166] Nebieridze 1972, 14; Meshveliani 2013, 62; Sagona 2018a, 92.
[1167] Bar-Yosef et al. 2011, Tab. 2; Meshveliani 2013, 71; Sagona 2018a, 93.
[1168] Meshveliani 2013, 71; Sagona 2018a, 92.
[1169] Meshveliani 2013, 71; Sagona 2018a, 92-93.

sites, originally dated to the Chalcolithic, belong to the Neolithic period.[1170] Consequently, it is not yet possible to explain if or how the ceramic assemblages of western Georgia might be connected to the Sioni complex.

Beyond Georgia: Tracing the Sioni Complex throughout the Caucasus

Armenia

In Armenia, along the Ararat plain, Chaff-faced ceramics, with features recalling the Sioni complex, and obsidian tempered ceramics were recovered from Aknashen (previously Verin Khatunarkh), Aratashen, and kurgans 5 and 6 at Aknalitch in the province of Armavir.[1171]

Aknashen – Thirty kilometres to the west of Yerevan and six kilometres to the south of Vagharshapat (Echmiadzin), Aknashen is a small artificial mound (*blur* in Armenian) measuring 100 metres in diameter and 3.5 metres high **(*fig. 5.25*)**.[1172] More than five metres of cultural deposits were exposed with the main phase of occupation occurring during the Late Neolithic period during the sixth millennium B.C.E.[1173]

The uppermost horizon, Horizon I, is typologically dated to the mid-sixth to late fifth millennium from 5400 to 4000 B.C.E.[1174] Disturbed by later anthropogenic activities, Horizon I measures 0.7 metres to 1.5 metres thick. No discernible architectural remains

[1170] Meshveliani 2013, 71; Sagona 2018a, 92-93.
[1171] Badalyan et al. 2004b, 400; Hovsepyan 2004, 123; Badalyan et al. 2005, 34; Badalyan et al. 2007, 37; Palumbi 2007, 63; Hovsepyan and Willcox 2008, S63; Badalyan et al. 2010a, 187, 189; Badalyan and Hartutyunyan 2014, 162; Hartutyunyan 2014, 191; Muradyan et al. 2014, 339; Palumbi et al. 2014, 45; Palumbi 2015b; Vila et al. 2017, 98; Palumbi et al. 2018, 123.
[1172] Hovsepyan and Willcox 2008, S63; Badalyan et al. 2010a, 187, 189; Badalyan and Hartutyunyan 2014, 162.
[1173] Arutyunyan 2008, 37; Hovsepyan and Willcox 2008, S63; Badalyan et al. 2010a, 187; Badalyan and Hartutyunyan 2014, 165; Vila et al. 2017, 98.
[1174] Badalyan et al. 2010a, 189; Badalyan and Hartutyunyan 2014, 163-164; Sagona 2014, 27; Vila et al. 2017, 100.

were exposed. However, a small quantity of chaff tempered ceramics with comb-scraped surfaces, notched rims, decorative protuberances, and perforations beneath the rim were discovered.[1175] Although predating Sioni, the early appearance of these features among some Neolithic assemblages indicate a deeply rooted conservatism among local ceramic traditions of the Chalcolithic period.

Aratashen – Six kilometres to the north-east of Aknashen, Aratashen is situated along the right bank of the Kasakh River, a tributary of the Araxes River. Aratashen is a multi-period, artificial mound measuring 90 by 60 metres and three metres high **(*fig. 5.26*)**.[1176] 2.5 metres of stratified deposits were uncovered, and three phases of occupation have been identified. Levels II and I, on the central summit of the mound, were occupied during the Neolithic period. Level 0 dates to the Late Chalcolithic period. Relative dating places the Chalcolithic occupation within the last quarter of the fifth millennium from 4250 to 4000 B.C.E.[1177]

Due to natural erosion, caused by the Kasakh River, and recent agricultural activities, the Chalcolithic occupation has been completely destroyed. Level 0 consists of a series of eroded destruction deposits, up to one metre thick, which have accumulated around the base of the mound.[1178] From this level, obsidian tempered ceramics, with notched, circular, and comb-impressed rims, form ten percent of the Chalcolithic ceramic assemblage, the majority of which is Chaff-faced **(*fig. 5.27*)**.[1179]

[1175] Badalyan et al. 2010a, 194; Arutjunjan 2011, Tab. 1; Badalyan and Hartutyunyan 2014, 163-164.
[1176] Badalyan et al. 2004b, 400-401; Hovsepyan 2004, 123; Badalyan et al. 2005, 34; Badalyan et al. 2007, 37; Hovsepyan and Willcox 2008, S63; Palumbi 2015b.
[1177] Badalyan et al. 2004b, 401; Hovsepyan 2004, 123; Badalyan et al. 2007, 37-38; Palumbi 2007, 63; Palumbi et al. 2014, 45; Vila et al. 2017, 99-100; Palumbi et al. 2018, 123; Baudouin 2019, 116.
[1178] Badalyan et al. 2004b, 402; Badalyan et al. 2007, 37-38; Palumbi 2007, 74.
[1179] Badalyan et al. 2004b, 405; Badalyan et al. 2007, 60; Palumbi 2007, 63; Palumbi et al. 2014, 45; Palumbi 2015b; Palumbi et al. 2018, 124.

Kurgans 5 and 6 at Aknalitch – Along the northern outskirts of the village of Aknalitch, obsidian and mixed tempered ceramics were recovered from kurgans 5 and 6. A radiocarbon sample from Kurgan 5 places the burial mounds within the last quarter of the fifth millennium from 4340 to 4050 B.C.E.[1180]

Kurgan 5 was the least disturbed (***fig. 5.28***). The burial mound is positioned along a slope and measures 1.10 metres high along its north-western side and 0.45 metres high to the north east. It is circular in shape and measures between 11 and 11.5 metres along the east-west and north-south axes.[1181] From the topsoil, mixed Chalcolithic and Late Bronze Age ceramics were recovered. An intrusive Late Bronze Age burial was uncovered in the western section of the kurgan. The burial was modified and reused during the Iron Age.[1182]

In the northern section of the kurgan, chaff and obsidian tempered ceramics and lithic artefacts were uncovered in the area of the burial chamber. The primary burial chamber was constructed from large basalt stones and was oval in plan. The chamber, which was dug into the bedrock, was oriented north-east to south-west and measured 1.43 by 0.93 metres and 0.75 metres deep.[1183] In the chamber, an individual was found in a flexed position on its right side, oriented north-east, with their head facing west. Beneath the skeleton, chaff, mixed, and obsidian tempered ceramics were recovered.[1184]

[1180] Muradyan et al. 2014, 347.
[1181] Muradyan et al. 2014, 339-340.
[1182] Muradyan et al. 2014, 340.
[1183] Muradyan et al. 2014, 340.
[1184] Muradyan et al. 2014, 341.

Along the northern, western, and eastern sides of Kurgan 6, the upper sections of the burial mound were destroyed due to anthropogenic activities (***fig. 5.29***). The uppermost layers of the kurgan consist of mixed deposits with ceramics and lithic material dating to the Chalcolithic, Early Bronze Age, and Medieval periods.[1185] In the south-eastern section of the mound, an intrusive Iron Age burial was uncovered. To the north-east, a large rectangular platform and wall fragment, constructed during the 20th century, was discovered.[1186]

Kurgan 6 was constructed from large basalt stones. The surviving portion of the kurgan is positioned along a north-west axis and measures 25 metres in diameter. Located atop a low hill, Kurgan 6 measures 1.10 metres high.[1187] Despite the disturbance, the lowermost layers remain intact. A large number of Chalcolithic ceramics and lithic artefacts were recovered from the centre of the mound where the burial chamber was also uncovered. It was constructed of large basalt stones and partially dug into the underlying bedrock. The chamber was oriented north-east to south-west and measured 1.74 by 0.87 metres and 1.42 metres deep, inclusive of the mound. Inside, a poorly preserved skeleton was found positioned on their back in an east-west direction.[1188] In both kurgans, obsidian and mixed tempered ceramics with comb-scraped surfaces and wavy rims were present. Similar material was also recovered from Mushakan-4, in the Erebuni district of Yerevan, and in Nerkin Sasnashen in the province of Aragatsotn.[1189]

[1185] Muradyan et al. 2014, 341.
[1186] Muradyan et al. 2014, 341.
[1187] Muradyan et al. 2014, 341.
[1188] Muradyan et al. 2014, 341-342.
[1189] Muradyan et al. 2014, 343-344. The material from these sites has not been published.

Tekhut – Tekhut is located eight kilometres to the south of Vagharshapat. The site is positioned on a small mound and it covers an area measuring one hectare. The settlement consists of a single period of occupation with deposits measuring up to 1.6 metres thick.[1190] The Chalcolithic occupation has been relatively dated to the early to mid-fourth millennium from 4000 to 3500 B.C.E.[1191]

At Tekhut pits and free-standing, semi-subterranean, circular structures were found. The size and function of the structures varied; some were used for storage whilst others were built for habitation. The largest measured 2.6 to three metres in diameter.[1192] The cultural affiliation of the settlement at Tekhut remains ambiguous. Tekhut has been associated with the Sioni complex, however, examples of Chaff-faced ware, associated with the Leilatepe tradition, and Tilkitepe ware, connected to the region of Lake Van in eastern Anatolia, are also attested.[1193] In the absence of a full publication, the quantities of these ceramics, and their roles within the wider ceramic assemblage at Tekhut, remains unknown.

Areni-1 Cave Complex – To the south-east, close to the Iranian border, Areni-1 is situated in a canyon along the Arpa River, in the province of Vayot Dzor.[1194] Radiocarbon dates places the Chalcolithic occupation between the late fifth to early fourth millennium from 4222 to 3139 B.C.E.[1195] A coarse chaff and mixed tempered ware, with

[1190] Kiguradze 2001b, 54; Kiguradze and Sagona 2003, 45; Sagona 2014, 27.
[1191] Kiguradze 2001b, 54; Kiguradze and Sagona 2003, 45; Sagona 2014, 27.
[1192] Torosyan 1976; Kiguradze 2001b, 54; Kiguradze and Sagona 2003, 45.
[1193] Kiguradze 2000, 323; Kiguradze 2001b, 54; Marro 2008, Footnote 49; Sagona 2014, 41; Lyonnet 2018, 549; Sagona 2018a, 196, 207.
[1194] Pinhasi et al. 2010, 1; Areshian et al. 2011, 65; Barnard et al. 2011, 979; Areshian et al. 2012, 116; Wilkinson et al. 2012, 23; Smith et al. 2014, 223; Stapelton et al. 2014, 219; Zarikian and Gasparyan 2016, 20; Zarikian et al. 2019, 144.
[1195] Pinhasi et al. 2010, Tab. 1; Areshian et al. 2011, 65-69; Areshian et al. 2012, Tab, 1; Wilkinson et al. 2012, Tab. 1; Smith et al. 2014, 234-235; Stapleton et al. 2014, 219-220; Zarikian et al. 2019, 145.

comb-scraped surfaces, notched rims, applied knobs, and perforations, has been found.[1196]

The cave complex consists of three areas including the northern slope of the talus, an external rock shelter, and three inner cave galleries extending over 40 metres into the rock (***fig. 5.30***). Excavations indicate that the cave galleries were reserved for rituals of death and wine making whilst the external rock shelter was use for habitation.[1197] Within the central gallery, jar burials and cremations were found alongside an installation possibly used for wine production. Found within the north-western portion of the trench, the installation consisted of six large storage jars lined with reeds and set within clay basins to form an extensive baked clay surface. Desiccated grapes, grape skins, and seeds were found within the vicinity of the installation (***fig. 5.31 and 5.32***).[1198]

The Chalcolithic deposits uncovered in the external rock shelter were characterised by hard packed, dirt floors, hearths, ashy deposits, pits, ceramics, lithics, faunal, and archaeobotanical remains (***fig. 5.33***). No architectural remains were uncovered. However, amongst the lowermost deposit, there was a circular pit, 1.1 metres deep, encircled by posts, which is suggestive of a wooden superstructure.[1199] Immediately above, a series of hard packed, dirt floors and pits, lined with large ceramic vessels, were discovered. Similar remains were uncovered in Trench 5, located along the

[1196] Areshian et al. 2012, 127; Wilkinson et al. 2012, 28.
[1197] Pinhasi et al. 2010, 1; Areshian et al. 2011, 68; Areshian et al. 2012, 116, 123-125; Wilkinson et al. 2012, 30; Smith et al. 2014, 243; Zarikian et al. 2019, 145.
[1198] Areshian et al. 2011, 67-68; Barnard et al. 2011, 979; Areshian et al. 2012, 123-124; Wilkinson et al. 2012, 26, Tab. 1; Smith et al. 2014, 234, 240; Stapleton et al. 2014, 219.
[1199] Pinhasi et al. 2010, 1; Areshian et al. 2012, 122; Wilkinson et al. 2012, 27; Smith et al. 2014, 235; Stapleton et al. 2014, 219-220.

slope at the entrance of the cave complex.[1200] This also suggests that the area immediately outside of the cave may have also accommodated lightweight domestic structures **(*fig. 5.34*)**.

Azerbaijan

Mentesh Tepe and Ovçular Tepesi – Sioni ware and other related features are well attested throughout Azerbaijan. The earliest examples are from Period III at Mentesh Tepe. Referred to as 'kitchen ware,' Sioni ceramics at Mentesh Tepe consist of obsidian tempered, large necked pots, with globular bodies and flat bases, large circular pans, and 'mangals' (trays). Vessels display comb-scraped exterior surfaces and oblique incisions or comb impressions along the rim. Mangals are characterised by a row of perforations beneath the rim.[1201] A similar collection was also recovered from Ovçular Tepesi. Eight sherds were recovered from poorly stratified contexts.[1202] Dating to the second half of the fifth millennium B.C.E., the ceramics from Mentesh Tepe and Ovçular Tepesi predate the material discovered at Sioni.[1203]

During the Soviet period, a series of surveys and excavations led to the discovery of many Chalcolithic settlements throughout Azerbaijan. These sites are considered to fall within the influence of the Leilatepe tradition. However, small amounts of Sioni ware, and Chaff-faced ware displaying similar features, have been recovered. The sites of Leilatepe and Alikemek Tepesi are the best studied. At both sites, small quantities of

[1200] Smith et al. 2014, Fig. 2; Stapleton et al. 2014, 219-220.
[1201] Lyonnet and Guliyev 2012, 89-90; Lyonnet et al. 2012, 101; Lyonnet 2017, 147; Lyonnet 2018, 561.
[1202] Marro et al. 2009, 49.
[1203] Bakhchaliyev et al. 2009, 55; Lyonnet 2009, 43; Bakhchaliyev et al. 2010, 87; Marro 2011, 35; Courcier et al. 2012, 205; Lyonnet and Guliyev 2012, 88; Lyonnet et al. 2012, 87; Berthon et al. 2013, 192; Courcier 2014, 595-596; Marro et al. 2014, 131; Lyonnet et al. 2015, 189; Marro et al. 2015, 157; Lyonnet and Guliyev 2017, 132-133.

grit and chaff tempered ceramics, with combed surfaces, notched rims, knobs, and perforations, have been found.[1204]

The Jalilabad Region

Alikemek Tepesi – Alikemek Tepesi is situated on the Mugan steppe of south-eastern Azerbaijan, along the outskirts of the village of Uchtepe, in the Jalilabad district, and it is positioned upon a terrace along the right bank of the Inchechay River. It is a small, artificial mound measuring 150 by 70 metres over an area of one hectare.[1205]

During excavations, six occupational horizons were encountered throughout a deposit measuring 5.1 metres thick. Sioni ware, and other related ceramics, were recovered from the uppermost layers, horizons 0 and 1. Horizon 0 extended to a depth of one metre below the surface.[1206] This deposit was heavily disturbed, however, walls constructed of unbaked mudbrick were uncovered. Large, barrel-shaped storage vessels were found in addition to household pits and a pottery kiln.[1207] A burial that was also exposed contained an individual placed in the foetal position and sprinkled with red ochre. Only a small bowl was placed beside the cranium.[1208]

Under Horizon 0, Horizon 1 was encountered two to 2.15 metres below the surface.[1209] Horizon 1 was similarly characterised by multi-cellular, rectilinear

[1204] Narimanov 1987, 47-48; Kiguradze 2000, 322; Aliev and Narimanov 2001, 18-19; Kiguradze 2001b, 51; Akhundov 2007, 116; Museibli 2009, 52; Kavtaradze 2014, 16; Kavtaradze 2017, 101; Kavtaradze 2018, 80; Sagona 2018a, 203.
[1205] Narimanov 1987, 57; Aliev and Narimanov 2001, 24; Kiguradze 2001b, 47; Kiguradze and Sagona 2003, 45.
[1206] Narimanov 1987, 57; Aliev and Narimanov 2001, 24; Kiguradze 2001b, 47-48; Kiguradze and Sagona 2003, 45.
[1207] Narimanov 1987, 57; Aliev and Narimanov 2001, 24; Kiguradze 2000, 322; Kiguradze 2001b, 47-48; Kiguradze and Sagona 2003, 45.
[1208] Kiguradze 2001b, 47-48; Kiguradze and Sagona 2003, 45.
[1209] Narimanov 1987, 57; Aliev and Narimanov 2001, 25; Kiguradze 2001b, 47-48.

architecture with walls constructed from unbaked mudbricks. A series of rooms, connected by a curved annex of storage units, measuring seven metres long, were excavated. Domestic spaces ranged between seven to nine square metres in size. Rooms used for storage were smaller and measured between two to 2.5 square metres.[1210]

Four burials were exposed in Horizon 1. The burials were cut into the previous layer of Horizon 2. The individuals were placed on their right sides, in the foetal position, with no preferred orientation. The bodies were sprinkled with red ochre and a bowl was placed close to the cranium.[1211]

Alkhantepe – Four kilometres from the village of Uchtepe, grit tempered and obsidian tempered ceramics were recovered among the Leilatepe assemblage at Alkhantepe. The site is positioned along a terrace which gently slopes towards a waterway. The settlement is not visible from the surface, but it is estimated to have covered an area of four hectares.[1212]

The Chalcolithic deposits measured up to three metres thick with seven construction horizons identified. The architectural remains are varied and include dugouts, semi-dugouts, and mudbrick structures. Round dugouts were uncovered in the first and fourth horizons. In the first horizon, the dugout was cut into the underlying subsoil and measured 2.4 metres in diameter and one metre deep.[1213]

Semi-dugouts were round and rectilinear. Round semi-dugouts were exposed in the first, fourth, and fifth horizons and measured 1.75 to 2.4 metres in diameter and 0.3

[1210] Narimanov 1987, 57; Aliev and Narimanov 2001, 24-25; Kiguradze and Sagona 2003, 45.
[1211] Narimanov 1987, 58; Aliev and Narimanov 2001, 25; Kiguradze 2001b, 47-48.
[1212] Akhundov 2014, 12; Akhundov 2018, 53.
[1213] Akhundov 2014, 12; Akhundov 2018, 54.

to 0.4 metres deep.[1214] In the second horizon, a rectilinear semi-dugout, with mudbrick walls, was discovered. The walls of the dugout were lined with three courses of mudbrick with the interior measuring 2.4 by 4.4 metres.[1215] Outside of the structure, along the north-western wall, was a platform lined with broken stone implements bearing traces of fire.[1216] Another rectilinear dugout was excavated in the fourth horizon. Unlike the previous dugout, the structure was characterised by earthen walls and a rectilinear annex, measuring two by 0.7 metres, along the north-western wall.[1217]

Other architectural features include mudbrick wall fragments of various lengths, measuring 20 to 30 centimetres high and 40 centimetres wide, which had been repeatedly rebuilt over the course of the occupation.[1218] Rectilinear, mudbrick architecture was uncovered in the fourth horizon. In the sixth horizon, two rectilinear wattle-and-daub structures, with beaten earth floors and central hearth installations, were found.[1219] At 0.45 metres deep, in the seventh horizon, a large wooden platform, measuring over 100 square metres, was uncovered. The function of the platform remains unclear, however, another two were found in sondages located 30 to 60 metres to the west of the main excavation.[1220]

Nagorno-Karabakh and the Mil Plain

Ceramics with similar features were recovered from sites in the area of Nagorno-Karabakh and the Mil plain. These include Chalagantepe, situated along the right side of

[1214] Akhundov 2018, 54.
[1215] Akhundov 2018, 54.
[1216] Akhundov 2018, 54.
[1217] Akhundov 2018, 54.
[1218] Akhundov 2018, 54.
[1219] Akhundov 2018, 54.
[1220] Akhundov 2018, 54.

the Agdam-Adgjabadi highway, and Ilanlitepe, located one kilometre to the east of the village of Orta Karwend and close to the settlements of Shomlutepe and Kültepe **(*fig. 5.35*)**.[1221]

Chalagantepe – Chalagantepe is a partially destroyed, low mound measuring 70 by 40 metres. Chalcolithic deposits were discovered 1.2 metres below the surface measuring 4.3 metres thick.[1222] Excavations along the western portion of the mound revealed a series of densely clustered, round structures constructed from mudbricks. In the lowermost layers, the structures reached up to 5.5 metres in diameter. Dwellings built in the upper layers measured up to three metres in diameter.[1223] Hearths and other focal points of domestic activity were found along the walls of the buildings. The remains of matting indicate that the floors were lined. In some structures, household pits and rows of storage jars, cut into the floor, were attested.[1224] In several of the structures, a sequence of occupation, abandonment, restoration, and reuse is evident. Similar mudbrick architecture at Ilanlitepe included rectilinear and circular structures, built with adjoining subsidiary storage facilities.[1225]

The Ganja-Gazakh Region

Rustepesi – Several low-lying mounds were also explored in the Ganja-Gazakh region of north-western Azerbaijan. Chaff-faced ceramics, bearing stylistic and decorative features similar to Sioni ware, were found at Rustepesi, Kechili, and Toiretepe II. Rustepesi is located one kilometre to the north-east of the village of Bittili and one

[1221] Narimanov 1987, 50-52.
[1222] Narimanov 1987, 50-51.
[1223] Narimanov 1987, 50-51.
[1224] Narimanov 1987, 50-51.
[1225] Narimanov 1987, 48.

kilometre from the right bank of the Shamkorchay River. The mound measures 70 metres in diameter at its base and four metres high above the surrounding landscape.[1226]

Along the northern slope of the mound, Chalcolithic deposits measured 1.4 metres thick.[1227] A circular pit, 1.1 metres in diameter and 60 centimetres deep, was uncovered. At its base, fragments of unbaked mudbrick were exposed. Sixty small, round stones, many of which were broken, were found in addition to stone tools, used for cereal processing, and flint and obsidian lithic materials. Many bone tools were also recovered from the pit including 11 knives, awls, a spatula, and an item crafted from a piece of horn. Chaff tempered ceramics were present; many of the sherds bore traces of red paint.[1228] The nature of these finds suggests that the pit contents may represent a structured deposit.

Kechili and Toiretepe II – 2.5 kilometres to the east of Rustepesi, the site of Kechili is situated 1.2 kilometres from the right bank of the Kura River and 1.5 kilometres from the left bank of the Shamkorchay River (***fig. 5.36***). Amongst the disturbed Chalcolithic deposits, the fragmentary remains of rectilinear, mudbrick architecture were exposed.[1229] The Chalcolithic deposits at Toiretepe II were also heavily disturbed. However, surface finds have yielded dark grey, grit tempered ceramics with mat impressed bases and perforations beneath the rim.[1230] However, it is possible that this

[1226] Narimanov 1987, 33-34; Aliev and Narimanov 2001, 27-28.
[1227] Narimanov 1987, 33-34; Aliev and Narimanov 2001, 27-28.
[1228] Narimanov 1987, 33-34; Aliev and Narimanov 2001, 27-28.
[1229] Narimanov 1987, 34-35; Aliev and Narimanov 2001, 28-29; Kiguradze 2001b, 45.
[1230] Narimanov 1987, 31-32.

material may be related to the Aratashen-Shulaveri-Shomutepe culture of the preceding Neolithic period.

Recently, new sites have been discovered in the Ganja-Gazakh region in relation to the construction of the Baku-Tbilisi-Ceyhan and South Caucasus pipelines. Beyuk Kesik is the most studied of these sites. Amongst the Chaff-faced assemblage, a small collection of grit and mixed tempered ceramics, with comb-scraped bodies, notched and impressed rims, perforations, and protuberances, was recovered.[1231] Chalcolithic deposits were also exposed at Agili Dere and Khoja Khan, located close to the village of Ashagi Ayibli, in the Tovuz district. In addition, related ceramic material came from the Chalcolithic deposits of Poylu II in the Agstafa district.[1232]

Agili Dere – Situated one kilometre to the west of the Zayamchay River, Agili Dere is a flat settlement with a single period of occupation relatively dated to the first half of the fourth millennium B.C.E. The Late Chalcolithic deposits were encountered directly beneath the surface and measured 68 centimetres to 1.03 metres thick. No architectural remains were uncovered at the site, however, five pits, one hearth, and a pottery kiln were documented (***fig. 5.37***).[1233]

The pits were revealed six to 60 centimetres below the surface after the removal of the first 30 centimetres of topsoil. The pits were cylindrical and circular in shape and measured between 1.15 and 1.35 metres in diameter and 28 to 60 centimetres in depth (***fig. 5.38***).[1234] Unlike the other pits, Pit 3 was quadrangular in shape with rounded edges.

[1231] Akhundov 2007, 108, 116; Museibli 2007, 68-69; Museibli and Huseynov 2008, 21-22; Lyonnet and Guliyev 2010, 223; Sagona 2014, 16.
[1232] Huseynov 2007, 3-5; Huseynov and Jalilov 2007, 3, 6; Museibli 2008b, 2.
[1233] Huseynov 2007, 5-6, 13.
[1234] Huseynov 2007, 6.

The pit measured 60 by 70 centimetres. From the quadrangular opening, the pit extended downwards in a cone shape measuring 1.5 metres at its mid-section and two metres at its base. Amongst the fill, burnt stones and ashy deposits were found mixed with Late Chalcolithic pottery sherds, flint and obsidian flakes, and faunal remains. Similar material was also recovered from the fill of the other pits.[1235]

Khoja Khan – To the south of Agili Dere, Khoja Khan is situated along a flat plain and to the west of a gently sloping gully that was once an ancient riverbed. Khoja Khan is a flat site. The distribution of surface finds suggests that the settlement covered an area roughly of 1.5 hectares.[1236] Three phases of occupation were exposed dating to the Late Medieval period, the Early Bronze Age, and the Late Chalcolithic.

Chalcolithic deposits were discovered 60 centimetres below the surface and measured 60 centimetres thick **(*fig. 5.39*)**.[1237] These were heavily disturbed, however, an oval-shaped, mudbrick structure was uncovered in the area of Site II **(*fig. 5.40, 5.41, and 5.42*)**. The structure consisted of two adjacent rooms which were separated by a partition wall measuring 66 centimetres thick. The first room, aligned north-south, measured 2.9 by 2.15 metres. The second room, located to the north-west, measured 2.8 by 1.5 metres. Access to both rooms was via a shared entrance way situated on either side of the internal partition wall.[1238] No architectural features were exposed in the area of Site I. However, a floor level of river stones, gravel, and sand was exposed at

[1235] Huseynov 2007, 6.
[1236] Huseynov and Jalilov 2007, 6.
[1237] Huseynov and Jalilov 2007, 27.
[1238] Huseynov and Jalilov 2007, 10.

85 centimetres. The spread was found packed into the underlying layer of earth and measured two by 3.5 metres.[1239]

Other structural features include pits, *tendirs* (ovens), and hearths. Fifteen circular and oval-shaped pits were exposed 35 centimetres to one metre below the surface, with some cut into the underlying subsoil. Circular pits measured 45 centimetres to 1.1 metres in diameter. Oval-shaped pits were 57 by 47 centimetres up to one by 1.1 metres. Across the two excavation sites, the pits measured between 40 and 60 centimetres deep.[1240] Pottery sherds, river stones, and flaked lithic material, consisting of both flint and obsidian, were recovered from the pits and some held large storage jars.[1241]

Poylu II – Poylu II is situated to the east of the Poylu railway station and 2.5 kilometres to the south of the Kura River. It is a flat site approximately one hectare in size.[1242] The site was occupied during the Late Chalcolithic and resettled during the Late Bronze Age, Early Iron Age, and Medieval period. Radiocarbon dates place the Chalcolithic occupation during the first half of the fourth millennium from 3960 to 3540 B.C.E.[1243] The uppermost deposits at Poylu II are heavily mixed, however, from a depth of 0.7 metres, until sterile subsoil at 1.8 metres, Late Chalcolithic deposits remain undisturbed.[1244]

From 0.7 metres below the surface, the Chalcolithic occupation is characterised by a series of stone floors and stone wall foundations (***fig. 5.43***). In quadrants 3 and 4,

[1239] Huseynov and Jalilov 2007, 8.
[1240] Huseynov and Jalilov 2007, 7-10.
[1241] Huseynov and Jalilov 2007, 7-8.
[1242] Museibli 2008b, 5.
[1243] Museibli 2008b, 5; Museibli 2014a, 102.
[1244] Museibli 2008b, 8-9.

the remains of stone flooring were found at 1.3 metres. It was constructed from large river stones and reached a maximum width of two metres. A similar floor, constructed of sparsely spaced river stones, was uncovered in quadrants 16 and 17.[1245]

Stretching across quadrants 18 and 19, a stone wall was uncovered measuring six metres long and 50 to 60 centimetres wide at a depth of 0.7 to 0.8 metres. Adjacent and to the west of this structure, another straight section of wall was exposed measuring eight metres. In the southern corner of Quadrant 18, a curvilinear segment of wall was also defined at 1.2 metres **(*fig. 5.44*)**.[1246] Groups of river stones, arranged in a circular configuration, were found in quadrants 10 and 17 at varying depths. The clusters of stones measured 40 to 50 centimetres in diameter and possibly functioned as foundations for structures.[1247]

Other features include five pits and two kilns. One large pit, at 1.3 metres, may represent a semi-subterranean structure. It was dug into the underlying subsoil and measured 2.2 metres in diameter and 0.7 metres deep.[1248]

Two graves and four infant jar burials were also discovered at Poylu II. The two pit graves, exposed in quadrants 6 and 11, are significant as such graves are rare amongst sites of the Leilatepe complex **(*fig. 5.45 and 5.46*)**.[1249] The graves contained the remains of adult males.

In Quadrant 6, grave markers were encountered at 0.85 metres. The pit was round and measured two by 1.9 metres. The base of the grave was cut into the sterile

[1245] Museibli 2008b, 10-11.
[1246] Museibli 2008b, 10-11.
[1247] Museibli 2008b, 10-11.
[1248] Museibli 2008b, 9.
[1249] Museibli 2008b, 11; Museibli 2014b, 59-60.

subsoil at a depth of 1.2 metres. The individual was placed in a supine position, oriented north-east to south-west, with the arms and legs flexed. No grave goods were found.[1250]

In Quadrant 11, grave markers were encountered at 0.8 metres. The pit was oval-shaped, measuring 1.4 by 1.1 metres, and was cut into the underlying subsoil to a depth of 1.5 metres. The individual was also found in a supine position with the cranium oriented to the west and the arms and legs flexed at the elbows and knees. Unlike the previous burial, the occupant was buried with grave goods. Worked river stones were placed over the right shoulder, beneath the left arm, and alongside the right wrist. A small flake of obsidian was also discovered beneath the left arm and the jawbone of a large bovid was found behind the pelvis.[1251]

The Gabala District

Galayeri – Further east, in the Gabala district of northern Azerbaijan, Sioni related ceramics have been recovered from Galayeri. Unlike other Leilatepe sites, which are characterised by mudbrick architecture, Galayeri is characterised by a series of clay structures. The structures are rectilinear in plan and are built from sequential layers of clay, seven to eight centimetres thick, which are separated by a 2.5 to three centimetre layer of mortar. According to the excavators, the closest analogies for such structures are seen in Temple C from Arslantepe VII in eastern Anatolia.[1252] Storage pits and semi-dugouts were also exposed.[1253] Radiocarbon dates place the Chalcolithic occupation at Galayeri in the early fourth millennium from 3960 to 3780 B.C.E.[1254]

[1250] Museibli 2008b, 11; Museibli 2014b, 59-60.
[1251] Museibli 2008b, 11; Museibli 2014b, 59-60.
[1252] Museibli 2016a, 284; Museibli 2019, 65.
[1253] Museibli 2019, 66.
[1254] Museibli 2014a, 102; Museibli 2019, 74.

More than 20 infant jar burials were exposed.[1255] The primary receptacle for burial was a handmade, mineral tempered ware with comb-scraped surfaces and notched rims.[1256] An infant, interred in a catacomb-type grave, was also found buried beneath the floor of a domestic structure (***fig. 5.47***). Currently, this burial type remains unique to Galayeri.[1257] The opening of the catacomb was exposed at 2.7 metres. A rectangular-shaped entrance way, measuring 1.1 by 1.2 metres, led to small steps over a depth of 80 centimetres. Adjoining the stairs at the entrance way was an oval-shaped burial chamber. The floor of the chamber was located 30 centimetres below the stairs and measured 75 centimetres by 1.3 metres. Inside were the remains of a child, between four and five years of age, positioned on its right side, with its head pointed east, and the arms and legs tightly flexed.[1258]

Eastern Anatolia

Further west, in the region of eastern Anatolia, Sioni ware has been recovered from sites in the plains of Iğdır and Doğubeyazıt close to the borders of Armenia and Iran.

Hanago – Sites include Hanago, Sarıgül, Çetenli, Bozkurt, and Aştepe. Located in the Iğdır plain, Hanago is situated along the foot of Mount Ararat. The site is positioned atop a lava ridge, 800 metres above sea level, and was flat prior to the construction of a kurgan over the original settlement.[1259] Illicit digging has resulted in disturbed deposits.

[1255] Museibli 2019, 66.
[1256] Museibli 2014b, 55-59, Fig. 34.3; Museibli 2019, 66.
[1257] Museibli 2016b, 16; Museibli 2019, 66-67.
[1258] Museibli 2016b, 16; Museibli 2019, 66-67.
[1259] Marro and Özfırat 2003, 389; Marro and Özfırat 2005, 325; Marro 2007, 78; Munchaev and Amirov 2014, 160.

However, the recovery of Chalcolithic ceramics from the surface of the site suggests that the settlement was first occupied during the first half of the fourth millennium B.C.E.[1260] The majority of the Chalcolithic ceramics recovered from Hanago were Chaff-faced, however, six examples of grit and mixed tempered sherds, with comb-scraped surfaces and notched rims, were also recovered **(*fig. 5.48*)**.[1261]

Sarıgül – Due south, in the Ağrı province, Sioni ware was also recovered from Sarıgül in the Sarıgül district of Doğubeyazıt. Sarıgül is a multi-period settlement situated on a natural mound close to the old city of Doğubeyazıt. During surveys, ceramics of the Iron Age and Medieval periods were recovered. However, a small collection of sherds is suggestive of a Chalcolithic occupation.[1262] Unlike other contemporary sites, Chaff-faced ware was not recovered from Sarıgül. Rather, ceramics consist of a coarse, grit tempered ware with notched rims.[1263]

Çetenli – Sioni ware was also recovered from Çetenli situated 18 kilometres from Doğubeyazıt and the site of Sarıgül. Çetenli is also positioned over a natural mound which was occupied during the Early Bronze Age and Iron Age. Today, housing and the remains of an ancient fortress cover much of the site.[1264] However, mixed and grit tempered ceramics, with comb-scraped surfaces, were located on the northern slope.[1265] In the absence of chaff tempered ceramics, Sarıgül and Çetenli may represent

[1260] Marro and Özfırat 2003, 389; Marro 2007, 78.
[1261] Marro and Özfırat 2003, 390; Marro and Özfırat 2005, 325; Marro 2008, 12-17.
[1262] Marro and Özfırat 2005, 325.
[1263] Marro and Özfırat 2005, 325; Marro 2008, 10-11; Sagona 2010b, 689; Sagona 2018a, 204.
[1264] Marro and Özfırat 2005, 325.
[1265] Marro and Özfırat 2005, 325; Marro 2008, 10-11; Sagona 2010b, 689; Sagona 2018a, 204.

independent settlements of the Sioni complex, however, without a full-scale archaeological investigation, such suggestions remain tentative.[1266]

Bozkurt – A single diagnostic fragment of Sioni ware was also recovered from the Melecami settlement mound at Bozkurt. The site is located at the juncture of the Doğubeyazıt plain and the base of Mount Ararat and was intensively occupied from the Late Chalcolithic through to the Middle Iron Age.[1267] It consists of a Late Chalcolithic/Early Bronze Age settlement mound, a Middle Bronze Age to Early Iron Age kurgan cemetery, and two fortresses dating to the Late Bronze Age to Middle Iron Age.[1268] Here, a grit tempered, vertical necked jar, with a notched rim, was found among red-brown and cream slipped Chaff-faced ware.[1269]

Aştepe – A single diagnostic sherd, recalling the Sioni complex, was found at Aştepe located 20 kilometres to the north of Lake Van. The site is situated on a low-lying, natural mound overlooking the Özalp River. Aştepe is a single period settlement. The distribution of surface finds suggest that the Chalcolithic settlement occupied the summit of the mound which is completely flat. It is possible that the site was levelled to enhance its suitability for a temporary campsite.[1270] The Chalcolithic assemblage was chaff-faced and it is considered to bear a strong connection to the region of northern Mesopotamia.[1271]

Sos Höyük VA – A small collection of 'Sioni-like' material was also recovered from Sos Höyük VA, near Erzurum, in north-eastern Anatolia. Ceramics from this group

[1266] Marro and Özfırat 2005, 325.
[1267] Özfırat 2012, 113.
[1268] Özfırat 2012, 113.
[1269] Özfırat 2012, 113.
[1270] Marro and Özfırat 2005, 322; Marro 2008, 12; Munchaev and Amirov 2014, 160.
[1271] Marro and Özfırat 2005, 322; Marro 2008, 12.

represent the smallest category at the site and were discovered laid into a floor level surrounding a circular hearth.[1272] Sioni-like ceramics from Sos Höyük are grit tempered and hard-fired to an orange colour. Sherds often display a grey section as a result of low and uneven firing temperatures. Exterior surfaces were smoothed. However, these ceramics lack features characteristic of Sioni ware such as the addition of obsidian temper and decorative rims.[1273] Consequently, it is difficult to confidently associate this material with the Sioni complex.

North-Western Iran

The Khoda Afarin Plain

Dormishkanlu and Seramlu – To the south-east of eastern Anatolia, Sioni ware and other related materials are attested at sites along the Khoda Afarin and Jolfa plains in the East Azerbaijan province of north-western Iran. During surveys of the Khoda Afarin plain, Sioni material was discovered alongside Chaff-faced ware at Dormishkanlu (***fig. 5.49***). The flat bases of trays and a small collection of notched rims were recovered as surface finds.[1274] Three kilometres to the south-east, similar material was recovered from Seramlu (***fig. 5.50***). At 2.6 hectares in size, the mound at Seramlu is the largest known Late Chalcolithic settlement in the region.[1275]

Köhne Pāsgāh Tepesi – In the area of the Khoda Afarin delta, in the Kaleybar district, excavations at Köhne Pāsgāh Tepesi yielded small quantities of grit and mixed tempered ceramics with features echoing Sioni ware. Diagnostic pieces include rims and

[1272] Sagona and Sagona 2000, 59-60; Kiguradze and Sagona 2003, 47-48; Palumbi 2008a, 66; Palumbi 2008b, 40; Sagona 2018a, 204.
[1273] Palumbi 2008a, 66; Lyonnet 2018, 550; Sagona 2018a, 204.
[1274] Maziar 2015, 28, 30.
[1275] Maziar 2015, 30.

bases of trays with perforations beneath the rims and semi-circular lugs similar to those recovered from Mentesh Tepe **(*fig. 5.51*)**.[1276] Now submerged beneath the Khoda Afarin Dam, Köhne Pāsgāh Tepesi was a multi-period, artificial mound 0.5 hectares in size and 18 metres high.[1277]

Five phases of occupation, dating from the Late Chalcolithic to the Early Bronze Age, were identified. Phase I represents the Late Chalcolithic occupation which is dated to the early fourth millennium from 3955 to 3783 B.C.E.[1278] No floor levels or architectural remains were exposed. However, sedimentary deposits were rich in material remains including fragments of mudbrick indicating that permanent structures existed at the site. Three bell-shaped pits were cut into the sterile subsoil measuring one to two metres in diameter and 60 to 100 centimetres deep **(*fig. 5.52*)**.[1279] They were filled with deposits of ash, pottery sherds, faunal remains, broken animal figurines, fragmentary pieces of mudbrick, and ochre pigment. In one pit, a piece of copper was also recovered.[1280] Hence, the contents of this Köhne Pāsgāh Tepesi group may represent structured deposits.

The Jolfa Plain

Kul Tepe/Hadishahr – Close to the boarders of Armenia and Azerbaijan, Sioni related material was recovered from Kul Tepe/Hadishahr in the Jolfa plain. Located close to the city of Hadishahr, Kul Tepe is a large mound measuring six hectares in size and 19 metres high. Excavations have revealed eight cultural phases demonstrating an

[1276] Maziar 2010, 171; Maziar 2015, 30.
[1277] Maziar 2010, 167-168; Nejad et al. 2011.
[1278] Maziar 2010, 171; Nejad et al. 2011; Maziar 2015, 27.
[1279] Maziar 2010, 170; Nejad et al. 2011; Helwing 2012, 205.
[1280] Maziar 2010, 170; Nejad et al. 2011.

uninterrupted sequence of occupation from the fifth millennium B.C.E. through to the modern historical period.[1281]

The earliest phase, Kul Tepe VIII, is a three metre deposit associated with the Dalma tradition of the Early Chalcolithic period dating from 5000 to 4500 B.C.E.[1282] Three phases, Kul Tepe VII, VIB, and VIA, are dated to the Late Chalcolithic period. Kul Tepe VII, a 1.5 metre deposits, is associated with the Pisdeli complex contemporary with the post-Ubaid period. Radiocarbon dates place this phase between 4500 and 4200 B.C.E.[1283] Phases VIB and VIA at Kul Tepe are characterised by Chaff-faced ceramics. Radiocarbon dates place the occupation of Kul Tepe VIB from 4200 to 3900 B.C.E. and VIA from 4000/3900 to 3750 B.C.E. Phases VIB and VIA account for six metres of deposits with each phase measuring three metres thick.[1284]

Phases VIII through to VIA at Kul Tepe are contemporary with the Sioni complex. From Phase VII, several examples of pierced body sherds with small knobs positioned beneath the rim are recall features of Sioni ware.[1285] Shared features with the Sioni complex are apparent in phases VIB and VIA. Although the ceramic assemblage is chaff-faced, many of the diagnostic pieces recall forms and decorative features common to Sioni ceramics. These include short, straight necked jars, hole-mouthed jars, notched rims, and perforated sherds.[1286] Many of these features occur amongst mixed tempered ceramics which may suggest that a certain amount of hybridity occurred across Chaff-

[1281] Abedi et al. 2009; Khazaee et al. 2011, 14; Abedi et al. 2014, 33-34, 37; Abedi et al. 2015, 323-324; Kouhpar et al. 2015, 277, 279; Marro et al. 2019, 82-83.
[1282] Abedi et al. 2014, 37-39; Abedi et al. 2015, 324; Kouhpar et al. 2015, 279.
[1283] Abedi et al. 2014, 37, 39-40; Abedi et al. 2015, 324; Kouhpar et al. 2015, 279.
[1284] Abedi et al. 2014, 37, 39-40; Abedi et al. 2015, 324; Kouhpar et al. 2015, 279.
[1285] Abedi et al. 2014, Fig. 13.5-6.
[1286] Abedi et al. 2014, Fig. 17.4, 6-7, Fig. 18.5, Fig. 19.3, 7, 9, 11, Fig. 20.7-9, 11, 14, Fig. 21.9-11, 13, Fig. 22.8, Fig. 25.2-3, 8-9, Fig. 26.3, 6-8, 10, Fig. 28.1-2, 7, 9, 16-17, Fig. 29.2.

faced, Sioni, and local assemblages. Grit tempered ceramics were also recovered. Vessel fragments were found with perforations beneath the rims or oblique notches.[1287]

The Chalcolithic period at Kul Tepe is characterised by mudbrick architecture. Kul Tepe VII had one building phase. At 4.2 to 4.6 metres, a rectangular mudbrick structure on a stone foundation, measuring 1.3 metres by 80 centimetres, was found.[1288] Kul Tepe VIB comprised two architectural phases consisting of two rectangular mudbrick structures **(*fig. 5.53*)**. One of the buildings, made from three rows of mudbricks, measured 1.3 by one metre.[1289] Another two construction phases, and two structures, were identified at Kul Tepe VIA **(*fig. 5.54*)**. Three rows of mudbrick on stone foundations survived the first structure. The second structure was a stone roundhouse which was exposed 12.6 metres from the radix point of Trench II. The structure was built using irregular stones and reached over 3.5 metres in diameter **(*fig. 5.55*)**.[1290]

The Northern Caucasus

Features of the Sioni complex are attested at pre-Maikop and early Maikop sites along the highlands and foothills of the northern Caucasus. Radiocarbon dates place the pre-Maikop phase between the mid-fifth and early fourth millennium, from 4500 to 3800/3600 B.C.E., where the tail-end of this component overlaps the beginnings of the Maikop.[1291]

Meshoko – Fragments of grit tempered, ovoid bodied jars, with flat bases and notched rims, have been recovered from the rock shelter and settlement of Meshoko in

[1287] Abedi et al. 2014, Fig. 21.9, Fig. 28.16, Fig. 29.2; Abedi et al. 2015, 325.
[1288] Abedi et al. 2014, 39.
[1289] Abedi et al. 2014, 42.
[1290] Abedi et al. 2014, 42.
[1291] Lyonnet 2007, 134; Sagona 2018a, 137.

the north-western Caucasus.[1292] Recent investigations have distinguished six stratigraphic layers. The earliest, layers 6 and 5, belong to a pre-Maikop phase followed by a thin, sterile deposit (Layer 4) superimposed by the Maikop occupation of Layer 3. Radiocarbon dates place the pre-Maikop occupation from 3800 to 3600 B.C.E.[1293]

The most conspicuous feature of the Meshoko settlement is the remains of a large defensive stone wall which ran 150 metres along the perimeter of the settlement. The wall was constructed from irregular fieldstones and measured four metres in width and was preserved to a height of two metres. Lightweight, rectilinear domestic structures were built up against the defensive wall with the remaining walls constructed from wooden posts.[1294] Ceramics, similar to those found at Meshoko, were recovered from Agubekovo, where freestanding domestic structures were found built on a framework of posts, and from mixed deposits at Zamok.[1295]

Ginchi – Further east, ceramics with features echoing the Sioni complex are also attested at Ginchi in Dagestan. The site is located in a small gorge bearing the same name, situated in the high plain of Gideril Or. It covers an area of 1500 square metres with deposits measuring up to 1.5 metres thick.[1296] Like Meshoko, the Chalcolithic deposit at Ginchi is characterised by the remains of a defensive stone wall. Fifteen metres were excavated measuring two metres wide and 1.15 metres high.[1297] A series of rectilinear and round domestic structures were also exposed. Rectilinear structures

[1292] Formozov 1965, 119; Lyonnet 2007, 135-136; Courcier 2014, 594-595.
[1293] Ostashinskii and Cherlenok 2013, 321-324; Ostashinskii and Cherlenok 2014, 164-170; Sagona 2018a, 137.
[1294] Chernykh 1992, 72; Munchaev 1994, 174; Ivanova 2007, 14; Kohl 2007, 76; Lyonnet 2007, 134-135; Kohl 2009, 95; Korenevskii 2012, 9; Kohl and Trifonov 2013, 1579; Sagona 2018a, 137-138.
[1295] Lyonnet 2007, 135; Nebieridze 2010, 166; Lyonnet 2018, 563; Sagona 2018a, 138.
[1296] Gadzhiev 1991; Kiguradze 2000, 321; Kiguradze 2001b, 50; Kiguradze and Sagona 2003, 45; Nebieridze 2010, 176.
[1297] Gadzhiev 1991; Kiguradze 2001b, 50; Kiguradze and Sagona 2003, 45; Sagona 2018a, 137-138.

were built with walls measuring 1.5 metres thick and fitted with open circular hearths around 0.6 to 1.9 metres in diameter. The circular structures were semi-subterranean and measured up to 2.5 metres in diameter. Nine circular domestic pits were also discovered.[1298] The mixed Chalcolithic deposits at Ginchi make it difficult to associate the site with the Sioni complex. Rather, the early deposits are considered to represent a local development with a strong connection to communities further south.[1299]

Galyugai I – In the northern Caucasus, features reminiscent of the Sioni complex continued into the early Maikop period at Galyugai I and other related sites situated in the Terek and Kuban river basins. At Galyugai I, grit tempered ceramics with notched rims and perforated, shallow trays were uncovered.[1300] Architecture is characterised by three round domestic structures. The dwellings were constructed from wattle-and-daub and varied in size from 21 to 38 square metres. The dwellings were fitted with circular hearths which were positioned in the centre and along the perimeter of the domestic space. Circular pits and the remains of large storage jars were also discovered **(*fig. 5.56*)**.[1301]

Ust'-Dzheguta – Fragments of shallow trays with a row of perforations beneath the rim also came from Ust'-Dzheguta **(*fig. 5.57*)**. Ust'-Dzheguta is positioned on a terrace overlooking the right bank of the Kuban River. The distribution of surface finds indicate that the settlement extended over an area measuring 1000 by 500 square metres. The fragmentary remains of baked clay point to lightweight, wattle-and-daub

[1298] Gadzhiev 1991; Kiguradze 2001b, 50; Kiguradze and Sagona 2003, 45; Sagona 2018a, 138.
[1299] Kiguradze 2001b, 50; Nebieridze 2010, 176; Lyonnet 2018, 550.
[1300] Korenevskii 2004, Fig. 4, Fig. 5; Lyonnet 2007, 135-136; Nebieridze 2010, 177; Courcier 2014, 594-595.
[1301] Korenevskii 2004, 12-14; Anthony 2007, 209-291; Sagona 2018a, 150-151.

architecture.[1302] A small number of perforated ceramics were also recovered from Sereginskoe and Bol'sheteginskoe.[1303]

Conclusion

In the mid-1970s, the discovery of a handmade grit and obsidian tempered ware, with a restricted morphology and distinctive decorative rim treatment, at Sioni marked the beginning of archaeological investigations into the Chalcolithic period of eastern Georgia.[1304] Since its discovery, Sioni ware, and its distinctive features, can be traced across the entire region of the Transcaucasus. Based on the distribution of its assemblage, the heartland of the Sioni complex resides in eastern Georgia where the majority of Sioni sites are found.[1305] Here, Chalcolithic settlements are positioned along the mountains and foothills and are characterised by thin occupational deposits, scant architectural remains, and a prevalence of pits.[1306]

Across the Transcaucasus, the frequency of pits is a reoccurring theme amongst settlements of the Chalcolithic period. Research suggests that the deposition of refuse was more purposeful and structured than previously thought.[1307] Pits may have held a social and symbolic significance that extended beyond the practical applications of waste disposal and storage. At Chalcolithic settlements, pits are strongly associated with domestic contexts and were filled with household refuse including large quantities of faunal remains, broken stone and bone tools, lithic debitage, and ceramic fragments.

[1302] Nechitajlo 2007, 163-164, Fig. 9.2; Lyonnet 2018, 563.
[1303] Korenevskii 2004, Fig. 12, Fig. 15; Courcier 2014, 594-595.
[1304] Menabde and Kiguradze 1981.
[1305] Kiguradze and Sagona 2003, 40; Kiguradze and Menabde 2004, 362; Demetradze and Mirtskhukava 2010, 160; Sagona 2010b, 689; Sagona 2014, 30; Sagona 2018a, 203.
[1306] Kiguradze 2000, 321; Kiguradze 2001b, 45; Kiguradze and Sagona 2003, 40; Marro 2007, 10-11; Demetradze and Mirtskhulava 2010, 160; Sagona 2018a, 204.
[1307] Chapman 2000, 63.

However, at sites such as Rustepesi and Köhne Pāsgāh Tepesi, the discovery of ash, ochre pigment, painted ceramics, animal figurines, and copper fragments suggests that the deposits were made intentionally and that pits may have played a central role within rituals of the domestic context.[1308]

The act of digging pits may have been connected to a sense of place within the landscape. For mobile and semi-mobile communities, pits may have symbolically commemorated rituals of arrival, departure, and return.[1309] At Sioni, the discovery of a fully articulated skull of a bull in the central pit of Structure 1 may represent a foundation deposit. It is also feasible that the digging of ditches at settlements, such as Alazani III, Damtsvari Gora, and Chinti, fulfilled a similar purpose.[1310] For sedentary communities, where pits were dug into previous occupational deposits, the digging of pits may have provided an opportunity to engage and exchange symbolically with ancestors and generations past. The incorporation of human remains into the fill of several pits at Areni-1 seems to reinforce this connection.[1311]

The thin deposits of Sioni settlements, situated along the mountains and foothills, in eastern Georgia represents a fundamental break in settlement distribution and type which occured at the onset of the Chalcolithic period.[1312] In eastern Georgia, the development of the Sioni complex marks the closure of the Late Neolithic and the end of the Aratashen-Shulaveri-Shomutepe tradition and, with it, the densely occupied

[1308] Narimanov 1987, 33-34; Aliev and Narimanov 2001, 27-28; Maziar 2010, 170; Nejad et al. 2011.
[1309] Chapman 2000, 76.
[1310] Chapman 2000, 68; Kiguradze 2001b, 53; Sagona 2014, 36; Sagona 2018a, 206.
[1311] Chapman 2000, 64; Wilkinson et al. 2012, 27.
[1312] Kiguradze 2000, 321; Kiguradze and Sagona 2003, 40; Connor and Sagona 2007, 30; Sagona 2010b, 685-686; Connor 2011, 232-234; Chataigner et al. 2014, 13; Varoutsikos et al. 2014, 237; Sagona 2018a, 93-94.

tells clustered along the Kura and Araxes river basins. This break in settlement patterns also coincides with a shift in subsistence strategies, which may reflect a response to the evolving ecological and climatic conditions of the early to mid-Holocene period.[1313]

Current settlement data indicates that Chalcolithic communities abandoned the agricultural farming economy of the Late Neolithic in favour for a mixed farming, agro-pastoral subsistence strategy, with varying degrees of mobility and sedentism, focused on diversification and the minimisation of risk.[1314] This is implied by thin occupational deposits and evidence for less durable, domestic architecture found at Tsopi and Nachivchavebi in eastern Georgia, Areni-1 in Armenia, and Ust'Dzheguta in the northern Caucasus. The distribution of settlements beyond the confines of the Kura and Araxes river basins also indicates that Chalcolithic communities were concerned with exploiting a wide variety of ecological niches.[1315]

Although sparse, the archaeobotanical and faunal evidence indicates both cereal cultivation and pastoralism played an important role within local subsistence economies. Cereals, such as *Triticum aestivum* (bread wheat)*, Triticum dicoccum* (emmer)*,* and *Hordeum vulgare* (hulled barley)*,* were cultivated at Nachivchavebi, Tsopi, Samshvilde, and Tanditskaro 1.[1316] The remains of *Ovis aries* (sheep), *Capra aegagrus* (goat), *Bos taurus* (cattle), and *Sus domesticus* (pig) were also recovered from Tsopi and

[1313] Kiguradze and Sagona 2003, 40; Connor and Sagona 2007, 30; Sagona 2010b, 685-686; Connor 2011, 232-234; Sagona 2018a, 93-94.
[1314] Kiguradze and Sagona 2003, 40; Connor and Sagona 2007, 30; Nechitajlo 2007, 163-164; Chikovani et al. 2010, 96; Nebieridze 2010, 144-146; Connor 2011, 232-234; Areshian et al. 2012, 116; Wilkinson et al. 2012, 23.
[1315] Kiguradze and Sagona 2003, 40; Connor and Sagona 2007, 30; Connor 2011, 232-234.
[1316] Chikovani 1999, 19; Mirtskhulava et al. 2007, 27; Chikovani et al. 2010, 98; Nebieridze 2010, 148; Sagona 2018a, 206-207.

Bavra Ablari in Georgia and Meshoko and Galyugai I in the northern Caucasus.[1317] Wild taxa, including *Sus scrofa attila* (Carpathian boar)*, Cervus elaphus maral* (Caspian red deer)*, Equus caballus fossilis* (wild horse)*, Alces alces caucasicus* (Caucasian moose)*,* and *Bos primigenius* (Auroch), at sites, such as Nachivchavebi, indicates that some communities continued to supplement their subsistence economies with hunting activities.[1318]

The shift in spatial distribution, settlement type, architectural traditions, and subsistence strategies also coincides with changes in local and regional dynamics, which developed at the onset of the Chalcolithic. The Chalcolithic period is characterised by the intensification of interregional interaction. The Transcaucasus formed part of an extensive network, based on the procurement and exchange of natural resources and wealth, which sought to maintain the development of a highly stratified social organisation in regions such as Syro-Mesopotamia, eastern Anatolia, and the Northern Caucasus.[1319] The discovery of Sioni ware at sites outside of eastern Georgia, such as Mentesh Tepe, Leilatepe, and Alikmek Tepesi, and alongside other contemporary traditions, is indicative of such interaction on a regional scale.[1320] Hybridisation and the dispersal of shared features between Sioni ware, Chaff-faced ware, and other local assemblages, particularly at sites such as Beyuk Kesik in Azerbaijan and Kul Tepe/Hadishahr in north-western Iran, further reflects the increasing sophistication of

[1317] Kohl 2007, 78; Nebieridze 2010, 154; Varoutsikos et al. 2012, 50-52; Chahoud 2013, 70-71; Chahoud 2014, 62; Chahoud 2015, 13; Varoutsikos et al. 2018, 247.
[1318] Chikovani et al. 2010, 97.
[1319] Kiguradze and Sagona 2003, 92; Sagona 2010b, 688; Marro 2011, 52; Sagona 2014, 40; Sagona 2018a, 211.
[1320] Narimanov 1987, 47-48; Kiguradze 2000, 322; Aliev and Narimanov 2001, 18-19; Kiguradze 2001b, 51; Akhundov 2007, 116; Museibli 2009, 52; Lyonnet and Guliyev 2012, 89-90; Lyonnet et al. 2012, 101; Lyonnet 2017, 147; Lyonnet 2018, 564; Sagona 2018a, 203.

local and regional cultural dynamics during this period.[1321] As a result, the changes at settlements may not have developed simply as a result of ecological and climatic conditions but, rather, they may have also arisen from the desire to acquire natural resources and facilitate trade in order to actively exploit and partake in these networks of exchange.

[1321] Akhundov 2007, 108, 116; Museibli 2007, 68-69; Museibli and Huseynov 2008, 21-22; Lyonnet and Guliyev 2010, 223; Abedi et al. 2014, Fig. 21.9, Fig. 28.16, Fig. 29.2; Sagona 2014, 16; Abedi et al. 2015, 325.

Chapter Five: Figures

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Figure 5.1: Plan and section of the Chalcolithic occupation at the site of Sioni (after Menabde and Kiguradze 1981, Fig. 1).

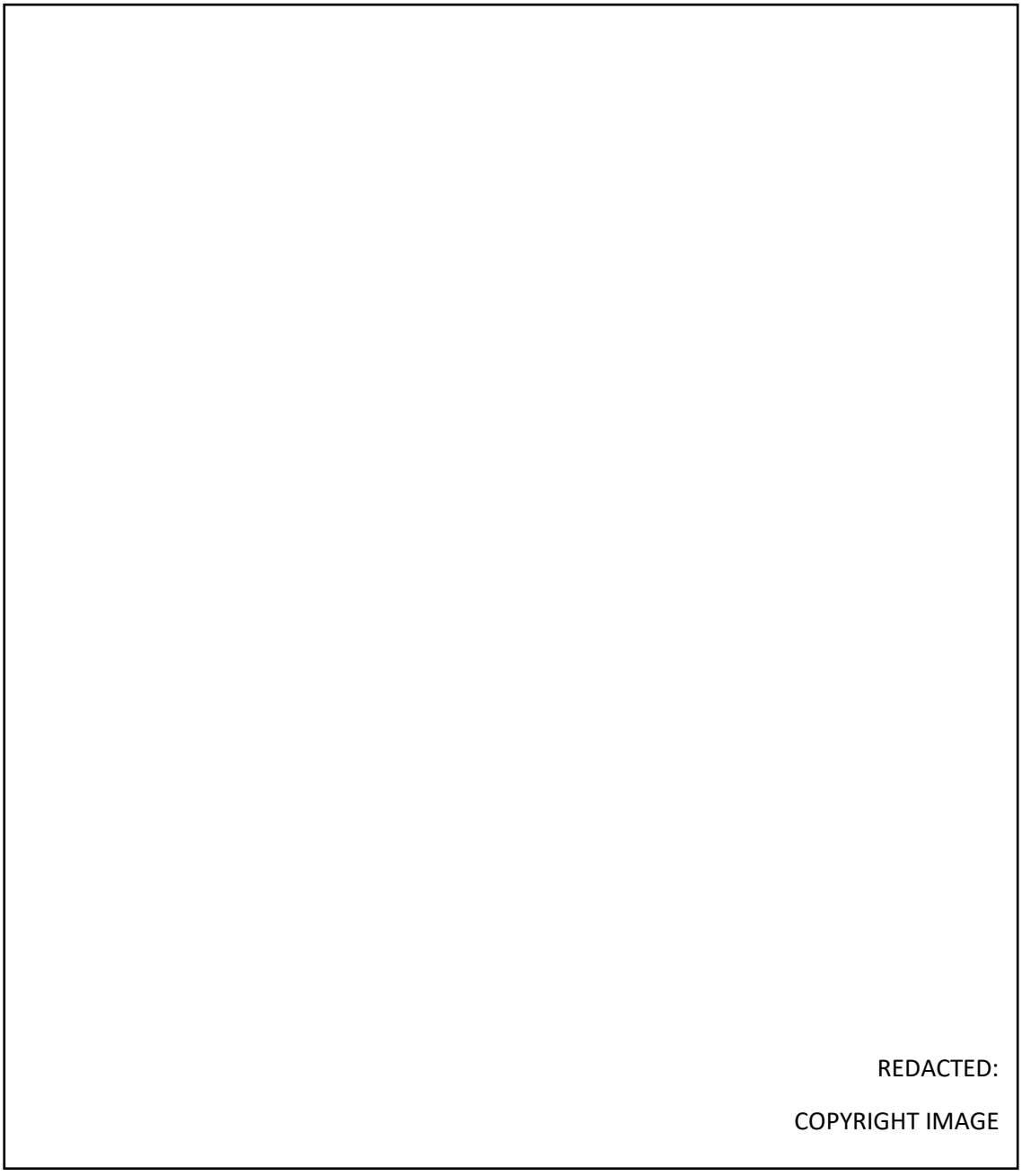


Figure 5.2: The curved, stone wall of Structure 1 at Sioni (after Menabde and Kiguradze 1981, Tab. 1).

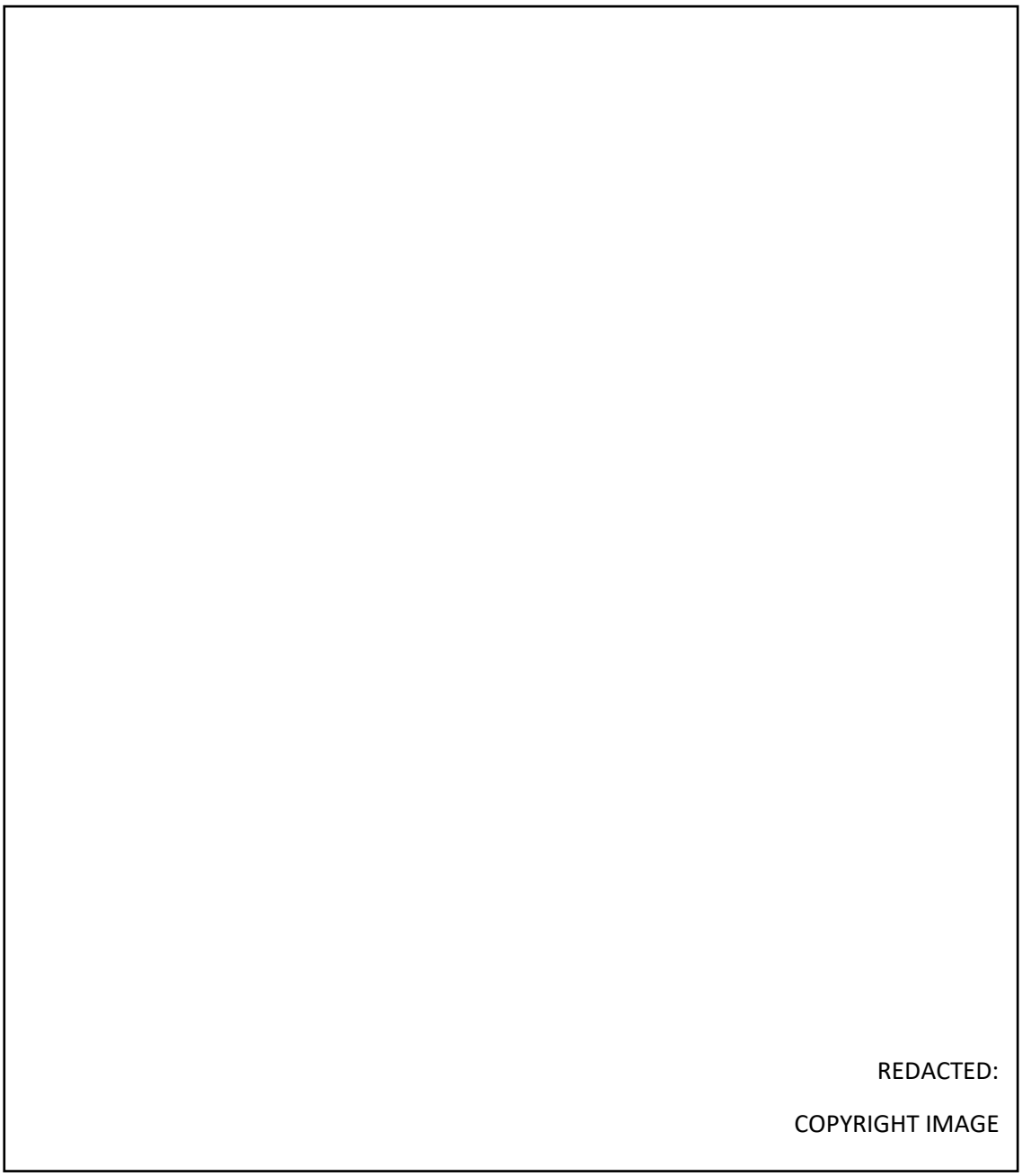


Figure 5.3: Middle Bronze Age Pit Tomb 4 found cut into the wall of Structure 1 (after Menabde and Kiguradze 1981, Tab. 4.1).

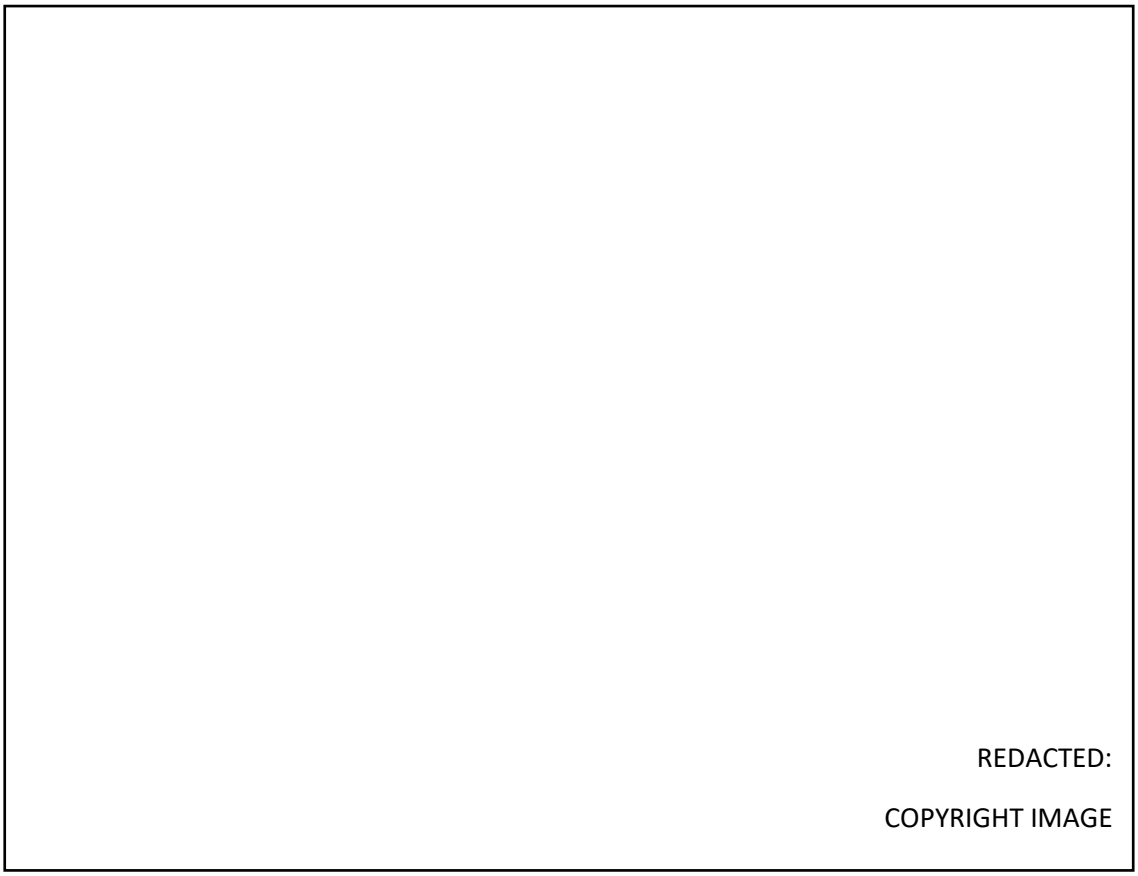


Figure 5.4: Circular pit uncovered close to the hearth found in Structure 1 (after Menabde and Kiguradze 1981, Tab. 3.2).

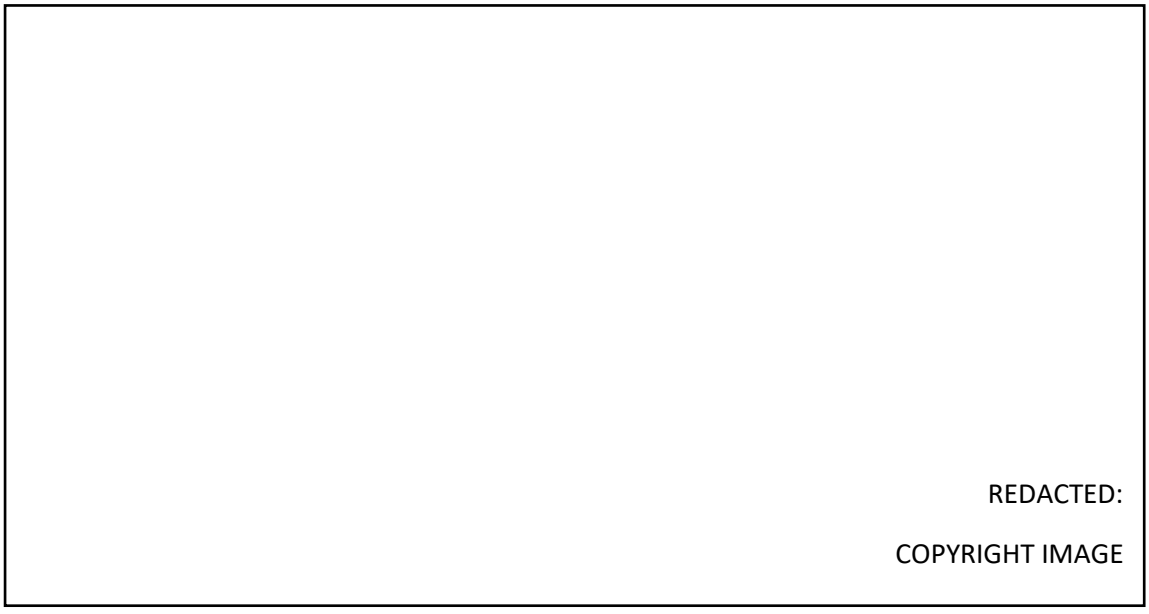


Figure 5.5: Stone wall of Structure 2 with the wall of Structure 3 immediately to the right. Middle Bronze Age Pit Tomb 10 can also be seen to the right (after Menabde and Kiguradze 1981, Tab. 4.1).



Figure 5.6: The remains of a disused animal shed built directly atop of the Chalcolithic settlement at Sioni (Photo: B. Shapardon).



Figure 5.7: The site of Sioni today almost 45 years after the excavation of the Chalcolithic settlement (after D. Patch).

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Figure 5.8: Site plan of the site of Tsopi during the excavations of 1976 (after Nebieridze 2010, Fig. 4).

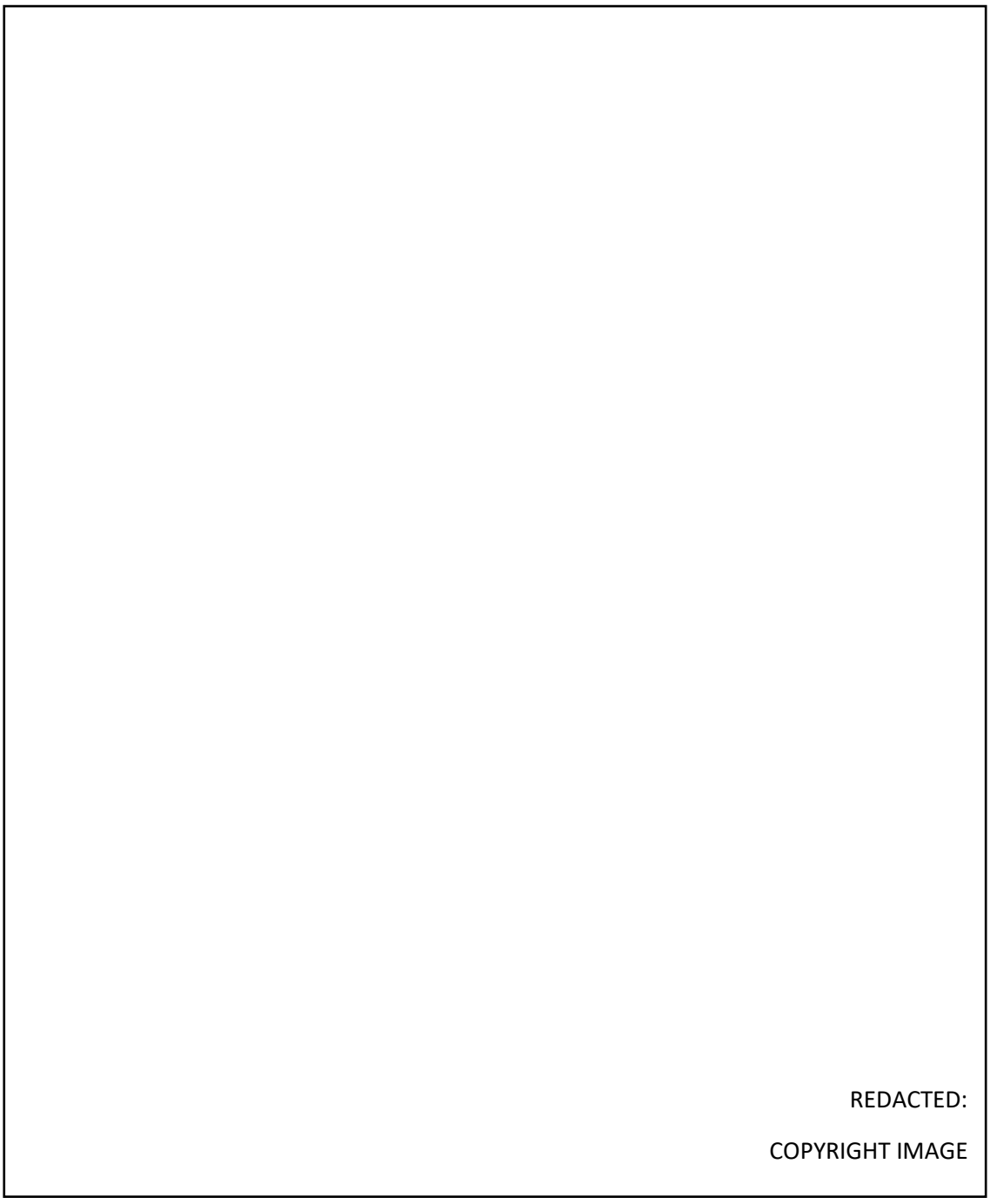


Figure 5.9: Plan and section of the site of Nachivchavebi (after Chikovani et al. 2010, Pl. I).

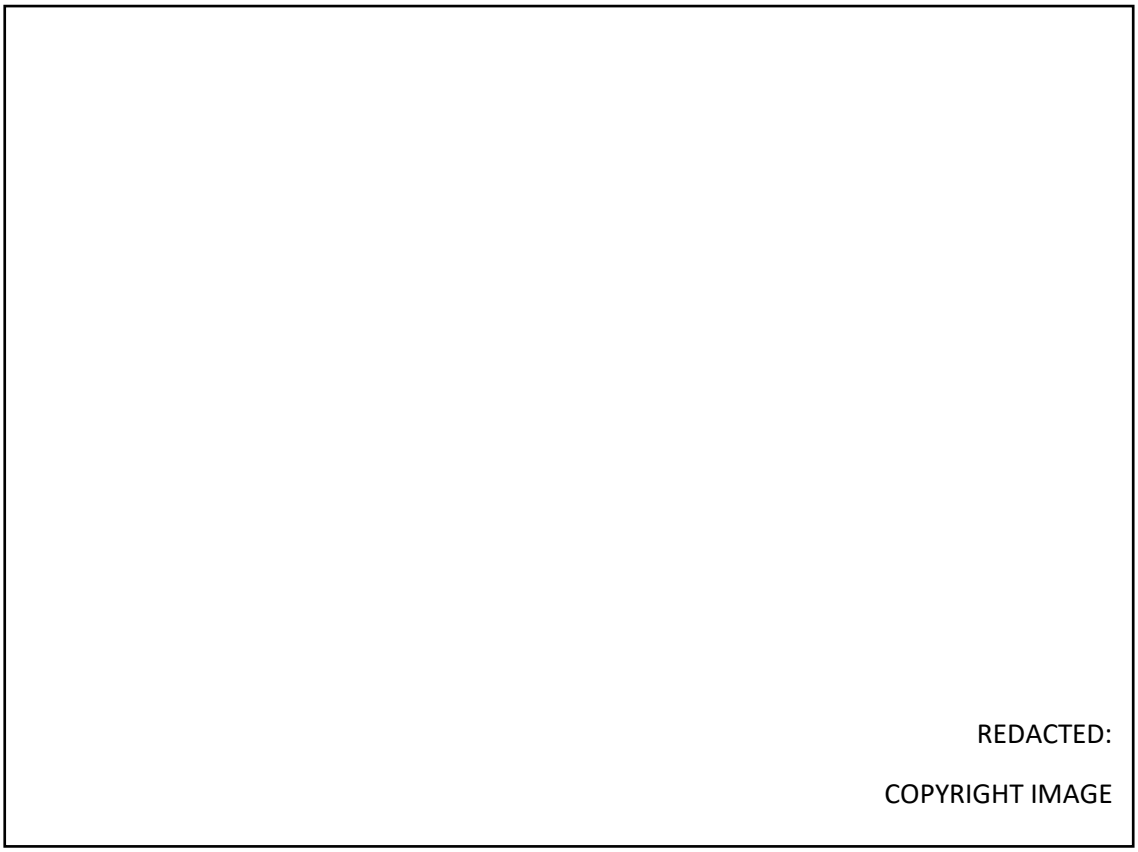


Figure 5.10: Plan and section of the semi-dugout and pit at Nachivchavebi (after Chikovani et al. 2010, Pl. III).

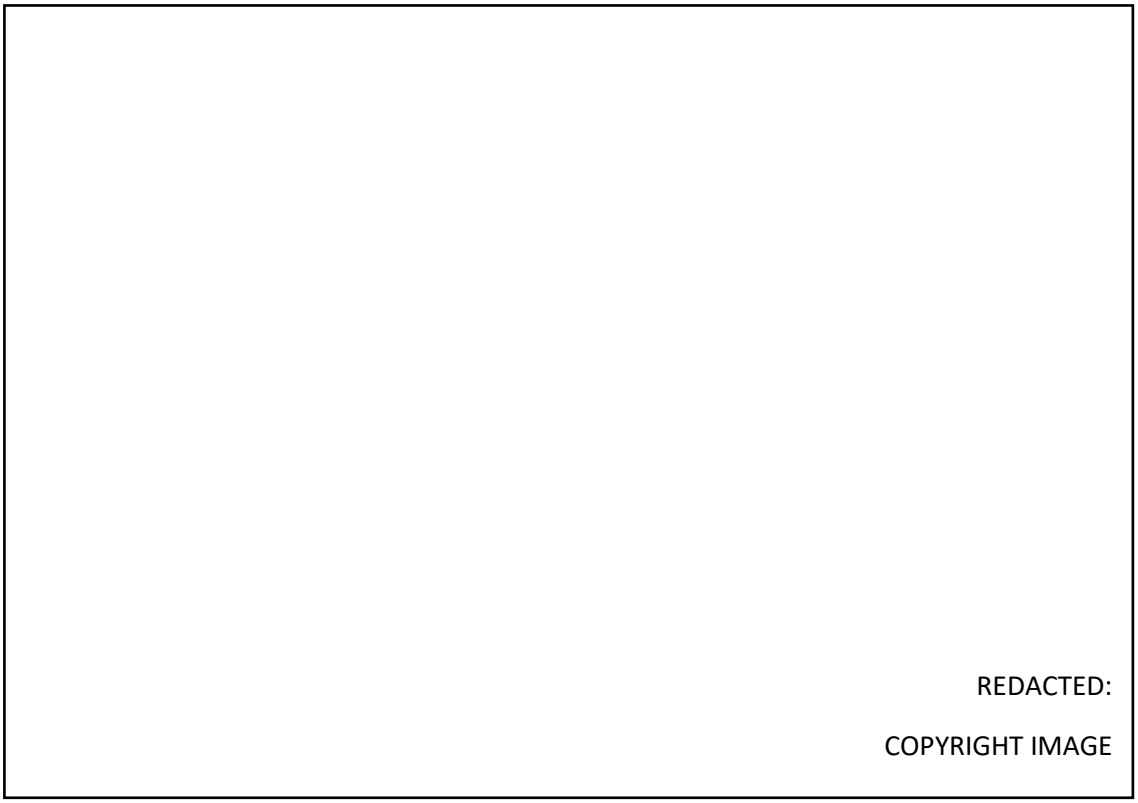


Figure 5.11: Plan and section of the Chalcolithic pit grave, Burial 4, at Nachivchavebi (after Chikovani et al. 2010, Pl. IV).

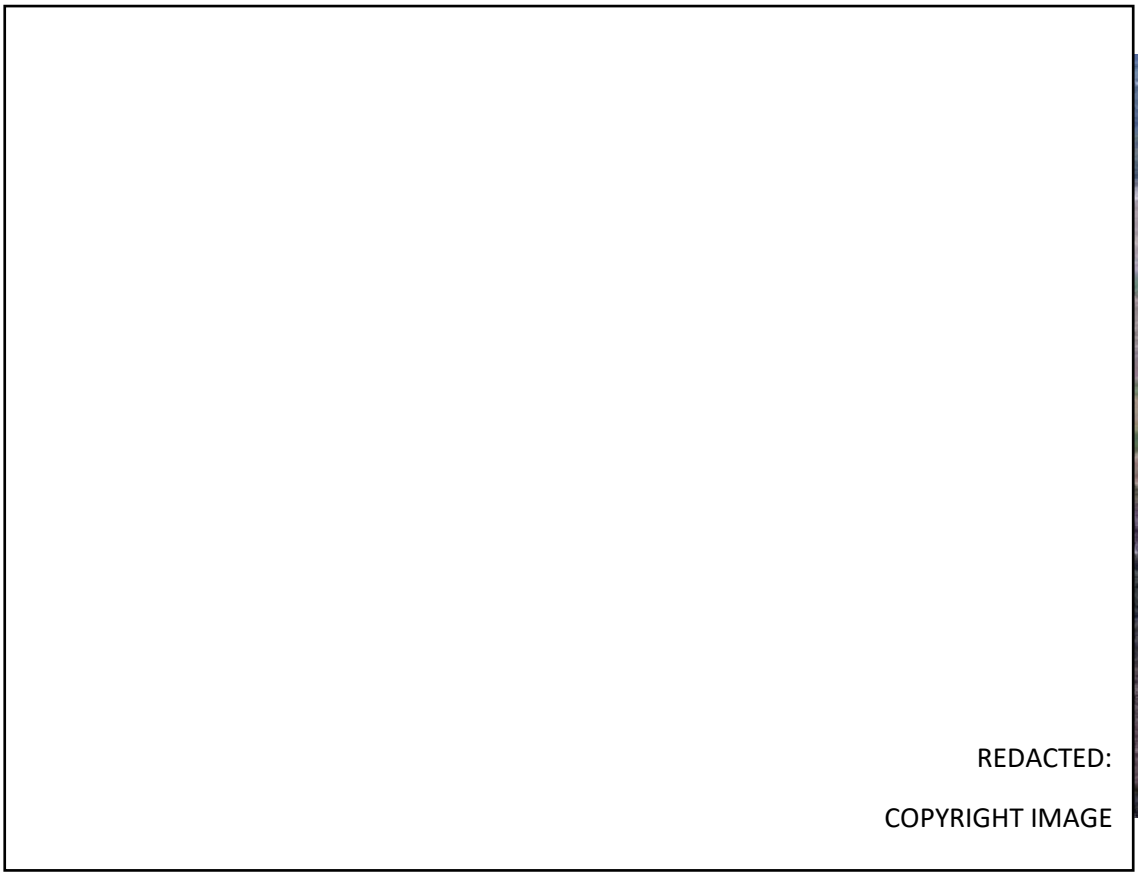


Figure 5.12: Aerial photo of the settlement plateau of Dzedzvebi IV (after Stöllner et al. 2014, Fig. 31).

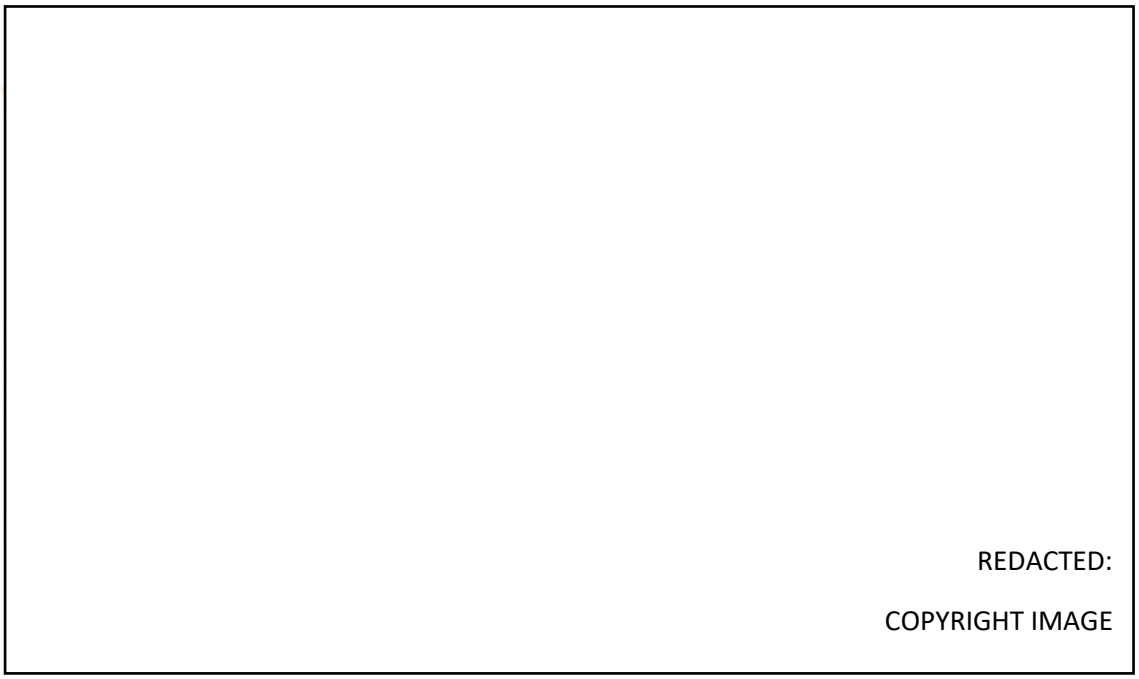


Figure 5.13: N section of Trench 4 at Dzedzvebi IV.3 (after Stöllner et al. 2014, Fig. 33).

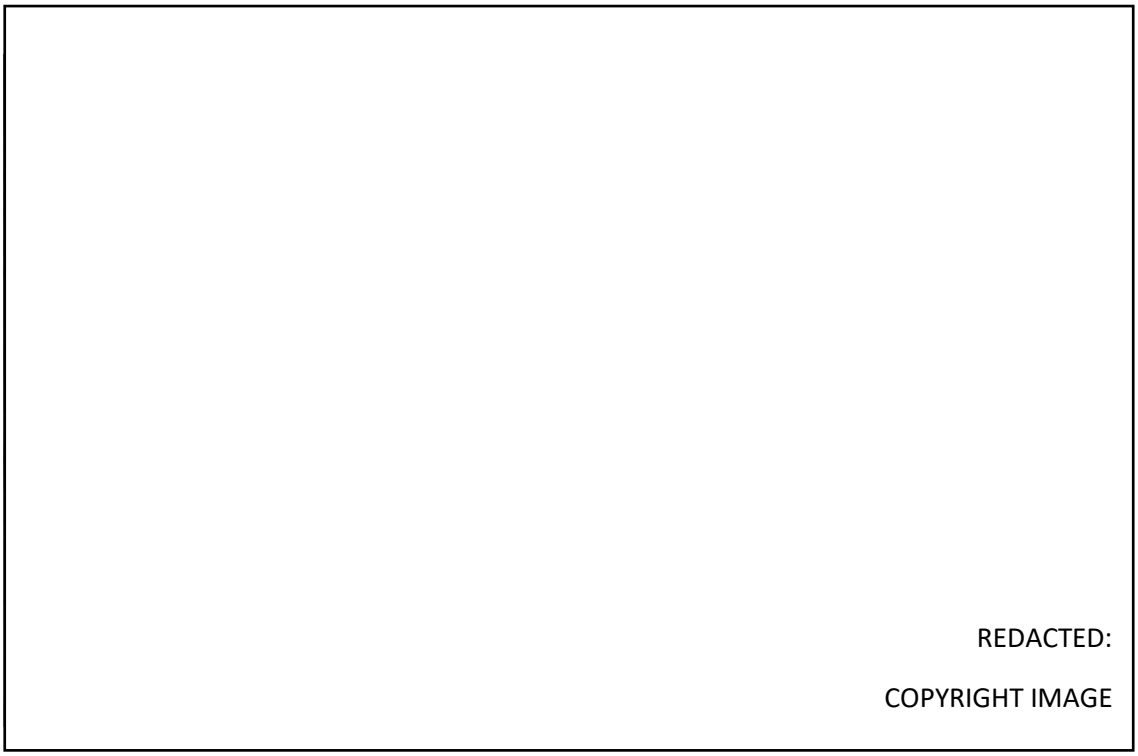


Figure 5.14: Crucibles discovered *in situ* in a Late Chalcolithic pit at Dzedzvebi IV.3 (after Gambashidze et al. 2016b, 112).

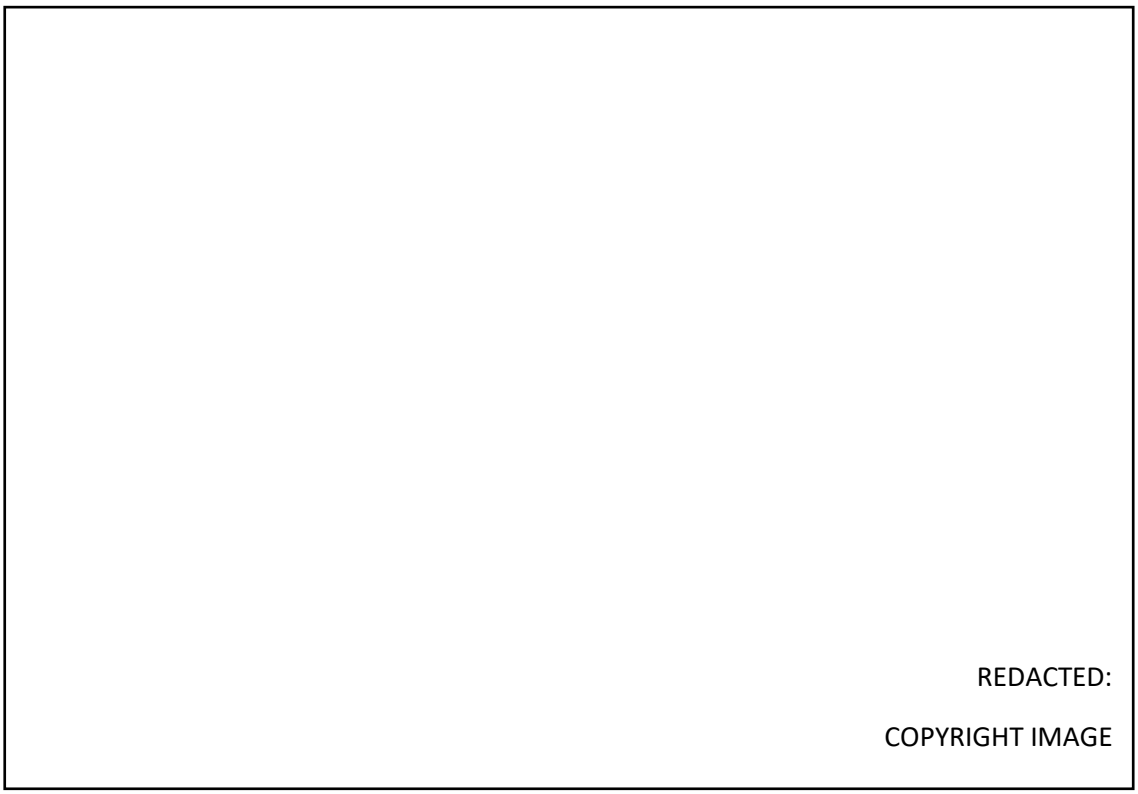


Figure 5.15: Ceramic and bone material discovered in a Late Chalcolithic pit at Dzedzvebi IV.3 (after Gambashidze et al. 2016b, 113).

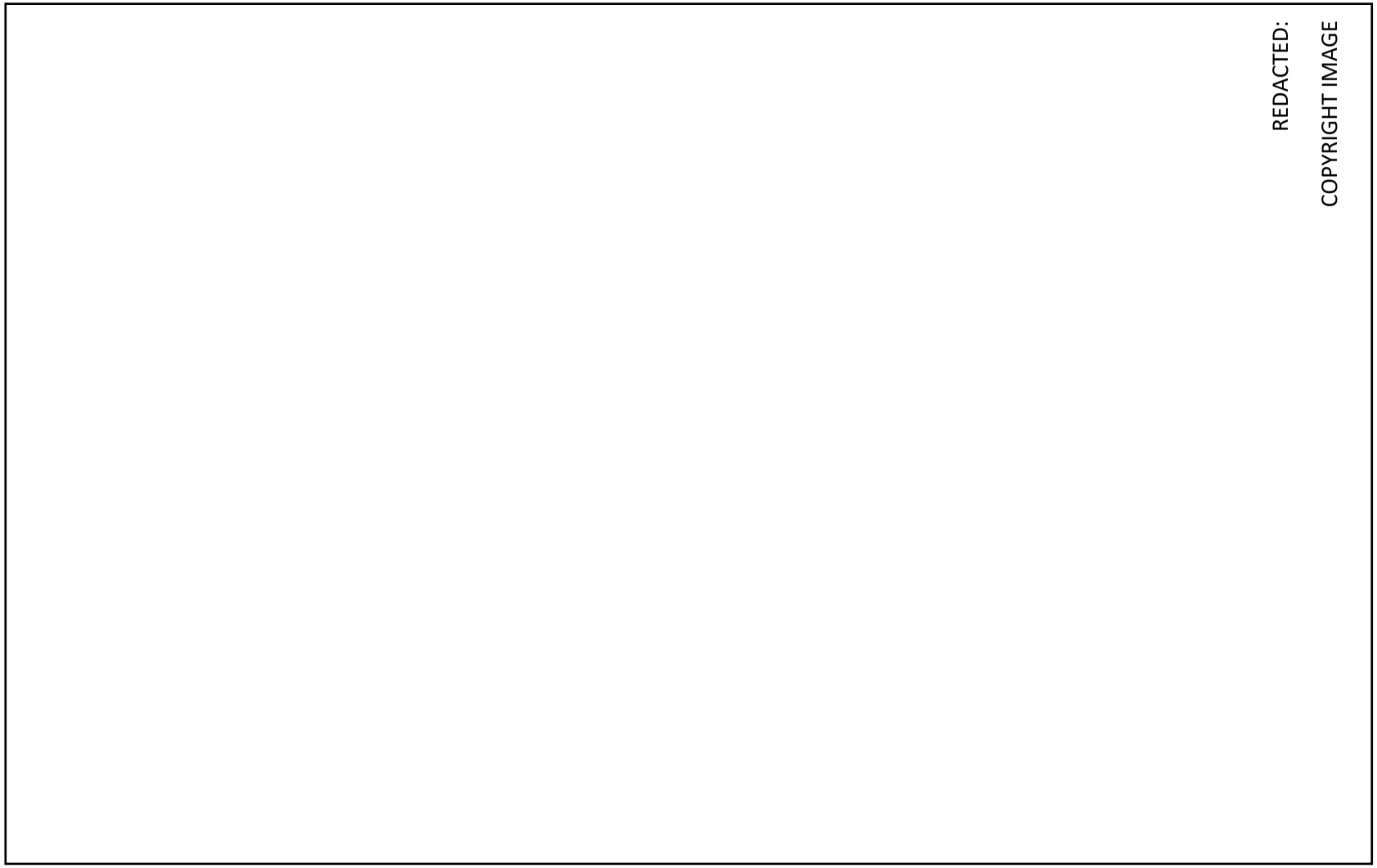


Figure 5.16: Plan of Alazani III (Kviriastskali) showing the pits excavated within the top portion of the mound (after Varazashvili 1992, Tab. LVI).

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Figure 5.17: Plan of Damtsvari Gora (after Varazashvili 1992, Tab. II).

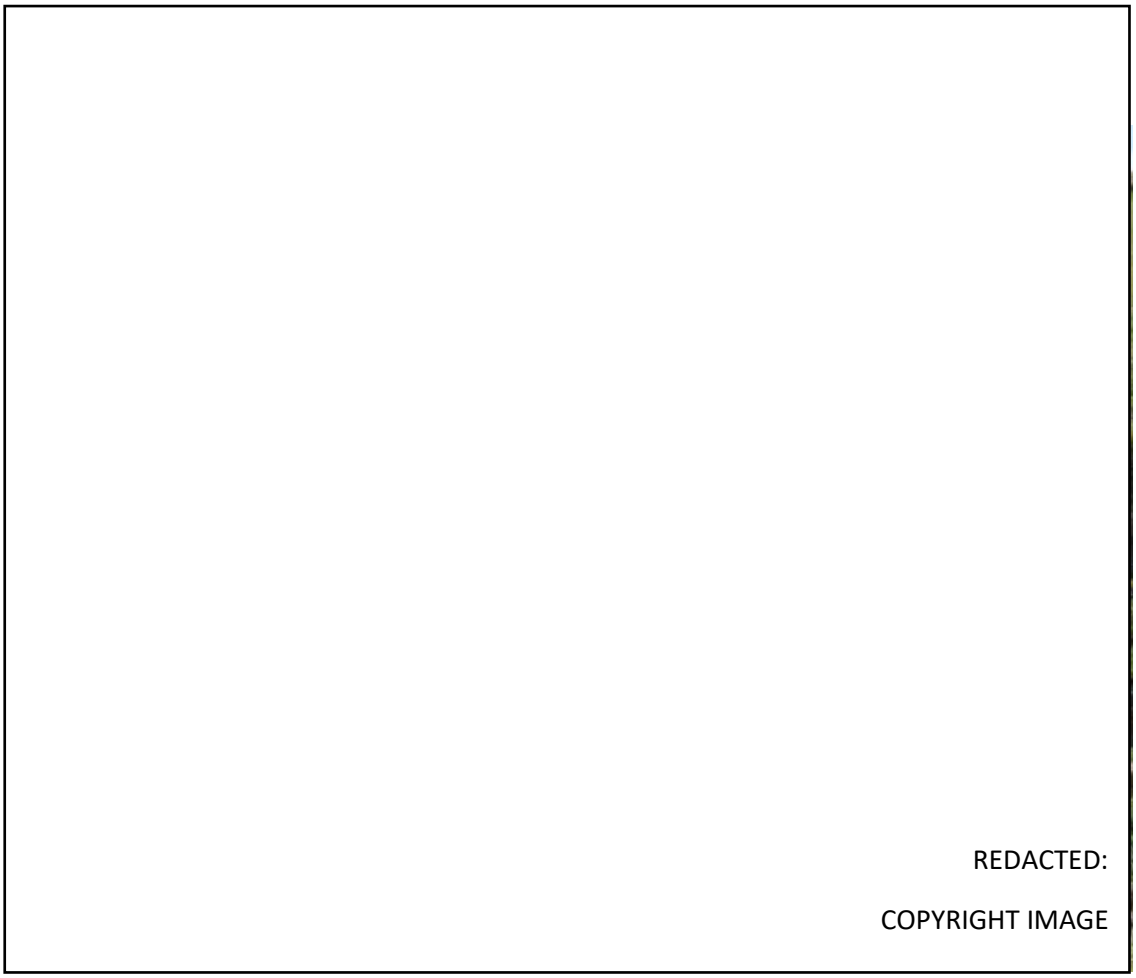


Figure 5.18: View of the Bavra Ablari rock shelter (after Varoutsikos et al. 2015, Fig. 1).

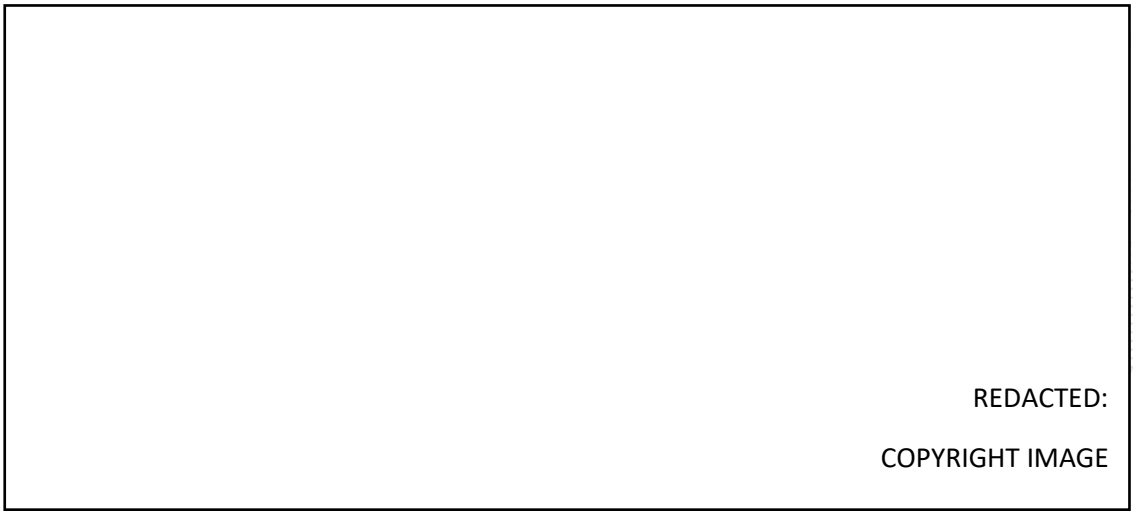


Figure 5.19: Simplified stratigraphic sequence of the Bavra Ablari rock shelter showing the western section of squares I1 to I5, surface to Layer 3 (after Varoutsikos et al. 2018, Fig. 3).

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Figure 5.20: Plan of Area D, Orchosani (after Baramidze et al. 2007, Pl. IX).

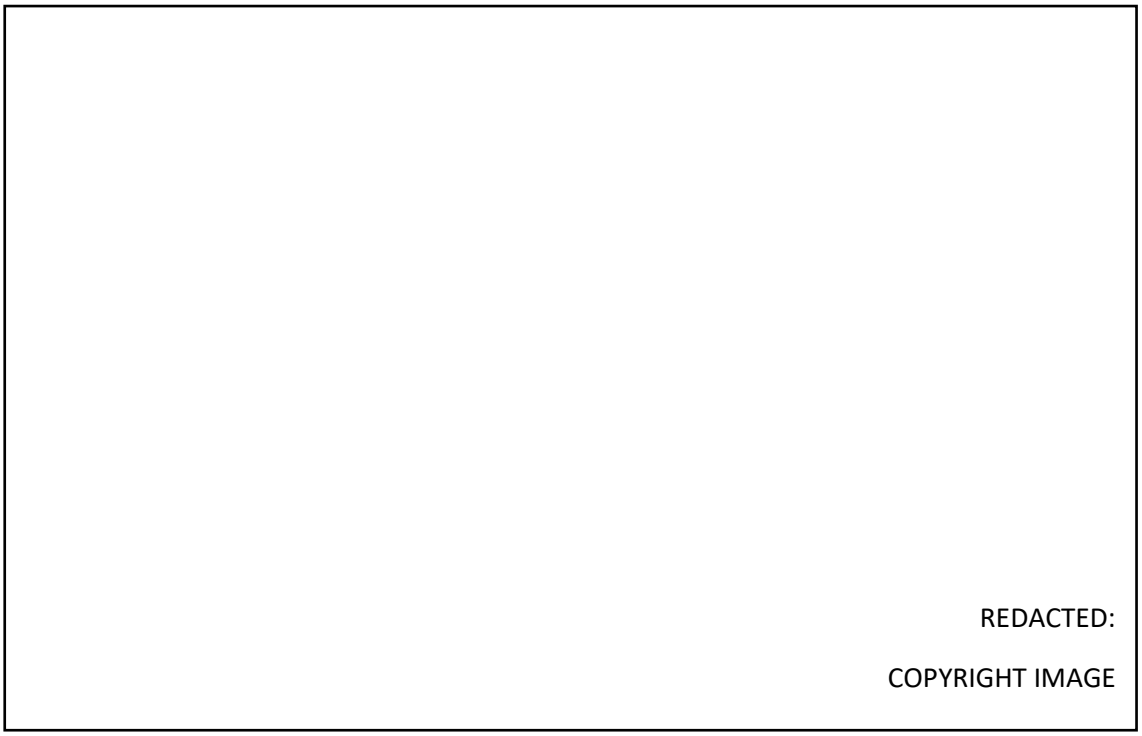


Figure 5.21: Area D at Orchosani, Layer I (after Baramidze et al. 2007, Pl. X:1).



Figure 5.22: Pits discovered in Area D at Orchosani, Layer II (after Baramidze et al. 2007, Pl. X:2).

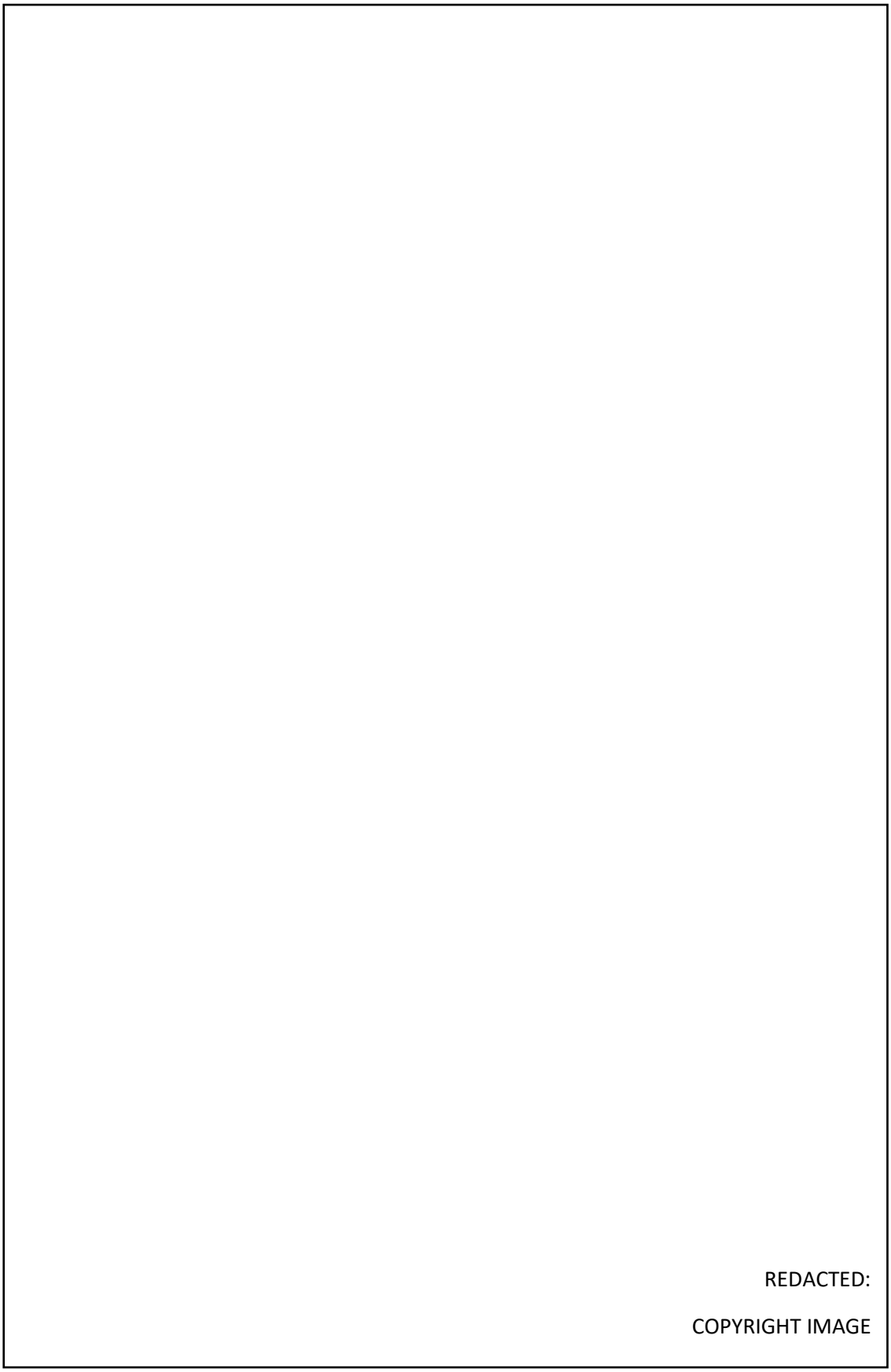


Figure 5.23: Sherds with notched and impressed rims recovered from the west Georgian site of Anaseuli II (after Nebieridze 2010, Pl. XLVI).

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Figure 5.24: Schematic cross section of the stratigraphy showing both the upper and lower areas of the Dzudzuana rock shelter (after Bar-Yosef et al. 2011, Fig. 3).

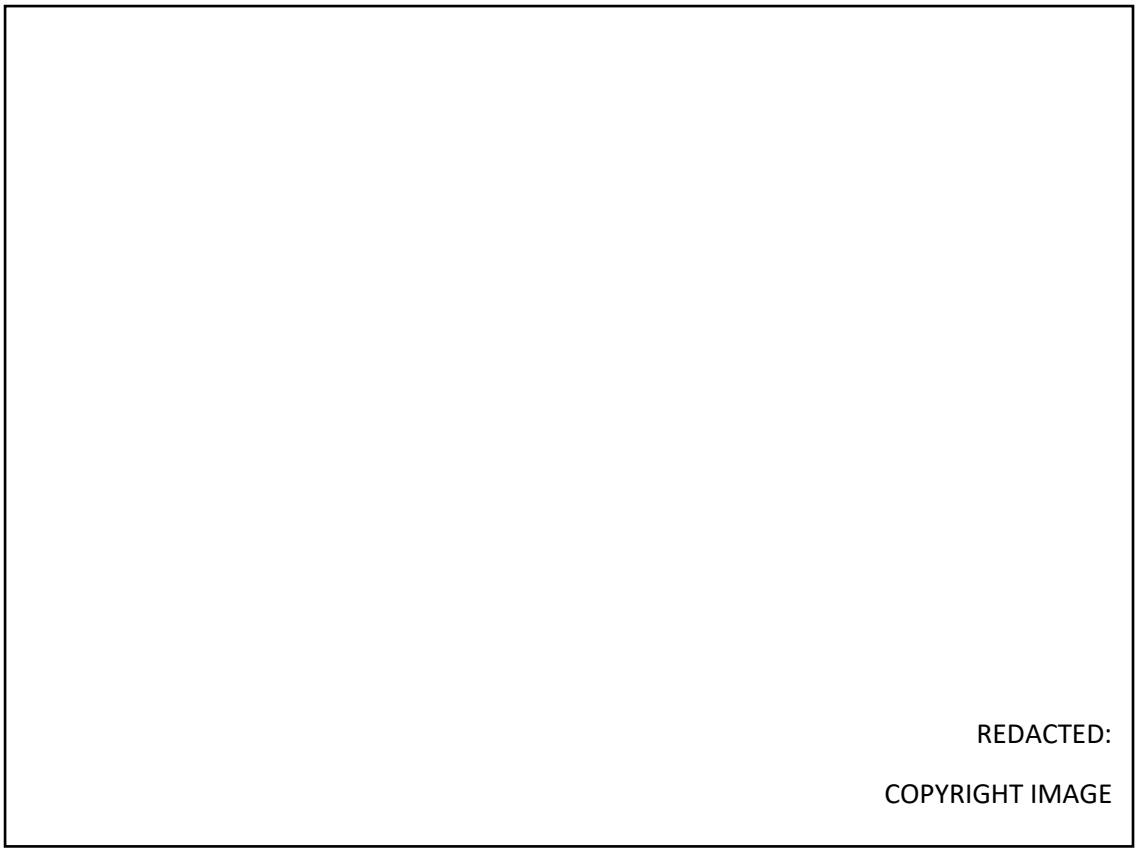


Figure 5.25: Topographic plan of the site of Aknashen (after Badalyan and Harutyunyan 2014, Fig. 1).

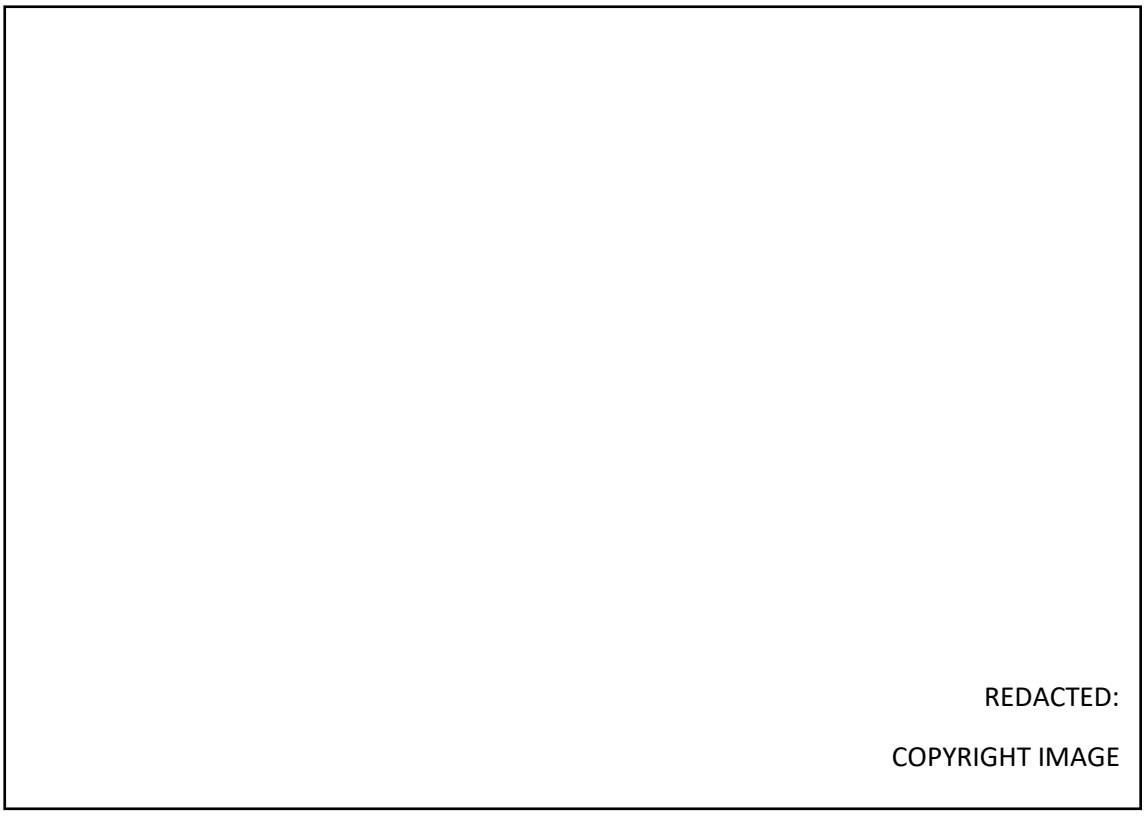


Figure 5.26: View of Aratashen with Mount Ararat in the background (after Palumbi et al. 2014, Fig. 2).

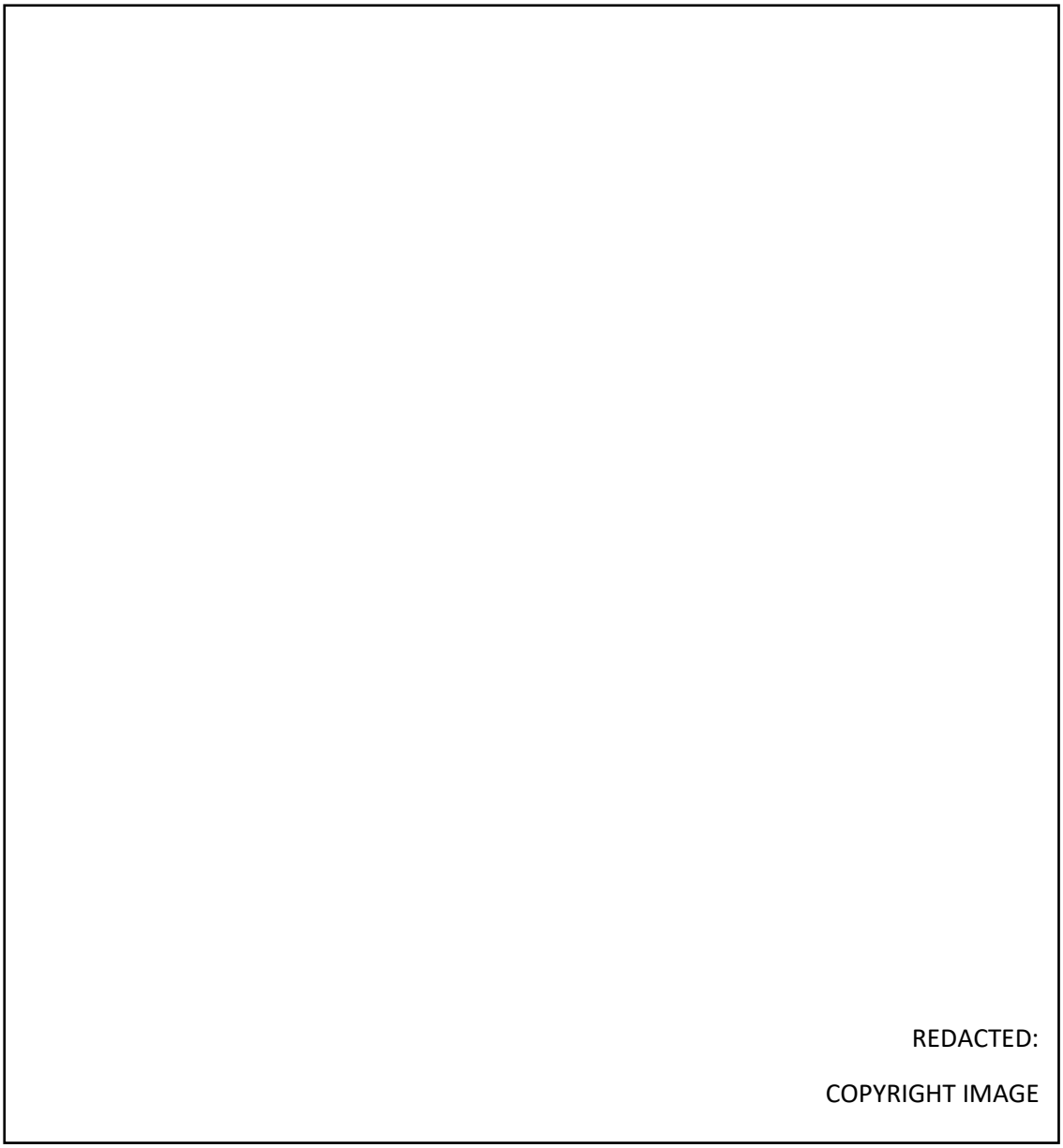


Figure 5.27: Different decorative motifs applied to the rims of obsidian tempered ceramics from Aratashen – (a) – comb impressed; (b, c, e) – incised; (d) – circular impressed (after Palumbi et al. 2014, Fig. 5).

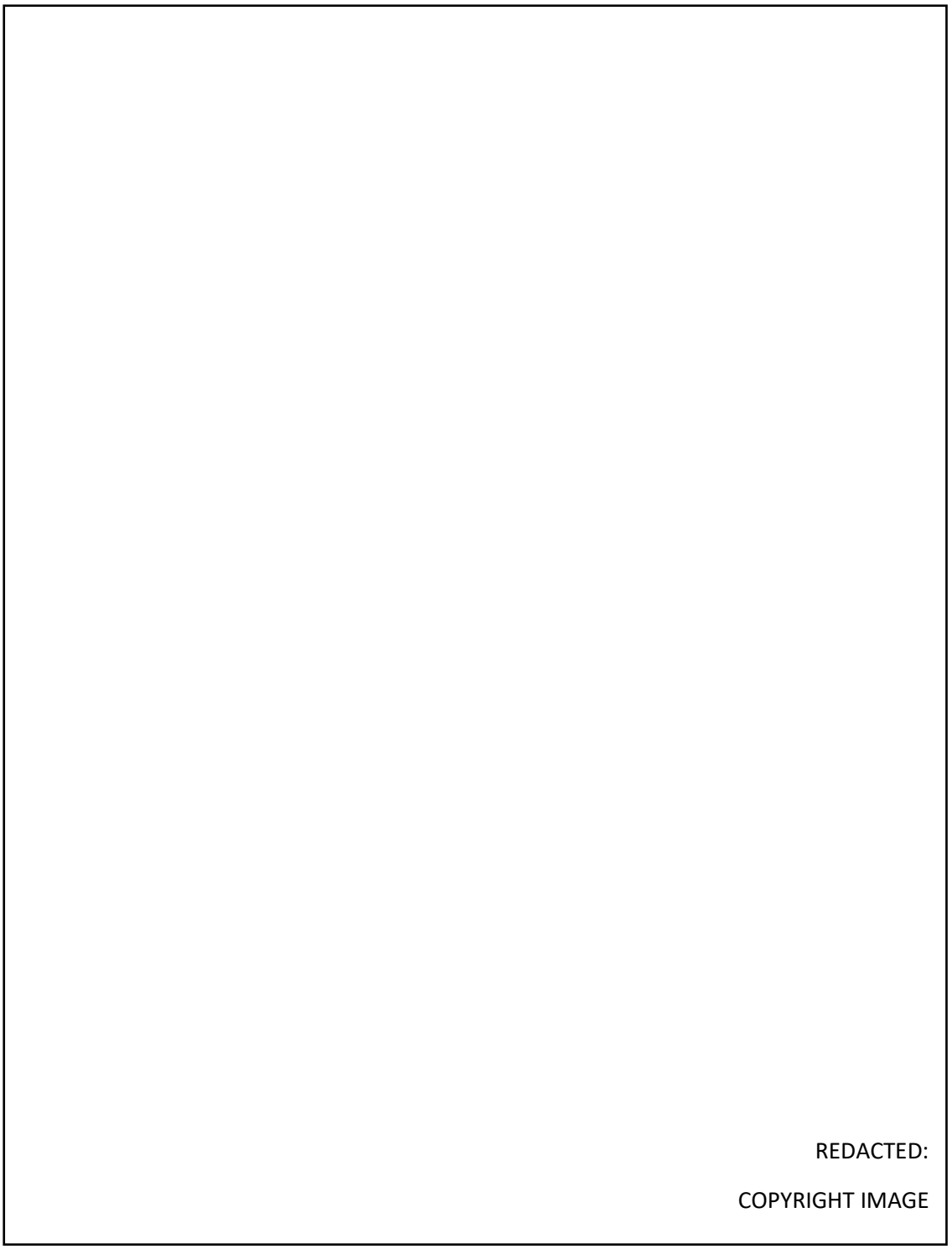


Figure 5.28: Plan and section of Kurgan 5 at Aknalitch (after Muradyan et al. 2014, Fig. 2).

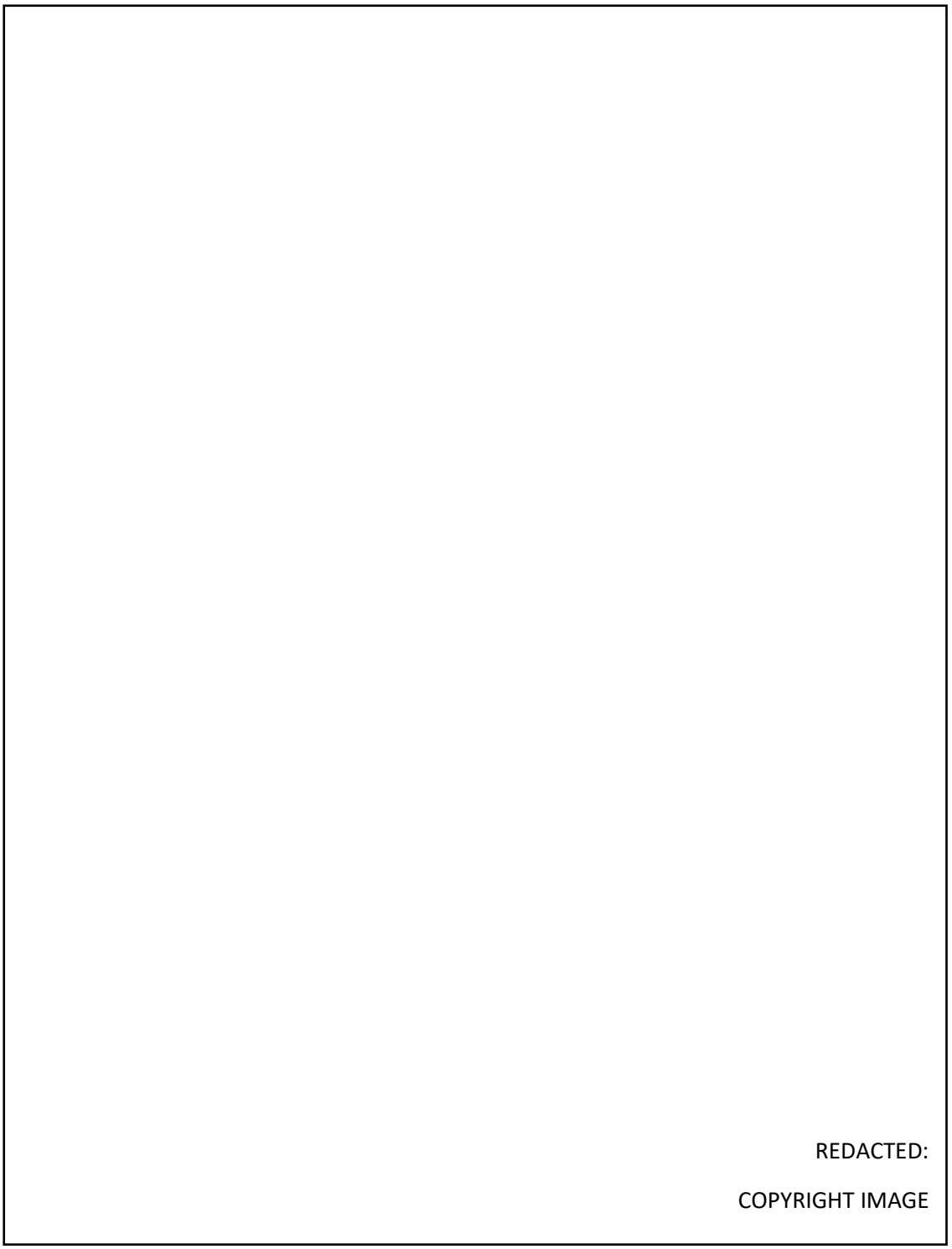


Figure 5.29: Plan and section of Kurgan 6 at Aknalitch (after Muradyan et al. 2014, Fig. 5).

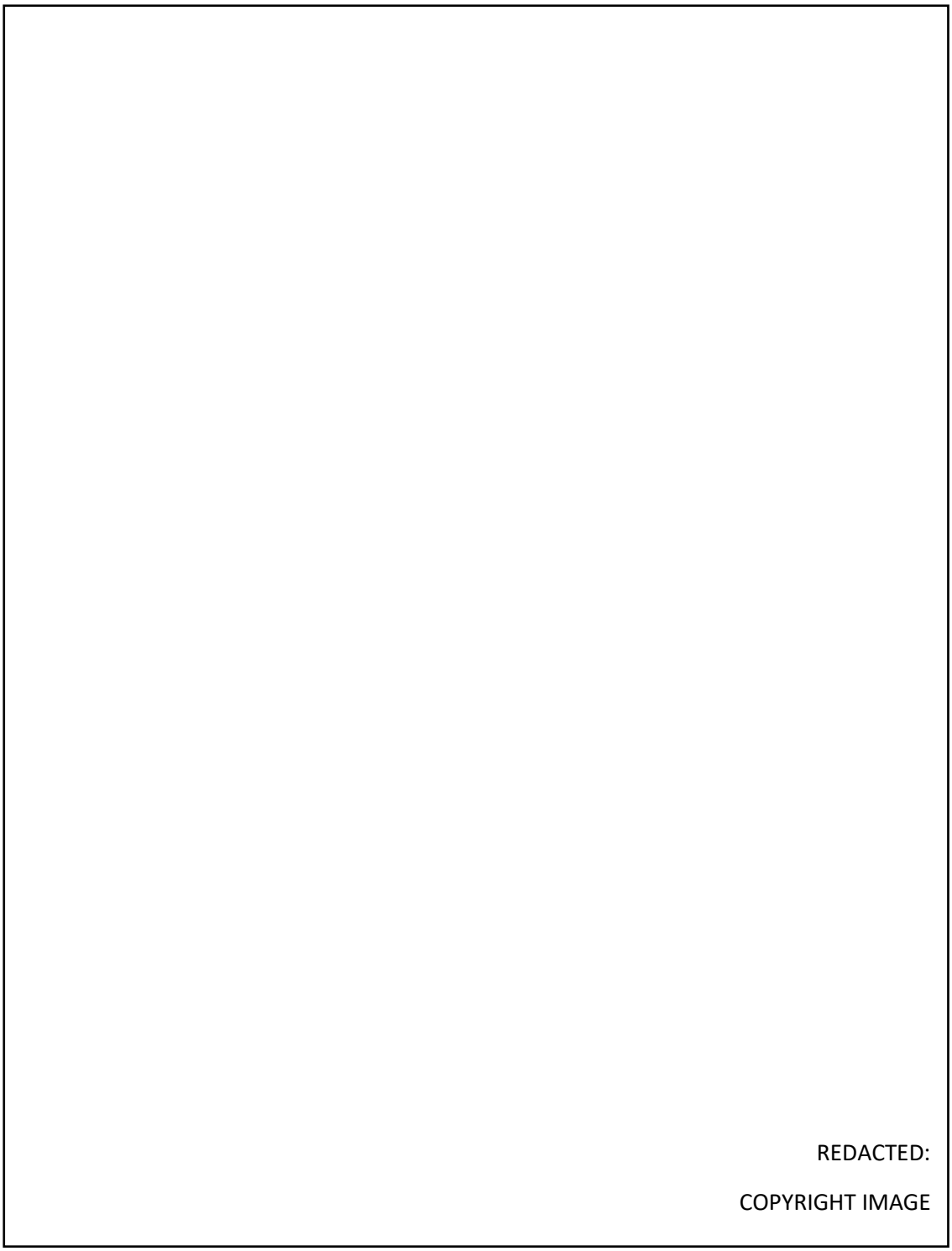


Figure 5.30: Topographic plan of the Areni-1 cave complex (after Smith et al. 2014, Fig. 2).

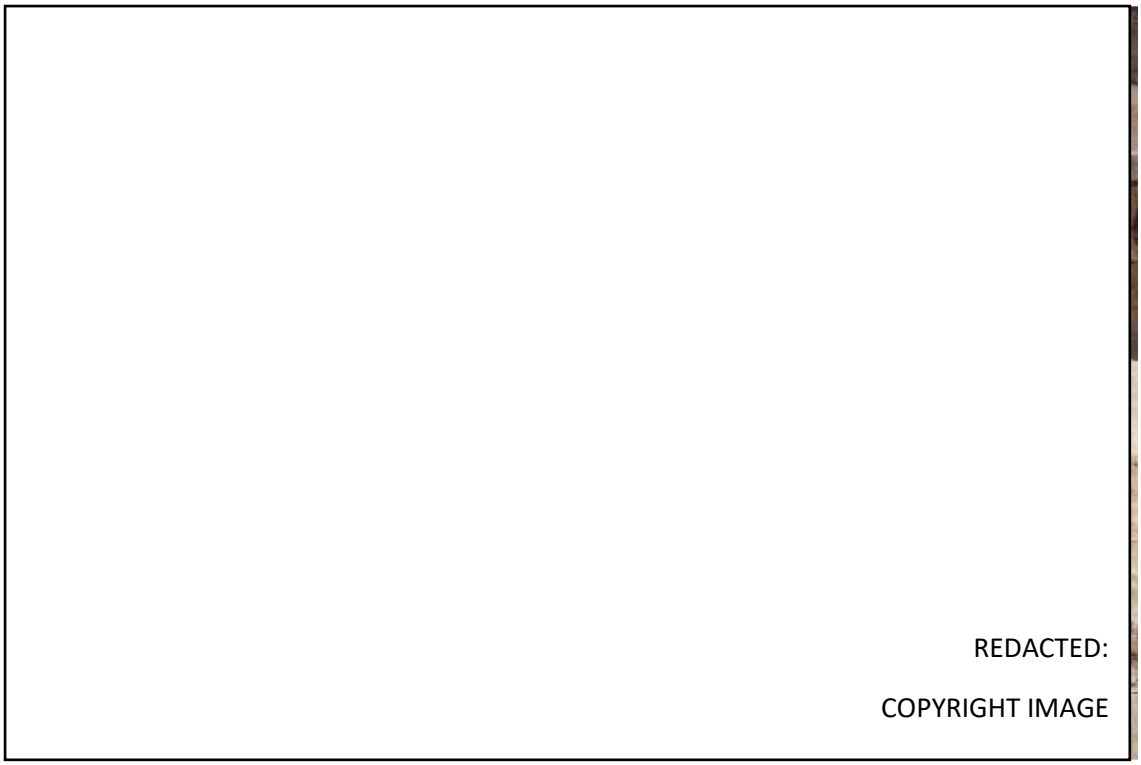
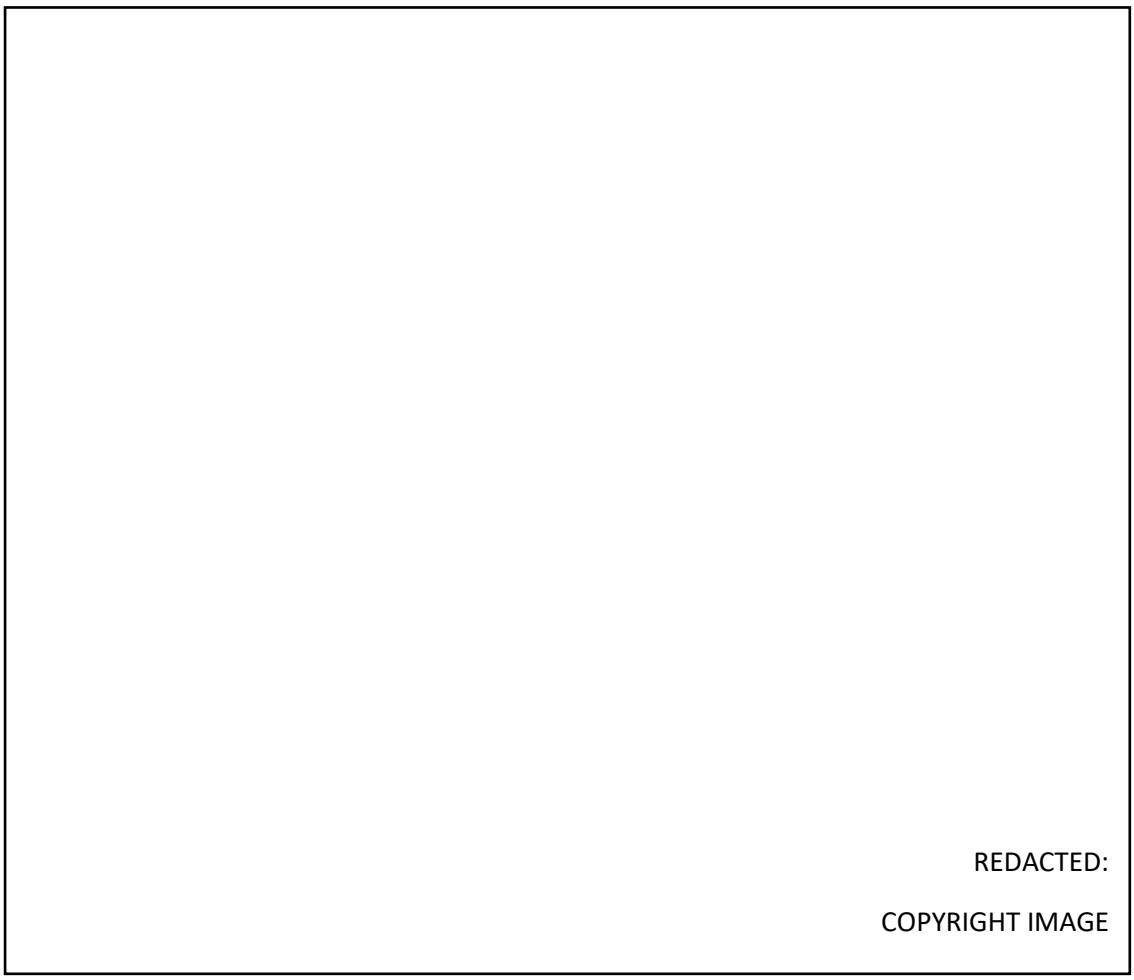


Figure 5.31: Grape pressing installation used for the production of wine, discovered in Trench 1 (after Smith et al. 2014, Fig. 3.1).



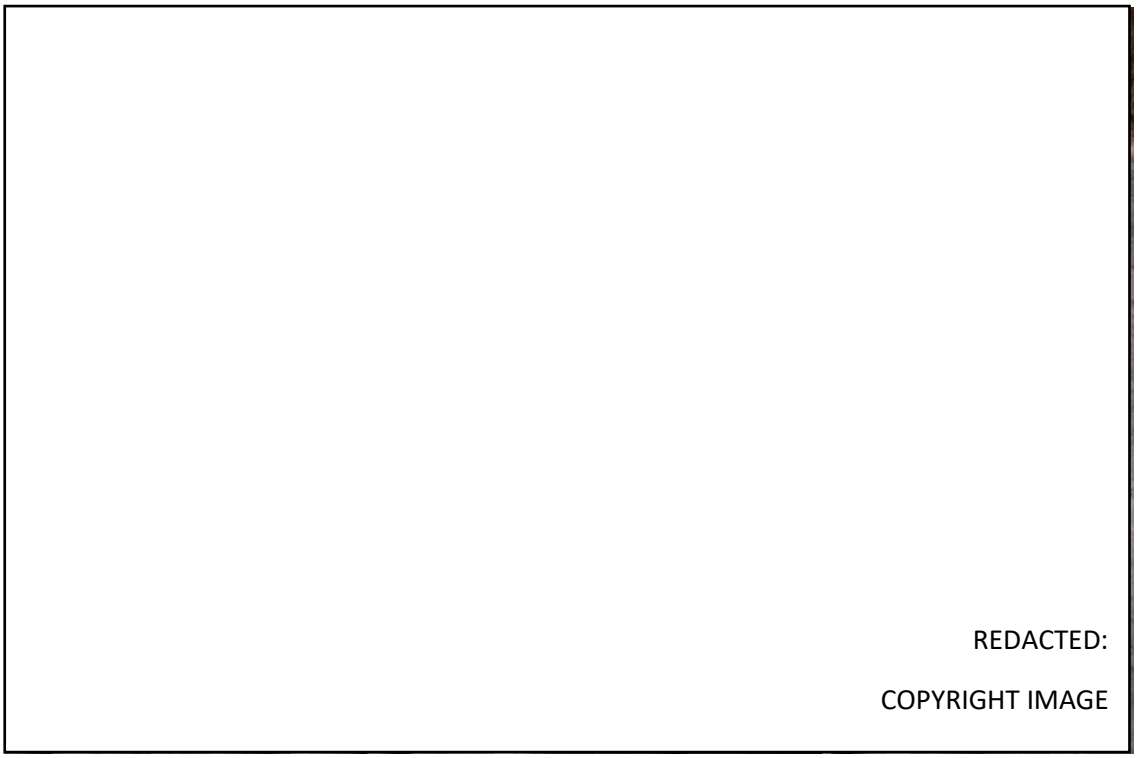


Figure 5.33: The Chalcolithic occupation layer of Trench 3 at Areni-1 (after Smith et al. 2014, Fig. 5.3).

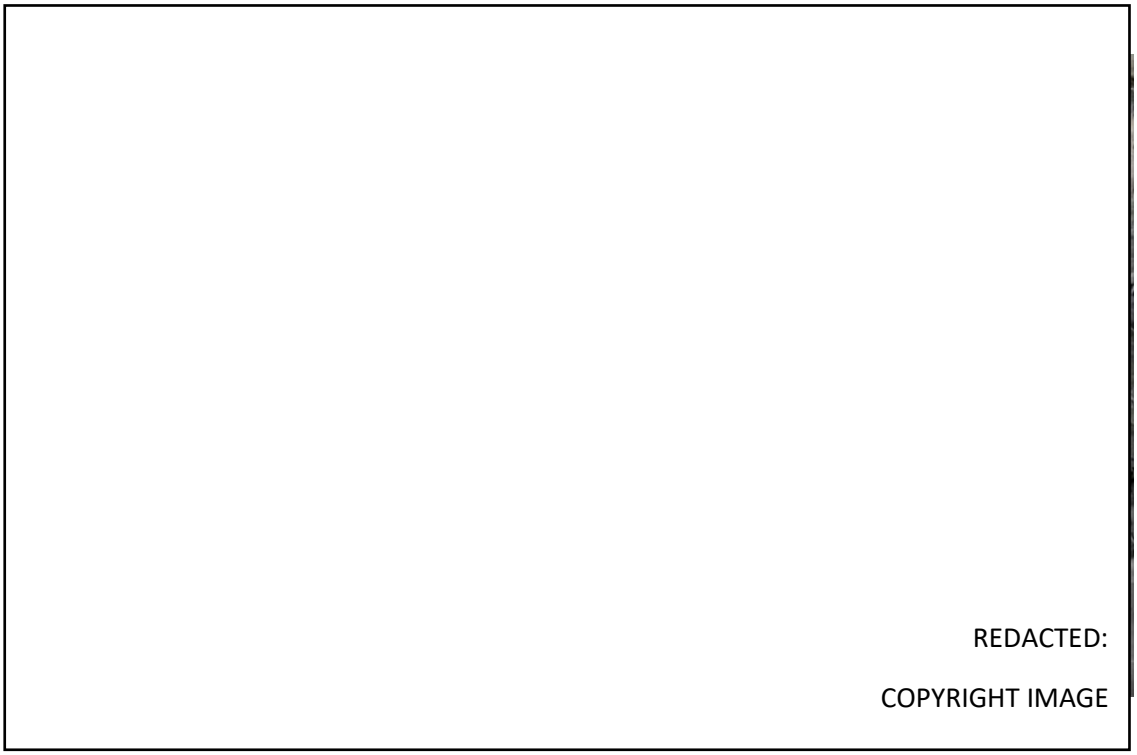


Figure 5.34: The Chalcolithic occupation layer of Trench 5 located at the entrance of the Areni-1 cave complex (after Smith et al. 2014, Fig. 7.1).

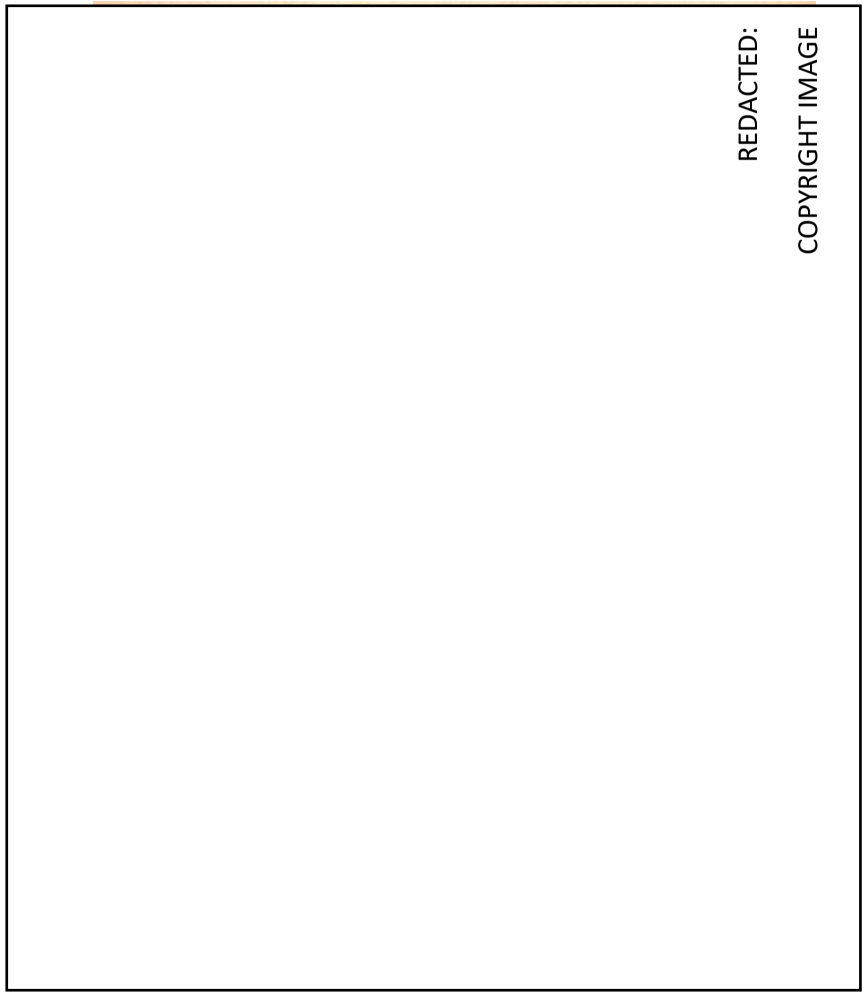


Figure 5.35: A sample of ceramics collected from the site of Chalagantepe (after Narimanov 1987, Fig. 46).

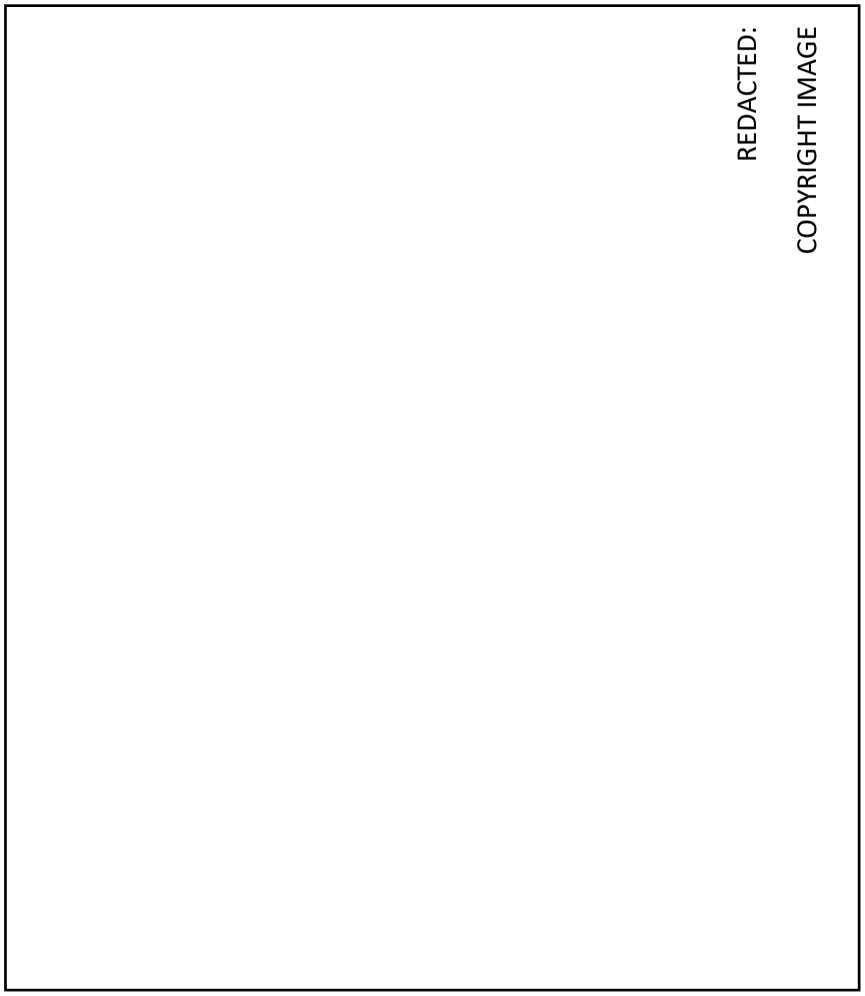


Figure 5.36: A sample of ceramics collected from the site of Kechili (after Narimanov 1987, Fig. 35).

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Figure 5.37: Site plan of Agili Dere (after Huseynov 2007, Fig. 1).

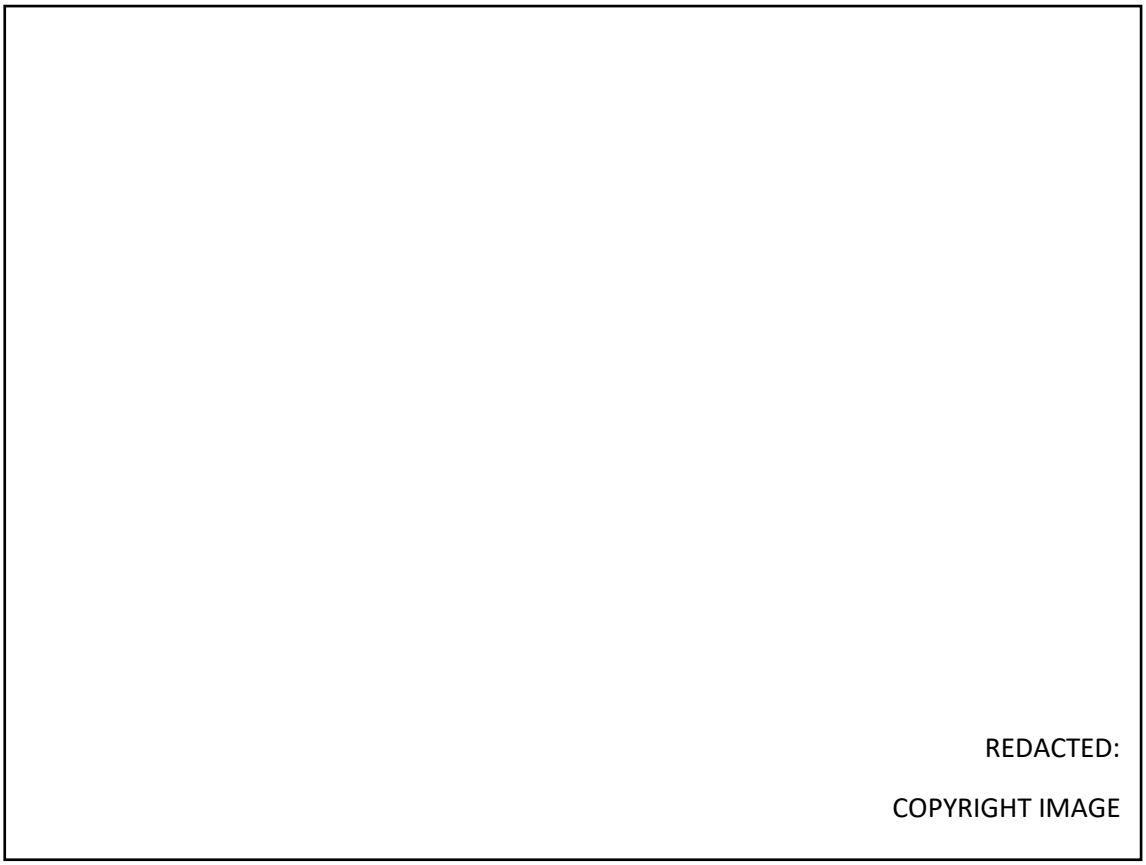


Figure 5.38: Chalcolithic pit from the site of Agili Dere (after Huseynov 2007, Photo 3).

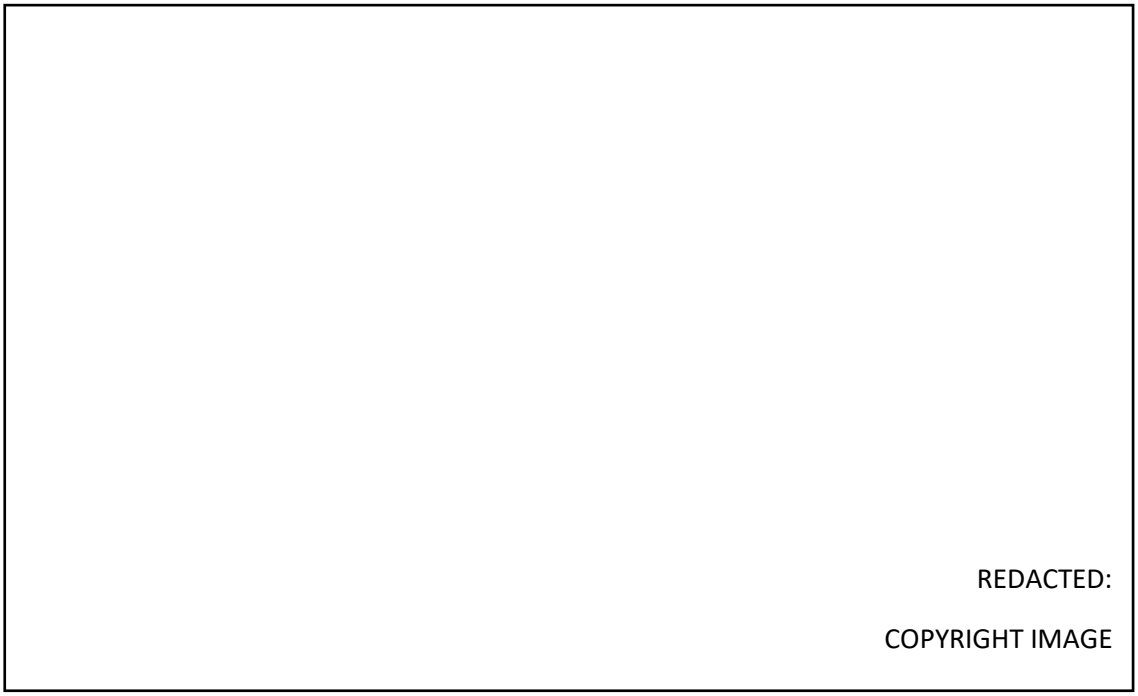


Figure 5.39: Plan of Site II at Khoja Khan (after Huseynov and Jalilov 2007, Pl. III).

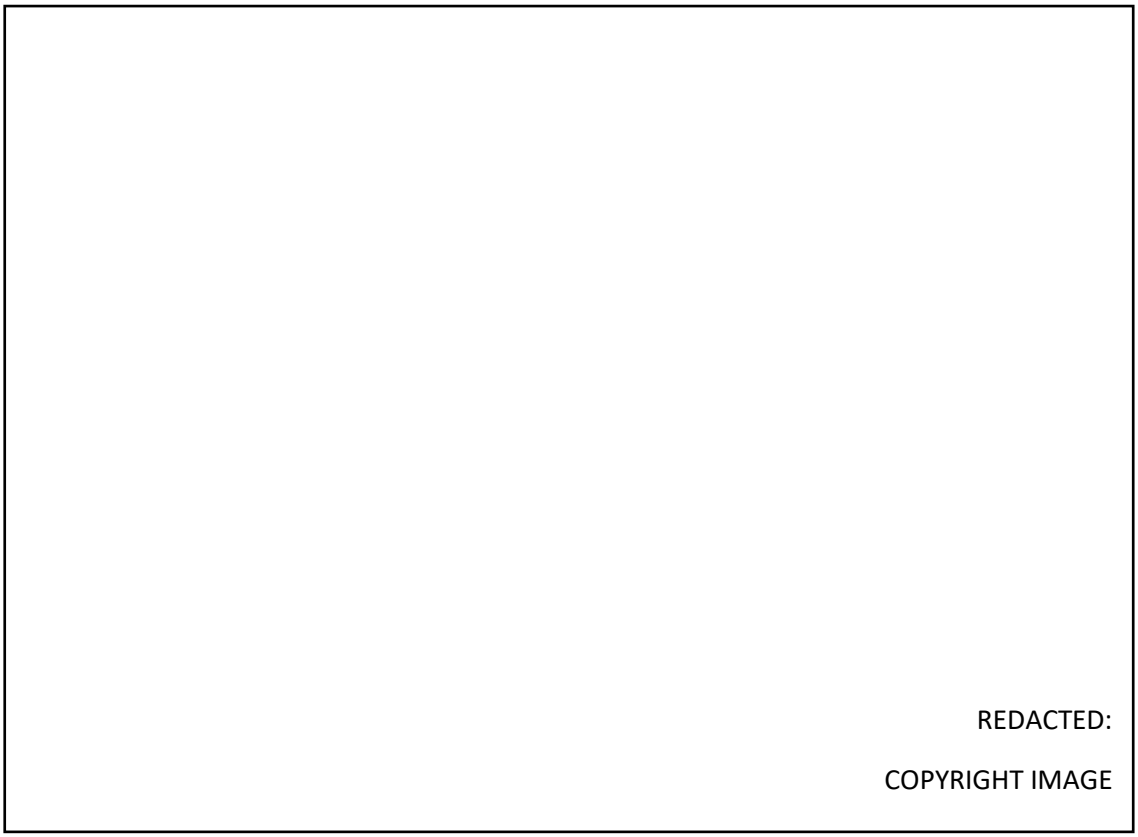


Figure 5.40: Plan of the Chalcolithic mud brick structure uncovered in Site II at Khoja Khan (after Huseynov and Jalilov 2007, Pl. IV).

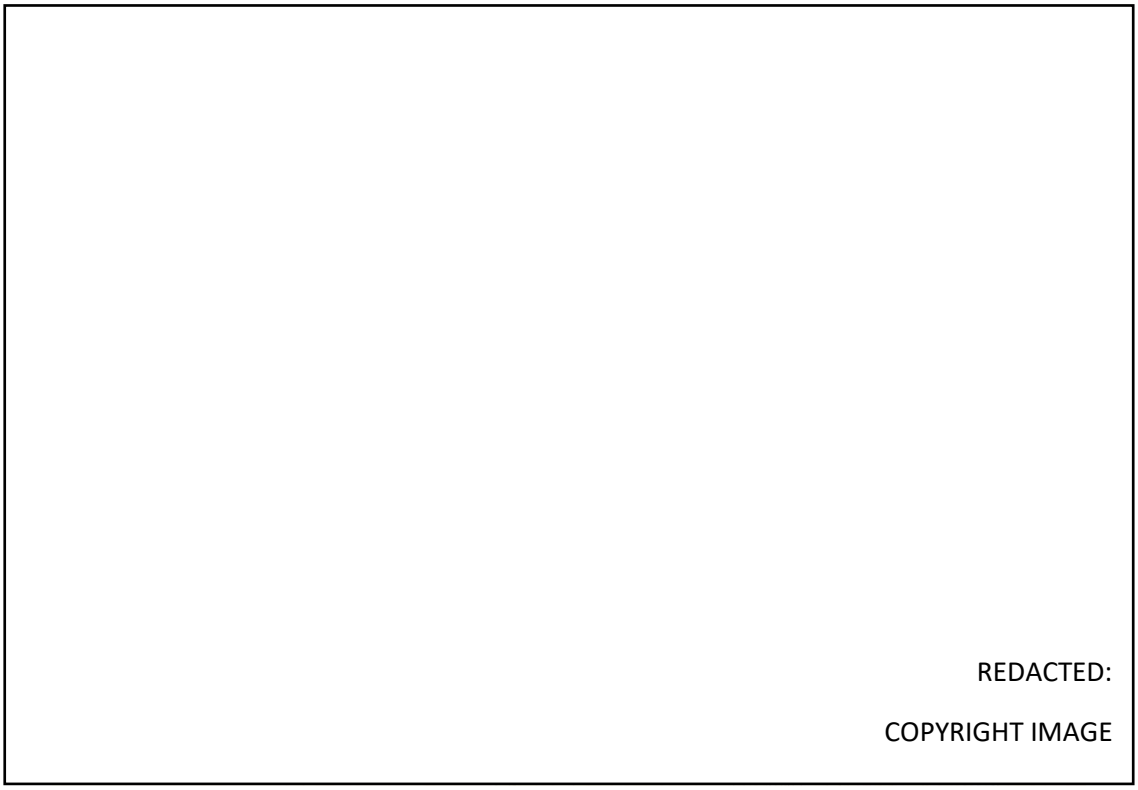


Figure 5.41: Photo showing the remains of the Chalcolithic structure uncovered at Khoja Khan (after Huseynov and Jalilov 2007, Photo 18).

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Figure 5.42: Conjectural reconstruction of the Chalcolithic mud brick structure uncovered at Khoja Khan (after Huseynov and Jalilov 2007, Pl. IV).

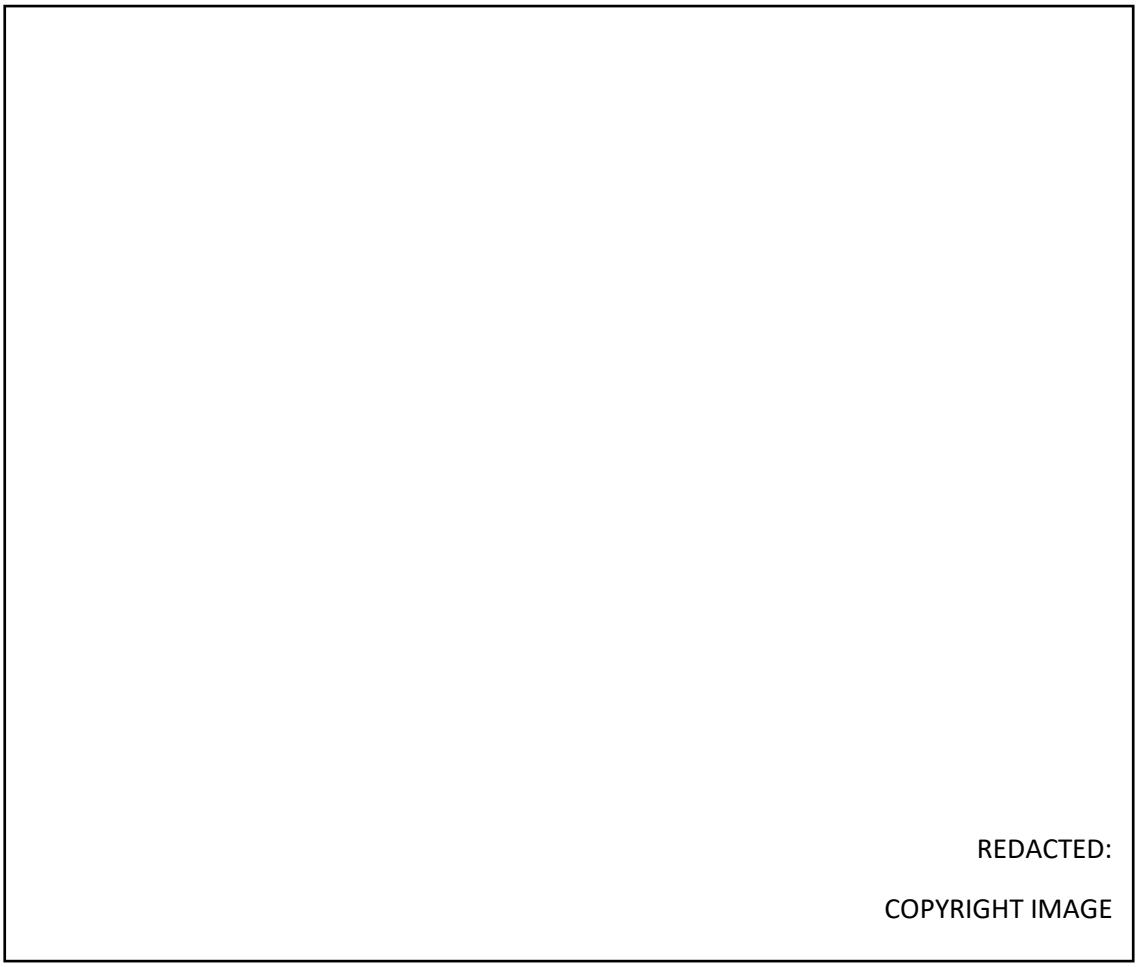


Figure 5.43: Antique period grave cut into the Chalcolithic floor level at Poylu II (after Museibli 2008b, Fig. 1).

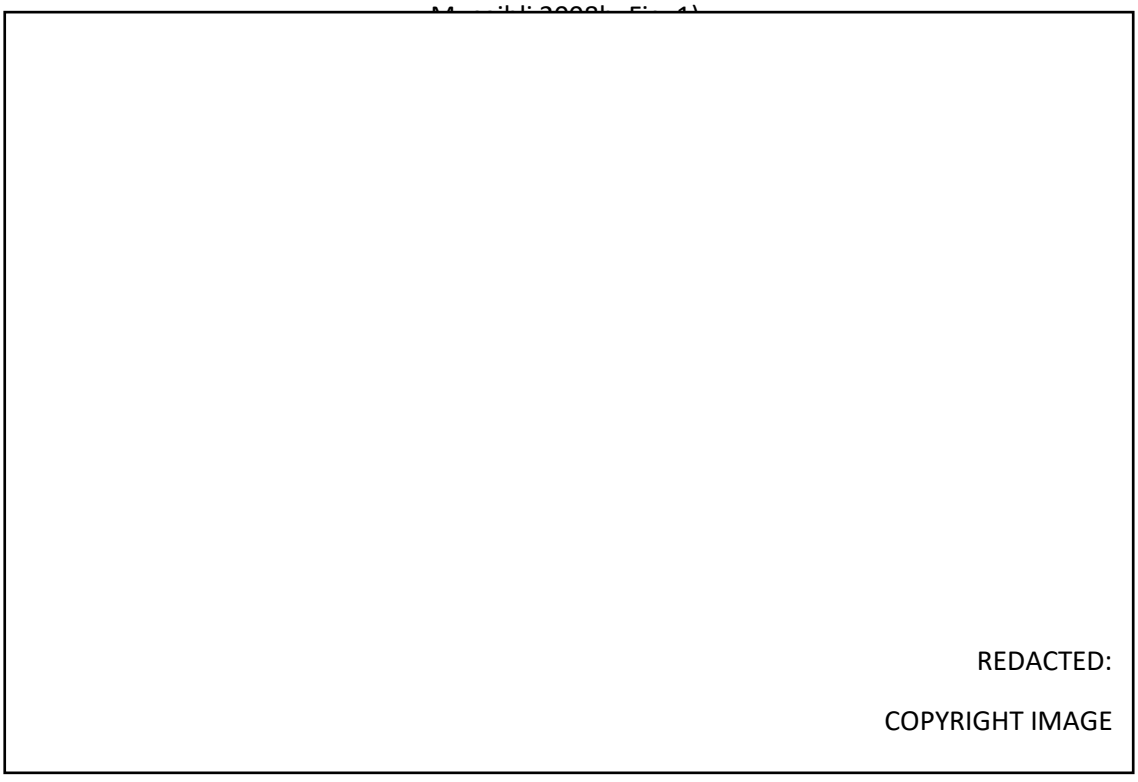


Figure 5.44: The curvilinear stone wall segment uncovered in Quadrant 18 at Poylu II (after Museiblli 2008b, Fig. 6).

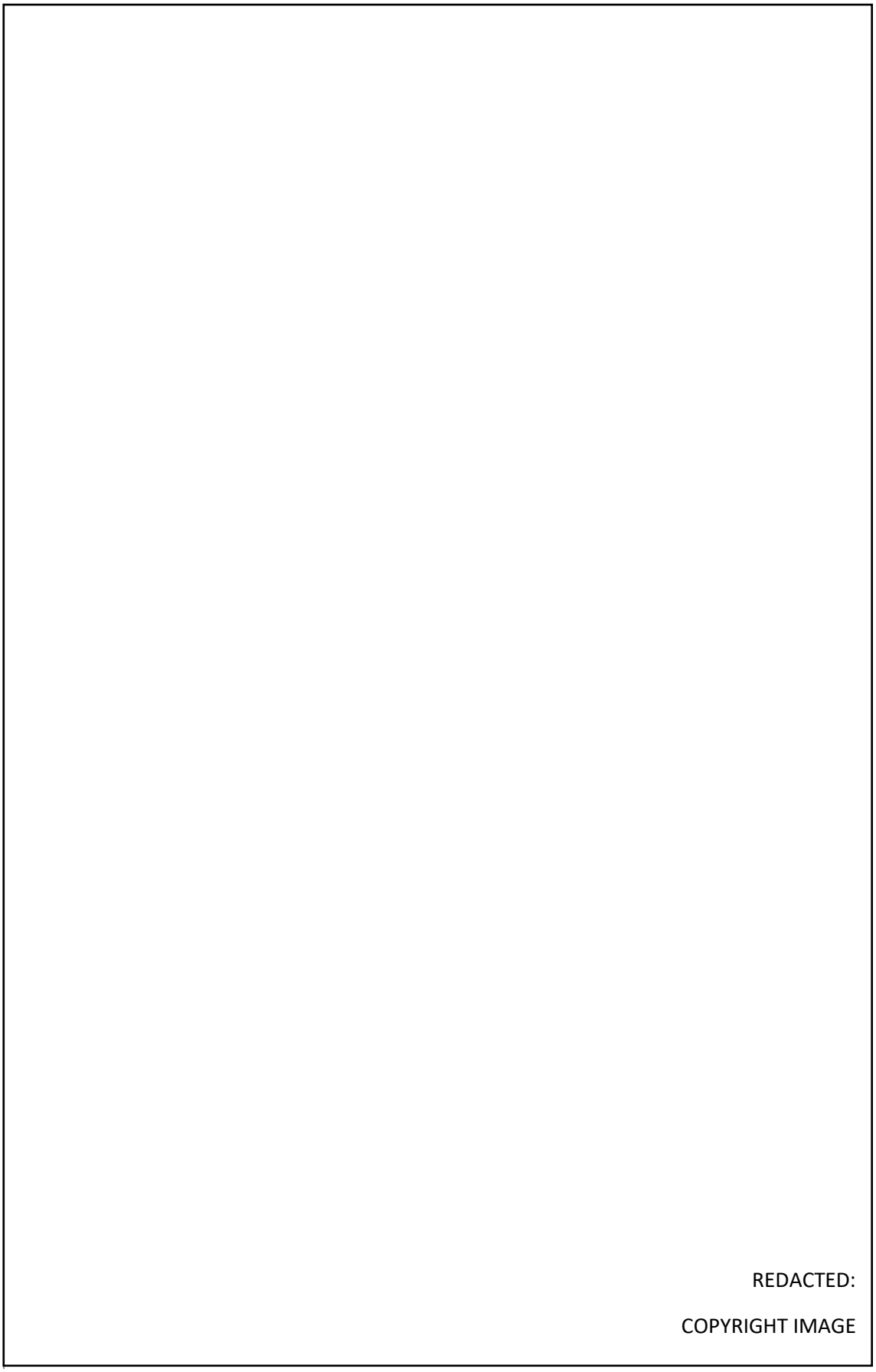


Figure 5.45: Chalcolithic pit grave (No. 1) from Poylu II (after Musebili 2014b, Fig. 22.1 and 29.1).

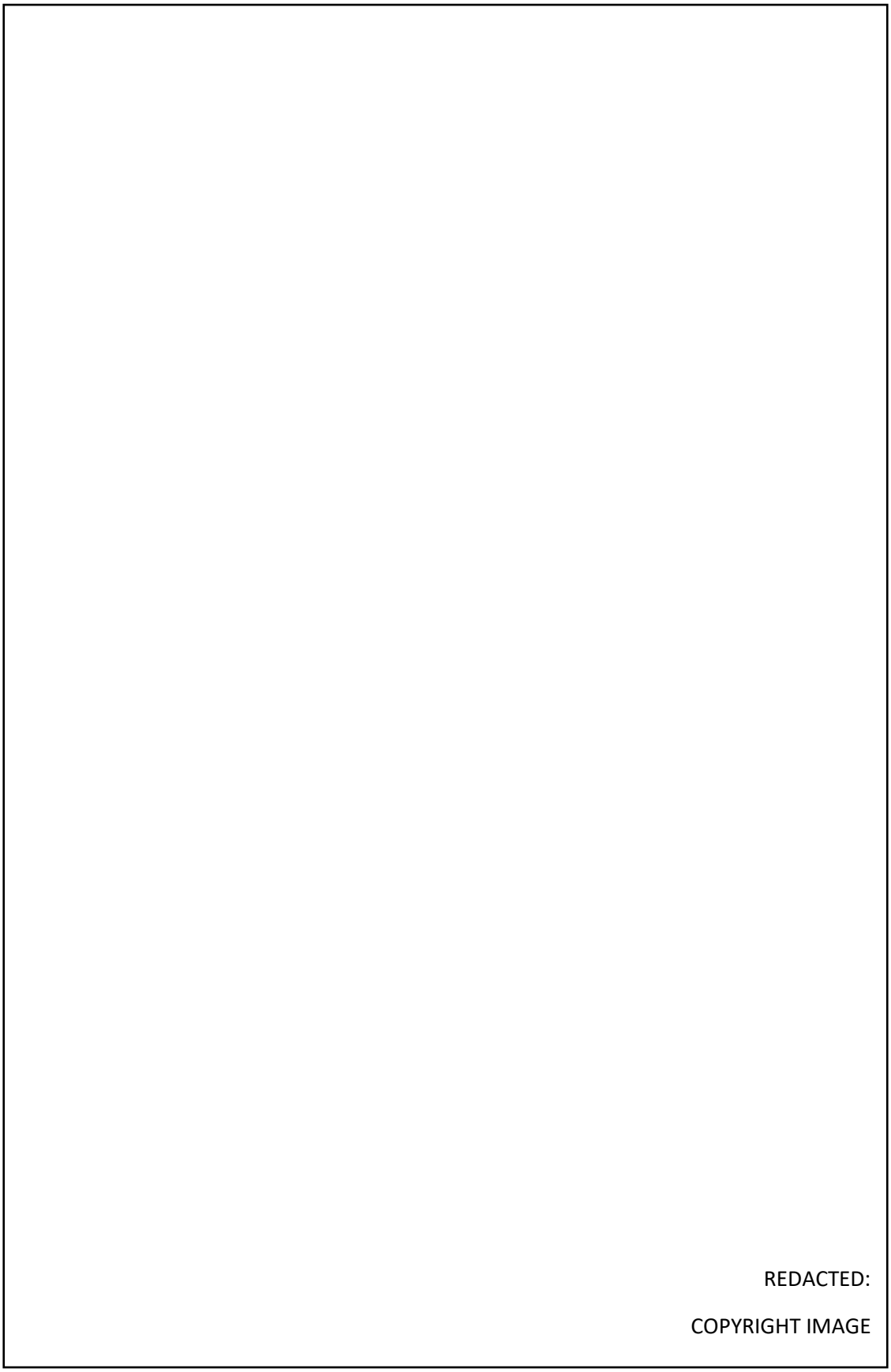


Figure 5.46: Chalcolithic pit burial (No. 2) from Poylu II (after Museibli 2014b, Fig. 22.2 and 29.2).

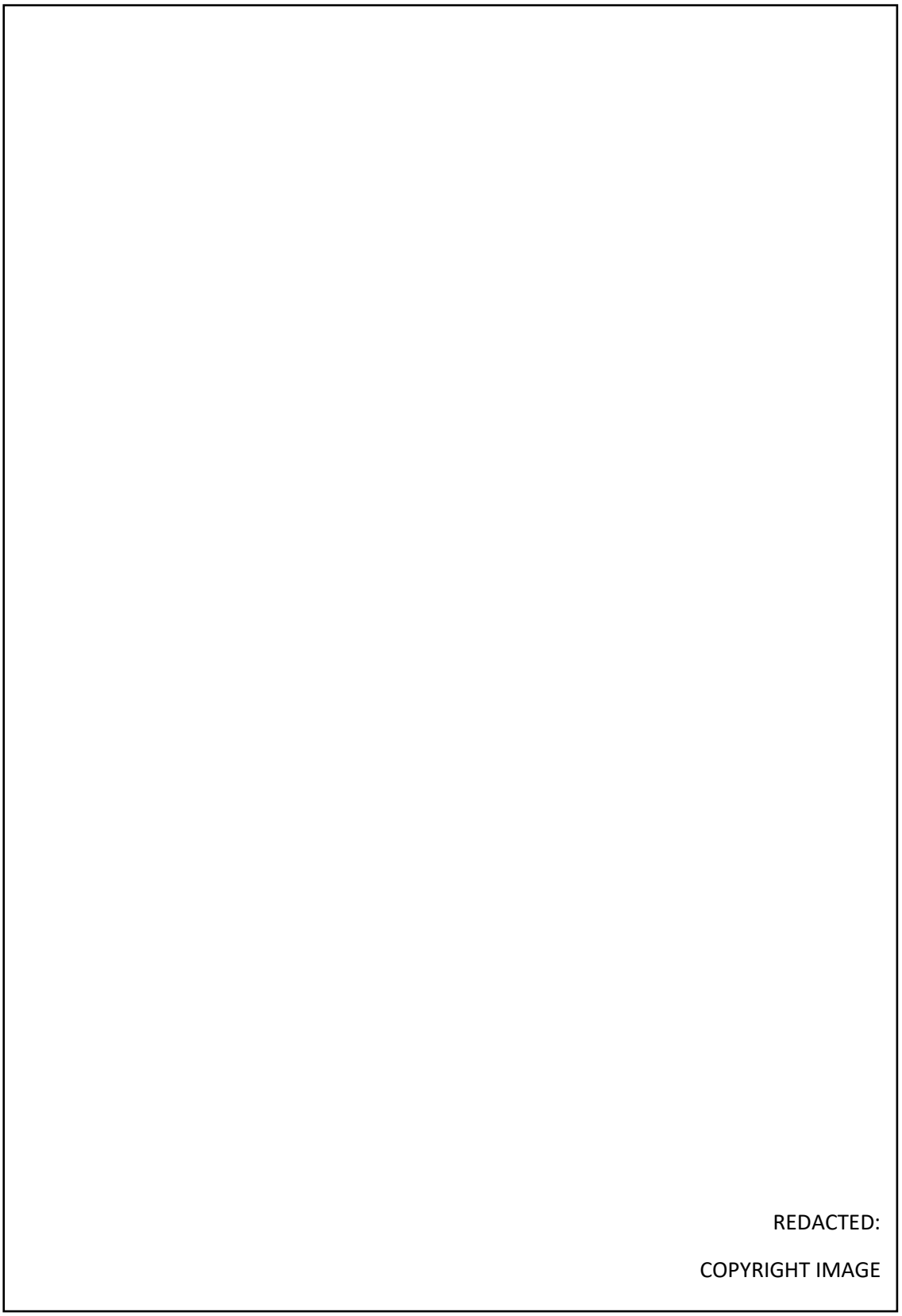


Figure 5.47: Chalcolithic catacomb burial of an infant uncovered at Galayeri (after Museibli 2016b, Fig. 1.1).

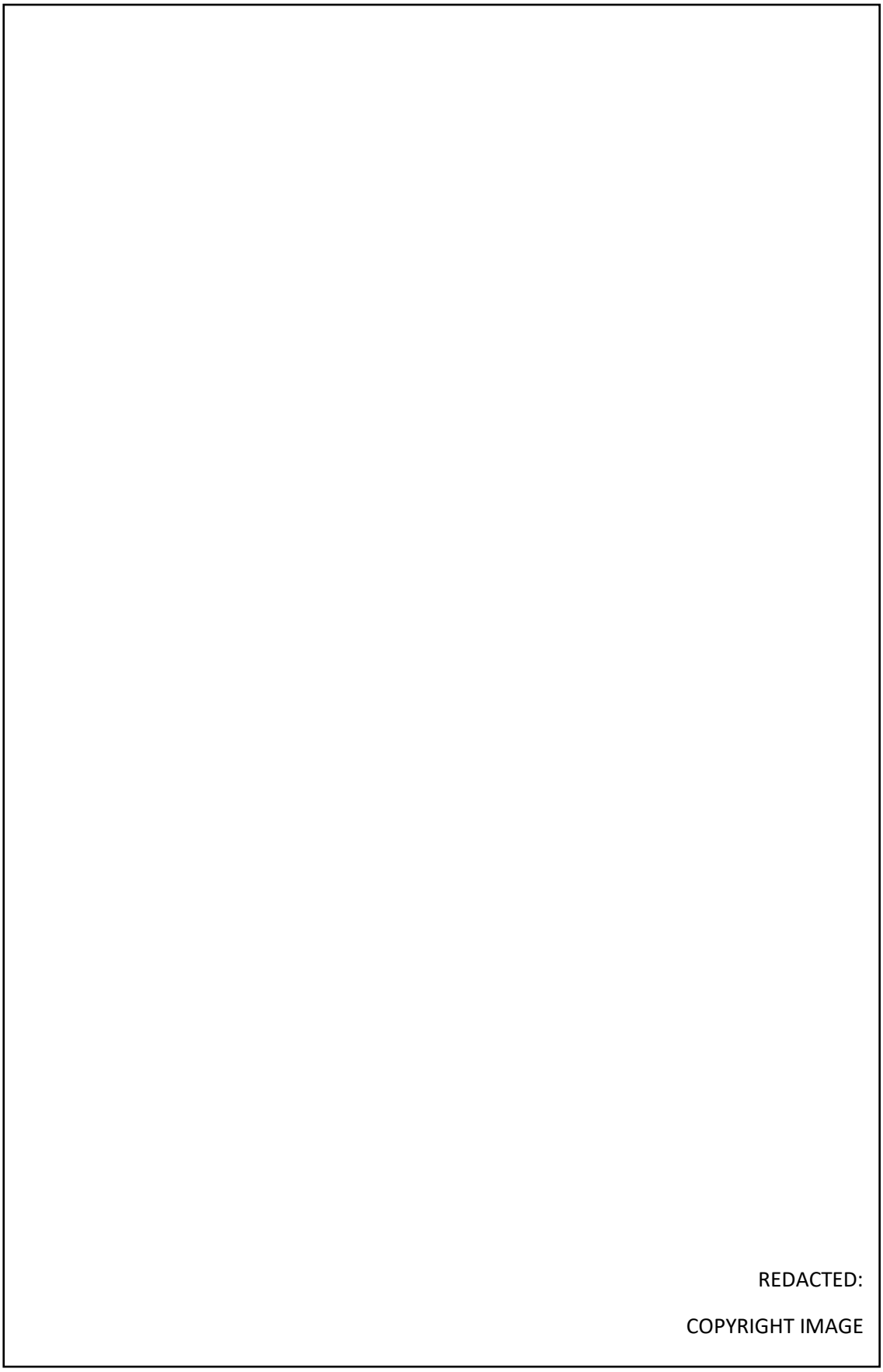


Figure 5.48: Sioni ware recovered from the site of Hanago (after Marro 2008, Fig. 1).

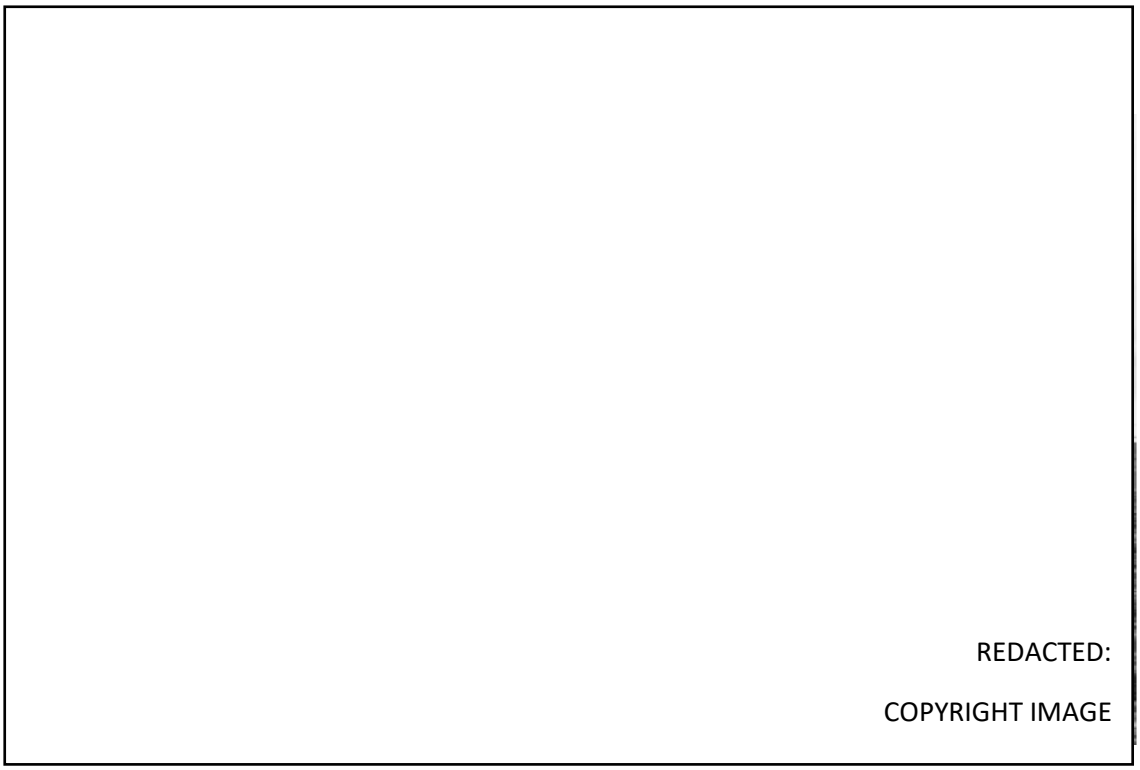


Figure 5.49: The site of Dormishkanlu, looking north west (after Maziar 2015, Fig. 4).

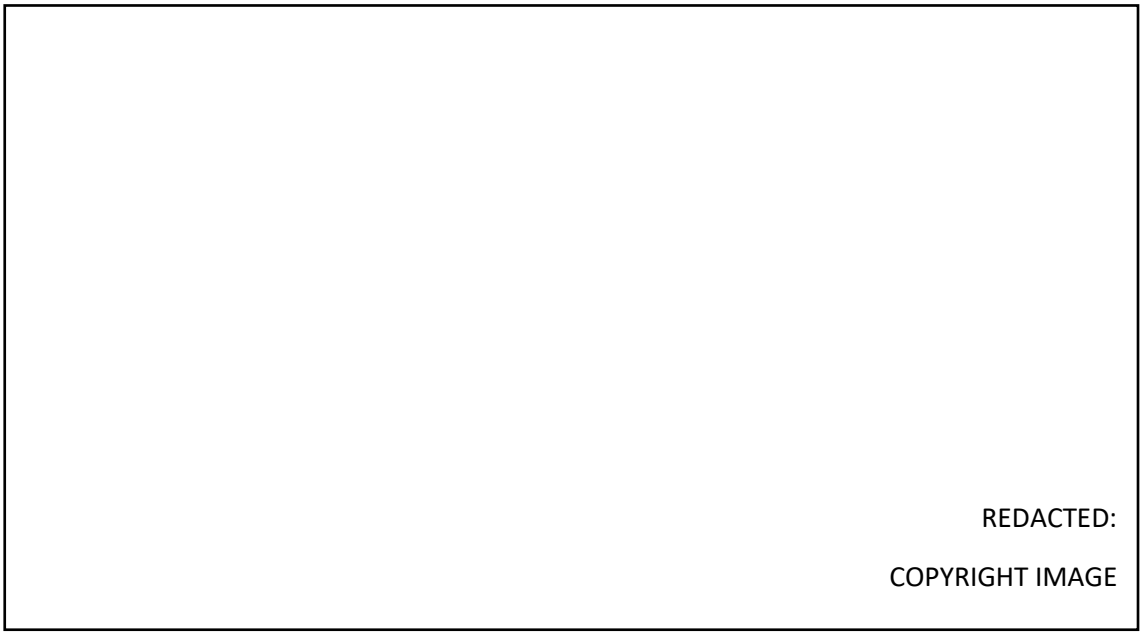


Figure 5.50: The site of Tepe Seramlu, looking east (after Maziar 2015, Fig. 5).

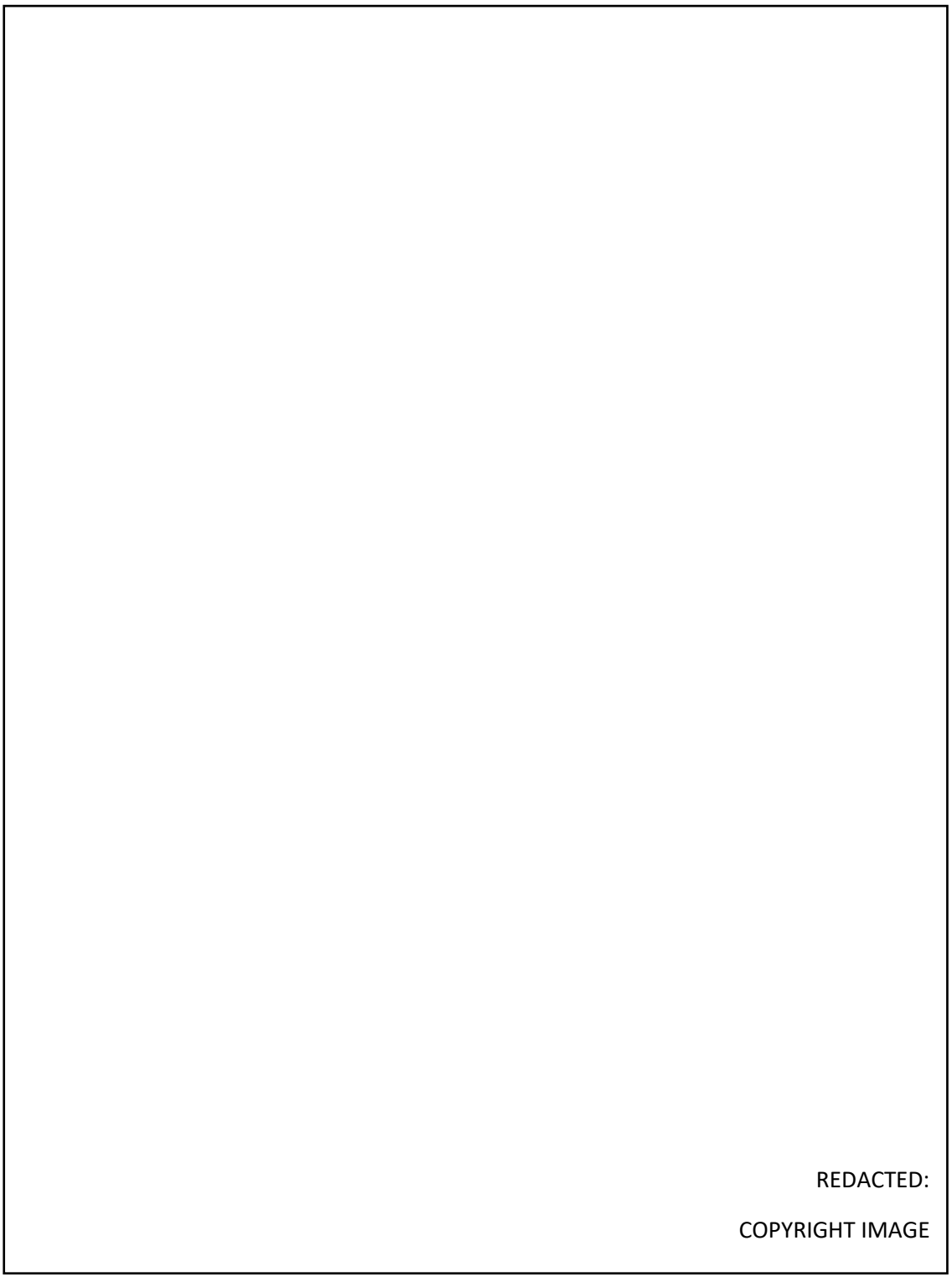


Figure 5.51: Perforated tray fragments from Köhne Pāsgāh Tepesi (after Maziar 2010, Fig. 7).

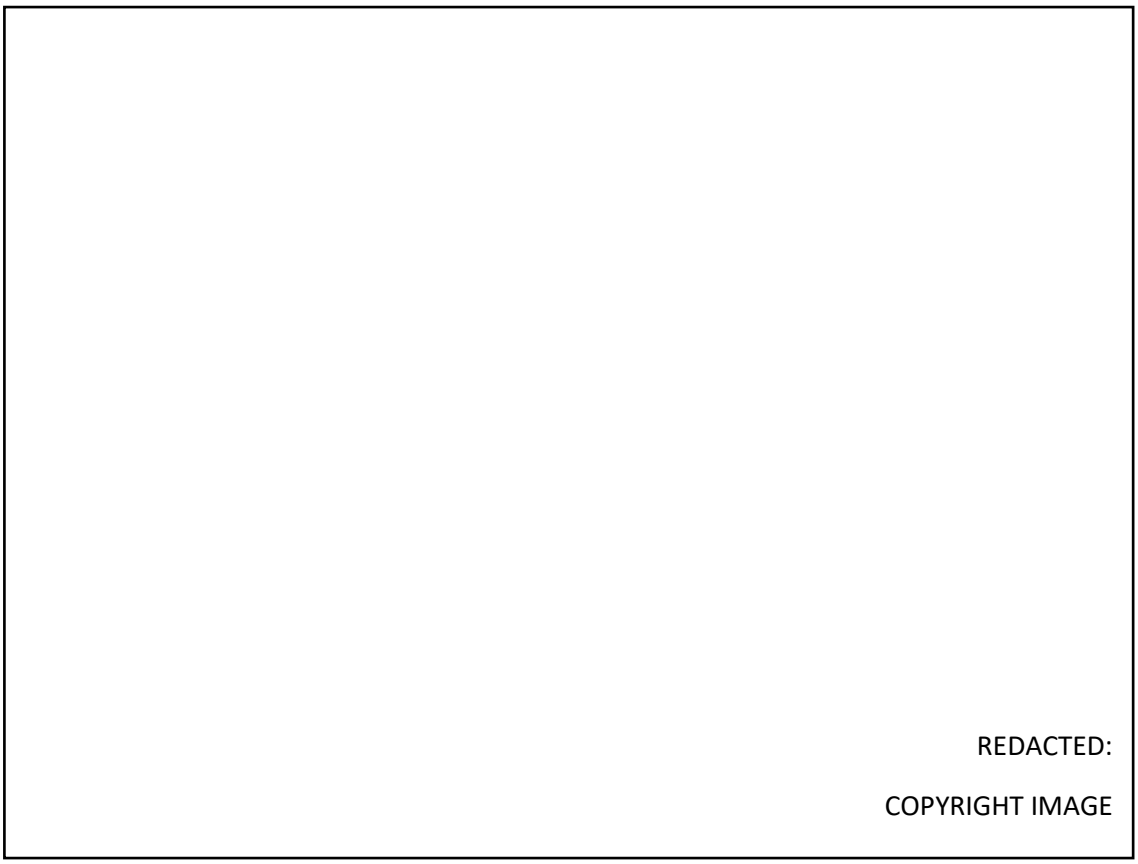


Figure 5.52: Late Chalcolithic pits from Köhne Pāsgāh Tepesi (after Maziar 2010, Fig.4.2).

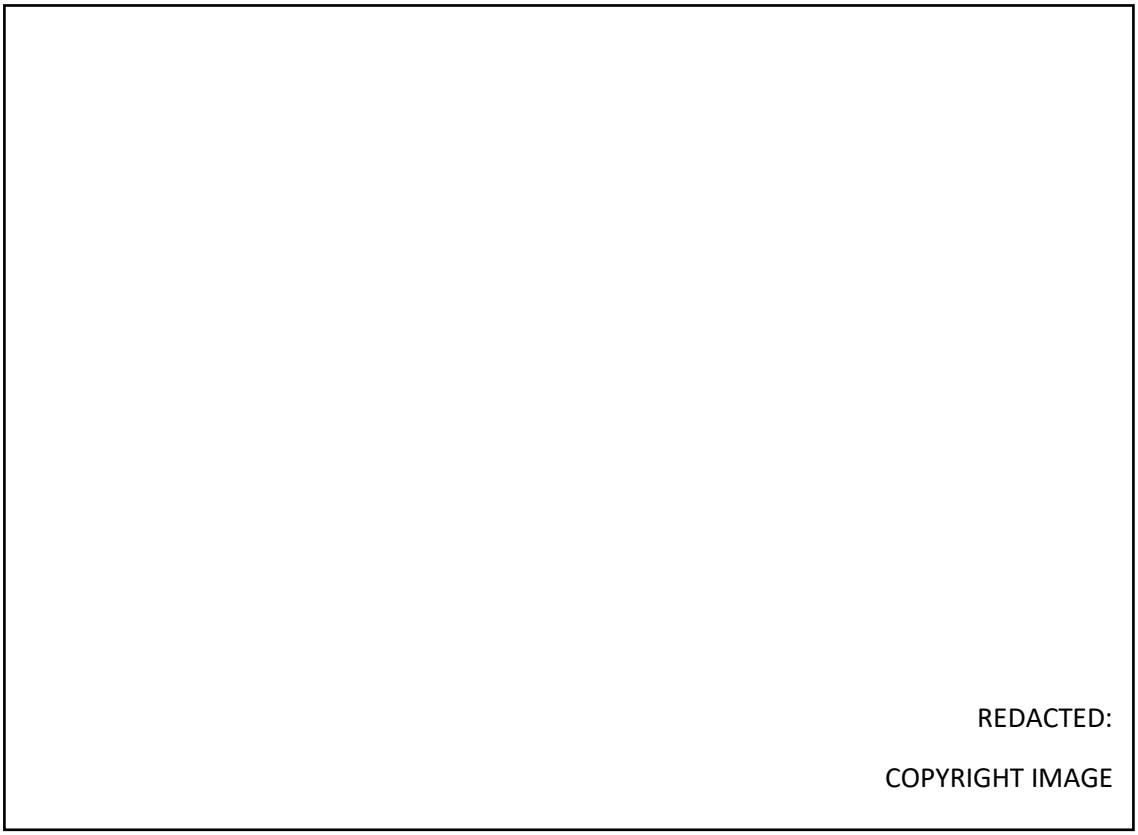


Figure 5.53: Kul Tepe VIB: F. 3003-3004, Trench III. Mud brick structure with stone foundation (after Abedi et al. 2014, Fig. 16.1).

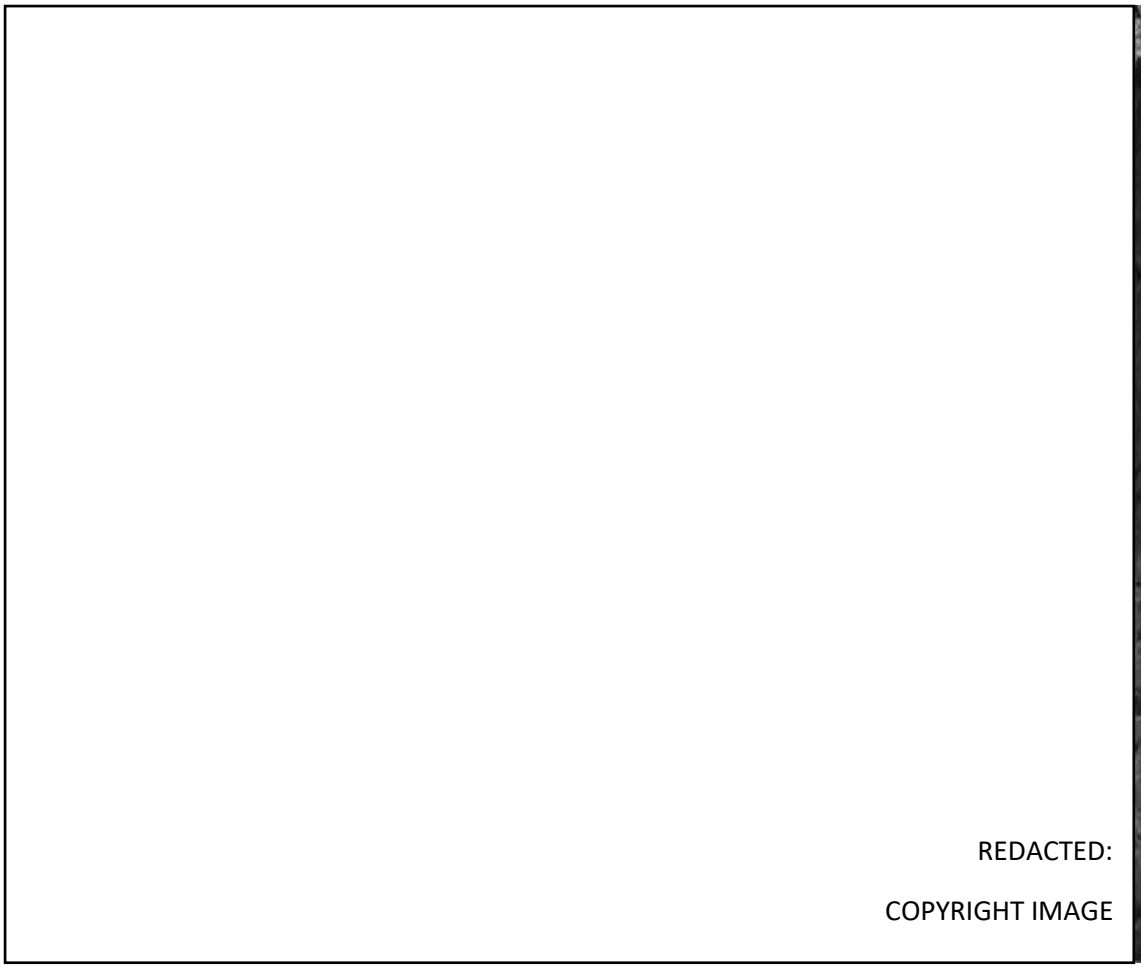


Figure 5.54: Kul Tepe VIA: F. 3001, Trench III. Mud brick structure with stone foundation (after Abedi et al. 2014, Fig. 16.2).

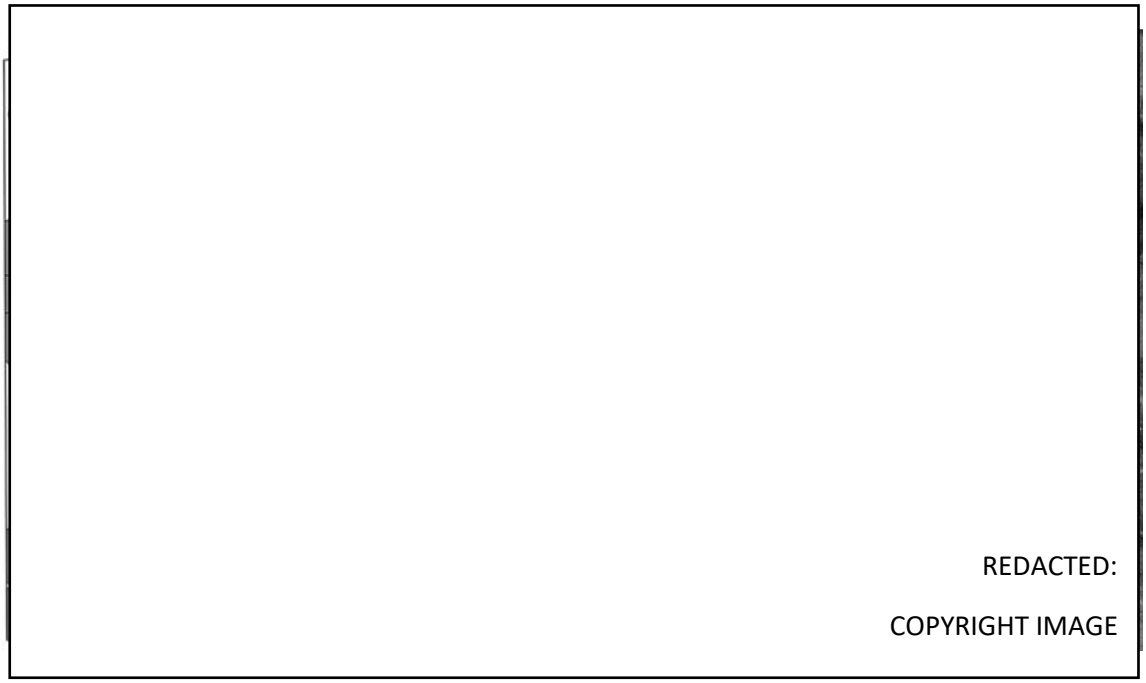


Figure 5.55: Kul Tepe VIA: F. 2044, Trench II. Stone built round structure with irregular stone (after Abedi et al. 2014, Fig. 24.1).

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Figure 5.56: Plan of House 2, Galiugai I, showing the living areas (A) - shown in white and surrounded by features such as hearths (H), pits (P), grinding stones (G) and other cultural debris (after Sagona 2018a, Fig. 4.4.1).

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Figure 5.57: Shallow trays recovered from the site of Ust'-Dzheguta (after Nechitajlo 2007, Fig. 9).

Chapter Six: Ceramics of the Sioni Complex: Ceramics from the Type Site and Beyond

Introduction

Sioni ware has served as a basis for the organisation of relative chronologies and periodisations throughout the region. However, for almost 45 years, the material from the type site has remained largely unpublished and the definition of the Sioni complex has remained vague and inconsistent.

In the absence of a strict definition, 'Sioni' has become an umbrella term referring to a wide range of technological, morphological, and stylistic features that occur across several Chalcolithic assemblages.[1322] In the archaeological literature, the Sioni complex is associated with handmade vessels constructed from grit and/or obsidian tempered clay.[1323] At later sites, the addition of chaff may reflect a techno-chronological development.[1324] Comb-scraped surfaces and the stylistic application of notches and impressions around the rims of vessels are also affiliated with Sioni ceramics.[1325] Additionally, Sioni ware is associated with specific morphological forms such as necked jars, pans, trays, and perforated vessels (discussed in detail later in this chapter).[1326]

[1322] Sagona 2014, 27.
[1323] Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 48-49; Sagona 2014, 30; Palumbi et al. 2018, 121; Sagona 2018a, 207.
[1324] Marro 2008, 10; Sagona 2018a, 207.
[1325] Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 48-50; Sagona 2014, 30; Lyonnet 2017, 146; Palumbi et al. 2018, 124; Sagona 2018a, 207.
[1326] Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 48-50; Lyonnet et al. 2012, Footnote 209; Lyonnet 2017, 146; Lyonnet 2018, 562; Palumbi et al. 2018, 124; Sagona and Shapardon in preparation.

Referring to such a broad range of features, the term 'Sioni' has been overused and indiscriminately applied to other sites and assemblages.[1327] Features such as comb-scraping, pans, trays, and perforated vessels, occur across a number of contemporary Chalcolithic traditions in the Transcaucasus.[1328] Consequently, the definition of the Sioni tradition, based upon such characteristics, remains problematic.

A study of the ceramic assemblage from the type site provided an opportunity to revise and refine current definitions of the Sioni complex. The ceramics demonstrate a restricted assemblage that highlights the principle features of the Sioni industry. Vessels were handmade, poorly fired, and constructed from grit or obsidian tempered clay. They demonstrate a restricted morphological repertoire centred on closed forms such as necked and sinuous jars. Decorative treatment was restricted to the rim of vessels and was characterised by vertical or oblique notches and circular impressions. Stemming from the type site, these features provide a firm basis for the definition of the Sioni complex.

Ceramic assemblages from locations throughout eastern and southern Georgia, the *oikoumene* of the Sioni complex, enhance our understanding of the material from the type site.[1329] Sites of the Sioni period are well attested in Kvemo Kartli, along the Alazani River Basin in Kakheti, the Aragvi River Gorge in the area of Shida Kartli and Mtskheta-Mtianeti, and the Samtskhe-Javakheti region.[1330] Ceramics from these regions

[1327] Sagona 2014, 30.
[1328] Marro and Özfırat 2003, 390; Marro and Özfırat 2005, 325; Marro 2008, 10-11, 12-17; Sagona 2010b, 689; Abedi et al. 2014, Fig. 20.14; Abedi et al. 2015, 325; Kuliyeva and Bahşeliyev 2018, 42-43; Sagona 2018a, 204; Sagona and Shapardon in preparation.
[1329] Sagona 2014, 30.
[1330] Varazashvili 1992; Chikovani 2001; Kiguradze and Sagona 2003; Chikovani 2005; Chikovani and Chelidze 2008, 28-29; Chikovani et al. 2010; Nebieridze 2010.

present a greater range of morphological, stylistic, and decorative features. Open forms are well represented consisting of cups, cylindrical and wide-mouthed jars, bowls, and trays. Decorative treatments were not restricted to the rims of vessels. Among sites of the Alazani River Basin and the Aragvi River Gorge, Sioni ceramics have a variety of incised and impressed decorative motifs.[1331] Relief ornamentation was especially common and incorporated a series of lugs, ledges, knobs, pastilles, and relief bands.[1332] The near complete absence of such decorative treatments at the type site may reflect chronological developments within the cultural complex over the wider regional assemblage.[1333]

Outside of Georgia, Sioni ceramics occur alongside other contemporary traditions at settlements in Armenia, Azerbaijan, eastern Anatolia, north-western Iran, and the northern Caucasus. At these sites, Sioni ceramics occur in small quantities among assemblages that are chaff-faced or mixed tempered.[1334] Across the Caucasus, contemporary pottery types, including Sioni, the Chaff-faced and Leilatepe traditions, the local assemblages of Nakhichevan and north-western Iran, and the Meshoko and Maikop of the northern Caucasus, demonstrate shared technological, morphological, and decorative features. The use of a comb-like tool, to level vessel surfaces, was a manufacturing technique employed across multiple regional ceramic traditions.[1335]

[1331] Varazashvili 1992, Pl. IX.9-10; Chikovani 2005, Pl. 1.2, 4; Nebieridze 2010, Pl. XXXVII.2, 4.
[1332] Varazashvili 1992, Pl. VIII.1-7, Pl. X.2-4, 7-8, Pl. XI.1-10, Pl. XIII.1-5, Pl. XVIII, Pl. XIX.2, Pl. XXIII, Pl. XLI; Kiguradze and Sagona 2003, Fig. 3.11.1-2, Fig. 3.12.
[1333] Lyonnet 2018, 564.
[1334] Sagona 2014, 41; Sagona 2018a, 211.
[1335] Ramishvili 1982, 25-46; Narimanov 1987, 47-48; Varazashvili 1992, 29, 46; Kiguradze 2000, 322; Aliev and Narimanov 2001, 18-19; Kiguradze 2001b, 51; Marro and Özfırat 2003, 390; Badalyan et al. 2004b, 405; Marro and Özfırat 2005, 325; Akhundov 2007, 108, 116; Badalyan et al. 2007, 60; Museibli 2007, 68-69; Palumbi 2007, 63; Marro 2008, 10-11; Marro et al. 2009, 48-49; Lyonnet and Guliyev 2010, 224; Nebieridze 2010, 169; Marro 2011, 44; Areshian et al. 2012, 127; Gülçur and Marro 2012, 312; Lyonnet et al. 2012, 98; Wilkinson et al. 2012, 28; Mirtskhulava and Chikovani 2014, 33; Muradyan et al. 2014,

Forms, particularly pans, trays, and perforated vessels, also feature within the Chaff-faced and Leilatepe traditions and local assemblages of Nakhichevan and north-western Iran.[1336] Similarly, incised and impressed motifs and relief ornamentation are documented among early Chaff-faced ceramics and at sites in Nakhichevan and north-western Iran.[1337] While many of these attributes frequently appear among Sioni ceramics, their occurrence across other contemporary traditions reflects a core set of shared features of the Chalcolithic period within the Caucasus's sphere of influence.

Methodology: Approaching the Collection from the Type Site

Artefacts from Sioni are stored in the Georgian National Museum in Tbilisi. Permission to study the material was granted by David Lordkipanidze, the director of the museum, and Medea Menabde, who took part in coordinating the original excavations, alongside the late Tamaz Kiguradze. I conducted two study seasons during June and July in 2012 and 2013.

Artefacts were held in a storage room on the second floor of the museum. The material was stored in 37 corrugated cardboard boxes **(*fig. 6.1*)**. Each box was labelled with the name of the site and a number ranging consecutively from 129 to 160 **(*fig. 6.2*)**. Inside each box, artefacts, including pottery sherds, lithics, stone and bone tools, metal implements, and jewellery, were stored in smaller, rigid cardboard boxes. Smaller

343-345; Palumbi et al. 2014, 45, 47; Abedi et al. 2015, 325; Palumbi 2015b; Lyonnet et al. 2017, 146-147; Lyonnet 2018, 562; Palumbi et al. 2018, 124; Sagona 2018a, 203-204.

[1336] Narimanov 1987, 34-34; Korenevskii 2004, Fig. 4, Fig. 5; Akhundov 2007, Fig. 18.4; Museibli 2007, Pl. XVIII.9; Nechitajlo 2007, Fig. 9.1-3; Museibli 2008b, Pl. 9.2-6; Marro et al. 2009, Pl. VI.8, Pl. VIII.2, Pl. XVIII.7; Lyonnet and Guliyev 2010, 221; Maziar 2010, Fig. 7.1-4; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98, Fig. 148.7-8; Abedi et al. 2014, Fig. 29.2; Lyonnet 2017, 145, Fig. 10; Kuliyeva and Bahşeliyev 2018, Fig. 11; Lyonnet 2018, Fig. 8.1-2, Fig. 10.1-2; Palumbi et al. 2018, Fig. 8; Sagona and Shapardon in preparation.

[1337] Marro et al. 2009, Pl. XII.1-3, Pl. XV.3-4, Pl. XVI.1, Pl. XIX.4; Abedi et al. 2014, Fig. 18.3, Fig, 19.3, 6, 12, Fig. 20.7.

artefacts, such as beads, pendants, and bone tools and fragments, were stored in matchbox size containers and envelopes. Each box and envelope were clearly labelled with an inventory number corresponding to its context as listed in the inventory notes (***fig. 6.3***). Where feasible, each artefact, including pottery sherds and lithics, were also labelled with an inventory number. Some of the complete or reconstructed vessels were packed with paper, however, most were stacked on top or inside one another. In some cases, paper was placed between the vessels to prevent the surfaces from rubbing.

The assemblage was photographed and described in its entirety. The photographs were taken using a Nikon D5100 DSLR. An 18-55mm lens was used for larger items, such as reconstructed vessels, pottery sherds, and lithics, while a macro lens was used for smaller artefacts such as beads. Photographs were taken in two formats (fine JPEG and RAW) to ensure maximum image quality. A tripod and an external shutter release were used, as well as the vibration reduction setting on both lenses, to ensure the clarity of the images.

Artefacts were photographed on a raised pane of glass with a white background and described in sets (***fig. 6.4***). Reconstructed vessels were photographed on a table with a white backing (***fig. 6.5***). In every photo, a scale of two, five, or ten centimetres was used. Vessels were turned between photos to ensure that the entire surface was photographed. For smaller artefacts, such as pottery sherds and lithics, photographs were taken of both the exterior and interior, or front and back, surfaces. For diagnostic sherds, photographs were taken of the sections. Rims with decorative treatment were photographed as viewed from above to ensure that the decorative elements could be seen clearly.

Artefacts were describe using a dictaphone and were later transcribed. The descriptions of the artefacts are based on a macroscopic analysis. Sherds were systematically described in reference to the manufacture, paste, inclusions, and quality of firing. The size of the inclusions within the paste were described in reference to the table of granular and crumb structures of the Munsell soil colour chart. The exterior and interior surfaces of the sherds were also described. The Munsell soil colour chart was used to provide a comparable reference of colour whilst a note was made of surface treatments. For diagnostic sherds, rim shapes, base types, and decorative treatments were noted. A radius chart was used to measure rim and base diameters. The preserved height of the diagnostic sherds was also measured. Based on this information, the ceramics were subdivided into ware types based on the paste and inclusions. The diagnostics were further divided into separate morphological groups based on the shape of their profile.

In some instances, the attribution of sherds to a ware or morphological type remains an approximation. The fragmentary nature of the ceramic assemblage made it difficult to attribute some small sherds to a morphological category or to obtain accurate measurements regarding the rim and base diameters. The partial reconstruction of some sherds also led to difficulties in analysing the ceramic material. The remains of glue and plaster fillers made it difficult to identify ware types and surface treatments as they obscured sections and altered surfaces **(*fig. 6.6*)**. The reconstruction of some sherds has resulted in significant damage. As the glue has dried and shrunk over time, it has pulled away layers of the surface. In a few instances, the restorative work has obscured inventory numbers, making it difficult to associate some artefacts with a specific context.

Ceramics of the Sioni Complex: The Ceramic Assemblage from the Type Site

The Chalcolithic Assemblage: An Overview

The Chalcolithic assemblage at Sioni represents a small but homogeneous collection. A total of 1,089 sherds were attributed to the Chalcolithic period. 896[1338] body fragments were recorded representing 82 percent of the ceramic assemblage; diagnostics are represented by 306 examples which constitute 28 percent of the assemblage **(*tab. 1*)**. Diagnostic sherds include rims, bases, and some body sherds. The latter were considered diagnostic, if they demonstrated a notable method of surface treatment such as comb-scraped interior and/or exterior surfaces. However, in one instance, a body sherd with a small, elliptical lug was recorded.

Rim sherds are the most common diagnostic. A total of 185 fragments were recorded representing 17 percent of the assemblage and 60.5 percent of the diagnostic collection. In contrast, only eight base fragments are present which constitute less than one percent of the assemblage and 2.6 percent of the diagnostic material. There are 113 examples of diagnostic body sherds. Diagnostic body sherds represent ten percent of the ceramic assemblage and 37 percent of the diagnostics **(*tab. 2*)**.

The average preserved height of a diagnostic sherd is 5.13 centimetres. The measurements of diagnostic sherds ranged from as little as 1.5 centimetres up to 49 centimetres. The measurement of 49 centimetres, however, taken from the remains of a partially reconstructed *pithos*, represents an outlier amongst the assemblage, as the

[1338] This number is inclusive of diagnostic body sherds.

next highest measurement is 12 centimetres which, brings the average preserved height down to 4.9 centimetres **(*tab. 3*)**.

Manufacturing Techniques

At Sioni, the Chalcolithic ceramics are handmade; a fundamental feature of the Sioni tradition. This is consistent with other sites throughout the Transcaucasus where Sioni ware is present.[1339] At later sites, ceramics may have been produced on a slow wheel. Currently, there exists no definitive examples of wheel-made sherds to support this view.[1340]

At Sioni, vessels were constructed using slabs of clay rolled or patted flat then joined and worked into the desired shape. Between one and three slabs were used to construct a vessel.[1341] Evidence of this technique is seen in the breaks of sherds that preserve lamination seams along the join between the slabs **(*fig. 6.7*)**. Slab construction was common during the Chalcolithic where it is recorded at Tsopi, Araratshen, and Leilatepe.[1342] At Mentesh Tepe, clay slabs were used to build large vessels.[1343] However, the majority of vessels, were manufactured using the coil technique using successive ropes of clay, eight centimetres wide, and then smoothed on the exterior surface using

[1339] Varazashvili 1992, 21; Chikovani 2001, 16; Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 48; Chikovani 2005, 63; Akhundov 2007, 116; Museibli 2007, 68; Museibli and Huseynov 2007, 22; Palumbi 2007, 67-68; Chelidze and Chikovani 2008, 28-29; Museibli 2008b, 13; Demetradze and Mirtskhulava 2010, 155; Nebieridze 2010, 149; Lyonnet et al. 2012, 97-98; Abedi et al. 2014, 42; Sagona 2014, 30; Lyonnet 2017, 146; Sagona 2018a, 207.
[1340] Three pithoi fragments, recovered from Tsopi, were reportedly wheel-made. However, the nature of the manufacture has been called into question. Kushnareva and Chubinishvili 1970, Pl. 9; Nebieridze 2010, 149; Kiguradze and Sagona 2003, 48.
[1341] Kiguradze 2001b, 68; Kiguradze and Sagona 2003, 48; Rice 2005, 125; Palumbi 2007, 67-68; Chelidze and Chikovani 2008, 28-29; Heinsch 2012, 330; Sagona 2014, 30; Sagona 2018a, 207-208.
[1342] Kiguradze 2001b, 51; Kiguradze and Sagona 2003, 48; Palumbi 2007, 67-68; Nebieridze 2010, 149; Heinsch 2012, 330. I would like to thank L. Nebieridze and N. Tskvitinidze giving me the opportunity to view a collection of ceramics from Tsopi.
[1343] Lyonnet 2017, 146.

a comb-like tool. Much like the slab technique, evidence of coil production can be identified along the breaks of sherds at the juncture of poorly bonded coils.[1344]

In the case of slab construction, traces of textile impressions may be found sandwiched between the layers of clay. While this is not apparent at the type site, textile impressions on ceramics are known from other Chalcolithic sites including Tsopi and Leilatepe.[1345] This suggests that the slabs of clay were rolled out onto woven mats prior to being joined. Alternatively, large pieces may have been manufactured around a cloth covered mould. It is also possible that wet clay was packed into a textile bag and left to reach a leather-hard state prior to the removal of the bag and the application of the exterior clay layer.[1346] Either way, the presence of textile impressions implies that the slabs of clay were not firmly pressed together during production.[1347] This method of manufacture continued into the Early Bronze Age and is attested at early Kura-Araxes sites including Sos Höyük, Chobareti, and Talin **(*fig. 6.8*)**.[1348]

Impressions of basketry and matting on base fragments are also attested. Mats may have been used to facilitate the turning of pots during the construction, handling, and moving of vessels whilst still wet.[1349] Baskets may have also been used as moulds.[1350] At Sioni, two adjoining base sherds were found with spiral basket

[1344] Fournier 2000, 70-71; Rice 2005, 127; Lyonnet et al. 2012, 98; Lyonnet 2017, 146; Lyonnet 2018, 558.
[1345] Kiguradze 2001b, 51; Kiguradze and Sagona 2003, 48; Nebieridze 2010, 149, Pl. XXIII.9; Sagona 2018a, 207-208.
[1346] Palumbi 2003, 99; Doumani and Frachetti 2012, 369; Heinsch 2012, 332; Jalilov 2018, 104; Sagona 2018b, 286.
[1347] Kiguradze and Sagona 2003, 48; Rice 2005, 125; Sagona 2018a, 207-208.
[1348] Palumbi 2003, 99; Badalyan and Avetisyan 2007, 244; Smith et al. 2009, 43; Heinsch 2012, 332; Hovsepyan 2013, 205; Kakhiani et al. 2013, 30; Sagona 2018b, 285.
[1349] Özdemir 2007, 74; Doumani and Frachetti 2012, 375; Sagona 2018b, 288.
[1350] Preserved remains of textiles and basketry have been recently recovered Areni-1. Stapleton et al. 2014.

impressions (***fig 6.9***).[1351] Basket and mat-impressed bases are a common feature at Chalcolithic sites in the Alazani River Basin. Base fragments of jars with spiral basket impressions were recovered from Damtsvari Gora. Similar material was also recovered from Chinti situated along the course of the Aragvi River (***fig. 6.10***).[1352]

At Damtsvari Gora, Alazani III, and Shavtskala, in the Alazani River Basin, the bases of jars and trays had impressed herringbone, twill matting (***fig. 6.11***).[1353] Closer to the type site, the impression of a woven mat was on a base fragment from Nachivchavebi.[1354] To the south-east, mat-impressed bases were recovered from Kul Tepe/Hadishahr VIB and VIA in Iran.[1355] In the Alazani River Basin, the use of basket moulds and mats may represent a remnant of the preceding Aratashen-Shulaveri-Shomutepe tradition where spiral basket impressed bases are found at several sites including Shulaveris Gora and Imiris Gora.[1356] However, the discovery of a spiral basket impression on a base fragment and triangular, portable andiron at Sos Höyük demonstrate that the use of basketry and matting in ceramic production continued into the Early Bronze Age (***fig. 6.12***).[1357]

Firing Techniques

Ceramics from Sioni are hard-fired with few voids.[1358] Many of the ceramics are characterised by the 'biscuit effect,' where sections are distinguished by darkened cores

[1351] Kiguradze and Sagona 2003, 48; Chelidze and Chikovani 2008, 28-29; Sagona 2014, 30; Sagona 2018a, 207-208.
[1352] I would like to thank G. Chikovani and G. Gogochuri for taking me to the Dusheti storehouse to view materials from sites along the Aragvi River.
[1353] Varazashvili 1992, 31-52.
[1354] Chikovani et al. 2010, 98.
[1355] Abedi et al. 2014, 42-44.
[1356] Kiguradze 1986, Fig. 19.19, Fig. 40.12, Fig. 42.8, 11, Fig. 45.4-6; Lyonnet 2018, 548.
[1357] Sagona 2018b, 287-289, Fig. 1.2-3, Fig. 2.1.
[1358] Kiguradze and Sagona 2003, 48; Sagona 2018a, 207.

(***fig. 6.13***). At Sioni, the cross-section of sherds demonstrate up to three colours ranging from browns (10YR 7/3, 6/3, 5/3), yellows (2.5Y 7/3, 7/4), and pinks (5YR 7/3, 7/4), along the interior and exterior surfaces, to greys (10YR 6/1, 5/1) and black (10YR 2/1) at the centre of the section.[1359] Darkened cores indicate that ceramics were unevenly fired at low temperatures for a short duration of time resulting in vessels that were incompletely oxidised.[1360]

Oxidisation occurs when ceramics are fired in an atmosphere where there is free air circulation and ample free oxygen to bind with the elements in the clay. In contrast, an atmosphere lacking free oxygen is said to be reducing.[1361] Oxidisation begins at 200 degrees Celsius when carbon in the clay oxidises as carbon monoxide (CO) and carbon dioxide (CO_2).[1362] Between 400 and 500 degrees Celsius, carbon particles begin to move from the interior towards the surface of the clay. This process often results in vessels with blackened surfaces.[1363] It is not until temperatures of 600 degrees Celsius and above are reached, and in the presence of free oxygen, that carbon is effectively eliminated from the clay.[1364] As a result, it is reasonable to suggest that ceramic vessels at Sioni were fired at temperatures no higher than 600 degrees Celsius. The simple kiln technology likely produced a highly variable atmosphere which was neither completely oxidising nor reducing at any one time resulting in ceramics that were incompletely oxidised.[1365]

[1359] Menabde and Kiguradze 1981, 14; Kiguradze and Sagona 2003, 48; Palumbi 2007, 67-68; Sagona 2014, 30; Sagona 2018a, 207.
[1360] Kiguradze and Sagona 2003, 48; Rice 2005, 81; Palumbi 2007, 67-68; Demetradze and Mirtskhulava 2010, 155; Palumbi et al. 2014, 46; Sagona 2014, 30.
[1361] Rice 2005, 81.
[1362] Fournier 2000, 231; Rice 2005, 88.
[1363] Rice 2005, 88.
[1364] Rice 2005, 88.
[1365] Fournier 2000, 127; Rice 2005, 81.

Underfired ceramics are a feature of the Chalcolithic period in the Transcaucasus. Fragments of incompletely oxidised ceramics were recovered from Tsopi and Samshvilde, in the Kvemo Kartli region, Alazani III, Damtsvari Gora, and Nadikari, in the Alazani River Basin, and Zhinvali, Chinti, Bodorna, and Abanoskhevi, along the Aragvi River.[1366] Beyond Georgia, Sioni ceramics, demonstrating darkened cores, were recovered from Aratashen in Armenia and Mentesh Tepe, Leilatepe, and Beyuk Kesik in Azerbaijan.[1367] Underfired ceramics are not specific to the Sioni complex. Similar firing techniques were also used to produce Chaff-face ware and the Monochrome ware of the Early Kura Araxes period.[1368]

The variability in temperature and atmosphere during the firing process resulted in a wide range of surface colours.[1369] At Sioni, surfaces ranged from yellows (2.5Y 8/3, 8/4, 8/6, 8/8; 10YR 7/6, 8/8) through reds (2.5YR 7/6, 6/6, 5/6) to light yellowish brown (2.5Y 6/3; 10YR 6/4, 5/4) and to dark brown (10YR 3/3; 7.5YR 3/2) **(*fig. 6.14*)**. The surfaces of vessels could also be grey (10YR 6/1, 5/1; 7.5YR 6/1, 5/1) to very dark grey (10YR 3/1; 7.5YR 3/1). In some instances, some sherds were black (10YR 2/1). Most were heavily mottled and demonstrated blemishes, such as fire clouds, as a result of uneven firing **(*fig. 6.15*)**.[1370]

[1366] Varazahsvili 1992, 21, 43, 52; Mirtskhulava et al. 2007, 21; Demetradze and Mirtskhulava 2010, 155; Nebieridze 2010, 149.
[1367] Akhundov 2007, 108; Palumbi 2007, 68-69; Museibli and Huseynov 2007, 22; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98; Palumbi et al. 2014, 46; Lyonnet 2018, 562.
[1368] Zavaxisvili 1998, 14; Kiguradze 2001b, 51; Akhundov 2007, 108; Badalyan and Avetisyan 2007, 58; Makharadze 2007, 128; Museibli 2007, 68; Palumbi 2008a, 188; Bakhchaliyev et al. 2009, 56; Bakhchaliyev et al. 2010, 92-93; Iserlis et al. 2010, 249; Lyonnet and Guliyev 2010, 224-225; Marro 2010, 42-43; Kibaroğlu et al. 2011, 3074, 3082; Lyonnet et al. 2012, 98, 103; Hovsepyan 2013, 205; Kakhiani et al. 2013, 30-31; Lyonnet 2014, 118-119; Kibaroğlu 2015, 222-223.
[1369] Menabde and Kiguradze 1981, 14; Kiguradze and Sagona 2003, 48; Rice 2005, 109; Chelidze and Chikovani 2008, 28-29; Sagona 2014, 30; Sagona 2018a, 207.
[1370] Rice 2005, 109.

Pastes and Ware Types

Clay, tempered with inorganic inclusions, such as crushed obsidian, basalt, carbonates, sand, and mica, is a general feature of the Sioni complex.[1371] The addition of finely chopped chaff is also known.[1372] Grit and mixed tempered ceramics are present at Sioni, however, grit temper predominates. At Sioni, the Chalcolithic assemblage can be divided into six ware types based upon macroscopic differences in the ceramic pastes: Fine Ware, Medium Ware, Coarse Ware, Obsidian Tempered Ware, Mixed Tempered Ware, and Chaff Tempered Ware **(*tab. 4 and 5*)**.

Fine Ware

Sixty sherds are attributed to this group representing 5.5 percent of the total Chalcolithic assemblage. Twenty-four sherds were diagnostic forming 7.8 percent of the diagnostic materials. During the excavations, Fine Ware was spread across an extensive area of the Chalcolithic settlement. Sherds were collected as surface finds or they were amongst the mixed upper layers. Some sherds were within the eastern and western sections of Structure 1. Stratified examples were recovered from the floor of Structure 1 and the ashy deposits of the central storage pit.

[1371] Menabde and Kiguradze 1981, 14; Varazashvili 1992, 21; Aliyev and Narimanov 2001, 19; Chikovani 2001, 16; Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 48; Badalyan et al. 2004b, 403-404; Chikovani 2005, 63; Akhundov 2007, 116; Palumbi 2007, 68-69; Chelidze and Chikovani 2008, 28-29; Marro 2008, 10; Museibli 2008b, 8; Marro et al. 2009, 49; Chikovani et al. 2010, 96; Demetradze and Mirtskhulava 2010, 155; Lyonnet and Guliyev 2010, 224; Nebieridze 2010, 149; Lyonnet and Guliyev 2012, 9; Lyonnet et al. 2012, 98; Varoutsikos et al. 2012, 54; Varoutsikos et al. 2013, 66; Palumbi et al. 2014, 53; Sagona 2014, 30; Varoutsikos et al. 2014, 53; Palumbi 2015b; Lyonnet 2017, 145; Lyonnet 2018, 550; Palumbi et al. 2018, 121; Sagona 2018a, 203; Varoutsikos et al. 2018, 246.

[1372] Menabde and Kiguradze 1981, 14; Chikovani 2005, 63; Marro and Özfırat 2005, 325; Museibli 2007, 68; Museibli and Huseynov 2007, 22; Palumbi 2007, 68; Marro 2008, 10; Nebieridze 2010, 151; Abedi et al. 2014, 42-44; Sagona 2014, 30; Sagona 2018a, 207.

Fine Ware ceramics have fine textured, moderately levigated clay characterised by low concentrations of very fine (less than one millimetre in diameter) to fine (one to two millimetres in diameter) gritty inclusions such as basalt, quartz, white carbonates, and mica (***fig. 6.16***). Vessels are hard-fired with very few voids and such sherds demonstrate moderately sharp and angular breaks. Fine Ware ceramics were fired to a variety of colours from reddish yellow (5YR 6/6) to brown (7.5YR 5/4). At Sioni, examples of Fine Ware were often derived from thin walled vessels four to six millimetres thick.[1373] With the exception of one sherd, Fine Ware diagnostic pieces were rims belonging to a range of vessel shapes. Outward flaring jars with a pronounced juncture between the neck and the shoulder, inward leaning, short necked jars, and vertical necked jars were the most common.

Fine, thin walled vessels at other Sioni sites are not frequent. In the Alazani River Basin, two thin walled vessel fragments, between three to five millimetres thick, were recovered from Damtsvari Gora. The fragments belonged to a small bowl and were well fired and tempered with sand.[1374] Similar thin walled vessels were also recovered from Nadikari and also Nichbisi in the Mtskheta district.[1375] To the south-west, comparable material (53 sherds) came from the Chalcolithic contexts at Bavra Ablari in the Samtskhe-Javakheti region.[1376] They were constructed from a well levigated, grit tempered clay with very fine obsidian inclusions.[1377] The sherds were evenly fired to a reddish to dark reddish brown (5YR 4/4; 5YR 3/3) with very few voids. Many sherds had

[1373] Menabde and Kiguradze 1981, 14.
[1374] Varazashvili 1992, 43.
[1375] Varazashvili 1992, 52; Chikovani 2001, 16.
[1376] Varoutsikos et al. 2018, 246. I would like to thank A. Mgdeladze and T. Agapishvili for kindly allowing me to view the material from Bavra Ablari.
[1377] Varoutsikos et al. 2012, 54; Varoutsikos et al. 2013, 66; Varoutsikos et al. 2014, 53; Varoutsikos et al. 2018, 246.

a thin profile measuring four millimetres to one centimetre thick. Diagnostic sherds were poorly preserved. However, inward leaning, short necked jars, outward flaring jars, some with a gentle juncture between the neck and the shoulder, and vertical short necked jars were present. Adjoining body sherds, with a row of perforations, may also come from a tray **(*fig. 6.17*)**.

Medium Ware

Medium Ware represents the largest group of ceramics. A total of 597 examples were recorded comprising 55 percent of the Chalcolithic assemblage. Similarly, 159 diagnostic sherds were identified representing 52 percent of the diagnostic assemblage. Medium Ware was found widely dispersed across the Chalcolithic occupation on the surface and in the mixed upper layers. Medium Ware sherds were also recovered from the Late Bronze Age and Early Iron Age tombs (burials 24, 28, and 37) as mixed deposits. However, most were found within the eastern and western sections of Structure 1, amongst the mixed upper layers, and alongside the curved stone wall. Stratified deposits were retrieved from the burnt floor level and were found with examples of Fine Ware at the base of the central storage pit. Medium Ware was also found outside of Structure 1 and along the eastern section of the curved stone wall and the area between structures 1 and 2.

Medium Ware consists of a medium textured clay with poor to moderate levigation. Sections demonstrate a moderate amount of very fine (less than one millimetre in diameter) to medium (two to five millimetres in diameter) gritty inclusions such as basalt, quartz, carbonates, mica, and obsidian **(*fig. 6.18*)**. The very fine nature (less than one millimetre in diameter) of the obsidian in the clay may have occurred

naturally in the clay deposits used by the potters.[1378] Less frequently, ceramics were also tempered with small amounts of grog, as recorded at Delisi, in the Tbilisi area, and Aratashen in Armenia.[1379] The presence of tiny voids in the clay may also be indicative of finely chopped chaff.[1380]

Medium Ware at Sioni, was poorly and inconsistently fired and many sherds have a darkened core.[1381] Along the edges, ceramics exhibit a combination of sharp, angular breaks and less severe, rounded edges. The vessels were fired to a wide range of colours from yellows (10YR 8/8) through to reds (2.5YR 6/6) and light yellowish brown (10YR 6/4) to dark brown (7.5YR 3/2) and black (7.5YR 2.5/1). The interior and exterior surfaces of the vessels were often mottled. The average vessel thickness was between eight millimetres and one centimetre.[1382] Diagnostics include rims, bases, and body sherds. Rims were the most common with 83 examples followed by body sherds with 74 examples. Only two base fragments are documented. As the largest group of ceramics, Medium Ware demonstrates almost the entire range of forms identified at Sioni including inward leaning, short necked jars, vertical necked jars, outward flaring jars, crinkled rim jars, sinuous jars, and hole-mouthed jars.

Similar ceramics, tempered with fine grained sand, quartz, mica, and basalt inclusions, are known at Chalcolithic sites throughout eastern Georgia including Tsopi, Nachivchavebi, Samshvilde, and Dzedzvebi in the Kvemo Kartli region and sites within

[1378] Palumbi et al. 2014, 48.
[1379] Badalyan et al. 2004b, 403-404; Sagona 2014, 30; Sagona 2018a, 207.
[1380] Sagona 2018a, 207.
[1381] Rice 2005, 88.
[1382] Menabde and Kiguradze 1981, 14.

the Alazani River Basin.[1383] Those along the Aragvi River, including Zhinvali, Kvemo Aranisi, Chinti, Bodorna, and Abanoskhevi, had ceramics tempered with high concentrations of fine to medium crushed basalt inclusions (***fig. 6.19***).[1384] Beyond Georgia, grit tempered ceramics were recovered from Aratashen in Armenia,[1385] Ovçular Tepesi, Alikemek Tepesi, Leilatepe, and Beyuk Kesik in Azerbaijan,[1386] in addition to Hanago, Sarıgül, and Çetenli in eastern Anatolia.[1387] Grit tempered ceramics are also present at sites in north-western Iran, including Dormishkanlu, Seramlu, Köhne Pāsgāh Tepesi, and Kul Tepe/Hadishahr, and the northern Caucasus.[1388] However, unlike settlements in eastern Georgia, grit tempered ceramics represent a small component within assemblages that are otherwise predominantly chaff-faced.

Coarse Ware

Coarse Ware ceramics are represented by 90 sherds making up eight percent of the Chalcolithic assemblage. Amongst the diagnostics, Coarse Ware constitutes the smallest group with 13 examples identified, representing four percent of the diagnostic material. At Sioni, it was among surface finds and in the mixed upper layers, between

[1383] Varazashvili 1992; Mirtskhulava et al. 2007, 21; Chikovani et al. 2010, 95-96; Demetradze and Mirtskhulava 2010, 115; Nebieridze 2010, 149; Stöllner and Gambashidze 2011, 196; Stöllner et al. 2014, 29.
[1384] Ramishvili 1982, 25-46; Chikovani 1999, 20; Kiguradze 2000, 322; Kiguradze and Sagona 2003, 89; Chikovani 2005, 64; Marro 2007, 90; Marro 2008, 10-11; Chikovani 2010, 89; Nebieridze 2010, 180-181; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 33; Palumbi et al. 2014, 47; Rova 2014, 50; Shanshashvili and Narimanishvili 2014, 252; Sherazadishvili 2014, 168; Sagona 2018a, 203.
[1385] Badalyan et al. 2004b, 403-405; Badalyan et al. 2007, 60; Palumbi 2007, 63; Palumbi et al. 2014, 45; Palumbi 2015b; Palumbi et al. 2018, 124.
[1386] Narimanov 1987, 47-48; Kiguradze 2000, 322; Aliev and Narimanov 2001, 18-19; Kiguradze 2001b, 51; Akhundov 2007, 108, 116; Museibli 2007, 68-69; Museibli and Huseynov 2008, 21-22; Marro et al. 2009, 49; Museibli 2009, 52; Lyonnet and Guliyev 2010, 223; Sagona 2014, 16; Kavtaradze 2017, 101; Sagona 2018a, 203.
[1387] Marro and Özfırat 2003, 390; Marro and Özfırat 2005, 325; Marro 2008, 10-17; Sagona 2010b, 689; Sagona 2018a, 204.
[1388] Korenevskii 2004, Fig. 4, Fig. 5; Lyonnet 2007, 135-136; Nechitajlo 2007, 163-164; Maziar 2010, 171; Nebieridze 2010, 177; Courcier 2014, 594-595; Abedi et al. 2014, Fig. 13.5-6; Maziar 2015, 30.

0.07 and 0.35 metres below the surface. Sherds were also in the vicinity of Structure 1 and were recovered from the eastern and western sections. Fragments were found amongst the mixed upper layers in association with a series of stones. One example was recovered from the ashy layer of a storage space.[1389] Coarse Ware was also recovered along the curved stone wall, outside of Structure 1, and the area between structures 1 and 2.

Coarse Ware ceramics are characterised by a poorly levigated clay with a high concentration of fine to coarse (five to ten millimetres in diameter) gritty inclusions. Coarsely crushed basalt was used to temper the clay **(*fig. 6.20*)**. In some instances, a small amount of fine to medium chopped chaff was also added. Vessels were inconsistently fired, demonstrating incompletely oxidised cores and moderately angular to gently curving breaks. Some poorly fired examples were friable. In some sherds, medium to large voids can be seen throughout the section, however, they may be the result of dislodged coarse, gritty inclusions due to the friable nature of the clay. Sherds were fired to a variety of colours from very pale brown (10YR 7/4) through to very dark grey (10YR 4/1). Similar to Medium Ware, the surfaces of sherds were often mottled, demonstrating three or more colours and blemishes.

Coarse Ware diagnostics demonstrate thick profiles measuring two to five centimetres. Flat, footed, bases are the most common diagnostic. Six of the eight bases recovered belong to this category. The base sherds are poorly fired with a high concentration of coarse basalt inclusions that are visible on the interior and exterior

[1389] Unfortunately, the details of the storage space were not given in the report and it is unclear if this is referring to the central storage pit in Structure 1.

surfaces and throughout the section **(*fig. 6.21*)**. The high concentration of coarse gritty inclusions among base fragments possibly represents a conscious technological decision related to the form and function of such vessels. The thick profile of Coarse Ware sherds suggests that these vessels were used for storage, rather than cooking, as thick-walled vessels conduct heat less efficiently compared to those with thin walls.[1390] Potters may have intentionally added large quantities of coarse gritty inclusions to the bases of large jars in an attempt to strengthen the clay so that it would support the heavy superstructure of the rest of the vessel.[1391] Similar bases are attested at Chinti and Zhinvali along the Aragvi River **(*fig. 6.22*)**.

Rim sherds were less common with only four examples identified. Shapes include a vertical necked jar and outward flaring jars with a pronounced juncture between the neck and the shoulder. One of the diagnostics is a thick based, pan fragment with a wide, flat handle-like projection.[1392] The remaining three diagnostics are comb-scraped body sherds.

Obsidian Tempered Ware

Ceramics tempered with volcanic glass are a hallmark of the Sioni complex and a chronological indicator for the Chalcolithic period in the Caucasus.[1393] The intentional use of obsidian as an additive to the clay is recorded at other contemporary sites including Delisi, in the Tbilisi area, and Bodorna along the Aragvi River.[1394] Further south,

[1390] Rice 2005, 227.
[1391] Rice 2005, 227.
[1392] This pan, and the circumstances surrounding its discovery, was not discussed in the excavation report or later publications. Menabde and Kiguradze 1981; Kiguradze 2000; Kiguradze 2001b; Kiguradze and Sagona 2003.
[1393] Palumbi 2010, 208; Palumbi et al. 2014, 43; Sagona 2014, 30; Palumbi 2015b; Palumbi et al. 2018, 122.
[1394] Tbilisi 1978; Ramishvili 1982; Kiguradze and Sagona 2003, 48; Palumbi et al. 2014, 47.

they were uncovered at Aratashen, Level 0, Mushakan-4, and Nerkin Sasnashen in Armenia.[1395] More came from Mentesh Tepe, Period III, Toiretepe, and Alkhantepe in Azerbaijan.[1396] Contemporary with Mentesh Tepe, small quantities of obsidian tempered ceramics were recovered from mixed deposits at Ovçular Tepesi in Nakhichevan.[1397] In eastern Anatolia, examples were noted at Hanago in the Iğdır plain.[1398] Outside of Georgia, obsidian tempered sherds comprise a small portion of the ceramic assemblages. For example, at Aratashen, they represent ten percent of the assemblage which is predominantly chaff faced.[1399] A similar trend is reflected at Mentesh Tepe where they represent five percent of the assemblage.[1400]

At Sioni, obsidian tempered ceramics is the second largest group after Medium Ware. A total of 288 examples were identified which account for 26.5 percent of the Chalcolithic assemblage. From the 288 examples, 95 diagnostic sherds were identified. The diagnostic material consists of rim fragments and body sherds, representing 31 percent of the diagnostic assemblage. Obsidian tempered ceramics were found widely dispersed across the Chalcolithic levels. Examples came from the surface and others were amongst the mixed upper layers between 0.07 and 1.5 metres below the surface. A significant quantity were in the fill of the intrusive pit tombs of the Middle Bronze and Early Iron Ages. Likewise, they were in the Middle Bronze Age Tomb 4 which was cut

[1395] Badalyan et al. 2004b, 403-404; Palumbi 2007, 68-69; Muradyan et al. 2014, 343; Palumbi et al. 2014, 45; Palumbi 2015b; Palumbi et al. 2018, 122.
[1396] Petrun 1973, 40-45; Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98; Palumbi et al. 2014, 47; Lyonnet 2017, 146; Akhundov 2018, 61; Lyonnet 2018, 558; Palumbi et al. 2018, 122.
[1397] Marro et al. 2009, 49; Marro et al. 2011, 74; Gülçür and Marro 2012, 311, 318, 320; Palumbi et al. 2014, 47.
[1398] Marro and Özfırat 2003, 390; Palumbi et al. 2014, 47.
[1399] Palumbi et al. 2014, 45; Palumbi et al. 2018, 123-124.
[1400] Lyonnet et al. 2012, 98; Palumbi et al. 2014, 43; Lyonnet 2017, 146; Lyonnet 2018, 559; Palumbi et al. 2018, 125.

into the northern portion of Structure 1. Similar ceramics were also discovered in the vicinity of Tomb 10 of the Late Bronze Age, close to structures 2 and 3, and the deposits of tombs 11, 28, 31, and 37 of the Early Iron Age.

As for Fine, Medium, and Coarse wares, obsidian tempered ceramics were found in the vicinity of structures 1 and 2 and in the eastern and western sections of Structure 1. The ceramics were mixed with stones amongst the upper layers. Examples were also recovered during the cleaning of the eastern portion of the stone wall. *In situ* examples were found scattered along the burnt floor level and at the base of the central storage pit.

This ware was constructed using a medium to coarse clay with poor to moderate levigation. The ceramics are characterised by very fine to fine gritty inclusions such as basalt, quartz, and mica.[1401] However, the clay also contains a high concentration of angular, fine to coarse obsidian inclusions **(*fig. 6.23*)**. Fragments from Aratashen and Mentesh Tepe demonstrate similar characteristics. The clay was tempered with gritty inclusions such as basalt, quartz, carbonates, and mica in addition to finely crushed grog and chopped chaff.[1402] At Aratashen, a petrographic analysis demonstrates that obsidian inclusions, measuring three to five millimetres, represent 14 to 37 percent of the temper used in the clay.[1403] At Mentesh Tepe, obsidian inclusions, used to temper the thin, flat bases of 'mangals,' reached up to ten millimetres in size **(*fig. 6.24*)**.[1404]

[1401] Menabde and Kiguradze 1981, 14; Chelidze and Chikovani 2008, 28-29; Sagona 2018a, 207.
[1402] Badalyan et al. 2004b, 403-404; Palumbi 2007, 68-69; Lyonnet and Guliyev 2010, 224; Lyonnet and Guiyev 2012, 89; Lyonnet et al. 2012, 98; Palumbi et al. 2014, 46-47; Lyonnet 2017, 146; Lyonnet 2018, 558; Palumbi et al. 2018, 125.
[1403] Palumbi et al. 2014, 46.
[1404] Palumbi et al. 2018, 125.

At Sioni, Obsidian Tempered ware is poorly and inconsistently fired with moderately sharp, angular breaks demonstrating grey (10YR 5/1) to black (10YR 2/1) cores. Vessels are fired to a range of colours with mottled and blemished surfaces. Surface colours vary from reddish yellow (5YR 6/6) through to very dark grey (10YR 3/1). However, colours ranging from light brownish grey (10YR 6/2) to very dark greyish brown (10YR 3/2) are predominant.

Obsidian tempered ceramics from Aratashen and Mentesh Tepe were fired in a similar fashion. Vessels were incompletely oxidised with a variety of hues including yellow (10YR 8/5), pink (7.5YR 8/3), red (2.5YR 6/6), and brown (10YR 5/3) through to black (10YR 2/1).[1405] At Aratashen, the low level of vitrification and the presence of secondary cracks in the obsidian inclusions suggests that the ceramics were fired at temperatures between 600 and 750 degrees Celsius.[1406] Although a petrographic analysis has yet to be undertaken, it seems reasonable to suggest that similar firing temperatures were reached during the production of the Obsidian Tempered Ware at Sioni.

Obsidian tempered diagnostics include 62 rim fragments and 33 comb-scraped body sherds. Rim fragments demonstrate the full range of jars including inward leaning, short necked jars, vertical necked jars, outward flaring jars, crinkled rim jars, sinuous jars, and hole-mouthed jars. The morphological repertoire of obsidian tempered

[1405] Palumbi 2007, 68-69; Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98.
[1406] Palumbi 2015b; Palumbi et al. 2018, 132.

ceramics at Aratashen focused exclusively on necked jars.[1407] At Mentesh Tepe, open shapes, such as disc-like pans and 'mangals,' feature more prominently.[1408]

Obsidian as a ceramic temper seldom occurs beyond the Caucasus. A few isolated and unrelated examples are known from the Aegean and Yemen along the Arabian Peninsula.[1409] Although readily available, obsidian was a difficult material to work with as small slivers and flakes could lacerate the hands.[1410] Recent studies in experimental archaeology suggest that crushed obsidian was intentionally added to the clay to increase thermal conductivity.[1411] Obsidian tempered vessels boiled liquids at a faster rate, likely due to the high silica content in the obsidian and the compact nature of the clay, when compared to chaff tempered ceramics.[1412] This suggests that obsidian tempered ceramics developed in relation to specific practices surrounding the processing of liquids and semi-dry food stuffs and conservation of fuel.[1413] Consequently, the appearance of Obsidian Tempered Ware during this period is likely linked to domestic foodways and the emergence of a region-specific, Chalcolithic cuisine.[1414]

Mixed Tempered Ware

Fifty-one mixed tempered sherds were identified, representing 4.7 percent of the Chalcolithic assemblage. Fifteen diagnostic sherds, including 13 rims and two body

[1407] Palumbi et al. 2014, 46-47; Palumbi et al. 2018, 124.
[1408] Lyonnet et al. 2012, 101; Lyonnet 2017, 146; Lyonnet 2018, 563; Palumbi et al. 2018, 125.
[1409] Katsarou et al. 2002; Lewis et al. 2010; Palumbi et al. 2014, 43; Sagona 2014, 30; Palumbi 2015b.
[1410] Chataigner and Gratuze 2014a; Chataigner and Gratuze 2014b; Sagona 2014, 30; Palumbi 2015b; Palumbi et al. 2018, 121-122.
[1411] Palumbi 2015b.
[1412] Palumbi 2015b.
[1413] Palumbi 2015b; Palumbi et al. 2018, 132.
[1414] Palumbi 2015b; Palumbi et al. 2018, 132; Sagona and Shapardon in preparation.

sherds, were identified representing 4.9 percent of the diagnostic material. Mixed tempered ceramics were found concentrated in and around Structure 1. They were in the mixed upper layers between 0.2 to 0.4 metres below the surface. *In situ* examples were also recovered from the floor level of Structure 1 and the base of the central storage pit.

Mixed tempered ceramics were constructed from a medium textured clay with poor to moderate levigation. The clay contained a moderate concentration of very fine to medium gritty inclusions such as basalt, quartz, carbonates, and mica. Sections demonstrate small to medium voids indicating that finely chopped chaff also was added. In some instances, chaff impressions are apparent on the interior and exterior surfaces **(*fig. 6.25*)**. They were hard-fired and characterised by moderately sharp, angular breaks. The addition of chaff produced sherds that were less heavy when compared to other ware types that were grit tempered. Mixed tempered sherds also produced an audible 'clink' when struck. Sherds were inconsistently fired and incompletely oxidised. Mixed tempered ceramics demonstrated darkened cores ranging from light grey (10YR 7/1) to very dark grey (10YR 3/1). Exterior and interior surfaces were mottled and fired to a variety of colours, from yellow (10YR 8/9) through to red (2.5YR 6/6) and light yellowish brown (10YR 6/4) through to dark brown (7.5YR 3/2). Amongst the diagnostics, mixed tempered ceramics include inward leaning, short necked, vertical necked, and outward flaring forms. Sinuous jars and hole-mouthed jars are present, however, vertical necked jars are predominant.

Small quantities of mixed tempered ceramics appear at sites throughout the Caucasus from the mid-fifth millennium B.C.E. They were recovered from the

Chalcolithic levels at Ovçular Tepesi (***fig. 6.26***).[1415] At Aratashen, finely chopped chaff was added to clay tempered with gritty and vitroclastic inclusions.[1416] Similar ceramics were recovered from the Chalcolithic occupation at Areni-1 and kurgans 5 and 6 at Aknalitch.[1417] In north-western Iran, at Kul Tepe/Hadishahr VIB and VIA, mixed tempered ceramics comprise between 76 and 91 percent of the ceramic assemblage.[1418]

The production of mixed tempered ceramics continued into the early fourth millennium B.C.E. A small collection was recovered from Beyuk Kesik where they represent six percent of the Chalcolithic assemblage.[1419] Similar ceramics were also recovered from Poylu II in the Agstafa district.[1420] They are found in eastern Anatolia and surface finds were collected from Hanago, Sarıgül, and Çetenli in the Iğdır and Doğubeyazıt plains.[1421] Roughly contemporary with level VIA at Kul Tepe/Hadishahr, mixed tempered ceramics were reported at Köhne Pāsgāh Tepesi along the Khoda Afarin delta.[1422]

Closer to Sioni, mixed tempered ceramics recovered from Tsopi and Nachivchavebi in the Kvemo Kartli region.[1423] The use of chaff, particularly at sites throughout Azerbaijan and north-western Iran, may reflect regional technological traditions. Additionally, its increasing prominence throughout sites at the onset of the fourth millennium B.C.E. may also reflect a chronological and technological bifurcate.[1424]

[1415] Marro et al. 2009, Pl. XVII.1, 6, Pl. XVIII.1, 4-6, Pl. XIX.1, 4.
[1416] Badalyan et al. 2004b, 403-404; Palumbi 2007, 68; Palumbi et al. 2014, 46.
[1417] Areshian et al. 2012, 127; Wilkinson et al. 2012, 28; Muradyan et al. 2014, 343-344.
[1418] Abedi et al. 2014, 42-43; Kouhpar et al. 2015, 279.
[1419] Museibli 2007, 68-69; Museibli and Huseynov 2007, 22.
[1420] Museibli 2008b, 12-13.
[1421] Marro and Özfırat 2003, Pl. IV.4.4; Marro and Özfırat 2005, 325, Pl. IV.2-3; Sagona 2018a, 207.
[1422] Maziar 2010, 170.
[1423] Chikovani et al. 2010, 96; Nebieridze 2010, 151; Sagona 2014, 30; Sagona 2018a, 207.
[1424] Marro 2008, 10; Sagona 2018a, 207.

Chaff Tempered Ware

During the excavations, three non-diagnostic examples of Chaff Tempered Ware were recovered. As a result, Chaff Tempered Ware accounts for less than one percent of the Chalcolithic assemblage suggesting that chaff-faced ceramics were not produced on site. One example came from the mixed upper layer in the western section of Structure 1. Another fragment was found in a black ashy layer, beneath a series of stones, close to pit tombs 6 and 7 of the Late Bronze Age.

Chaff Tempered Ware was constructed from a moderately well levigated, fine to medium textured clay. The sherds are characterised by small to medium voids indicating that fine to medium chopped chaff was added to the clay. Chaff impressions are also apparent on the interior and exterior surfaces **(*fig. 6.27*)**. Like Mixed Tempered Ware, the use of chaff to temper the clay produced vessel fragments that were light weight, and which 'clink' when tapped. In some cases, the sherds also demonstrate low concentrations of very fine white carbonate inclusions which likely occurred naturally in the clay deposit.

The chaff tempered ceramics were hard-fired and demonstrate sharp, angular breaks. Studies from Aratashen suggests that they were fired under low temperatures, between 550 and 600 degrees Celsius, for a short duration of time.[1425] At Sioni, the examples were likely fired under similar conditions as each of the sherds were inconsistently and incompletely fired with sections demonstrating darkened cores ranging from grey (10YR 6/1) to dark grey (10YR 4/1). Interior and exterior surfaces are

[1425] Palumbi et al. 2014, 46.

drab and sometimes mottled. The surfaces range from pale yellow (7.5YR 7/2), very pale brown (10YR 7/3), and light brownish grey (10YR 6/2) to light grey (10YR 7/2).

Small quantities of chaff tempered ceramics are attested at a few contemporary sites throughout eastern Georgia. At Tsopi, examples were found in association with grit tempered ceramics in several Chalcolithic storage pits. Here, the ware is predominantly represented by a series of large *pithoi* and small jar fragments.[1426] Other fragments were recovered from Grmakhevistavi in the same region and Treli in the Tblisi area.[1427] Despite this, these ceramics are poorly represented at sites throughout eastern Georgia. The exception is Berikldeebi, which has strong ties to the Leilatepe complex.[1428] Beyond Georgia, the ratio of grit tempered to chaff tempered ceramics is inverse. In Azerbaijan and Armenia, chaff tempered ceramics are predominant at early sites such as Mentesh Tepe, Ovçular Tepesi, and Aratashen.[1429] This trend continued into the early fourth millennium B.C.E., at Beyuk Kesik, Poylu II, Leilatepe, Alikemek Tepesi, and Soyuq Bulaq, with the development of the Leilatepe complex.[1430]

Surface Treatments

At Sioni, vessels demonstrate a variety of surface treatments, which could be plain, smoothed, slipped, or lightly burnished.[1431] In many cases, vessel fragments

[1426] Kiguradze and Sagona 2003, 48; Nebieridze 2010, 151-152; Sagona 2018a, 207.
[1427] Abramishvili and Gotsiridze 1978, 34-37; Abramishvili et al. 1980, Pl. 11.105; Kiguradze and Sagona 2003, 43; Palumbi 2008a, 28; Sagona 2018a, 207.
[1428] Zavaxisvili 1998, 7; Kiguradze 2001a, 18-19; Kiguradze and Sagona 2003, 44; Makharadze 2007, 126; Munchaev and Amirov 2014, 166; Sagona 2014, 15-16; Sagona 2018a, 190.
[1429] Palumbi 2007, 63; Marro et al. 2009, 48; Marro et al. 2011, 72; Lyonnet et al. 2012, 97; Lyonnet 2017, 146-147.
[1430] Narimanov 1987, 47-48; Aliev and Narimanov 2001, 18-19; Akhundov 2007, 108, 116; Huseynov 2007, 3-5; Museibli 2007, 68-69; Museibli 2008b, 2; Sagona 2018a, 190.
[1431] Menabde and Kiguradze 1981, 14; Kiguradze and Sagona 2003, 48; Chelidze and Chikovani 2008, 28-29; Sagona 2014, 30; Sagona 2018a, 208.

demonstrate a combination of these finishing techniques. Exterior surfaces were rarely left plain (less than two percent) **(*tab. 6 and tab. 7*)**.[1432] Rather, exteriors were smoothed and slipped (35.90 percent) or simply smoothed (31 percent). Twenty percent of the exterior surfaces were also smoothed, slipped, and inconsistently burnished. In contrast, 50 percent of interior surfaces were left plain across the assemblage. Twenty-six percent of interior surfaces were smoothed while 13 percent were smoothed and slipped.

Plain, smoothed, slipped, and burnished surfaces, and the combined use of these techniques occurs across each of the ware types **(*tabs. 8-19*)**. Likewise, the prevalence of plain interior surfaces is consistent across most ware types (between 41 and 60 percent of the Fine, Medium, Coarse, and Obsidian Tempered ceramics; ***fig. 6.28***): 60 percent of obsidian tempered ceramics; 25.5 percent of Mixed Tempered ceramics; 66 percent of Chaff Tempered Ware interiors were plain. Note, however, that the small number of Mixed Tempered and Chaff Tempered ceramics has influenced the outcome of these results.

Sherds with smoothed interior surfaces demonstrate a similar trend. Across all ware types, 20 to 33 percent of vessel fragments have smoothed interior surfaces. At 33 percent, smoothed interior surfaces are more common amongst Fine Ware and Chaff Tempered ceramics followed by Medium Ware at 29.5 percent. Sherds with smoothed and slipped interior surfaces range between eight and 29 percent across each ware type, but are prevalent amongst Mixed Tempered ceramics; 29 percent of the interior surfaces were smoothed and slipped followed by Coarse Ware at 20 percent. They are

[1432] Kiguradze and Sagona 2003, 48; Sagona 2018a, 208.

least common amongst Medium Ware and Obsidian Tempered ceramics which represent 13 and eight percent of the material, respectively.

Exterior surfaces were mostly smoothed and slipped. Amongst Medium, Mixed Tempered, Obsidian Tempered, and Fine wares, they represent 35 to 43 percent of each ware type **(*fig. 6.29*)**. Smoothed and slipped exterior surfaces are less common amongst Coarse Ware ceramics with 26 percent bearing such treatment. Rather, the exterior surfaces of Coarse Ware vessels were often smoothed, representing 39 percent. Smoothed exterior surfaces were also common amongst other ware types, including Mixed Tempered, Medium, Obsidian Tempered, and Fine wares representing 25 to 35 percent of the vessel fragments.

Burnished exteriors are less common. Polishing was applied in conjunction with other forms of surface treatment so that the exterior surfaces were often smoothed, slipped, and burnished. Exterior surfaces were lightly burnished which produced an irregular, streaky lustre **(*fig. 6.30*)**.[1433] Mixed Tempered ceramics demonstrate the highest occurrences of smoothed, slipped, and burnished exterior surfaces at 31 percent followed by Coarse Ware at 29 percent. This pattern is also reflected in the treatment of interior surfaces in which smoothed, slipped, and burnished surfaces occur most commonly amongst Mixed Tempered and Coarse Ware ceramics at 16 and eight percent, respectively. Such exterior surfaces are poorly represented among Obsidian Tempered ceramics. Only 16 percent of vessel fragments demonstrate this type of surface treatment. The high proportion among Coarse Ware ceramics may be related to vessel form and function. The polishing of leather-hard or dry vessel surfaces led to the

[1433] Rice 2005, 138; Sagona 2014, 30; Sagona 2018a, 208.

compaction and reorientation of the fine clay particles resulting in vessels that were less permeable to moisture which may have been a desirable feature when storing liquids and/or semi-dry foodstuffs.[1434]

Vessel fragments may also demonstrate comb-scraped interior and/or exterior surfaces **(*fig. 6.31 and fig. 6.32*)**, but it is attested on less than four percent of interior surfaces. In contrast, ten percent of vessel fragments are comb-scraped on the exterior surface. Like burnishing, comb-scraping was often employed in conjunction with other surface treatments. Vessels were comb-scraped and *then* smoothed, slipped, and/or burnished. Where vessels were smoothed or burnished afterwards, the comb-scraping was partially obscured.[1435] It seems likely that comb-scraping was utilised as a manufacturing technique rather than a decorative treatment.[1436] At Sioni, combing occurs along the juncture of the neck and the body suggesting that it was used while attaching the neck to the body. Comb-scraping was also used to even out vessel walls and remove surface impurities.[1437] Although primarily serving a functional role, at some sites, the careful application of comb-scraping on the exterior surfaces of vessels suggests that the technique also carried an aesthetic value **(*fig. 6.33*)**.[1438]

Comb-scraped surfaces occur across all ware types with the exception of Chaff Tempered Ware **(*tab. 20 and tab. 21*)**. Comb-scraped surfaces most frequently occur amongst Medium and Obsidian Tempered wares. Six percent of Obsidian Tempered

[1434] Rice 2005, 138, 231.
[1435] Menabde and Kiguradze 1981, 14; Lyonnet 2017, 146-147; Lyonnet 2018, 558.
[1436] Marro et al. 2009, 48; Gülçur and Marro 2012, 312; Lyonnet et al. 2012, 97-98; Lyonnet 2017, 146-147; Lyonnet 2018, 558; Sagona 2018a, 208.
[1437] Rice 2005, 137; Marro et al. 2009, 48; Gülçur and Marro 2012, 312; Lyonnet et al. 2012, 97-98; Lyonnet 2017, 146-147; Lyonnet 2018, 558; Sagona 2018a, 208.
[1438] Lyonnet et al. 2012, Footnote 198; Museibli 2014b, Fig. 34.

ceramics demonstrate combed interior surfaces compared to four percent of Medium Ware. However, 12 percent of both ware types are characterised by comb-scraped exterior surfaces. Two percent of interior surfaces and six percent of exterior surfaces of Mixed Tempered ceramics were finished in this way. Comb-scraped surfaces occur less frequently amongst Fine and Coarse Ware ceramics (only two percent of exterior surfaces).

The use of a serrated tool to smooth surfaces and join vessel pieces was not a technique that was exclusive to Sioni ware, but it is well represented across the Transcaucasus during the Chalcolithic. The technique was employed across the Sioni, Chaff-faced/Leilatepe, and other local horizons. Early examples of comb-scraped pottery were recovered from Mentesh Tepe in Azerbaijan, Ovçular Tepesi in Nakhichevan, and Areni-1, Aratashen, and kurgans 5 and 6 at Aknalitch in Armenia.[1439] In Georgia, grit and obsidian tempered, comb-scraped ceramics were recovered from Alazani III and Damtsvari Gora, in the Alazani River Basin, Bodorna, along the Aragvi River, and Orchosani and Rabati in the Samtskhe-Javakheti region.[1440] It is common amongst sites of the Leilatepe tradition in Azerbaijan. Grit tempered and chaff tempered examples were recovered from Leilatepe, Alikemek Tepesi, Beyuk Kesik, Poylu II, and Galayeri.[1441]

[1439] Badalyan et al. 2004b, 405; Badalyan et al. 2007, 60; Palumbi 2007, 63; Marro et al. 2009, 48-49; Lyonnet and Guliyev 2010, 224; Marro 2011, 44; Areshian et al. 2012, 127; Gülçur and Marro 2012, 312; Lyonnet et al. 2012, 98; Wilkinson et al. 2012, 28; Muradyan et al. 2014, 343-345; Palumbi et al. 2014, 45; Palumbi 2015b; Lyonnet et al. 2017, 146-147; Lyonnet 2018, 558; Palumbi et al. 2018, 124.
[1440] Ramishvili 1982, 25-46; Varazashvili 1992, 29, 46; Baramidze et al. 2007, 25-27; Marro 2008, 10-11; Nebieridze 2010, 169; Chikovani 2011, 265; Mirtskhulava and Chikovani 2014, 33; Palumbi et al. 2014, 47; Sagona 2018a, 203; Bedianiashvili et al. 2019, 14.
[1441] Narimanov 1987, 47-48; Kiguradze 2000, 322; Aliev and Narimanov 2001, 18-19; Kiguradze 2001b, 51; Akhundov 2007, 108, 116; Huseynov 2007, 3-5; Huseynov and Jalilov 2007, 3, 6; Museibli 2007, 68-69; Museibli 2008b, 2; Museibli and Huseynov 2008, 21-22; Museibli 2009, 52; Lyonnet and Guliyev 2010, 223; Museibli 2014b, Fig. 34; Sagona 2014, 16; Museibli 2016a, 284; Kavtaradze 2017, 101; Sagona 2018a, 203; Museibli 2019, 69.

Comb-scraped ceramics are also documented at sites in eastern Anatolia, including Hanago and Çetenli, and Kul Tepe/Hadishahr in north-western Iran.[1442]

Morphology

At Sioni, 194 diagnostic sherds were used to determine the basic range of vessel forms within the assemblage. It comprises a restricted morphological repertoire that is primarily represented by closed vessel forms. Jars feature most commonly and are divided into three major shapes including necked jars (Jar 1), sinuous jars (Jar 2), and hole-mouthed jars (Jar 3) **(*tab. 22*)**. Open forms, such as trays, pans, plates, and bowls, are poorly represented. A single pan-like fragment, found in an ashy deposit in Structure 1, represents the only clear example of an open form. The under representation of open forms is possibly due to the poor preservation and highly fragmented nature of the diagnostic material. Other forms include flat and heeled bases and an elliptical, lugged body sherd **(*tab. 23*)** Beyond Sioni, grit and mixed tempered ceramics from other contemporary sites display a diverse array of morphological types including spouted jars, jars and jugs with handles, cylindrical vases, cups, goblets, hemi-spherical bowls, trays, and pans.

Necked Jars (Jar 1)

Necked jars represent the largest group and constitutes 80 percent of the diagnostic sherds. Jar 1 is a broad category that may be divided into seven sub-categories which represent variations of a similar from **(*tab. 24*)**. The profile of necked jars may be inward leaning, becoming progressively outward leaning with a pronounced

[1442] Marro and Özfırat 2003, 390; Marro and Özfırat 2005, 325; Marro 2008, 10-17; Sagona 2010b, 689; Abedi et al. 2014, Fig. 20.14; Abedi et al. 2015, 325; Sagona 2018a, 204.

juncture between the neck and the shoulder, with globular bodies and a flat or heeled base.

Jar 1.1

Jar 1.1 is an inward leaning, short necked jar with a gentle curvature between the neck and the shoulder **(*fig. 6.34*)**. Twenty-two examples were recovered representing 11.3 percent of the repertoire. Rim diameters range from seven to 32 centimetres in size **(*tab. 25*)**. As a result, Jar 1.1 may be subdivided into two variants. Small jars range (Jar 1.1i) from seven to 20 centimetres in diameter and large jars (Jar 1.1ii) from 20 to 32 centimetres in diameter. Ten vessels were attributed to the small variant and 11 to the large variant **(*tab. 26*)**.

Simple cut rims are the most common amongst inward leaning, short necked jars (14 examples; 63.6 percent) followed by simple rounded rims (four examples; 18.2 percent). Vessels with irregular rims (three examples; 13.6 percent) and a single example of a thickened and rounded rim are also attested **(*tab. 27*)**. Inward leaning, short necked jars occur across several ware types including Fine, Medium, Obsidian Tempered, and Mixed Tempered Wares. Fifty percent of inward leaning, short necked jars are represented by Medium Ware followed by Fine Ware at 27.3 percent and Obsidian Tempered Ware at 18.2 percent. Only one example of a mixed tempered inward leaning, short necked jar was identified **(*tab. 28*)**.

Inward leaning, short necked jars represent a common form at other contemporary sites throughout the Caucasus. Examples were recovered from

Samshvilde in the Kvemo Kartli region.[1443] A similar vessel type, with a squat, globular body, came from Shavtskala, along the Alazani River Basin, and Nichbisi in the Mtskheta-Mtianeti region.[1444] Beyond Georgia, inward leaning, short necked jars were present at Aknalitch in Armenia, Agili Dere in Azerbaijan, and Hanago in eastern Anatolia **(*fig. 6.35*)**.[1445] In north-western Iran, mixed tempered examples are also known from Köhne Pāsgāh Tepesi and Kul Tepe/Hadishahr.[1446] Such jars at Kul Tepe/Hadishahr display several variations including examples with a tall neck and jars with a more pronounced inward leaning profile between the rim and the shoulder.[1447] In the northern Caucasus, they are also documented at Galyugai I.[1448]

Jar 1.2

Jar 1.2 is characterised by a vertical neck from the shoulder to the lip and a stronger curvature between the juncture of the neck and the shoulder when compared to Jar 1.1 **(*fig. 6.36*)**. Thirty-two examples are recorded, representing 16.5 percent of the morphological repertoire. Rim diameters range from eight to 40 centimetres **(*tab. 29*)**. There are two variants based on size: small jars (Jar 1.2i) measure eight to 20 centimetres in diameter; large jar rims (Jar 1.2ii) measure 20 to 40 centimetres in diameter. Eighteen were classified as small jars and 14 as large jars **(*tab. 30*)**.

Simple cut rims are prevalent amongst vessels of this category (23 examples; 71.9 percent). Simple, rounded rims and thickened and rounded rims occur in smaller

[1443] Demetradze and Mirtskhulava 2010, Fig. 6.
[1444] Varazashvili 1992, Pl. XLIII.3; Chikovani 2001, Fig. 1.25.
[1445] Marro and Özfırat 2003, Pl. IV.3; Huseynov 2007, Pl. III.5; Marro 2007, Pl. VII.3; Marro 2008, Fig. 1.3; Muradyan et al. 2014, Fig. 8.2.
[1446] Maziar 2010, Fig. 8.1; Abedi et al. 2014, Fig. 17.4, 7, 9-10, Fig. 20.8-9, Fig. 21.7, 14, Fig. 22.4.
[1447] Abedi et al. 2014, Fig. 19.7, 10, Fig. 21.14.
[1448] Korenevskii 2004, Fig. 5.

quantities (three examples; 9.4 percent and two examples; 6.3 percent, respectively). Other rim types include a flaring, simple cut rim and an oblique rim which are each represented by a single example **(*tab. 31*)**. Almost half of the diagnostic fragments are represented by Obsidian Tempered Ware at 43.8 percent. Next, Medium Ware constitutes 30 percent of Jar 1.2 diagnostics. Other ware types are less well represented. Fine Ware comprises 15.6 percent followed by Mixed Tempered Ware at 6.3 percent and Coarse Ware at 3.1 percent **(*tab. 32*)**.

Vertical necked jars, such as those represented by Jar 1.2, are known at other contemporary sites throughout eastern Georgia including Tsopi, Nachivchavebi, and Samshvilde in the Marneuli and Tetritskaro districts of the Kvemo Kartli region.[1449] Further east, examples were recovered from Beyuk Kesik and Agili Dere in the Ganja-Gazakh region of Azerbaijan.[1450] At these sites, the profile is slightly outward flaring and the differences in the length of the neck suggest that there may have been short and tall necked variants. In north-western Iran, at Kul Tepe/Hadishahr, a mixed tempered, vertical, tall necked jar with a slightly inward leaning profile was also uncovered.[1451]

Jar 1.3

Jar 1.3 is an outward flaring jar with a gentle curvature between the neck and the shoulder **(*fig. 6.37*)**. Both short and tall necked varieties are documented. Although no complete examples were recovered, the curvature between the neck and the shoulder suggests that vessels of this type were characterised by a globular body.

[1449] Chikovani et al. 2010, Pl. II.1; Demetradze and Mirtskhulava 2010, Fig. 6; Nebieridze 2010, Pl. XXVII.1.
[1450] Huseynov 2007, Pl. III.3, 6; Museibli 2007, Pl. XIX.1, Pl. XIII.5.
[1451] Abedi et al. 2014, 39-43, Fig. 21.10; Kouhpar et al. 2015, 279.

Seventeen diagnostic sherds were identified representing 8.8 percent of the morphological repertoire. Rim diameters ranged from 11 to 30 centimetres with two distinguishable variants based on size **(*tab. 33*)**. The rim diameter of small jars (Jar 1.3i) measures between 11 to 20 centimetres. Large jars (Jar 1.3ii) measure between 20 to 30 centimetres. The majority of vessels are represented by large jars. Ten had rim diameters measuring over 20 centimetres **(*tab. 34*)**.

In contrast to jars 1.1 and 1.2, outward flaring jars are characterised by simple rounded rims (eight examples; 47 percent) and thickened and rounded rims (six examples; 35.3 percent). Amongst this type, only two examples (11.8 percent) of simple cut rims and a single irregular rounded rim are attested **(*tab. 35*)**. Outward flaring jars most commonly occur amongst obsidian tempered ceramics. Sixty percent of the vessels were obsidian tempered followed by Medium Ware at 29.4 percent. Other ware types are poorly represented. Only singular examples of Fine and Mixed Tempered Ware were identified **(*tab. 36*)**.

Not far from Sioni, short and tall necked varieties of outward flaring jars are known from Tsopi, Arukhlo VI, Nachivchavebi, and Samshvilde in the Kvemo Kartli region.[1452] Tall necked varieties, with round or elliptical lugs positioned below the rim, are also known from Nachivchavebi and Orchosani in the Samtskhe-Javakheti region.[1453] Dating to the second half of the fifth millennium B.C.E., early examples were also recovered from Ovçular Tepesi in Nakhichevan **(*fig. 6.38*)**.[1454] Similar to those at Sioni,

[1452] Chikovani et al. 2010, Pl. II.3; Demetradze and Mirtskhulava 2010, Fig. 6; Nebieridze 2010, Pl. III.2, Pl. VIII.6, Pl. XI.6, Pl. XXIIIa.1, Pl. XXVI.1, Pl. XXXIII.
[1453] Chikovani et al. 2010, Pl. II.3; Nebieridze 2010, Pl. XL, Pl. XLI.
[1454] Bakhchaliyev et al. 2009, 55; Bakhchaliyev et al. 2010, 87; Marro 2011, 35; Berthon et al. 2013, 192; Marro et al. 2014, 131; Marro et al. 2015, 157.

outward flaring jars at Ovçular Tepesi were constructed from grit tempered clay and characterised by simple, rounded or thickened rims.[1455] Partly contemporary, a similar tall necked variety, characterised by a simple, cut rim, is also known from Areni-1 in Armenia.[1456]

Dating to the early fourth millennium B.C.E., outward flaring jars were also recovered from Leilatepe sites in Azerbaijan.[1457] Short and tall necked varieties, constructed from a coarse, grit tempered clay, came from Beyuk Kesik and Leilatepe. At these sites, the vessels are characterised by simple, rounded and oblique rims.[1458] Further south, outward flaring jars are known in eastern Anatolia and north-western Iran. Grit tempered examples were recovered as surface finds from Hanago and Sarıgül along the Iğdır plain.[1459] At Kul Tepe/Hadishahr VIB and VIA, short and tall necked varieties, constructed from mixed tempered clay, were uncovered.[1460] At Galyugai I, in the northern Caucasus, an example of a short necked, outward flaring jar with a globular body and round base was also discovered.[1461]

Jar 1.4

Jar 1.4 is another outward flaring jar which is distinguished from Jar 1.3 based on a stronger curvature between the neck and the shoulder and a more pronounced outward leaning profile (***fig. 6.39***). Like Jar 1.3, based on the curvature of the shoulder,

[1455] Marro et al. 2009, Pl. XVII.3-6; Kuliyeva and Bahşeliyev 2018, Fig. 8.2.
[1456] Zardaryan 2014, Fig. 3.
[1457] Akhundov 2007, 95-96, 121; Museibli 2007, 59; Museibli and Huseynov 2008, 46; Museibli 2009, 54; Lyonnet and Guliyev 2010, 222-223; Museibli 2014a, 102.
[1458] Aliev and Narimanov 2001, Tab. V, Tab. VI.2; Akhundov 2007, Fig. 16.6, 10-11; Museibli 2007, Pl. XIX.2-4.
[1459] Marro and Özfırat 2003, Pl. IV.2; Marro and Özfırat 2005, Pl. IV.5; Marro 2007, Pl. VII.2, Pl. VIII.5; Marro 2008, Fig. 1.2, Fig. 2.5.
[1460] Abedi et al. 2014, Fig. 21.6, Fig. 25.8.
[1461] Korenevskii 2004, Fig. 5.

it can be assumed that such vessels were also characterised by a globular or ovoid-shaped body. Jar 1.4 is a broad category representing the largest morphological group. Thirty-eight examples were identified which represent 20 percent of the repertoire. Jar 1.4 demonstrates a wide range of sizes with rim diameters measuring between ten and 38 centimetres **(*tab. 37*)**. Small jars (Jar 1.4i), ten to 20 centimetres in diameter, are predominant. Twenty-two measured 20 centimetres in diameter or less. Large jars (Jar 1.4ii), measuring between 20 and 38 centimetres in diameter, are less common with 16 examples identified **(*tab. 38*)**.

Among Jar 1.4, simple, cut rims are the most common with 24 examples representing 63.2 percent of the fragments. Irregular rims, including simple, cut and rounded varieties, are also prevalent (five examples; 13.2 percent). Rounded rims, thickened and rounded rims, oblique rims (three examples; 7.9 percent and two examples each; 5.2 percent, respectively), and singular examples of simple, cut and rounded, flaring rims are also attested **(*tab. 39*)**. Jar 1.4 occurs across each of the ware types. Medium Ware comprise 50 percent followed by Obsidian Tempered Ware at 23.7 percent. Fine Ware is also present at 18.4 percent compared to Mixed Tempered and Coarse wares which comprise 5.3 and 2.6 percent of the vessel fragments, respectively **(*tab. 40*)**.

Vessels similar to Jar 1.4 are recurrent throughout Chalcolithic sites in eastern Georgia. Short and tall necked variations are known from Tsopi and Arukhlo VI in the Marneuli district of Kvemo Kartli **(*fig. 6.40*)**.[1462] A similar example, with a tall neck,

[1462] Kushnareva and Chubinishvili 1970, Fig. 7.18, Fig. 9.19; Kushnareva 1997, Fig. 12.14, 17; Nebieridze 2010, Pl. IV.3, Pl. XI.1-2, Pl. XXVI.2, Pl. XXXIII.

simple, rounded rim, and globular body, was also uncovered at Damtsvari Gora along the Alazani River Basin.[1463] Rim fragments, with a short neck, sharply flaring profile, and elongated, globular body, were also found, mixed with early Kura-Araxes deposits, at Orchosani in the Samtskhe-Javakheti region.[1464]

In Armenia, an example of a short necked, outward flaring jar with a simple rounded rim, globular body, and flat base was excavated from the Chalcolithic occupation at Areni-1.[1465] Partly contemporary, short necked, outward flaring jars, with a less pronounced juncture between the neck and the shoulder, were recovered from the Chalcolithic levels at Ovçular Tepesi and Mentesh Tepe **(*fig. 6.41*)**.[1466] In Azerbaijan, at sites of the Leilatepe tradition, short and tall necked, outward flaring jars, were recovered from Leilatepe, Beyuk Kesik, and Poylu II.[1467] At Poylu II, such jars are characterised by short necks, simple, cut and simple, rounded rims, squat, globular bodies, and flat bases.[1468] Mixed tempered jars, with a similar profile, were also discovered at Köhne Pāsgāh Tepesi in north-western Iran.[1469] In the northern Caucasus, a tall necked variation is attested at the pre-Maikop site of Meshoko.[1470] At Galyugai I, vessels similar to Jar 1.4 are characterised by short necks, simple, cut rims, globular or ovoid-shaped bodies, and rounded bases.[1471]

[1463] Varazashvili 1992, Pl. XVIII.1.
[1464] Baramidze et al. 2007, Pl. XXXIII.
[1465] Zardaryan and Gasparyan 2010, Fig. 1.
[1466] Marro et al. 2009, Pl. XVII.8; Lyonnet et al. 2012, Fig. 148; Palumbi et al. 2018, Fig. 8.
[1467] Aliev and Narimanov 2001, Tab. V; Akhundov 2007, Fig. 16.4-5, 8-9, 12; Museibli 2007, Fig. XXII.9; Museibli 2008b, Pl. 3.3-5, Pl. 6.5.
[1468] Museibli 2008b, Pl. 3.3-5, Pl. 6.5.
[1469] Maziar 2010, Fig. 8.3.
[1470] Sagona 2018a, Fig. 4.3.2.
[1471] Korenevskii 2004, Fig. 5.1-3.

Jar 1.5

Jar 1.5 is a vertical necked jar characterised by a distinct offset at the juncture between the neck and the shoulder **(*fig. 6.42*)**. Short and tall necked varieties are documented with some demonstrating an inclination towards an inward leaning or outward leaning profile. The partial reconstruction of one vessel indicates that Jar 1.5 was characterised by an elongated, globular body that gradually tapered towards the base. Twenty-six examples were identified, comprising 13.4 percent of the morphological repertoire. Rim diameters range from 12 to 38 centimetres **(*tab. 41*)**. Large jars (Jar 1.5ii), measuring 20 to 38 centimetres, are more common and are represented by 17 examples. Nine vessel fragments, measuring 20 centimetres in diameter or less, belong to small jars (Jar 1.5i) **(*tab. 42*)**.

Simple, cut rims are predominant (17 examples; 65.4 percent). Thickened, cut rims and simple, rounded rims are the next most common type (three examples each; 11.5 percent). Irregular, rounded rims are also present (two examples; 7.7 percent) in addition to a singular example of a thickened and rounded rim **(*tab. 43*)**. The majority of Jar 1.5 diagnostics are represented by Medium (65.4 percent) and Obsidian Tempered wares (26.9 percent). Other ware types are less common with only singular examples of Fine and Mixed Tempered Ware **(*tab. 44*)**.

Vertical necked jars, similar to Jar 1.5, are known from Tsopi and Samshvilde in the Kvemo Kartli region.[1472] At Tsopi, they are characterised by simple cut rims and an outward leaning profile. Similar to Sioni, the partial reconstruction of one jar indicates that such vessels were also characterised by the gradual tapering of the body towards

[1472] Demetradze and Mirtskhulava 2010, Fig. 6; Nebieridze 2010, Pl. XXIIIa.4.

the base.[1473] A short, vertical necked jar, with a simple, cut rim and globular body, was also uncovered at Aknalitch in Armenia (***fig. 6.43***).[1474] Similar vessels were also present at the contemporary sites of Mentesh Tepe and Ovçular Tepesi.[1475] At Ovçular Tepesi, mixed tempered examples, with a short and slightly outward leaning neck and globular body, are also known. The vessels were small, measuring between eight to 18 centimetres in diameter.[1476]

At later sites, such as Leilatepe and Chalagantepe in Azerbaijan, vertical necked jars can have a flaring rim or narrow neck.[1477] In eastern Anatolia, one fragment, with a thickened rim, was collected from Hanago (***fig. 6.44***).[1478] At Kul Tepe/Hadishahr, grit tempered and mixed tempered examples were also uncovered. Many of the jars are characterised by short, narrow necks, simple, rounded rims, and a swelling, globular body.[1479] Lastly, in the northern Caucasus, grit tempered, vertical necked jars, with a flaring, thickened and rounded rim, are known from Ust'-Dzheguta.[1480]

Jar 1.6

Jar 1.6 refers to a small group of vessels characterised by a strong outward flaring profile between the neck and the rim and a sharp juncture along the neck and the shoulder (***fig. 6.45***). Like Jar 1.5, Jar 1.6 is also distinguished by a globular body that gradually tapers towards a flat base. Nine examples were recovered representing 4.6

[1473] Nebieridze 2010, Pl. XXIIIa.4.
[1474] Muradyan et al. 2014, Fig. 8.1.
[1475] Marro et al. 2009, Pl. X.1, Pl. XIX.1; Lyonnet et al. 2012, Fig. 148.4, 6; Palumbi et al. 2017, Fig. 8; Kuliyeva and Bahşeliyev 2018, Fig. 8.11.
[1476] Marro et al. 2009, Pl. X.1, Pl. XIX.1; Kuliyeva and Bahşeliyev 2018, Fig. 8.11.
[1477] Narimanov 1987, Fig. 46; Akhundov 2007, Fig. 16.3.
[1478] Marro and Özfırat 2003, Pl. IV.4; Marro 2007, Pl. VII.4; Marro 2008, Fig. 1.4.
[1479] Abedi et al. 2014, Fig. 17.9, Fig. 21.5, Fig. 22.7, Fig. 28.5, 8, 11-12.
[1480] Nechitajlo 2007, Fig. 8.1-4.

percent of the morphological repertoire. Short necked (Jar 1.6i) and tall necked (Jar 1.6ii) variants were identified. Short necked jars comprise five of the nine examples uncovered. Rim diameters range from eight to 38 centimetres **(*tab. 45 and tab. 46*)**.

Simple, cut rims are the most common type (six examples; 66.7 percent) followed by simple, rounded rims (two examples; 22.2 percent), and a single example of a thickened and rounded rim **(*tab. 47*)**. Jar 1.6 occurs most frequently across Obsidian Tempered and Medium ware. Obsidian Tempered Ware represents 44.4 percent followed by Medium Ware at 33.3 percent. Among the other ware types, only singular examples of Coarse and Mixed Tempered wares are attested **(*tab. 48*)**.

Similar vessels were uncovered at Tsopi and Dzedzvebi in the Marneuli and Bolnisi districts of the Kvemo Kartli region. At both sites, such vessels are characterised by short, outward flaring necks.[1481] However, the reconstructed example from Dzedzvebi is also distinguished by a narrow neck and slender ovoid body that tapers towards a flat base **(*fig. 6.46*)**.[1482] Vessels with a short, sharply outward flaring neck and elongated globular body were also uncovered at Orchosani in the Samtskhe-Javakheti region.[1483]

A tall necked variant, with a globular body, was recovered from Areni-1 in Armenia.[1484] Short necked variants, constructed of grit tempered and mixed tempered clay, are also known at Ovçular Tepesi.[1485] At sites of the Leilatepe tradition, short and

[1481] Kushnareva and Chubinishvili 1970, Fig. 9.1; Kushnareva 1997, Fig. 12.1; Nebieridze 2010, Pl. VIII.1; Gambashidze et al. 2016b, 110.
[1482] Gambashidze et al. 2016b, 110.
[1483] Baramidze et al. 2007, Pl. XXIII.
[1484] Zardaryan and Gasparyan 2010, Fig. 1; Wilkinson et al. 2012, Fig. 7.1.
[1485] Marro et al. 2009, Pl. XIV.2, Pl. XVII.7.

tall necked varieties are known from Chalagantepe, Beyuk Kesik, and Poylu II.[1486] At the latter, a reconstructed example is characterised by a short neck, simple, rounded rim, and squat, globular body that tapers abruptly towards a flat, narrow base **(*fig. 6.47*)**.[1487] Along the Iğdır plain, a tall necked variant with an oblique, flaring rim was collected from Hanago.[1488] A tall necked variant, constructed from grit tempered clay, is also known from Ust'-Dzheguta in the northern Caucasus.[1489]

Jar 1.7

Jar 1.7 refers to a small group of vessels characterised by a crinkled or wavy rim. The distinctive rim was formed by applying pressure to both sides of the lip with the fingertips which produced a scalloped profile when viewed from the top **(*fig. 6.48*)**.[1490] Crinkled rim jars are characterised by an outward flaring neck. The curvature of the neck to the shoulder suggests that such jars had a globular body. Ten examples were recovered representing 5.2 percent of the morphological repertoire. Overall, rim diameters range from eight to 24 centimetres **(*tab. 49*)**. Large jars (Jar 1.7ii), measuring 20 to 24 centimetres in diameter, are represented by six examples. Only four examples measured 20 centimetres in diameter or less (Jar 1.7i) **(*tab. 50*)**. Prior to applying pressure to the lip to form the crinkled rim, jars of this type were characterised by simple, rounded rims. Fifty percent of the crinkled rim jars are Medium Ware followed by Obsidian Tempered Ware at 30 percent. Fine Ware comprises the remaining 20

[1486] Narimanov 1987, Fig. 46; Museibli 2007, Pl. XVII.9; Museibli 2008b, Pl. 6.3.
[1487] Museibli 2008b, Pl. 6.3.
[1488] Marro and Özfırat 2003, Pl. IV.1; Marro 2007, Pl. VII.1; Marro 2008, Fig. 1.1.
[1489] Nechitajlo 2007, Fig. 8.5.
[1490] Muradyan et al. 2014, 343.

percent while ware types such as coarse and Mixed Tempered Ware are not known **(*tab. 51*)**.

Despite their distinctive appearance, crinkled rim jars are not common at other contemporary Chalcolithic sites.[1491] Two obsidian tempered fragments were recovered from Aknalitch in Armenia **(*fig. 6.49*)**.[1492] Similar examples were also reported from Mushakan-4, in the Erebuni district of Yerevan, and Areni-1.[1493] A mixed tempered and an obsidian tempered example were recovered from Ovçular Tepesi. The jars are small, measuring 14 to 20 centimetres in diameter, and are characterised by a taller neck with a more gentle, outward flaring profile compared to those from Sioni **(*fig. 6.50*)**.[1494] A chaff tempered example was also recovered.[1495] However, the profile of this fragment suggests that it may have belonged to a bowl or tray with a 'scooped' rim.[1496]

Sinuous Jars (Jar 2)

Jar 2 is a sinuous jar characterised by a bulging neck and globular body which, together, form a distinctive, serpentiform profile **(*fig. 6.51*)**. Partially reconstructed vessels from other contemporary sites indicate that sinuous jars were also characterised by a flat base.[1497] Twenty-four examples were recovered representing 12.4 percent of the morphological repertoire. Rim diameters range from ten to 38 centimetres **(*tab. 52*)**. Small jars (Jar 2i) measure ten to 20 centimetres in diameter. Large jars (Jar 2ii) range

[1491] Interestingly, crinkled rim jars appear in the Neolithic assemblages of Aratashen and Aknashen in Armenia. Palumbi 2007, 67, Fig. 1.5.
[1492] Muradyan et al. 2014, Fig. 7.1.
[1493] Muradyan et al. 2014, 343.
[1494] Marro et al. 2009, Pl. XVIII.1, 3; Bakhshaliyev et al. 2010, 53.
[1495] Marro et al. 2009, Pl. XVIII.2; Bakhshaliyev et al. 2010, 53.
[1496] C. Sagona pers. comm. For trays with 'scooped' front see: Zavaxisvili 1998, Fig. 5; Sagona and Sagona 2000, Fig. 12.4; Korenevskii 2004, Fig. 5; Maziar 2010, Fig. 7.3; Nebieridze 2010, Pl. XXXVI; Sagona and Shapardon in preparation.
[1497] Varazashvili 1992, Pl. XIX.2; Kiguradze and Sagona 2003, Fig. 3.11.2.

between 20 and 38 centimetres. The majority of sinuous jars are large; 16 measured 20 centimetres or more in diameter **(*tab. 53*)**.

Most of the sinuous jars are characterised by simple, cut rims (23 examples; 95.8 percent). Only one example with a thickened and rounded rim is attested **(*tab. 54*)**. Sinuous jars occur across Fine, Medium, Obsidian Tempered, and Mixed Tempered Wares. The majority were constructed from Obsidian Tempered and Medium wares which comprise 45.8 and 41.6 percent of the examples, respectively. Mixed Tempered and Fine Wares are present in small quantities making up 8.3 and 4.2 percent of the jar fragments, respectively **(*tab. 55*)**.

Sinuous jars occur at sites throughout eastern Georgia. A sinuous jar fragment was recovered from Arukhlo VI in the Kvemo Kartli region.[1498] Near complete examples are also known from Damtsvari Gora and Shavtskala along the Alazani River Basin **(*fig. 6.52*)**. The vessels are characterised by tall, bulging necks, globular bodies, and flat bases.[1499] At Damtsvari Gora, some vessel fragments are also characterised by elliptical lugs beneath the rim.[1500] Similar examples, with a tall neck, were also recovered nearby from Alazani III.[1501] Similar to those at Sioni, small and large variants are attested. At Shavtskala, a partially reconstructed example is approximately ten centimetres in diameter.[1502] Sinuous jars from Damtsvari Gora are larger measuring approximately 20 centimetres in size.[1503] However, a partially reconstructed example, approximately 37

[1498] Nebieridze 2010, Pl. XXXIII.
[1499] Varazashvili 1992, Pl. XIX.2, Pl. XLI, Pl. XLII.1, Pl. L; Kiguradze and Sagona 2003, Fig. 3.11.1-2, Fig. 3.14.3.
[1500] Varazashvili 1992, Pl. XIX.2-4; Kiguradze and Sagona 2003, Fig. 3.11.2.
[1501] Varazashvili 1992, Pl. VIII.5-6.
[1502] Varazashvili 1992, Pl. XLII.1; Kiguradze and Sagona 2003, Fig. 3.14.3.
[1503] Varazashvili 1992, Pl. XIX.2, Pl. XLI; Kiguradze and Sagona 2003, Fig. 3.11.1-2.

centimetres in diameter, is also known from Chinti along the Aragvi River.[1504] Sinuous jars are not common at sites outside of eastern Georgia. A fragment of an obsidian tempered jar, with a slightly bulging neck, was recovered from Mentesh Tepe.[1505] A similar rim sherd, constructed from grit tempered clay, was also collected from Hanago in eastern Anatolia **(*fig. 6.53*)**.[1506]

Hole-Mouthed Jars (Jar 3)

Jar 3 is a hole-mouthed jar characterised by an inward leaning profile and a rounded body **(*fig. 6.54*)**. Six examples were recovered representing just 1.6 percent of the morphological repertoire. The size of the vessels ranges from 12 to 24 centimetres in diameter **(*tab. 56*)**. Small jars (Jar 3i) measure 12 to 20 centimetres in size. Large jars (Jar 3ii) range from 20 to 24 centimetres in diameter. The former are more common with four measuring 20 centimetres in diameter or less **(*tab. 57*)**. Half of the examples are characterised by a simple, cut rim. The remaining fragments have irregular, cut rims (two examples; 33.3 percent) and a single example has a simple, rounded rim **(*tab. 58*)**. Hole-mouthed jars were constructed from Medium and Mixed Tempered clay. The jars occur most commonly across Medium Ware which represents 66.7 percent of the examples recovered. Mixed Tempered Ware makes up the remaining 33.3 percent of the rim fragments **(*tab. 59*)**.

The hole-mouthed jar is a form that is more commonly associated with the Chaff-faced and Leilatepe traditions. Several fragments with an inward leaning profile and

[1504] Kiguradze and Sagona 2003, Fig. 3.14.1.
[1505] Lyonnet et al. 2012, Fig. 148.5; Palumbi et al. 2018, Fig. 8.5.
[1506] Marro and Özfırat 2003, Pl. IV.5; Marro 2007, Pl. VII.5; Marro 2008, Fig. 1.5.

rounded body are known from Arukhlo VI in Kvemo Kartli.[1507] However, hole-mouthed jars are more frequent at sites outside of eastern Georgia. Grit tempered, hole-mouthed jars are found among kitchen ware at Mentesh Tepe, period III.[1508] Some of the vessels are characterised by comb-scraped surfaces and round protuberances beneath the rim (***fig. 6.55***).[1509] However, the majority of hole-mouthed jars from Mentesh Tepe are chaff tempered rather than grit or obsidian tempered.[1510] Contemporary with Mentesh Tepe, a mixed tempered, hole-mouthed jar, with relief decoration beneath the rim, was recovered from Ovçular Tepesi.[1511]

In eastern Anatolia, a grit tempered, hole-mouthed jar was recovered from Sos Höyük VA, however, its association with Sioni ware remains ambiguous.[1512] In north-western Iran, hole-mouthed jars are well represented at Kul Tepe/Hadishahr.[1513] Mixed tempered examples with comb-scraped surfaces are known.[1514] However, the hole-mouthed jars from Kul Tepe/Hadishahr represent a feature of the local ceramic assemblage rather than a clear association with the Sioni complex.

Pans and Trays

A fragment of a pan-like vessel was recovered from an ashy deposit of the Chalcolithic occupation (***fig. 6.56***). The pan fragment is round and flat with a floor that gently slopes towards the centre. The rim is rounded and characterised by a wide, flat

[1507] Nebieridze 2010, Pl. XXXIII.
[1508] Lyonnet et al. 2012, Fig. 148.8-11.
[1509] Lyonnet et al. 2012, Fig. 148.8-11.
[1510] Lyonnet et al. 2012, 101.
[1511] Marro et al. 2009, Pl. XVIII.5.
[1512] Sagona and Sagona 2000, 59-60, Fig. 12.6; Palumbi 2008a, 66; Lyonnet 2018, 550; Sagona 2018a, 204.
[1513] Abedi et al. 2014, Fig. 17.3, Fig. 19.11, Fig. 20.11, Fig. 21.13, Fig. 26.2; Fig. 28.2, 9.
[1514] Abedi et al. 2014, Fig. 17.3.

handle-like projection. The base is coarse and flat. A small lip of clay around the diameter of the base suggests that the pan was formed directly over a rough surface, possibly of chopped chaff and/or gravel. The diameter of the pan measures 44 to 46 centimetres. The pan, constructed from clay tempered with coarse, gritty inclusions, belongs to the category of Coarse Ware.

Pans are a morphological development of the Chalcolithic period.[1515] Despite this, pans are not well documented among contemporary Chalcolithic sites. In part, this may be due to the difficulty of confidently identifying such a form amongst the highly fragmented assemblages that characterise Chalcolithic sites.[1516] Early examples come from periods II and III at Mentesh Tepe.[1517] The pans are flat and circular in shape and are characterised by a low wall or thickened rim.[1518] During Period II, pans were constructed from mixed tempered clay. In contrast, pans from Period III were grit or obsidian tempered and formed part of the kitchen ware assemblage (***fig. 6.57***).[1519] Similar pans were recovered from Ovçular Tepesi. However, the pans were constructed from chaff tempered clay and form part of the Chaff-faced repertoire.[1520] Other examples are reported amongst sites of the Leilatepe complex. A pan-like fragment, similar to those at Mentesh Tepe, is known from Alikemek Tepesi.[1521] Similarly, a round, flat pan fragment, with a slightly upward flaring rim, was recovered from Kechili in the Ganja-Gazakh region.[1522]

[1515] Lyonnet 2018, 554, 563.
[1516] Lyonnet 2018, 557.
[1517] Lyonnet et al. 2012, Fig. 148.7-8; Lyonnet 2017, Fig. 10; Lyonnet 2018, Fig. 8.1-2, Fig. 10.1-2; Palumbi et al. 2018, Fig. 8.
[1518] Lyonnet et al. 2012, 98; Lyonnet 2017, 145; Lyonnet 2018, 554.
[1519] Lyonnet et al. 2012, 98-101; Lyonnet 2017, 145-147; Lyonnet 2018, 554, 560.
[1520] Marro et al. 2009, Pl. VI.8, Pl. VIII.2.
[1521] Lyonnet et al. 2012, 98; Lyonnet 2018, 557.
[1522] Narimanov 1987, Fig. 35.2.

Although not present at Sioni, another related form is the tray or 'mangal.'[1523] Similar to the pan, the tray is another Chalcolithic development which first appears at the beginning of the fifth millennium B.C.E.[1524] Trays represent an open form and were constructed from coarse, poorly levigated clay. They are characterised by a thin and fragile, flat base and low, often outward leaning, walls.[1525] Trays could measure up to 54 centimetres in diameter.[1526] As a form, trays are often associated with the Sioni complex. However, the tray occurs across several contemporary traditions the Chaff-faced and Leilatepe complexes and other local assemblages at sites in Nakhichevan, north-western Iran, and the northern Caucasus.[1527]

Among Sioni sites, tray fragments were recovered from Tsopi, Arukhlo VI, and Dzedzvebi in the Kvemo Kartli region and Orchosani in the Samtskhe-Javakheti area.[1528] At these sites, trays are characterised by flat bases, thin outward leaning walls, and perforations beneath the rim. Similar trays are also known from sites along the Alazani River Basin, including Alazani III, Damtsvari Gora, and Shavtskala, where they are characterised by a horizontal, semi-circular lug along the rim (***fig. 6.58***).[1529] Analogous examples come from Period II at Mentesh Tepe. Trays continued to develop during

[1523] Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98; Lyonnet 2017, 145; Lyonnet 2018, 554; Palumbi et al. 2018, 125; Sagona and Shapardon in preparation.
[1524] Lyonnet 2017, 145; Lyonnet 2018, 554; Sagona and Shapardon in preparation.
[1525] Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98; Lyonnet 2017, 145; Lyonnet 2018, 554; Palumbi et al. 2018, 125; Sagona and Shapardon in preparation.
[1526] Chikovani 2005, 64; Akhundov 2018, 64; Sagona and Shapardon in preparation.
[1527] Narimanov 1987, 34-34; Korenevskii 2004, Fig. 4, Fig. 5; Akhundov 2007, Fig. 18.4; Museibli 2007, Pl. XVIII.9; Nechitajlo 2007, Fig. 9.1-3; Museibli 2008b, Pl. 9.2-6; Marro et al. 2009, Pl. XVIII.7; Lyonnet and Guliyev 2010, 221; Maziar 2010, Fig. 7.1-4; Helwing 2012, 211; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98; Abedi et al. 2014, Fig. 29.2; Lyonnet 2017, 145; Akhundov 2018, 64; Kuliyeva and Bahşeliyev 2018, Fig. 11; Lyonnet 2018, 554, 557, 563; Sagona and Shapardon in preparation.
[1528] Chikovani 2005, 64; Nebieridze 2010, Pl. XXXII, Pl. XXXIII, Pl. XLI; Gambashidze et al. 2016b, 110; Sagona and Shapardon in preparation.
[1529] Varazashvili 1992, Pl. V.12, Pl. XIV.3, Pl. XX, Pl. XLII.1-2; Kiguradze and Sagona 2003, Fig. 3.13.1-2; Nebieridze 2010, Pl. XXXIX; Lyonnet 2018, 557.

Period III where features such as comb-scraped exterior surfaces, vertical lugs, or trays without lugs are introduced **(*fig. 6.59*)**.[1530] Other contemporary examples are known from Ovçular Tepesi and Areni-1 **(*fig. 6.60*)**.[1531]

How these trays functioned remains unclear. It is possible that the tray may represent a composite vessel. The perforations beneath the rim may have functioned as a point for the attachment of an organic outer layer.[1532] The large size of the trays, coupled with the thin, friable, and fragile bases, suggests that they would not have been suitable for continuous handling or direct exposure to heat.[1533] This would imply that an outer layer may have been attached to reinforce the tray.[1534] At Mentesh Tepe, Period III, tray fragments were often sooted, and the bases were tempered with coarse obsidian and chamotte inclusions.[1535] This suggests that trays were often located within close proximity to the hearth and were linked to practices involving food preparation, serving, and dining, particularly in relation to the heating and insulation of food.[1536]

Trays continued to develop into the fifth and early fourth millennium B.C.E. Fragments were recovered from Leilatepe sites in Azerbaijan including Leilatepe, Ilanlitepe, Beyuk Kesik, Poylu II, Galayeri, and Alkhantepe.[1537] Perforated tray fragments were recovered from Alkhantepe and are also attested at Yeni Yol, in Nakhichevan, and

[1530] Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98-101; Lyonnet 2017, 145; Lyonnet 2018, 560.
[1531] Marro et al. 2009, Pl. XVIII.7; Zardaryan 2014, Fig. 3.1, Fig. 4.2, 4.
[1532] Bedianiashvili et al. 2019, 15-16; Sagona and Shapardon in preparation.
[1533] Lyonnet et al. 2012, 101; Lyonnet 2018, 560; Bedianiashvili et al. 2019, 15-16; Sagona and Shapardon in preparation.
[1534] Bedianiashvili et al. 2019, 15-16; Sagona and Shapardon in preparation.
[1535] Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 101; Lyonnet 2017, 145; Lyonnet 2018, 560; Palumbi et al. 2018, 125; Sagona and Shapardon in preparation.
[1536] Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 101; Lyonnet 2017, 145; Akhundov 2018, 64; Lyonnet 2018, 560; Palumbi et al. 2018, 132; Sagona and Shapardon in preparation.
[1537] Narimanov 1987, Fig. 18.3, Fig. 42; Akhundov 2007, Fig. 18.4; Museibli 2007, Pl. XVIII.9; Museibli 2008b, Pl. 9.2-6; Lyonnet 2018, 554; Museibli 2019, 69-70.

throughout north-western Iran including Köhne Pāsgāh Tepesi and Kul Tepe/Hadishahr (***fig. 6.61***).[1538] More are known from the Meshoko and Maikop assemblages in the northern Caucasus. Tray fragments, with and without perforations beneath the rim, have been recovered from Zamok, Galyugai I, and Ust'-Dzheguta.[1539]

During this period, trays with a scooped front also appear.[1540] Such examples are known from Berikldeebi in Georgia, Leilatepe, Beyuk Kesik, Poylu II, and Alkhantepe in Azerbaijan, Köhne Pāsgāh Tepesi in north-western Iran, and Galyugai I in the northern Caucasus (***fig. 6.62 and fig. 6.63***).[1541] The use of this form continues into the Early Bronze Age and are recorded at early Kura-Araxes sites including Chobareti and nearby Rabati, in the Samtskhe-Javakheti region, and Sos Höyük in eastern Anatolia (***fig. 6.64***).[1542] The persistence of the tray, as a form that occurs throughout multiple traditions over a prolonged period of time, is representative of conservative domestic practices associated with traditional foodways that may constitute a regional Chalcolithic cuisine specific to the Caucasus.[1543]

Bases

At Sioni, base fragments are flat and often demonstrate a thick, coarse profile. From the site, two adjoining fragments demonstrate a spiral basket impression. Eight

[1538] Maziar 2010, Fig. 7.1-4; Abedi et al. 2014, Fig. 29.2; Akhundov 2018, 61, Fig. 8.3; Kuliyeva and Bahşeliyev 2018, Fig. 11.
[1539] Korenevskii 1998, Fig. 6.2, 7, Fig. 7.3, 5, 6; Korenevskii 2004, Fig. 4, Fig. 5; Nechitajlo 2007, Fig. 9. 1-3; Lyonnet 2018, 563.
[1540] Sagona and Shapardon in preparation.
[1541] Zavaxisvili 1998, Fig. 5; Korenevskii 2004, Fig. 4, Fig. 5; Akhundov 2007, Fig. 18.3-4; Museibli 2007, Pl. XVIII.9; Museibli 2008b, Pl. 9.6; Maziar 2010, Fig. 7.3-4; Nebieridze 2010, Pl. XXXVI; Akhundov 2018, 64.
[1542] Sagona and Sagona 2000, Fig. 12.4; Kakhiani et al. 2013, Fig. 37.4; Bedianiashvili et al. 2019, 15-16; Sagona and Shapardon in preparation.
[1543] Palumbi et al. 2014, 53; Palumbi 2015b; Palumbi et al. 2018, 122; Rothman 2018, 136; Sagona and Shapardon in preparation.

base fragments were recovered representing 4.1 percent of the morphological repertoire. They range between seven to 12 centimetres in diameter **(*tab. 60*)**. There are two variants. The first, and dominant, variant (Base i) includes simple, flat bases with five examples **(*fig. 6.65*)**. The second variant (Base ii) refers to flat bases with a small heel **(*tab. 61*)**. Fragments occur across two different ware types including Coarse Ware (six examples; 75 percent) and Medium Ware (two examples; 25 percent) **(*tab. 62*)**.

Bases are well represented at other contemporary sites throughout Georgia. Like Sioni, the fragments recovered from these locations consist both forms (i and ii). Fragments were uncovered at Tsopi, Arukhlo VI, Nachivchavebi, and Dzedzvebi in the Kvemo Kartli region.[1544] Large quantities of base fragments were recovered from sites along the Alazani and Iori river basins including Alazani III, Damtsvari Gora, Shavtskala, and Nadikari.[1545] Examples from Alazani III and Damtsvari Gora are characterised by spiral basket and herringbone twill mat impressions.[1546] Similar fragments were discovered at Nichbisi and Tandistkaro 1 in the Mtskheta-Mtianeti and Shida Kartli regions **(*fig. 6.66*)**.[1547] A base fragment with a herringbone twill mat impression came from Tandistkaro 1.[1548] In southern Georgia, simple, flat and flat, heeled bases are known from Orchosani in the Samtskhe-Javakheti region. At Orchosani, some fragments also bear spiral basket impressions.[1549]

[1544] Kushnareva and Chubinishvili 1970, Fig. 9.6-9, 11; Kushnavera 1997, Fig. 12.7, 10; Chikovani et al. 2010, Pl. II.7; Nebieridze 2010, Pl. III.5, Pl. IV.8, Pl. VII.4, Pl. X.2, Pl. XIII.1-2, 5-6, Pl. XIX.7, Pl. XXI.4-8, Pl. XXXIII; Gambashidze et al. 2016b, 110-111.
[1545] Varazashvili 1992, Pl. XXI.1-2, 18-20, Pl. XXII.1, Pl. XXV.1-18, Pl. XXVI.1-15, Pl. XXVII.1-7, Pl. XXVIII.1-9, Pl. XIX.9, Pl. XLII.2, Pl. XLIII.4; Kiguradze and Sagona 2003, Fig. 3.14.2.
[1546] Varazashvili 1992, 31-52, Pl. XXII, Pl. XXV.14-18, Pl. XVII.1-7, Pl. XVIII.4-9.
[1547] Chikovani 1999, Fig. IV.63-69; Chikovani 2001, Fig. 1.14-20.
[1548] Chikovani 1999, Fig. IV.48.
[1549] Nebieridze 2010, Pl. XL.

Beyond Georgia, examples display a similar trend. At Leilatepe sites in Azerbaijan, grit tempered and mixed tempered ceramics with simple, flat and flat, heeled resting surfaces have been recovered from Ilanlitepe, Kechili, Beyuk Kesik, and Poylu II.[1550] Comparable fragments were also recovered from Dormishkanlu, Seramlu, and Kul Tepe/Hadishahr in north-western Iran.[1551] However, at Dormishkanlu, the underside of several base sherds demonstrates a concave profile **(*fig. 6.67*)**.[1552] A mixed tempered example of a pedestaled base came from Kul Tepe/Hadishahr.[1553] Rounded bases are not well attested. A mixed tempered, vertical necked jar with a rounded base was recovered from Ovçular Tepesi.[1554] Similarly, a short, vertical necked jar with a flaring rim, ovoid body, and rounded base was found at Galayeri in Azerbaijan **(*fig. 6.68*)**.[1555] Grit tempered, narrow necked jars with ovoid bodies and rounded bases were also recovered from Alkhantepe.[1556] In the northern Caucasus, small, outward flaring jars, with globular bodies and rounded bases, were recovered from Galyugai I.[1557]

Forms Attested at Other Sites

Closed Vessel Forms

Although the morphology at Sioni is restricted, vessel fragments recovered from other related sites point towards a repertoire that is more diverse. Among closed shapes, other forms include small cups, jugs, jars with handles, and large casseroles or

[1550] Narimanov 1987, Fig. 35.10, Fig. 41; Museibli 2007, Pl. XIX.5; Museibli 2008b, Pl. 5.2.
[1551] Abedi et al. 2014, Fig. 19.5, Fig. 22.10-11, Fig. 25.11, Fig. 26.4-5, Fig. 28.18; Maziar 2015, Fig. 6.4-6, Fig. 7.3-4.
[1552] Maziar 2015, Fig. 6.4-6.
[1553] Abedi et al. 2014, Fig. 22.10.
[1554] Marro et al. 2009, Pl. X.1.
[1555] Museibli 2014b, Fig. 21.4.
[1556] Akhundov 2018, 61.
[1557] Korenevskii 2004, Fig. 5.

cooking pots. A closed cup came from the Chalcolithic levels at Areni-1. It measures approximately eight centimetres in diameter and is characterised by a short, outward flaring rim, carinated body, and flat base.[1558]

Other small vessels include jugs with a single, looped handle. One example, with a flaring rim, tall neck, and squat, globular body, was recorded at Nachivchavebi in Kvemo Kartli **(*fig. 6.69*)**.[1559] Some jars have double, looped handles, positioned along the shoulder. A large jar, measuring approximately 30 centimetres in diameter, with a tall, vertical neck, flaring rim, elongated, ovoid body, and flat base was recovered from Nachivchavebi **(*fig. 6.70*)**.[1560] Closed jars with looped handles occur at sites along the Alazani River Basin. One with a flaring rim, short neck, globular body, and looped handle, positioned along the shoulder, came from Damtsvari Gora **(*fig. 6.71*)**.[1561] Small jars, with looped handles positioned along the rim, reminiscent of Early Bronze Age examples, are present at Köhne Pāsgāh Tepesi, in north-western Iran, and Galyugai I in the northern Caucasus.[1562] In addition, body fragments with looped handles came from Arukhlo VI, in the Kvemo Kartli region, Kul Tepe/Hadishahr, in north-western Iran, and the pre-Maikop site of Meshoko in the northern Caucasus.[1563]

An example of a thin walled, spouted jar, constructed from mixed tempered clay, was found in Kurgan 6 at Aknalitch in Armenia **(*fig. 6.72*)**.[1564] Spouted vessels are not common within the Transcaucasus. However, an early example of a spouted tray was

[1558] Zardaryan and Gasparyan 2010, Fig. 1.3.
[1559] Chikovani et al. 2010, Pl. III.1.
[1560] Chikovani et al. 2010, Pl. III.2.
[1561] Varazashvili 1992, Pl. XXIV.
[1562] Korenevskii 2004, Fig. 5.10; Maziar 2010, Fig. 8.4.
[1563] Nebieridze 2010, Pl. XXXIII; Abedi et al. 2014, Fig. 28.17; Sagona 2018a, Fig. 4.3.2.
[1564] Muradyan et al. 2014, Fig. 8.3.

recovered from Horizon IV at Aknashen.[1565] Spout fragments were also present in Horizon I at Areni-1 and the Chalcolithic levels at Beyuk Kesik.[1566] At Alkhantepe, some tray fragments are characterised by a 're-entrant lip' which have been likened to a type of spout.[1567]

Casseroles, or cooking pots, are known, although such forms are more commonly associated with the Leilatepe tradition; coarse, grit tempered examples were recovered from Leilatepe and Beyuk Kesik in Azerbaijan **(*fig. 6.73*)**.[1568] The vessels measure 15 to 40 centimetres in diameter and are characterised by an inward leaning profile and thickened and rounded lip. At Leilatepe, casseroles are characterised by a carinated body in contrast to those at Beyuk Kesik which display a rounded profile.[1569] At Beyuk Kesik, one example has a small, decorative knob beneath the rim.[1570] In addition, mixed tempered vessels with a similar profile came from Kul Tepe/Hadishahr VIB.[1571]

Open Vessel Forms

Beyond Sioni, open vessel types are not restricted to pans and trays. Open forms include small cups, goblets, jars, and bowls. Small cups, measuring approximately six to ten centimetres in diameter, were recovered from Nachivchavebi in the area of Kvemo Kartli, Orchosani in the Samtskhe-Javakheti region, and Galyugai I in the northern Caucasus.[1572] At Nachivchavebi, a cup with small lugs, positioned under a cut rim, a

[1565] Harutyunyan 2014, Fig. 1.13; Muradyan et al. 2014, 344.
[1566] Museibli 2007, Tab. XXV.4; Zardaryan and Gasparyan 2010, 155; Muradyan et al. 2014, 344.
[1567] Akhundov 2018, 64, Fig. 8.6-7.
[1568] Aliev and Narimanov 2001, Tab. VI; Akhundov 2007, Fig. 17.1-4; Museibli 2007, Tab. XV.8-9, Tab. XXI.3.
[1569] Aliev and Narimanov 2001, Tab. VI; Akhundov 2007, Fig. 17.1-4; Museibli 2007, Tab. XV.8-9, Tab. XXI.3.
[1570] Akhundov 2007, Fig. 17.1; Museibli 2007, Tab. XXI.3.
[1571] Abedi et al. 2014, Fig. 20.3-4.
[1572] Korenevskii 2004, Fig. 5.18, 20; Chikovani et al. 2010, Pl. II.2; Nebieridze 2010, Pl. XL.

rounded body, and a flat base was uncovered.[1573] A similar example came from Orchosani, however, the vessel has a vertical profile. Another example from Orchosani is conical in shape with a heeled, flat base.[1574] In contrast, small cups from Galyugai I have a hemi-spherical profile and a rounded base.[1575] A goblet, approximately 12 centimetres in diameter, was also recovered from Orchosani. The goblet consists of a conical cup positioned a top a tall, pedestaled, flat base.[1576]

The cylindrical jar is attested at Dzedzvebi in the Bolnisi district of Kvemo Kartli, Areni-1, and Ovçular Tepesi (***fig. 6.74***).[1577] These are small and range from five to 15 centimetres in diameter. They are characterised by a vertical, cylindrical profile, and a flat base.[1578] Some may have a slightly outward leaning profile.[1579] At Areni-1, a variant with a flaring rim was recovered.[1580] At Ovçular Tepesi, a mixed tempered, cylindrical jar with a rounded base was found.[1581] At sites of the Leilatepe complex, a base fragment of a cylindrical jar, with an outward leaning profile, came from Ilanlitepe.[1582] Another base fragment of a cylindrical jar, constructed from mixed tempered clay, was found at Kul Tepe/Hadishahr VIA in north-western Iran.[1583]

The wide-mouthed jar is a form that is currently limited to Sioni sites in the Kvemo Kartli region and the Alazani River Basin. Partially reconstructed examples are

[1573] Chikovani et al. 2010, Pl. II.2.
[1574] Nebieridze 2010, Pl. XL.
[1575] Korenevskii 2004, Fig. 5.18, 20.
[1576] Nebieridze 2010, Pl. XLI.
[1577] Marro et al. 2009, Pl. XVIII.4; Zardaryan and Gasparyan 2010, Fig. 1.4-5; Gambashidze et al. 2016b, 114.
[1578] Marro et al. 2009, Pl. XVIII.4; Zardaryan and Gasparyan 2010, Fig. 1.4-5; Gambashidze et al. 2016b, 114.
[1579] Narimanov 1987, Fig. 42.
[1580] Zardaryan and Gasparyan 2010, Fig. 1.4.
[1581] Marro et al. 2009, Pl. XVIII.4.
[1582] Narimanov 1987, Fig. 42.
[1583] Abedi et al. 2014, Fig. 28.19.

known from Dzedzvebi, Damtsvari Gora, and Shavtskala.[1584] At Dzedzvebi, an example is conical in shape with a body that sharply tapers towards a narrow, flat base **(*fig. 6.75*)**.[1585] In contrast, one from Damtsvari Gora displays an ovoid-shaped body and a heeled, flat, mat-impressed base. It also characterised by a distinctive relief decoration consisting of a series of small pastilles, applied along the body, resulting in a rough exterior surface **(*fig. 6.76*)**.[1586] A cinched variation is known from Shavtskala. The jar is characterised by a wide mouth, bulging neck, ovoid body, and a heeled, flat, mat-impressed base.[1587] The profile of this vessel strongly recalls the sinuous jars (Jar 2) that are attested at Sioni and other contemporary sites in the Kvemo Kartli region, the Alazani River Basin, and the Aragvi River Gorge.[1588]

Hemi-spherical and conical bowls, with flat bases, are known. Bowls are not common among Sioni assemblages, however, fragments of a hemi-spherical bowl and truncated, conical bowl with a flat base were found at Arukhlo VI.[1589] A hemi-spherical bowl fragment was also recovered from Nachivchavebi **(*fig. 6.77*)**.[1590] At Tandistkaro 1, in the Shida Kartli region, there were several fragments of deep bowls, with an outward leaning profile **(*fig. 6.78*)**.[1591] Beyond Georgia, mixed tempered, hemi-spherical bowls occur at sites in Armenia and Nakhichevan. Examples were recovered from Aratashen and Kurgan 6 at Aknalitch **(*fig. 6.79*)** and mixed tempered, hemi-spherical bowls came

[1584] Varazashvili 1992, Pl. XXIII, Pl. XLIV; Kiguradze and Sagona 2003, Fig. 3.12; Gambashidze et al. 2016b, 110-111.
[1585] Gambashidze et al. 2016b, 110-111.
[1586] Varazashvili 1992, Pl. XXIII; Kiguradze and Sagona 2003, 50, Fig. 3.12
[1587] Varazashvili 1992, Pl. XLIV, Pl. XLIX.
[1588] Varazashvili 1992, Pl. XIX.2, Pl. XLI, Pl. XLII.1, Pl. L; Nebieridze 2010, Pl. XXXIII; Kiguradze and Sagona 2003, Fig. 3.11.1-2, Fig. 3.14.1, 3.
[1589] Nebieridze 2010, Pl. XXXIII.
[1590] Chikovani et al. 2010, Pl. II.4.
[1591] Chikovani 1999, Fig. 5.73, 75.

from Ovçular Tepesi.[1592] The bowls are small and measure 12 to 17 centimetres in diameter.[1593] One example is characterised by small, decorative knobs beneath the rim.[1594]

Among Leilatepe sites in Azerbaijan, shallow, hemi-spherical bowls with a heeled, flat base were discovered at Chalagantepe.[1595] At Ilanlitepe, truncated, conical bowls, including some examples with a heeled, flat base, were uncovered measuring 20 to 30 centimetres in diameter.[1596] Hemi-spherical and conical bowls feature heavily within the assemblage at Kul Tepe/Hadishahr in north-western Iran. Many were constructed from mixed tempered clay, however, grit tempered examples are present.[1597] Shallow, hemi-spherical bowls, including one example with a rounded base, and small conical bowls came from Galyugai I in the northern Caucasus.[1598]

Miscellaneous Forms and Ceramic Objects

Miscellaneous forms include perforated vessels and 'comb-shaped' rims. In particular, perforations, located beneath the rim, are a feature that is often associated with Sioni ware.[1599] However, perforated ceramics occur across several contemporary assemblages including the Chaff-faced and Leilatepe traditions, local assemblages of Nakhichevan and north-western Iran, and the Meshoko and Maikop assemblages of the

[1592] Palumbi 2007, Fig. 2.1; Muradyan et al. 2014, Fig. 9.2.
[1593] Marro et al. 2009, Pl. VI.1, Pl. VII.1, Pl. XII.2, Pl. XVI.2.
[1594] Marro et al. 2009, Pl. XVI.2.
[1595] Narimanov 1987, Fig. 46.
[1596] Narimanov 1987, Fig. 42.
[1597] Abedi et al. 2014, Fig. 19.1-2, Fig. 20.5, 10, 12, Fig. 21.12, Fig. 22.1, 5, Fig. 25.1, 4, Fig. 26.9, Fig. 28.14-15.
[1598] Korenevskii 2004, Fig. 5.19, Fig. 21-23.
[1599] Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 50.

northern Caucasus.[1600] Therefore, perforated vessels represent another feature of the wider regional ceramic assemblage of the Chalcolithic period.

Among Sioni sites of eastern and southern Georgia, perforated vessel fragments were recovered from Tsopi, Arukhlo VI, Samshvilde, and Dzedzvebi in the Kvemo Kartli region (***fig. 6.80***).[1601] Perforated fragments are frequent at sites along the Alazani and Iori river basins. Examples were recovered from Alazani III, Damtsvari Gora, and Nadikari.[1602] Similar vessel fragments are known from Nichbisi along the Aragvi River Gorge.[1603] More recently, perforated ceramics were found at Bavra Ablari and Orchosani in the Samtskhe-Javakheti region (***fig. 6.81***).[1604]

In Armenia, perforated ceramics were recovered from Areni-1.[1605] In Nakhichevan, similar ceramics occur at Ovçular Tepesi and Yeni Yol.[1606] Examples were also among the early Chalcolithic levels at Mentesh Tepe in Azerbaijan.[1607] At sites of the Leilatepe tradition, they are present at Leilatepe, Ilanlitepe, Kechili, Beyuk Kesik, Poylu II, and Galayeri (***fig. 6.82***).[1608] A related vessel fragment was collected from Aştepe during a survey of the Doğubeyazıt plain in eastern Anatolia.[1609] In north-western Iran, perforated vessel fragments are known from Köhne Pāsgāh Tepesi and Kul

[1600] Narimanov 1987, Fig. 35; Korenevski 2004, Fig. 5; Akhundov 2007, Fig. 18; Museibli 2007, Pl. XXII, Pl. XXIII; Museibli 2008b, Pl. 9; Marro et al. 2009, 84; Maziar 2010, Fig. 6.5, Fig. 7.6; Abedi et al. 2014, Fig. 25.9, Fig. 26.7; Kuliyeva and Bahşeliyev 2018, 42; Sagona 2018a, Fig. 4.3.2.
[1601] Demetradze and Mirtskhulava 2010, Fig. 6; Nebieridze 2010, Pl. XIX.8, Pl. XXI.1-2, Pl. XXXIII; Gambashidze et al. 2016b, 110-111.
[1602] Varazashvili 1992, Pl. V.1-8, 11, Pl. VII.1-2, 11-12, Pl. VIII.14-21, Pl. XIV.1-2, 4, Pl. XVI.1-6, Pl. XVII.1-4, Pl. XXX.22-28; Kiguradze and Sagona 2003, Fig. 3.13.3-4.
[1603] Chikovani 2001, Fig. 1.1, 5, 7-8, 10-11, 18.
[1604] Baramidze et al. 2007, Pl. XI, Pl. XXIII; Nebieridze 2010, Pl. XLI; Varoutsikos et al. 2018, Fig. 8.1-2.
[1605] Zardaryan 2014, Fig. 4.
[1606] Marro et al. 2009, Pl. XVIII.7; Kuliyeva and Bahşeliyev 2018, Fig. 8.8, Fig. 10.5, Fig. 11.1-5.
[1607] Lyonnet et al. 2012, Fig. 142, Fig. 148.7, Fig. 149; Lyonnet 2017, Fig. 9; Lyonnet 2018, 554.
[1608] Narimanov 1987, Fig. 35, Fig. 43; Akhundov 2007, Fig. 18; Museibli 2007, Pl. XXII.11-16, Pl. XXIII.1-9; Museibli 2008b, Pl. 9.4, 7-9; Museibli 2019, 70.
[1609] Marro and Özfırat 2005, Pl. III.3.

Tepe/Hadishahr.[1610] Along the northern Caucasus, perforated sherds occur at the pre-Maikop site of Meshoko and Ust'-Dzheguta.[1611]

Vessel fragments with numerous perforations across the body are noteworthy. In Georgia, such sherds were recovered from Arukhlo VI, in Kvemo Kartli, Nichbisi, in Mtskheta-Mtianeti, and Orchosani in the Samtskhe-Javakheti region.[1612] Similar vessel fragments occur across sites of the Leilatepe tradition, including Beyuk Kesik and Poylu II.[1613] Similar sherds are present at sites in the northern Caucasus. Fragments were recovered from Ust'-Dzheguta.[1614] At Galyugai I, an example of a small, cylindrical vase, with a flat base, and perforated body was uncovered **(*fig. 6.83*)**.[1615] However, the function of this vessel, and other perforated fragments, remains unclear.

Additionally, distinctive rim fragments, characterised by a curved profile, occur in small quantities throughout eastern Georgia. In the literature, these are referred to as 'comb-shaped rims' as their unique profile is reminiscent of a rooster's crest **(*fig. 6.84*)**.[1616] Similar to the wide-mouthed jar, comb-shaped rims are mainly limited to Sioni sites in the areas of Kvemo Kartli, Shida Kartli, the Aragvi River Gorge, and the Alazani River Basin.[1617] Comb-shaped rims were first identified at Tsopi where they were also characterised by perforations beneath the rim.[1618] One fragment belonged to a bowl-

[1610] Maziar 2010, Fig. 6.5, Fig. 7.6; Abedi et al. 2014, Fig. 13.5-6, Fig. 20.14, Fig. 21.9, Fig. 22.8, Fig. 25.9, Fig. 26.3, 7, Fig. 28.16.
[1611] Nechitajlo 2007, Fig. 8.6-7; Sagona 2018a, Fig. 4.3.2.
[1612] Chikovani 2001, Fig. 1.11; Baramidze et al. 2007, Pl. XI; Nebieridze 2010, Pl. XXXIII, Pl. XL.
[1613] Museibli 2007, Pl. XXII.6, Pl. XXIII.7, 9; Museibli 2008b, Pl. 9.8.
[1614] Nechitajlo 2007, Fig. 8.6-7.
[1615] Korenevskii 2004, Fig. 5.
[1616] Chikovani 2005, 64.
[1617] Varazashvili 1992, 21; Chikovani 1999, 20; Chikovani 2005, 64; Chikovani et al. 2010, Pl. II.9; Nebieridze 2010, Pl. XXI.
[1618] Chikovani 2005, 64; Nebieridze 2010, Pl. XV.7, Pl. XXI.

shaped vessel measuring 50 centimetres in diameter.[1619] More recently, similar comb-shaped fragments were recovered from Nachivchavebi.[1620] However, examples are more common at sites in the Shida Kartli region and the Aragvi River Gorge. They have been recovered from Tandistkaro 1 in the Gori district.[1621] Along the Aragvi River, similar fragments, with and without perforations, were found at Kvemo Aranisi, Zhinvali, Akhali Zhinvali, Chinti, and Abanoskhevi-Mtsiturebis Mamuli.[1622] Such rims occur less frequently along the Alazani River Basin, however, examples were reported from Damtsvari Gora.[1623] An unusual, curved ceramic fragment, recently recovered from Rabati in the Samtskhe-Javakheti region, may represent a late example of this form.[1624]

The function of these vessels remains unclear. The curved rim makes it difficult to ascertain an accurate profile. However, comb-shaped rims seem to represent a class of cooking ware that was associated with open forms characterised by low, outward leaning walls.[1625] The profile of comb-shaped rims varies, however, fragments from Tsopi, Akhali Zhinvali, and Chinti closely resemble tray fragments.[1626] Hence, the large diameter of the vessels, low walls, and perforations beneath the rim suggest that comb-shaped rim fragments may represent another type of tray.

In similar fashion, the curved profile of the comb-shaped rim is not unlike the horizontal, semi-circular lugs that are attested among tray fragments at sites along the Alazani River Basin or, in some cases, the 'scooped front' that is attested among tray

[1619] Chikovani 2005, 64.
[1620] Chikovani et al. 2010, Pl. II.8-9.
[1621] Chikovani 1999, Fig. V; Chikovani 2005, Pl. 1.6-7; Nebieridze 2010, Pl. XXXVII.6-7.
[1622] Chikovani 2005, Pl. I.1-5; Nebieridze 2010, XXXVII.1-7.
[1623] Varazashvili 1992, 21; Chikovani 2005, 65.
[1624] Bedianashvili et al. 2019, 14.
[1625] Chikovani 2005, 65.
[1626] Nebieridze 2010, Pl. XV.7, Pl. XXI, Pl. XXXVII.1-2, 5.

fragments of the later Chalcolithic and Early Bronze Age.[1627] In contrast, the profile of comb-shaped rim fragments from Nachivchavebi, Abanoskhevi-Mtsiturebis Mamuli, and Tandistkaro 1 suggests that such fragments may have belonged to a deep bowl or basin-like vessel with outward leaning walls.[1628] This would indicate that comb-shaped rims may have occurred across several related forms within the morphological repertoire.

Miscellaneous clay objects include zoomorphic figurines, repurposed vessel fragments, and paraphernalia associated with metallurgical activities. A zoomorphic figurine was recovered from a pit at Tsopi (***fig. 6.85***).[1629] The figurine measured 4.1 by 2.5 centimetres and is characterised by a series of thin stripes across the body.[1630] The stocky profile of the body and thick neck suggests that the figurine represents a bull. However, the horns and the tail are missing.[1631] Similar zoomorphic figurines were recovered from Leilatepe sites including Berikldeebi in the Shida Kartli region and Beyuk Kesik in the Ganja-Gazakh region of Azerbaijan.[1632] Disc-shaped, repurposed vessel fragments are also known and were recovered from Orchosani in the Samtskhe-Javakheti region. Some examples are characterised by a large perforation in the centre of the sherd.[1633] Similar, reworked fragments were also recovered from Ilanlitepe in Azerbaijan.[1634] The function of these modified fragments remains unclear, however, the

[1627] Varazashvili 1992, Pl. V.12, Pl. XIV.3, Pl. XX, Pl. XLII.1-2; Zavaxisvili 1998, Fig. 5; Sagona and Sagona 2000, Fig. 12.4; Kiguradze and Sagona 2003, Fig. 3.13.1-2; Korenevskii 2004, Fig. 4, Fig. 5; Akhundov 2007, Fig. 18.3-4; Museibli 2007, Pl. XVIII.9; Museibli 2008b, Pl. 9.6; Maziar 2010, Fig. 7.3-4; Nebieridze 2010, Pl. XXXVI, Pl. XXXIX; Sagona and Shapardon in preparation.
[1628] Chikovani 1999, Fig. V; Chikovani 2005, Pl. I.3, 6-7; Chikovani et al. 2010, Pl. II.8-9; Nebieridze 2010, Pl. XXXVII.6-7.
[1629] Kushnareva and Chubinishvili 1970, Fig. 9.17; Kushnareva 1997, Fig. 12.6; Nebieridze 2010, 152-153, Pl. IV.6.
[1630] Nebieridze 2010, 152-153.
[1631] Nebieridze 2010, 152-153.
[1632] Zavaxisvili 1998, Fig. 5; Museibli 2007, 83; Museibli and Huseynov 2008, 37-40.
[1633] Baramidze et al. 2007, Pl. XI; Nebieridze 2010, Pl. XLI.
[1634] Narimanov 1987, Fig. 43.

perforated examples may represent a type of weight often associated with textile spindles. The use of these repurposed vessel fragments continued into the Early Bronze Age. For example, several reworked, ceramic discs were recovered from the early Kura-Araxes deposits at Chobareti **(*fig. 6.86*)**.[1635]

Clay vessels associated with metallurgical activities occur at Sioni sites in Georgia. Two clay crucibles and a mould, used for casting a shaft-hole hammer with a cutting edge on the other side, came from Dzedzvebi in the Mashavera River Valley **(*fig. 6.87*)**.[1636] Dating to the Late fifth and early fourth millennium B.C.E., these artefacts represent some of the earliest evidence of metallurgical activities in Georgia.[1637] In the Samtskhe-Javakheti region, at Bavra Ablari, a cylindrical clay fragment was recovered from the Chalcolithic occupation which may represent a tuyère **(*fig. 6.88*)**.[1638] Similar material was also recovered from Areni-1 in Armenia. A wide range of artefacts came from the Chalcolithic levels including pourers, crucibles, casting moulds, spouted vessels, and a tuyère.[1639]

Decorative Treatments

Incised and Impressed Rim Fragments

At Sioni, the decorative treatment of ceramics is almost limited to rims of the vessels and incised and impressed rims are considered to be a feature of the Sioni

[1635] Kakhiani et al. 2013, 40, Fig. 50.17-19.
[1636] Stöllner and Gambashidze 2011, 196; Hauptmann et al. 2013, 20; Stöllner et al. 2014, 28-29; Gambashidze et al. 2016b, 114-115; Stöllner 2016, 218.
[1637] Stöllner et al. 2008, 277, 280; Stöllner and Gambashidze 2011, 195; Stöllner and Gambashidze 2014, 108; Stöllner et al. 2014, 24; Gambashidze et al. 2016b, 110; Stöllner 2016, 223-225.
[1638] Varoutsikos et al. 2014, Fig. 8b; Varoutsikos et al. 2018, 246, Fig. 8.3.
[1639] Bobokhyan et al. 2014, Fig. 6.

complex.[1640] However, examples of incised and impressed rims are also known across chaff tempered and mixed tempered ceramics of the Chaff-faced and Leilatepe traditions and the local assemblages of north-western Iran.[1641] As a common decorative technique, particularly among Sioni sites of eastern Georgia, the application of notches and impressions along the rims of vessels has since become a chronological indicator for the Chalcolithic period in the Transcaucasus.

At Sioni, 105 rims were decorated, representing 56.8 percent of the rim fragments. Eighty rims were left plain **(*tab. 63*)**. Across the ware types, incised and impressed rims occur most frequently among Obsidian Tempered vessels with 47 examples, representing 45 percent of the decorated rims. This is followed by Medium Ware at 39 percent with 41 examples. Decorated rim fragments are less well represented across the other ware types. Sixteen decorated fragments were identified among Fine Ware ceramics, representing 15.2 percent of the incised and impressed rims. Only one example of an incised rim was identified among Mixed Tempered ceramics. No decorated examples were identified among the Coarse Ware and Chaff Tempered ceramics **(*tab. 64*)**.

Decorated rims occur most frequently across outward flaring jars (Jar 1.4). Twenty-five examples were identified, representing 23.8 percent of the decorated rim fragments and 65.8 percent of the outward flaring jars of this type. Following outward flaring jars, incised and impressed rims also occur across vertical necked jars (Jar 1.2) and sinuous jars (Jar 2), each with 19 examples identified, comprising 18 percent of the

[1640] Kiguradze 2001b, 46; Kiguradze and Sagona 2003, 50; Lyonnet et al. 2012, 101; Sagona 2018a, 208.
[1641] Marro et al. 2009; Abedi et al. 2014.

decorated rim fragments. Almost 60 percent of vertical necked jars and 80 percent of sinuous jar fragments are decorated. Of the decorated rim fragments, 15.2 percent are represented by vertical necked jars with a distinct offset at the juncture between the neck and the shoulder (Jar 1.5). With 16 examples identified, 61.5 percent of rim fragments attributed to Jar 1.5 are decorated. Ten examples were identified among inward leaning, short necked jars (Jar 1.1) and outward flaring jars with a gentle curvature between the neck and the shoulder (Jar 1.3). Each represents 9.5 percent of the decorated rim fragments in addition to 45.5 percent and 58.8 percent of jars 1.1 and 1.3, respectively. Six fragments were identified among outward flaring jars with a sharp juncture along the neck and the shoulder (Jar 1.6). These represent only 5.7 percent of decorated rims and 66.7 percent of the fragments attributed to Jar 1.6. Vessels identified as crinkled rim jars (Jar 1.7), hole-mouthed jars (Jar 3), and the pan fragment have no decorative treatments **(*tab. 65*)**.

Incised and impressed decorative motifs were most commonly applied to simple, cut rims. Seventy-five simple, cut rims were incised or impressed, representing 71.4 percent of the decorated rim fragments. They occur less commonly among other rim types. Rounded rims were also decorated. Twelve examples were identified, representing 11.4 percent of the decorated rim fragments, followed by thickened and cut rims with ten examples representing 9.5 percent. Decoration occurs across other rim types including thickened, simple, cut rims, cut, flaring rims, cut, oblique rims, irregular, simple, cut rims, and oblique rims. However, as such types are poorly represented among the assemblage, these rims only represent between one and two percent of the decorated fragments **(*tab. 66*)**.

Types of decorative treatment include oblique notches, vertical notches, circular impressions, oblique comb impressions, and circular impressions that were made with a hollow tipped stylus **(*tab. 67*)**. Oblique notches were the most common with 53 examples representing 50 percent of the decorated rim fragments **(*fig. 6.89*)**. This form of decorative treatment occurs most frequently across Obsidian Tempered and Medium ware ceramics with 23 and 21 examples, respectively. Eight Fine Ware fragments were also decorated with oblique notches in addition to a single Mixed Tempered rim sherd **(*tab. 68*)**. Oblique notches are most frequently attested among the rims of outward flaring jars (Jar 1.4) with 17 examples identified. Following outward flaring jars, oblique notches are also found along the rims of vertical necked jars (Jar 1.2) and sinuous jars (Jar 2), each with 11 examples. Inward leaning, short necked jars (jar 1.1) and vertical necked jars, with a distinct offset at the juncture between the neck and the shoulder (Jar 1.5), were also decorated in this manner. The rims of other outward flaring forms, including jars 1.3 and 1.6, were also decorated with oblique notches. However, across these forms, such decorative treatment is attested less frequently with only one and two examples identified, respectively **(*tab. 69*)**.

Vertical notches and circular impressions represent the next most common decoration **(*fig. 6.90 and fig. 6.91*)**. Both are represented by 17 examples, each accounting for 16.2 percent of the decorated rim fragments. Medium Ware ceramics are most commonly embellished in this manner. Eight examples are present followed by Obsidian Tempered ceramics, with five examples, and Fine Ware with four **(*tab. 70*)**.

Circular impressions are more frequent among Obsidian Tempered ceramics. Nine examples were identified followed by Medium Ware ceramics with seven. Among

Fine Ware ceramics, only one example of a circular impressed rim was identified **(*tab. 71*)**. Both types of decorative treatment occur across a wide variety of morphological forms. Vertical notches are most frequently attested among outward flaring jars (Jar 1.4) and vertical necked jars (Jar 1.2) with six examples and four examples identified, respectively. They are found along the rims of sinuous jars (Jar 2) in addition to other types of outward flaring jars (Jar 1.3) and vertical necked jars (Jar 1.5) **(*tab. 72*)**. Circular impressions occur more frequently among vertical necked jars with a distinct offset at the juncture between the neck and the shoulder (Jar 1.5) and sinuous jars (Jar 2). Five examples were identified for both jar types, however, circular impressions occur along the rims of inward leaning, short necked jars (Jar 1.1), vertical necked jars (Jar 1.2), other types of outward flaring jars (jars 1.3, 1.4, and 1.6) **(*tab. 73*)**.

Rim fragments decorated with oblique comb and deep, circular impressions, that were made using a hollow tipped stylus, occur less frequently. Ten rims decorated with oblique comb impressions were identified, representing 9.5 percent of the decorated rim fragments **(*fig. 6.92*)**. Only three examples of rims with deep, circular impressions were recovered encompassing three percent of the decorated materials **(*fig. 6.93*)**. Oblique comb impressions occur most commonly among Obsidian Tempered ceramics, with six examples identified, followed by Fine Ware ceramics, with three examples, and a single Medium Ware rim fragment **(*tab. 74*)**. Likewise, Obsidian Tempered Ware represents two of the three rim fragments that were decorated with deep, circular impressions. A single Medium Ware example was also identified. Oblique comb impressions occur most frequently among outward flaring jars with a gentle curvature between the neck and the shoulder (Jar 1.3) and inward leaning, short necked jars (Jar 1.1). Among these types, four and three examples were identified, respectively. Oblique

comb impressions also decorate vertical necked jars including jars 1.2 and 1.5 **(*tab. 75*)**. Deep, circular impressions are limited to outward flaring jars with a sharp juncture along the neck and the shoulder (Jar 1.6).

There are examples of rims which demonstrate a variation on these common motifs. A rim fragment of a Medium Ware, inward leaning, short necked jar (Jar 1.1) was decorated with a single, deep oblique notch. Elongated and overlapping oblique notches were found on the rim of an obsidian tempered, vertical necked jar (Jar 1.2). A combination of vertical and oblique notches was used to decorate the rim of a medium tempered, outward flaring jar with a gentle curvature between the neck and the shoulder (Jar 1.3). Oblique notches and comb impressions were along the rim of a medium tempered, vertical necked jar with a distinct offset at the juncture between the neck and the shoulder (Jar 1.5). On the same jar type, the rim of an obsidian tempered example was decorated with deep, elliptical impressions.

Decorated rim fragments are attested at other contemporary sites throughout eastern and southern Georgia. In the Kvemo Kartli region, a hole-mouthed jar, with circular impressions along the rim, was recovered from Arukhlo VI.[1642] At Tsopi, the rim of an outward flaring jar, similar to Jar 1.4, was decorated with wide, finger impressions **(*fig. 6.94*)**.[1643] Another was a notched fragment of a comb-shaped rim.[1644] Decorated, comb-shaped rim fragments came from sites along the Aragvi River Gorge including Zhinvali, Akhali Zhinvali, Chinti, and Abanoskhevi-Mtsiturebis Mamuli.[1645] Similar

[1642] Nebieridze 2010, Pl. XXXIII.
[1643] Kushnareva and Chubinishvili 1970, Fig. 7.18; Kushnareva 1997, Fig. 12.4; Nebieridze 2010, Pl. XI.1.
[1644] Nebieridze 2010, Pl. XV.7.
[1645] Chikovani 2005, Pl. 1; Nebieridze 2010, Pl. XXXVII.

fragments were identified at Tandistkaro 1 **(*fig. 6.95*)**.[1646] Comb-shaped rims were decorated with notches or wide, finger impressions which formed a scalloped edge along the lip. Notched, comb-shaped rim fragments were recovered from Chinti, Abanoskhevi-Mtsiturebis Mamuli, and Tandistkaro 1.[1647] Impressed comb-shaped rims are present at Zhinvali, Akhali Zhinvali, and Abanoskhevi-Mtsiturebis Mamuli.[1648] At Tandistkaro 1, finds included a finger impressed rim fragment of a deep bowl and rims decorated with oblique notches, vertical notches, and circular impressions.[1649] Similar material came from sites along the Alazani River Basin. Rim fragments, decorated with oblique notches, circular impressions, and deep, circular impressions made with a hollow tipped stylus, were discovered at Alazani III and Damtsvari Gora.[1650] In the Samtskhe-Javakheti region, a perforated rim fragment, decorated with vertical notches, was recovered from Orchosani.[1651]

Decorated rim fragments have been recovered from Areni-1 and Aratashen in Armenia. At Areni-1, they were decorated with oblique or vertical notches, or wide impressions, which occur across forms such as inward leaning, short necked jars (Jar 1.1), outward flaring jars (Jar 1.3), and trays **(*fig. 6.96*)**.[1652] At Aratashen, examples are restricted to obsidian tempered ceramics with a narrow morphological repertoire consisting of small, necked jars.[1653] The rims were decorated with oblique notches, comb stamped, or circular impressions **(*fig. 6.97*)**.[1654] Similar obsidian tempered ceramics

[1646] Chikovani 1999, Fig. V.71, 76; Chikovani 2005, Fig. 1.6-7; Nebieridze 2010, Pl. XXXVII.6-7.
[1647] Chikovani 1999, Fig. 5.71, 76; Chikovani 2005, Pl. 1.1, 3, 6-7; Nebieridze 2010, Pl. XXXVII.1, 3, 6-7.
[1648] Chikovani 2005, Pl. 1.2-5; Nebieridze 2010, Pl. XXXVII.2-5.
[1649] Chikovani 1999, Fig. V.72-75, 78-82.
[1650] Varazashvili 1992, Pl. X.1, 5, Pl. XII.3-7, Pl. XIV.5-6, Pl. XV.1, 5, 9.
[1651] Nebieridze 2010, Pl. XLV.
[1652] Zardaryan 2014, Fig. 3.1, 2-12, 14.
[1653] Palumbi et al. 2014, 46; Palumbi et al. 2018, 124.
[1654] Palumbi et al. 2014, Fig. 4b, Fig. 5; Palumbi et al. 2018, 124.

occur among the kitchen ware assemblage at Mentesh Tepe, Period III, in Azerbaijan. The rims were often decorated with oblique or vertical notches or circular impressions (***fig. 6.98***).[1655] Incised or impressed rims were common among necked jars including outward flaring (Jar 1.4) and vertical necked jars (Jar 1.5).[1656] Oblique notches can embellish the rims of sinuous jars (Jar 2).[1657] In contrast, pan fragments, at Mentesh Tepe, were often decorated with oblique comb impressions.[1658] Oblique notches and comb impressions are present at Ovçular Tepesi and frequently occur among necked jars, particularly outward flaring and vertical necked jars (jars 1.3, 1.4, 1.5, and 1.6).[1659] Among open forms, a conical bowl, with oblique notches, was documented.[1660] At Ovçular Tepesi, the majority of decorated rim fragments were grit tempered, however, a few chaff tempered and mixed tempered examples were also recovered.[1661]

Among sites of the Leilatepe tradition, incised and impressed rim fragments in a coarse, grit tempered ware came from Leilatepe, Chalagantepe, Beyuk Kesik, Kechili, Agili Dere, and Galayeri. At Leilatepe, outward flaring jars (Jar 1.4), including forms with an elongated neck, have been found with oblique notches along the rim.[1662] At Beyuk Kesik, outward flaring jars (jars 1.3 and 1.4) were decorated with circular impressions. Some fragments were decorated with deep, wide impressions forming a scalloped profile along the rim (***fig. 6.99***).[1663] The rims of vertical necked jars (Jar 1.2) were

[1655] Lyonnet and Gulyiev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 101; Palumbi et al. 2014, 47; Lyonnet et al. 2017, 146-147, Fig. 12; Lyonnet 2018, 560; Palumbi et al. 2018, 125.
[1656] Lyonnet et al. 2012, Fig. 148.3-4, 6; Palumbi et al. 2018, Fig. 8.
[1657] Lyonnet et al. 2012, Fig. 148.5; Palumbi et al. 2018, Fig. 8.
[1658] Lyonnet 2018, Fig. 10.1-2.
[1659] Marro et al. 2009, Pl. XVII.2-7, 8, Pl. XIX.1; Kuliyeva and Bahşeliyev 2018, Fig. 8.2, 7, 11.
[1660] Marro et al. 2009, Pl. XVII.1.
[1661] Marro et al. 2009, Pl. VI.8, Pl. VIII.2, Pl. XIII.2, Pl. XVII.6, Pl. XIX.1.
[1662] Aliev and Narimanov 2001, Tab. V; Akhundov 2007, Fig. 16.1-2, 9, 12.
[1663] Akhundov 2007, Fig, 16.4; Museibli 2007, Pl. XIX.2-4.

similarly decorated in this manner.[1664] At Agili Dere, vertical necked jars (Jar 1.2) were enhanced with oblique and vertical notches (***fig. 6.100***).[1665] At Galayeri, a vertical necked jar (Jar 1.5), with a distinct offset between the neck and the shoulder, and a flaring rim, was decorated with vertical notches.[1666] Rim fragments, with vertical notches, were also recovered from Chalagantepe.[1667] Open forms, such as pans, were also embellished. A pan fragment, decorated with deep, oblique notches, was recovered from Kechili.[1668]

Similar material appears throughout eastern Anatolia and north-western Iran. At Hanago, in the Iğdır plain, grit tempered, vessel fragments from the surface had oblique notches and wide, oblique impressions.[1669] The decorative treatment occurs across a wide range of forms including inward leaning, short necked jars (Jar 1.1), outward flaring jars (jars 1.3 and 1.6), vertical necked jars (Jar 1.5), and sinuous jars (Jar 2).[1670] Similar patterns occur along the rims of vessels at Kul Tepe/Hadishahr. Oblique notches and wide, oblique impressions are known among grit tempered and mixed tempered ceramics (***fig. 6.101***). Such decorative treatments frequently occur among vertical necked jars (Jar 1.2), outward flaring jars (Jar 1.3), open-mouthed jars, and trays.[1671] Incised and impressed rims are less well known in the northern Caucasus, however, incised tray fragments and circular impressed rim fragments have been recovered from Galyugai I.[1672]

[1664] Museibli 2007, Pl. XIX.1.
[1665] Huseynov 2007, Pl. III.6, Photo 6.
[1666] Museibli 2014b, Fig. 21.4, Fig. 34.3; Museibli 2019, 69, Fig. 9.5.
[1667] Narimanov 1987, Fig. 46.
[1668] Narimanov 1987, Fig. 35.
[1669] Marro and Özfırat 2003, 390; Marro and Özfırat 2005, 325; Marro 2008, 12-17.
[1670] Marro and Özfırat 2003, Pl. IV.1-5; Marro 2007, Pl. VII.1-5; Marro 2008, Fig. 1.1-5.
[1671] Abedi et al. 2014, Fig. 21.10, Fig, 25.8, Fig. 26.1, 6, 8, Fig. 29.2.
[1672] Korenevskii 2004, Fig. 4.10-11, 13-14.

Other Forms of Incised and Impressed Decorative Treatments

Incised and impressed decorative treatments, that occur along neck or the body of vessel fragments, are less well known. However, at Sioni, a rim fragment of a vertical necked jar (Jar 1.2) was decorated with oblique notches along the rim and a row of small, circular impressions along the neck **(*fig. 6.102*)**.[1673] In the Kvemo Kartli region, incised body sherds were recovered from Tsopi and Nachivchavebi. At Tsopi, the body fragment was decorated with straight lines and a zigzag motif.[1674] A geometric design was employed at Nachivchavebi with straight lines forming a row of overlapping triangles **(*fig. 6.103*)**.[1675] Along the Alazani River Basin, incised body sherds were recovered from Damtsvari Gora. The sherds were decorated with straight lines or were cross-hatched **(*fig. 6.104*)**.[1676] Along the Aragvi River, a comb-shaped rim, with two rows of circular impressions along the interior and exterior surfaces, was found at Zhinvali.[1677] From Akhali Zhinvali, came a comb-shaped rim, decorated with oblique incisions beneath the lip.[1678]

At Areni-1, in Armenia, there were incised and impressed body sherds decorated with incised lines, waves, zigzags, and chevron motifs.[1679] Rows of tiny, circular impressions are also known and were often executed in conjunction with incised geometric designs **(*fig. 6.105*)**.[1680] In Nakhichevan, ceramics with incised and impressed decorative motifs are attested among the Chalcolithic assemblage at Ovçular Tepesi.

[1673] Menabde and Kiguradze 1981, Fig. 3.2; Kiguradze and Sagona 2003, Fig. 3.7.10.
[1674] Nebieridze 2010, Pl. XI.5.
[1675] Chikovani et al. 2010, Pl. II.11.
[1676] Varazashvili 1992, Pl. IX.9-10.
[1677] Chikovani 2005, Pl. 1.4; Nebieridze 2010, Pl. XXXVII.4.
[1678] Chikovani 2005, Pl. 1.2; Nebieridze 2010, Pl. XXXVII.2.
[1679] Zardaryan 2014, 206-207.
[1680] Zardaryan 2014, Fig. 4.6-8.

Such decorative treatments frequently occur among mixed tempered ceramics, however, a few grit tempered examples are also known.[1681] From the surface of the site, the body of a mixed tempered, vertical necked jar (Jar 1.5) was decorated with a series of comb impressions forming a chevron motif **(*fig. 6.106*)**.[1682] Open forms include a mixed tempered, hemi-spherical bowl with two incised lines on the interior surface.[1683] In addition, finds incorporate mixed tempered body fragments decorated with incised lines and crude comb and stick impressions.[1684] A grit tempered body sherd was also decorated with incised triangles and comb-impressed vertical lines **(*fig. 6.107*)**.[1685]

At Leilatepe sites, incised and impressed body fragments were recovered from Chalagantepe and Ilanlitepe, in Nagorno-Karabakh, and Poylu II in the Ganja-Gazakh region. A body sherd, decorated with small, hemi-spherical impressions all over the surface, came from Chalagantepe.[1686] From Ilanlitepe, came a body sherd with crude, triangular impressions.[1687] Poylu II produced a coarse, outward flaring jar (Jar 1.4), decorated with a row of thumb impressions along the shoulder.[1688] Another example, decorated with impressed rhomboids along the shoulder, was also present **(*fig. 6.108*)**.[1689] Some sherds were marked with an incised line or decorated with circular impressions.[1690] Similar fragments are found throughout eastern Anatolia and north-western Iran. At Sarıgül, in the Ağrı province, a fragment of an outward flaring jar (Jar

[1681] Marro et al. 2009, Pl. XVI.1-2, Pl. XIX.1, 3-4; Kuliyeva and Bahşeliyev 2018, Fig. 8.10-11.
[1682] Marro et al. 2009, Pl. XIX.1; Kuliyeva and Bahşeliyev 2018, Fig. 8.11.
[1683] Marro et al. 2009, Pl. XVI.2.
[1684] Marro et al. 2009, Pl. XVI.1, Pl. XIX.4.
[1685] Marro et al. 2009, Pl. XIX.3; Kuliyeva and Bahşeliyev 2018, Fig. 8.10.
[1686] Narimanov 1987, Fig. 46.
[1687] Narimanov 1987, Fig. 43.
[1688] Museibli 2008b, Pl. 3.5.
[1689] Museibli 2008b, Pl. 3.3.
[1690] Museibli 2008b, Pl. 9.4, Pl. 12.1-2, 6.

1.3), with a row of nail impressions beneath the rim, was collected during a survey.[1691] In addition, there was also a body fragment with rows of nail impressions **(*fig. 6.109*)**.[1692] At Kul Tepe/Hadishahr, the interior surfaces of mixed tempered bowls were incised with straight lines, cross-hatching, or geometric designs.[1693] A jar fragment, decorated with a sequence of curved incisions, was also recovered **(*fig. 6.110*)**.[1694]

Relief Ornamentation

Relief ornamentation is poorly represented. At Sioni, a single body sherd, decorated with an elliptical lug, was recovered **(*fig. 6.111*)**.[1695] However, relief ornamentation, in the form of lugs, ledges, knobs, pastilles, and raised bands, is well attested at other contemporary sites. In the Kvemo Kartli region, body sherds, decorated with conical or elliptical lugs and circular knobs, came from Tsopi, Arukhlo VI, and Nachivchavebi.[1696] Lugs and circular knobs, singular or in pairs, could be positioned along or beneath the rim. For example, at Nachivchavebi, an outward flaring jar (Jar 1.3) and a small cup had lugs beneath the rim and a rim sherd carried a horizontal ledge beneath the lip.[1697] Similar vessel fragments came from Orchosani in the Samtskhe-Javakheti region.[1698] At Samshvilde, the rim fragments of inward leaning, short necked jars (Jar 1.1), vertical necked jars (Jar 1.2), and outward flaring jars (Jar 1.3) were

[1691] Marro and Özfırat 2005, Pl. IV.5; Marro 2007, Pl. VIII.5; Marro 2008, Fig. 2.5.
[1692] Marro and Özfırat 2005, Pl. IV.1; Marro 2007, Pl. VIII.1; Marro 2008, Fig. 2.1.
[1693] Abedi et al. 2014, Fig. 21.1-3.
[1694] Abedi et al. 2014, Fig. 22.9.
[1695] Menabde and Kiguradze 1981, Fig. 3.8; Kiguradze and Sagona 2003, Fig. 3.9.4.
[1696] Kushnareva and Chubinishvili 1970, Fig. 9.4-5, 10; Kushnareva 1997, Fig. 12.8; Chikovani et al. 2010, Pl. II.3, 6, 13; Nebieridze 2010, Pl. XIII.3, Pl. XVII.9, Pl. XIX.9, Pl. XXI.3, Pl. XXIII.8, Pl. XXXIII.
[1697] Chikovani et al. 2010, Pl. II.2-3, 13.
[1698] Nebieridze 2010, Pl. XL.

decorated with relief bands. The bands were applied along the neck of the vessels in a curved or zigzag motif **(*fig. 6.112*)**.[1699]

Relief ornamentation is particularly well represented among sites along the Alazani River Basin. Rim fragments and body sherds were decorated with lugs and circular knobs at Alazani III and Damtsvari Gora. At these sites, lugs could be semi-circular, elliptical, conical, or cuboidal-shaped.[1700] At Damtsvari Gora, a rim fragment was decorated with a vertical row of three conical lugs which were applied along the neck of the vessel **(*fig. 6.113*)**.[1701] Horizontal, semi-circular or elliptical lugs are common on sinuous jars (Jar 2). Sinuous jars were also decorated with relief bands.[1702] At Damtsvari Gora, a sinuous jar had a horizontal relief band, applied along the juncture of the neck and the shoulder, which was decorated with oblique impressions **(*fig. 6.114*)**.[1703] From Chinti, along the Aragvi River, a sinuous jar was decorated with a relief band along the neck which was applied in a scalloped motif **(*fig. 6.115*)**.[1704] Alazani III and Damtsvari Gora had body sherds decorated with circular impressed relief bands.[1705] Similar relief ornamentation was on the necks of fragments at sites along the Aragvi River Gorge.[1706] Body sherds, at Alazani III, were also decorated with geometric designs in relief and small pastilles.[1707] An open-mouthed jar was recovered from Damtsvari Gora with an all-over pastille design on the exterior surface.[1708]

[1699] Demetradze and Mirtskhulava 2010, Fig. 6.
[1700] Varazashvili 1992, Pl. VIII.1-7, Pl. X.2-4, 7-8, Pl. XI.1-10, Pl. XIII.1-5, Pl. XVIII.
[1701] Varazashvili 1992, Pl. XVIII; Kiguradze and Sagona 2003, Fig. 3.14.4.
[1702] Varazashvili 1992, Pl. VIII.5-6, Pl. XIX.2, Pl. XLI; Kiguradze and Sagona 2003, Fig. 3.11.1-2.
[1703] Varazashvili 1992, Pl. XLI; Kiguradze and Sagona 2003, Fig. 3.11.1.
[1704] Kiguradze and Sagona 2003, Fig. 3.14.1.
[1705] Varazashvili 1992, Pl. XII.9, 11, Pl. XXIV.1.
[1706] G. Chikovani pers. comm.
[1707] Varazashvili 1992, Pl. XV.4-6.
[1708] Varazashvili 1992, Pl. XXIII; Kiguradze and Sagona 2003, Fig. 3.12.

Lugs, knobs, pastilles, and relief bands, applied on the rim or neck of vessels, is a characteristic feature of many Aratashen-Shulaveri-Shomutepe assemblages of the Late Neolithic, particularly those in the Kura Basin.[1709] In terms of a relative chronology, the prominence of relief ornamentation among the assemblages of the Alazani River Basin suggests that they may predate the material recovered from Sioni.[1710] Ceramics recently recovered from Gadachrili Gora would seem to support this view. Necked jars with incised rims and hole-mouthed jars with knobs, lugs, and basket-impressed bases were recovered from the Late Neolithic/Early Chalcolithic levels.[1711] This material may be indicative of a transitional phase, where a level of continuity may be observed between the local Late Neolithic and Early Chalcolithic traditions.

Relief ornamentation is evident at early sites in Armenia and Nakhichevan. At Areni-1, sherds were decorated with rows of circular knobs, elliptical lugs, flat buttons, rings, ledges, and relief bands executed in a wavy or zigzag design.[1712] Anthropomorphic and zoomorphic relief decoration recalls the Aratashen-Shulaveri-Shomutepe tradition (***fig. 6.116***).[1713] From Ovçular Tepesi, in Nakhichevan, came mixed tempered and chaff tempered bowls and jars, decorated with circular or conical knobs along the shoulder or beneath the rim.[1714] Jars were decorated with incised relief bands extending from the juncture of the neck and the shoulder to the body.[1715] Circular, knobbed body fragments

[1709] Kiguradze 1986, Fig. 13.4, Fig. 19.1-11, 15, Fig. 43.1-8, Fig. 50; Kiguradze 2001a, 66; Lyonnet et al. 2012, 78-82; Chataigner et al. 2014, 22; Bastert-Lamprichs 2017, Fig. 6; Sagona 2018a, 112-114, Fig. 3.10.
[1710] Lyonnet 2018, 564.
[1711] Batiuk et al. 2019, 65-67.
[1712] Wilkinson et al. 2012, Fig. 7.2-4; Zardaryan 2014, 207, Fig. 2.
[1713] Zardaryan 2014, Fig. 2.12.
[1714] Marro et al. 2009, Pl. XII.1-3, Pl. XV.1.
[1715] Marro et al. 2009, Pl. XV.2-3.

and rims with wide, vertical lugs are known from Uçan Ağıl.[1716] A body sherd, similar to those found along the Alazani River Basin and Aragvi River Gorge, had a finger, impressed relief band.[1717] Circular, impressed relief bands are attested along the necks of medium to large sized jars at Mentesh Tepe in Azerbaijan.[1718] Jars were decorated with circular knobs along the shoulder or beneath the rim **(*fig. 6.117*)**.[1719]

Relief ornamentation is less common among Leilatepe sites. A body sherd with an elliptical lug was recovered from Chalagantepe.[1720] At Ilanlitepe, one body fragment had a relief band in a zigzag motif.[1721] A rim fragment with a pair of small, circular lugs along the shoulder came from Kechili.[1722] Small, circular knobs, positioned beneath the rim, are known from from Beyuk Kesik.[1723] At Galayeri, relief ornamentation, consisting of knobs or finger impressed bands along the rim, is attested among the grit tempered ceramics.[1724] In contrast, relief ornamentation is common among mixed tempered ceramics at Kul Tepe/Hadishahr in north-western Iran. Body fragments were decorated with pairs of circular knobs, flat, circular buttons, cuboidal motifs, flat lugs, and zigzag relief bands **(*fig. 6.118*)**.[1725] Along the northern Caucasus, body fragments, decorated with rows of small pastilles and small, circular knobs, using the *repouseé* technique, are known from Meshoko.[1726]

[1716] Kuliyeva and Bahşeliyev 2018, Fig. 7.1, 3.
[1717] Kuliyeva and Bahşeliyev 2018, Fig. 7.2.
[1718] Lyonnet 2017, 147, Fig. 16.
[1719] Lyonnet 2017, Fig. 15.
[1720] Narimanov 1987, Fig. 46.
[1721] Narimanov 1987, Fig. 43.
[1722] Narimanov 1987, Fig. 35.
[1723] Museibli 2007, Pl. XXII.6-7.
[1724] Museibli 2019, 69-70, Fig. 9.3-4.
[1725] Abedi et al. 2014, Fig. 18.3, Fig, 19.3, 6, 12, Fig. 20.7.
[1726] Sagona 2018a, 138, Fig. 4.3.4.

Painted and Burnished Vessel Fragments

Painted and decoratively burnished vessel fragments are poorly represented. A group of pinkish-grey, grit tempered ceramics were recovered from Tsopi with traces of yellow glaze and red paint on the exterior surfaces.[1727] Only a single painted sherd was found along the Alazani River Basin.[1728] At Mentesh Tepe, some pan fragments were painted with bitumen.[1729] At Beyuk Kesik, a few fragments of black or chestnut brown, painted coarse ware were collected.[1730] A rim fragment of an outward leaning jar (Jar 1.4) was decorated with vertical, burnished strips extending from beneath the rim and down the body.[1731]

Conclusion

'Sioni' is a broad term that has been applied to a specific ceramic tradition in addition to a wide variety of features that are known to occur across other contemporary Chalcolithic assemblages throughout the Caucasus. In the absence of a strict definition, the term has been overused within the literature resulting in a label that carries little meaning when applied to regional periodisations and material assemblages.[1732] As a ceramic tradition, a concise definition of the Sioni complex should stem from the type site and its material assemblage. Our understanding of the assemblage from the type site may be supplemented by material from sites in eastern

[1727] Nebieridze 2010, 151.
[1728] Varazashvili 1992, 42; Lyonnet 2018, 563.
[1729] Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89-90; Lyonnet et al. 2012, 101.
[1730] Museibli 2007, 70; Museibli and Huseynov 2008, 28.
[1731] Museibli 2007, 70, Pl. XXII.9; Museibli and Huseynov 2008, 28, Pl. XXII.9. Note that the two publications provide conflicting information regarding the ware type of this rim fragment. In Museibli 2007, 70, the fragment is referred to as 'Coarse Ware.' In Museibli and Huseynov 2008, 28, it is referred to as a 'qualified' vessel.
[1732] Sagona 2014, 30.

and southern Georgia which form part of the original *oikoumene* of the Sioni complex.[1733]

As the basis for a succinct definition, the Chalcolithic occupation at Sioni presents a narrow and restricted ceramic assemblage. This assemblage is characterised by a handmade ceramic production. Six ware types have been identified. Coinciding with the current definitions of the Sioni complex, grit tempered ceramics constitute the majority, representing 95 percent of the Chalcolithic assemblage. The clay was tempered with a variety of inorganic additives including basalt, quartz, carbonates, mica, crushed obsidian, and grog. Comprising 55 percent and 26.5 percent of the assemblage, Medium and Obsidian Tempered Ware represent the two predominant types. Mixed Tempered and Chaff Tempered ceramics are also present but are poorly represented. Combined, Mixed Tempered and Chaff Tempered ceramics account for five percent of the assemblage.

At Sioni, ceramics were poorly and inconsistently fired. Vessels were incompletely oxidised and fired to variety of colours from yellows, reds, and browns to greys and black. Vessel fragments were also distinguished by mottled surfaces and dark blemishes as a result of uneven firing processes. Exterior surfaces were rarely left plain and were often smoothed and slipped or simply smoothed. In some cases, vessel fragments were also sparingly and inconsistently burnished. In contrast, almost 50 percent of the interior surfaces were left plain while others were smoothed.

Ceramics also demonstrate a restricted morphological repertoire that focused on closed vessel forms. Representing 80 percent of the diagnostic rim fragments,

[1733] Sagona 2014, 30.

manufacture was centred on the production of a variety of necked jars. After necked jars, sinuous jars are the next most common form followed by a small quantity of hole-mouthed jars. Base fragments are poorly represented. However, bases are flat, and some were constructed with a small heel. Open forms are rare and consist of a single pan fragment. It seems probable that the fragmented nature of the ceramic assemblage has prevented the accurate identification of such forms.[1734] However, it is interesting to note the *complete absence* of open forms, such as cups, bowls, trays, and perforated ceramics, which are well attested at other contemporary sites.

Decorative treatment was restricted to the rims of necked jars and sinuous vessels. At Sioni, more than half of the rims were decorated with oblique notches, vertical notches, circular impressions, oblique comb impressions, and deep, circular impressions that were made with a hollow tipped stylus. Oblique notches were the most common, representing 50 percent of the decorated rim fragments. Other forms of decorative treatment are rare. Singular examples of relief ornamentation, in the form of a small, elliptical lug, and impressed decorative motifs are attested.

Beyond the type site, Sioni ceramics are widely dispersed throughout the areas of eastern and southern Georgia, which form the *oikoumene* of the Sioni complex. Sioni ceramics are present in the Kvemo Kartli region, along the Alazani River Basin in Kakheti, the Aragvi River Gorge in the area of Shida Kartli, and in the Samtskhe-Javakheti region of southern Georgia.[1735] The material recovered from these sites demonstrates a wider range of morphological forms and stylistic features that supplement the narrow

[1734] Lyonnet 2018, 557.
[1735] Varazashvili 1992; Chikovani 2001; Kiguradze and Sagona 2003; Chikovani 2005; Chikovani and Chelidze 2008, 28-29; Chikovani et al. 2010; Nebieridze 2010.

assemblage from the type site. In particular, open forms are well represented including small cups, cylindrical and wide-mouthed jars, and hemi-spherical and deep sided bowls. Tray fragments are also present at sites in the Kvemo Kartli region and along the Alazani River Basin.[1736] Perforated vessel forms, despite being completely absent from the type site, occur frequently among sites in Kvemo Kartli, the Alazani River Basin, the Aragvi River Gorge, and the Samtskhe-Javakheti region.[1737] Potentially related to trays and bowls, the comb-shaped rim is another form that is not found at the type site, but commonly occurs at sites along the Aragvi River.[1738] As a form, comb-shaped rims are currently endemic to sites of the Sioni complex. Other forms, such as crinkled rim jars, sinuous jars, wide-mouthed jars, and the cinched, wide-mouthed variation display a similar restricted distribution.

At Sioni, while decorative treatment is restricted to the rims of vessels, other related sites in Georgia demonstrate a wider range of ornamentation. Incised and impressed decorative motifs could be applied to other areas of the vessel. Vessel fragments, decorated with circular impressions and incised lines, zigzags, crosshatching, and geometric motifs, were recovered from sites in the Kvemo Kartli region and along the Alazani River Basin.[1739] Relief ornamentation, in the form of lugs, ledges, knobs, pastilles, and relief bands, is also attested at sites in the Kvemo Kartli and Samtskhe-Javakheti regions and is particularly common among sites along the Alazani River Basin

[1736] Varazashvili 1992, Pl. V.12, Pl. XIV.3, Pl. XX, Pl. XLII.1-2; Kiguradze and Sagona 2003, Fig. 3.13.1-2; Nebieridze 2010, Pl. XXXIX; Lyonnet 2018, 557.
[1737] Varazashvili 1992, Pl. V.1-8, 11, Pl. VII.1-2, 11-12, Pl. VIII.14-21, Pl. XIV.1-2, 4, Pl. XVI.1-6, Pl. XVII.1-4, Pl. XXX.22-28; Chikovani 2001, Fig. 1.1, 5, 7-8, 10-11, 18; Kiguradze and Sagona 2003, Fig. 3.13.3-4; Baramidze et al. 2007, Pl. XI, Pl. XXIII; Demetradze and Mirtskhulava 2010, Fig. 6; Nebieridze 2010, Pl. XIX.8, Pl. XXI.1-2, Pl. XXXIII; Gambashidze et al. 2016b, 110-111; Varoutsikos et al. 2018, Fig. 8.1-2.
[1738] Varazashvili 1992, 21; Chikovani 1999, 20; Chikovani 2005, 64; Chikovani et al. 2010, Pl. II.9; Nebieridze 2010, Pl. XXI.
[1739] Varazashvili 1992, Pl. IX.9-10; Chikovani 2005, Pl. 1.2, 4; Nebieridze 2010, Pl. XXXVII.2, 4.

and Aragvi River Gorge.[1740] At these sites, relief ornamentation, particularly lugs, pastilles, and relief bands, occur frequently across trays, wide-mouthed jars, and sinuous jars.[1741]

Sioni ware demonstrates a wide distribution across the Caucasus where it also occurs alongside other contemporary traditions. The dispersal of the Sioni complex is likely tied to subsistence strategies which incorporated a degree of mobility as suggested by the thin occupational deposits and the lack of architectural features at Sioni sites.[1742] The discovery of sizeable quantities of Obsidian Tempered Ware from sites such as Aratashen and Mentesh Tepe, Period III, suggests that, the Sioni assemblage functioned within the domestic context as a form of cooking ware that was associated with the preparation, serving, and consumption of food.[1743] Potters intentionally added obsidian to the clay to produce vessels with a high thermal conductivity.[1744] The prevalence of necked jars and open forms, such as pans and trays, suggests that obsidian tempered ceramics were used to process liquids and semi-dry food stuffs.[1745] In particular, heavily sooted tray fragments, with coarse, obsidian tempered bases, indicates that the function of this form was tied to the hearth, particularly in relation to the heating and insulation of food.[1746] Obsidian tempered

[1740] Kushnareva and Chubinishvili 1970, Fig. 9.4-5, 10; Varazashvili 1992, Pl. VIII.1-7, Pl. X.2-4, 7-8, Pl. XI.1-10, Pl. XIII.1-5, Pl. XVIII, Pl. XIX.2, Pl. XXIII, Pl. XLI; Kushnareva 1997, Fig. 12.8; Kiguradze and Sagona 2003, Fig. 3.11.1-2, Fig. 3.12; Chikovani et al. 2010, Pl. II.3, 6, 13; Nebieridze 2010, Pl. XIII.3, Pl. XVII.9, Pl. XIX.9, Pl. XXI.3, Pl. XXIII.8, Pl. XXXIII, Pl. XL.
[1741] Varazashvili 1992, Pl. VIII.5-6, Pl. XIX.2, Pl. XXIII, Pl. XLI; Kiguradze and Sagona 2003, Fig. 3.11.1-2, Fig. 3.12.
[1742] Lyonnet 2018, 564.
[1743] Palumbi 2007, 68; Lyonnet et al. 2012, 101; Palumbi et al. 2014, 53; Palumbi 2015b; Lyonnet 2017, 146; Palumbi et al. 2018, 132.
[1744] Palumbi 2015b; Palumbi et al. 2018, 132.
[1745] Palumbi et al. 2018, 132.
[1746] Lyonnet and Guliyev 2010, 224; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 101; Lyonnet 2017, 145; Lyonnet 2018, 560; Palumbi et al. 2018, 125; Sagona and Shapardon in preparation.

ceramics represent a hallmark of the Sioni complex. As a technological trend, the use of obsidian as tempered is geographically restricted to the Caucasus during the Chalcolithic and is suggestive of the development of a region-specific cuisine.[1747] Likewise, the persistence of the Sioni ceramic tradition into the fourth millennium B.C.E., at sites of the Leilatepe complex, is likely linked to the role it played within conservative foodways in the domestic sphere.[1748]

Across the Caucasus, ceramics of the Chalcolithic period are characterised by shared technological, morphological, and stylistic features which occur across multiple contemporary assemblages. The most conspicuous of these shared features include mixed tempered ceramics, which represent a hybridisation of two technological traditions, in addition to vessels with comb-scraped surfaces which feature heavily among ceramics of the Sioni complex and the Chaff-faced/Leilatepe traditions.[1749] Morphologically, forms, such as pans, trays, perforated vessels, and hole-mouthed jars, appear across the entire region and are known from sites of the Sioni complex, the Chaff-faced and Leilatepe traditions, local assemblages of Nakhichevan and north-western Iran, and sites of the Meshoko and Maikop in the northern Caucasus.[1750] In

[1747] Palumbi 2015b; Palumbi et al. 2018, 132; Sagona and Shapardon in preparation.
[1748] Lyonnet 2018, 564; Rothman 2018, 136.
[1749] Narimanov 1987, 47-48; Kiguradze 2000, 322; Aliev and Narimanov 2001, 18-19; Kiguradze 2001b, 51; Badalyan et al. 2004b, 405; Akhundov 2007, 108, 116; Badalyan et al. 2007, 60; Huseynov 2007, 3-5; Huseynov and Jalilov 2007, 3, 6; Museibli 2007, 68-69; Palumbi 2007, 63; Museibli 2008b, 2; Museibli and Huseynov 2008, 21-22; Marro et al. 2009, 48-49; Museibli 2009, 52; Lyonnet and Guliyev 2010, 223; Marro 2011, 44; Areshian et al. 2012, 127; Gülçur and Marro 2012, 312; Lyonnet et al. 2012, 98; Wilkinson et al. 2012, 28; Muradyan et al. 2014, 343-345; Museibli 2014b, Fig. 34; Palumbi et al. 2014, 45; Sagona 2014, 16; Palumbi 2015b; Museibli 2016a, 284; Kavtaradze 2017, 101; Lyonnet et al. 2017, 146-147; Palumbi et al. 2018, 124; Sagona 2018a, 203.
[1750] Narimanov 1987, 34-34, Fig. 35; Korenevskii 2004, Fig. 4, Fig. 5; Akhundov 2007, Fig. 18.4; Museibli 2007, Pl. XXII, Pl. XXIII, Pl. XVIII.9; Nechitajlo 2007, Fig. 9.1-3; Museibli 2008b, Pl. 9.2-6; Marro et al. 2009, 84, Pl. XVIII.7; Lyonnet and Guliyev 2010, 221; Maziar 2010, Fig. 6.5, Fig. 7.1-4, 6; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98; Abedi et al. 2014, Fig. 25.9, Fig. 26.7, Fig. 29.2; Lyonnet 2017, 145; Kuliyeva and Bahşeliyev 2018, 42, Fig. 11; Lyonnet 2018, 563; Sagona 2018a, Fig. 4.3.2; Sagona and Shapardon in preparation.

particular, the production of trays continued into the Early Bronze Age where fragments were recovered from Chobareti, Rabati, and Sos Höyük.[1751] Shared stylistic features include incised and impressed decorative motifs and relief ornamentation. Body fragments decorated with incised and impressed decorative motifs were recovered from sites of the Sioni cultural complex and early Chaff-faced assemblages at Areni-1 and Ovçular Tepesi.[1752] Relief ornamentation demonstrates a wide dispersal across contemporary Chalcolithic assemblages and is particularly well attested among Sioni sites of the Alazani River Basin and Aragvi River Gorge in addition to early Chaff-faced sites in Armenia, Nakhichevan, and Azerbaijan.[1753] Relief ornamentation is also represented among the mixed tempered ceramics of Kul Tepe/Hadishahr in north-western Iran and at the pre-Maikop site of Meshoko in the northern Caucasus.[1754]

While many of these attributes feature heavily among Sioni assemblages, their association with the Sioni complex within the archaeological literature remains problematic. The occurrence of these features among multiple contemporary traditions throughout the Caucasus indicates that they cannot be used to define a specific assemblage or local complex. Rather, these shared qualities represent a set of general features which have come to distinguish ceramics in the Caucasus region during the Chalcolithic. Such features, particularly comb-scraped surfaces and forms, such as pans, trays, and perforated vessels, represent conservative technological and morphological traditions that were associated with domestic foodways that were practised region

[1751] Sagona and Sagona 2000, Fig. 12.4; Sagona and Shapardon in preparation.
[1752] Varazashvili 1992, Pl. IX.9-10; Chikovani 2005, Pl. 1.2, 4; Marro et al. 2009, Pl. XVI.1-2, Pl. XIX.1, 3-4; Chikovani et al. 2010, Pl. II.11; Nebieridze 2010, Pl. XI.5, Pl. XXXVII; Zardaryan 2014, 206-207; Kuliyeva and Bahşeliyev 2018, Fig. 8.10-11.
[1753] Varazashvili 1992, Pl. VIII.1-7, Pl. X.2-4, 7-8, Pl. XI.1-10, Pl. XIII.1-5, Pl. XVIII; Marro et al. 2009, Pl. XII.1-3, Pl. XV.3-4, Pl. XVI.1, Pl. XIX.4; Wilkinson et al. 2012, Fig. 7.2-4; Zardaryan 2014, 207, Fig. 2.
[1754] Abedi et al. 2014, Fig. 18.3, Fig, 19.3, 6, 12, Fig. 20.7; Sagona 2018a, 138, Fig. 4.3.4.

wide.[1755] Consequently, these features constitute an effective chronological indicator for the Chalcolithic period in the Caucasus.

[1755] Palumbi et al. 2014, 53; Palumbi 2015b; Palumbi et al. 2018, 122; Rothman 2018, 136; Sagona and Shapardon in preparation.

Chapter Six: Figures



Figure 6.1: Stacks of corrugated cardboard boxes containing artefacts from Sioni at the Georgian National Museum, Tbilisi (Photo: B. Shapardon).



Figure 6.2: Artefacts stored in a series of smaller boxes and vessels wrapped in paper at the Georgian National Museum, Tbilisi (Photo: B. Shapardon).

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Figure 6.3: Pages from the original site inventory notes (Courtesy of A. Sagona).



Figure 6.4: Tripod and camera set up for photographing small artefacts at the Georgian National Museum, Tbilisi (Photo: B. Shapardon).



Figure 6.5: Tripod and camera set up for photographing larger artefacts, such as vessels, at the Georgian National Museum, Tbilisi (Photo: B. Shapardon).



Figure 6.6: Partially reconstructed Chalcolithic base fragment showing traces of glue and putty along the joins (Cat. no. 193; Inv. no. 82-976: 822; Photo: B. Shapardon).

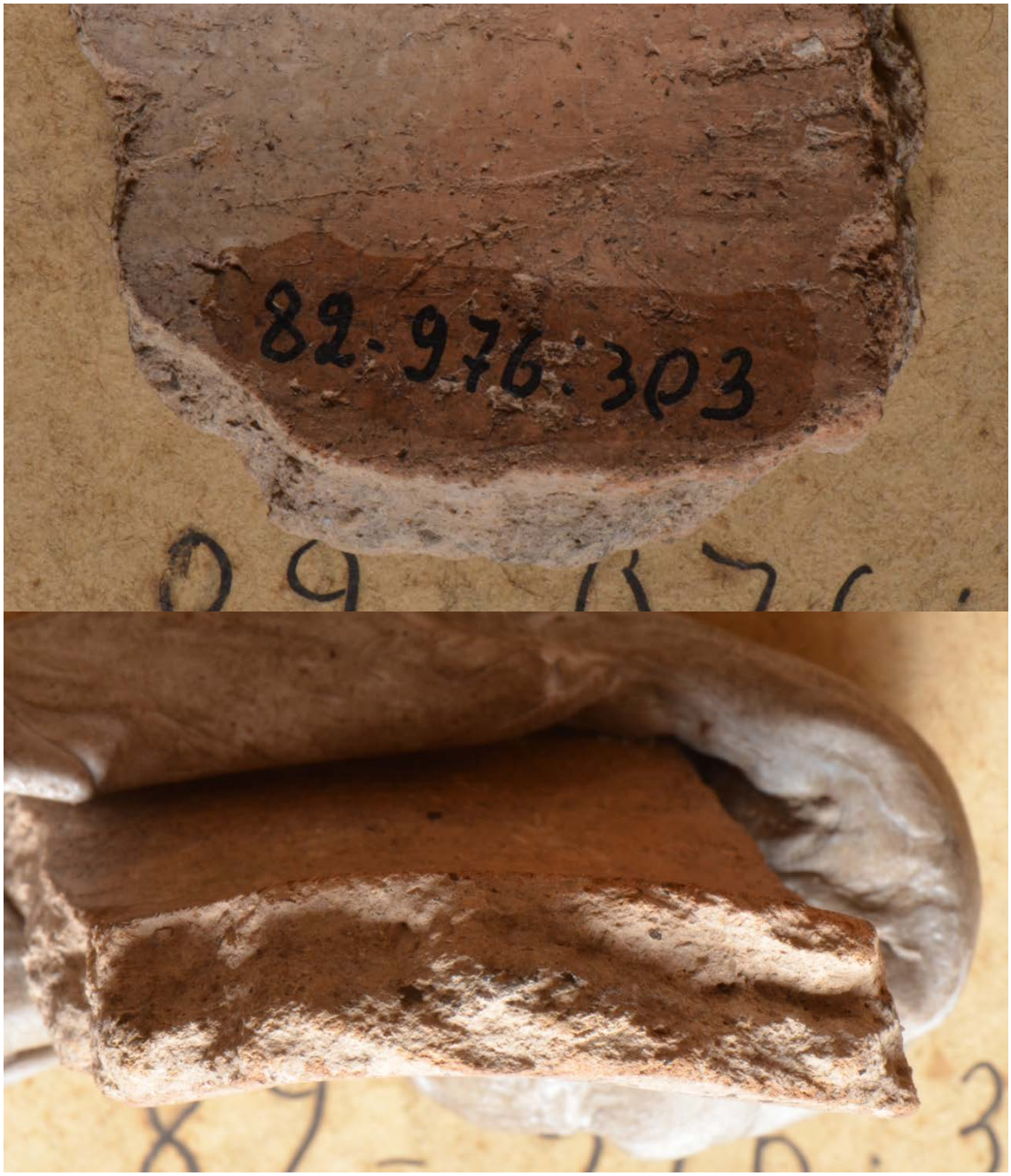


Figure 6.7: A Chalcolithic sherd with a laminated edge demonstrating the slab construction technique (Cat. no. 30; Inv. no. 82-976: 303; Photo: B. Shapardon).

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Figure 6.8: Body sherd from Chobareti showing a textile impression on the interior laminated surface (after Kakhiani et al. 2013, Fig. 52.6).



Figure 6.9: Adjoining spiral basket impressed base fragments from Sioni (Cat. no. 189, 190; Inv. no. 82-976: 305; Photo: B. Shapardon).



Figure 6.10: Spiral basket impressed base fragment from Chinti, Dusheti Storehouse (Photo: B. Shapardon).

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Figure 6.11: Herringbone mat impressed bases from Damtsvari Gora (after Varazashvili 1992, Pl. XXVII.3-5).

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Figure 6.12: Spiral basket impressions on the base of a portable andiron and vessel fragment from Sos Höyük (after Sagona 2018b, Fig. 1.2, Fig. 2.1).

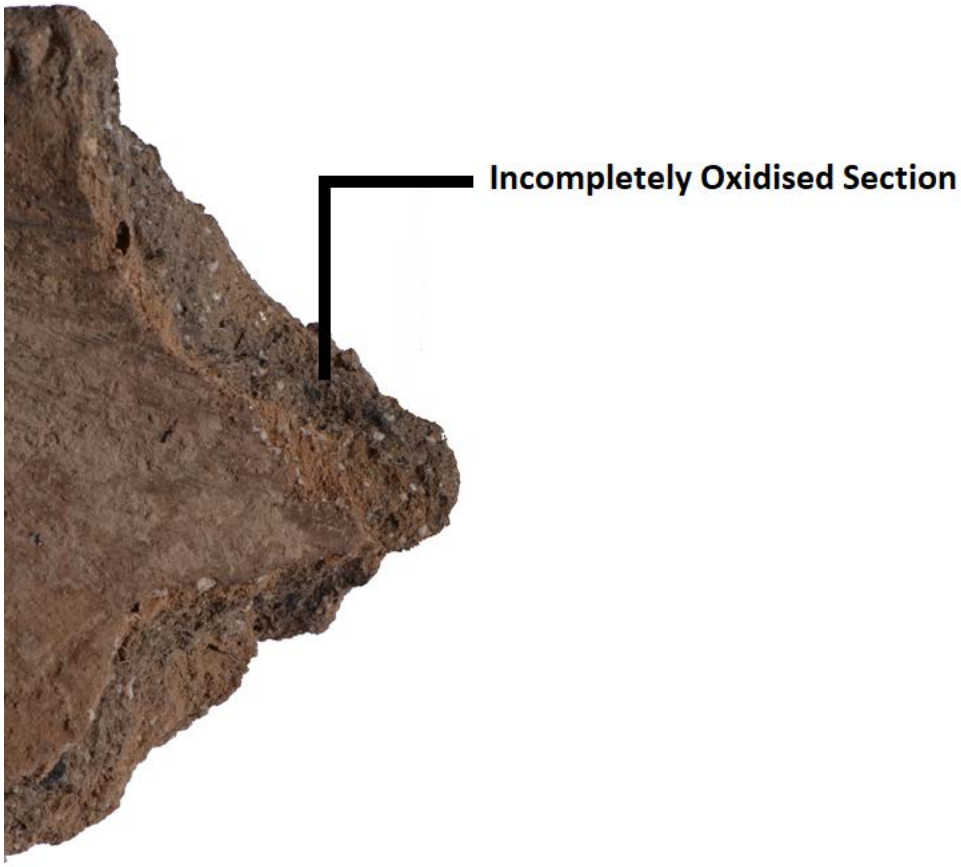


Figure 6.13: Section of a Chalcolithic sherd demonstrating the 'biscuit effect' (Cat. no. 153; Inv. no. 82-976: 1176; Photo: B. Shapardon).

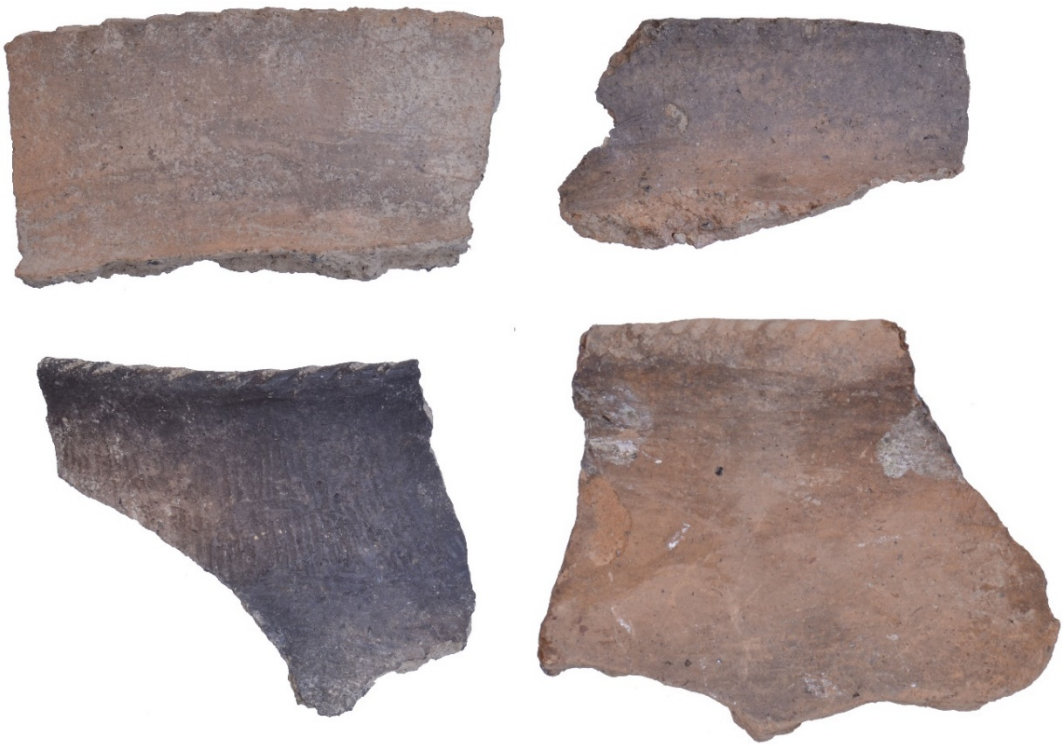


Figure 6.14: A collection of Chalcolithic sherds from Sioni demonstrating a variety of surface colours (Top to bottom and left to right: Cat. no. 136; Inv. no. 82-976: 344; Cat. no. 57; Inv. no. 82-976: 344; Cat. no. 88; Inv. no. 82-976: 380; Cat. no. 155; Inv. no. 82-976: 115; Photo: B. Shapardon).



Figure 6.15: A collection of Chalcolithic sherds from Sioni with blemished surfaces (Top to bottom and left to right: Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 186; Cat. no. 50; Inv. no. 82-976: 174; Cat. no. 223; Inv. no. 82-976: 186; Cat. no. 222; Inv. no. 82-976: 186; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 151; Photo: B. Shapardon).

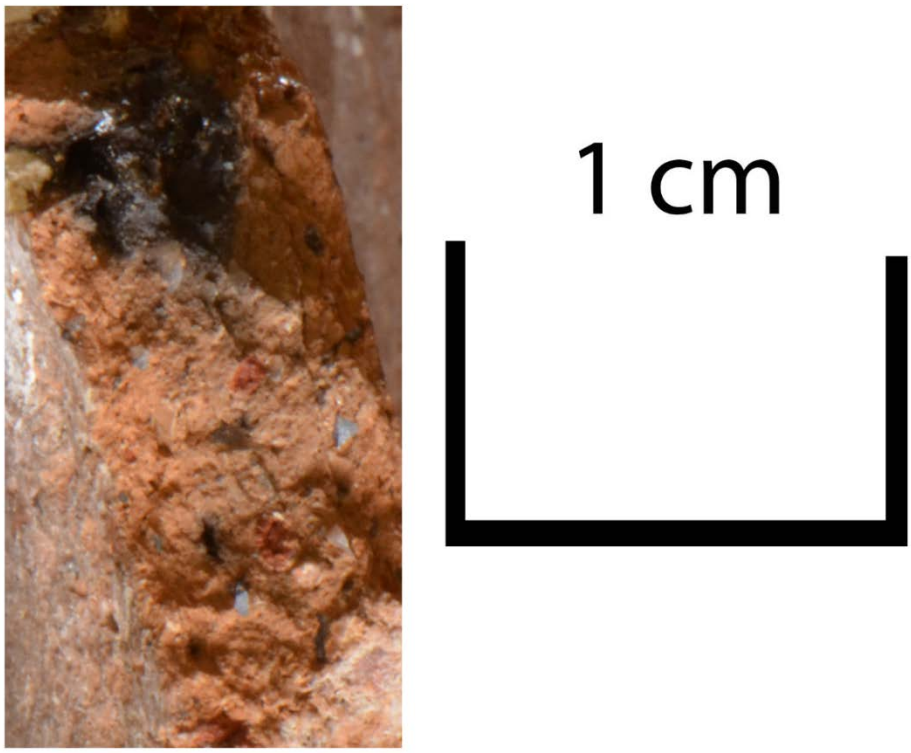


Figure 6.16: Thumbnail showing a section of a Fine ware ceramic (Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 115; Photo: B. Shapardon).

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Figure 6.17: Perforated ceramics from Bavra Ablari (after Varoutsikos et al. 2018, Fig. 8.1-2).

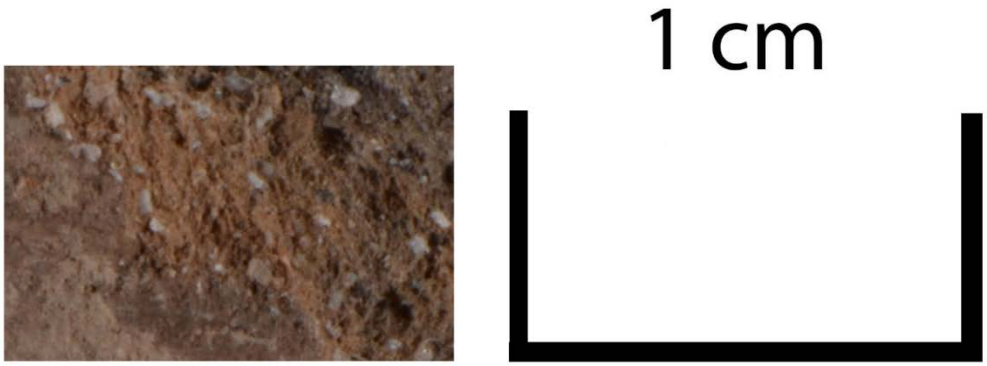


Figure 6.18: Thumbnail showing a section of a Medium ware ceramic (Cat. no. 153; Inv. no. 82-976: 1176; Photo: B. Shapardon).



Figure 6.19: Interior surface of an outward flaring, short necked jar tempered with fine to medium basalt inclusions from the site of Bodorna, Dusheti Storehouse (Photo: B. Shapardon).



Figure 6.20: Thumbnail showing the interior surface of a Coarse ware ceramic (Cat. no. 198, 190; Inv. no. 82-976: 305; Photo: B. Shapardon).



Figure 6.21: Interior surfaces of a base fragment from Sioni showing coarse basalt inclusions (Cat. no. 198, 190; Inv. no. 82-976: 305; Photo: B. Shapardon).



Figure 6.22: Interior surfaces of a base fragment from Zhinvali showing a high concentration of coarse basalt inclusions, Dusheti Storehouse (Photo: B. Shapardon).



Figure 6.23: Thumbnail showing the interior surface of an obsidian tempered sherd (Cat. no. 53; Inv. no. 82-976: 1111; Photo: B. Shapardon).

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Figure 6.24: Base fragment of a tray from Mentesh Tepe showing a high concentration of angular obsidian inclusions (after Palumbi et al. 2018, Fig. 11).

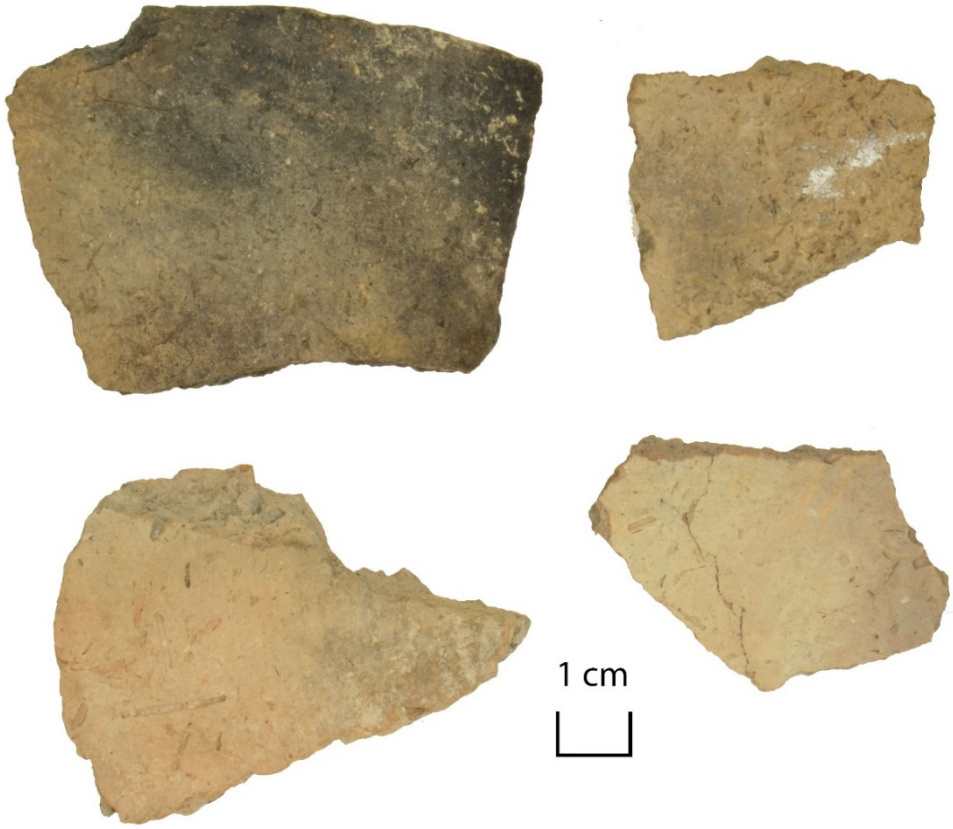


Figure 6.25: A small collection of mixed tempered ceramics from Sioni (Top to bottom and left to right: Cat. no. 144; Inv. no. 82-976: 1142; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 1145; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 1143; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 1143; Photo: B. Shapardon).

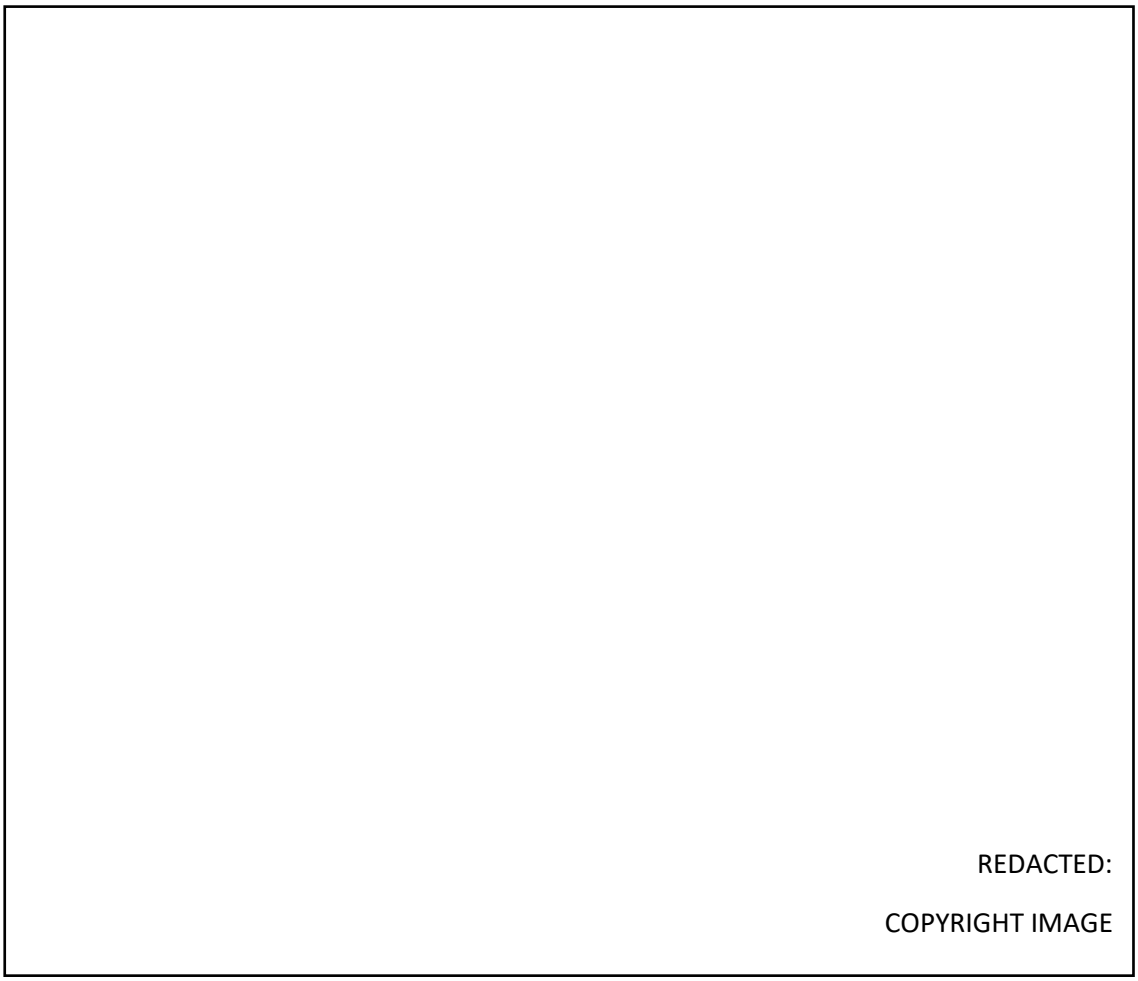


Figure 6.26: A collection of mixed tempered ceramics from Ovçular Tepesi (after Marro et al. 2009, Pl. VI. 1, Pl. VII. 1, Pl. X.1, Pl. XIV.3).



Figure 6.27: Examples of Chaff Tempered ware from Sioni (Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 824; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 440; Photo: B. Shapardon).



Figure 6.28: Plain interior surfaces of grit tempered body sherds from Sioni (Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 582; Photo: B. Shapardon).



Figure 6.29: A collection of body sherds from Sioni with smoothed and slipped exterior surfaces (Top to bottom and left to right: Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 153; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 153; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 153; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 152; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 152; Photo: B. Shapardon).

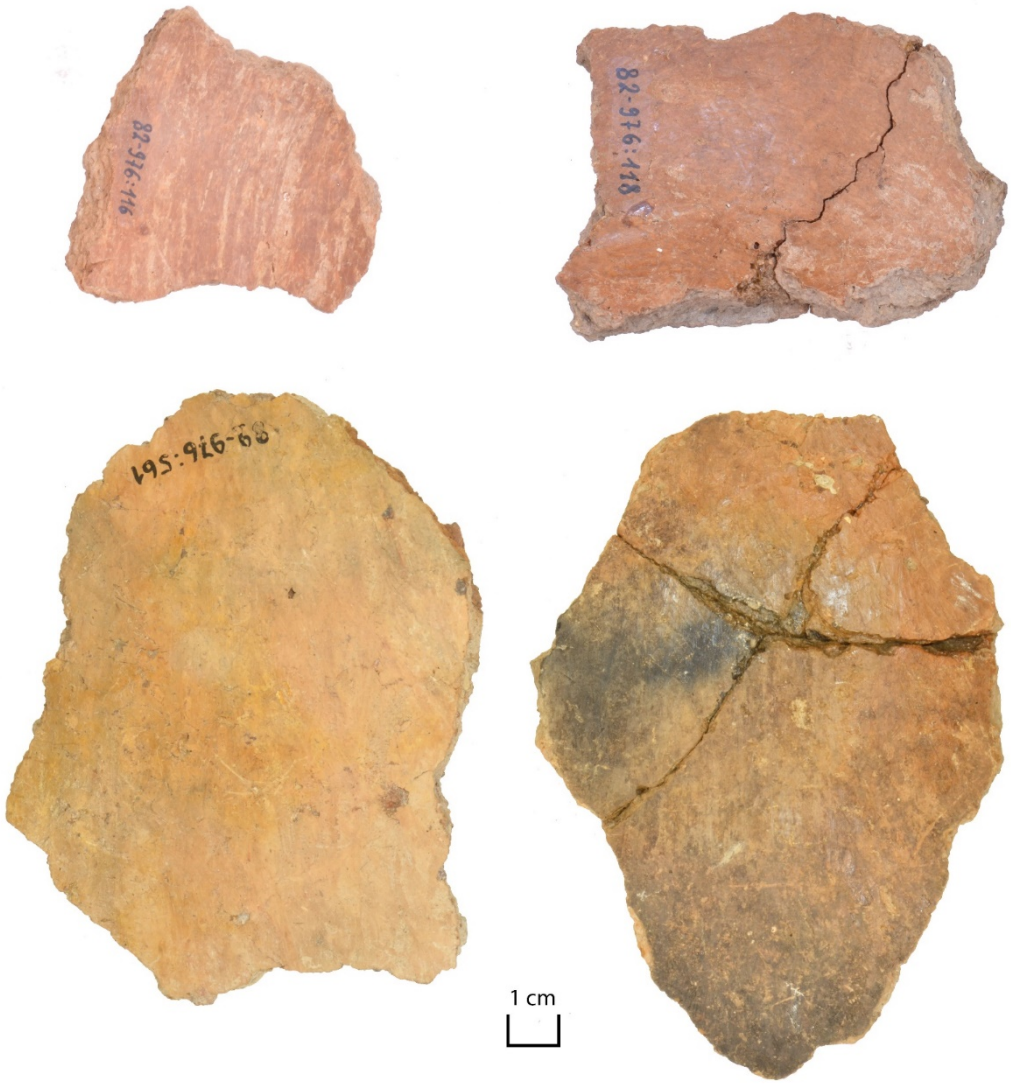


Figure 6.30: A collection of burnished sherds from Sioni (Top to bottom and left to right: Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 116; Cat. no. 186; Inv. no. 82-976: 118; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 561; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 822; Photo: B. Shapardon).



Figure 6.31: Thumbnail of a comb scraped surface of a Chalcolithic rim sherd from Sioni (Cat. no. 179; Inv. no. 82-976: 304; Photo: B. Shapardon).



Figure 6.32: A collection of comb-scraped body sherds from Sioni (Top to bottom and left to right: Cat. no. 283; Inv. no. 82-976: 561; Cat. no. 291; Inv. no. 82-976: 824; Cat. no. 199; Inv. no. 82-976: 221; Cat. no. 280; Inv. no. 82-976: 561; Cat. no. 279; Inv. no. 82-976: 561; Photo: B. Shapardon).

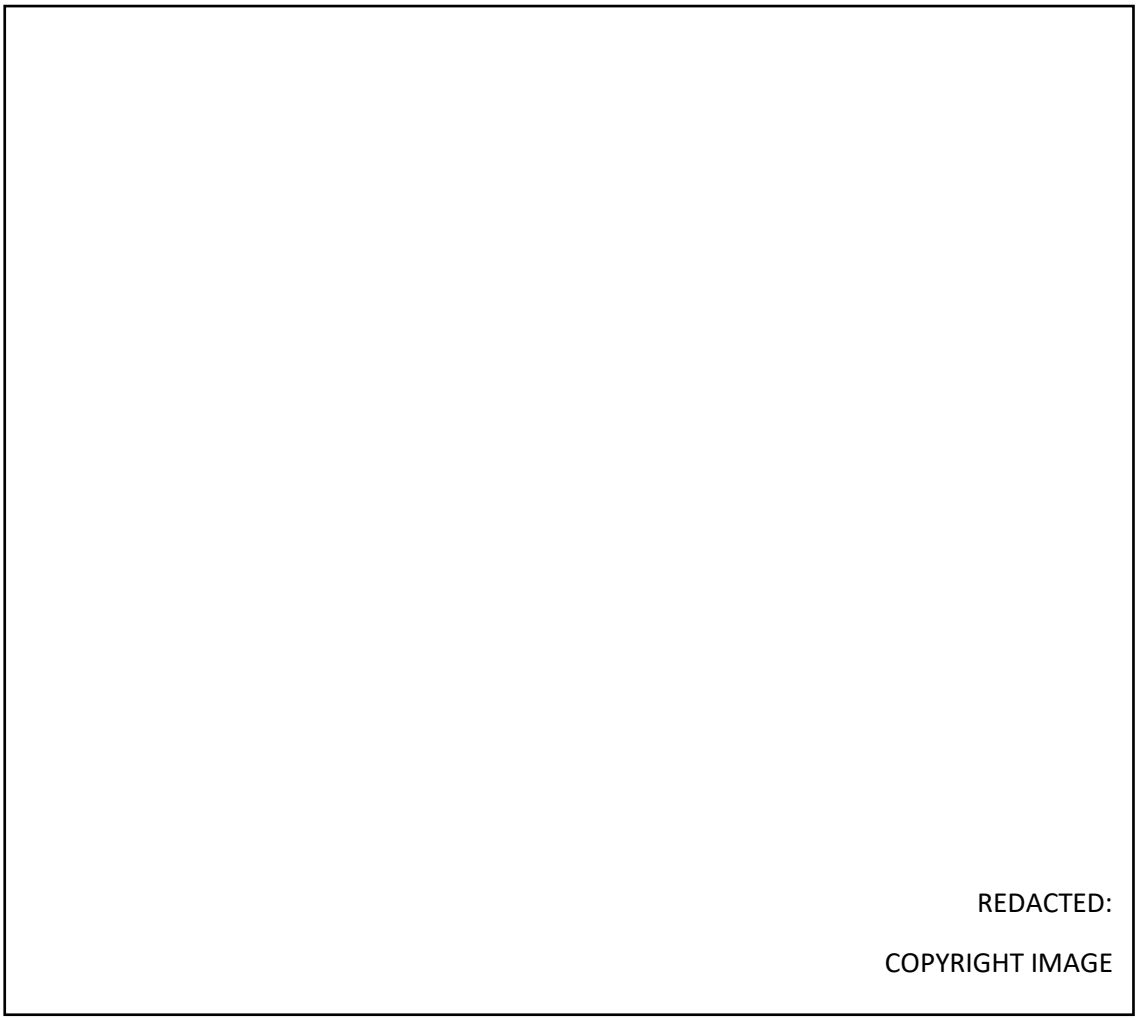


Figure 6.33: Burial vessel from Galyeri demonstrating a carefully comb scraped exterior surface (after Museibli 2014b, Fig. 34.3).

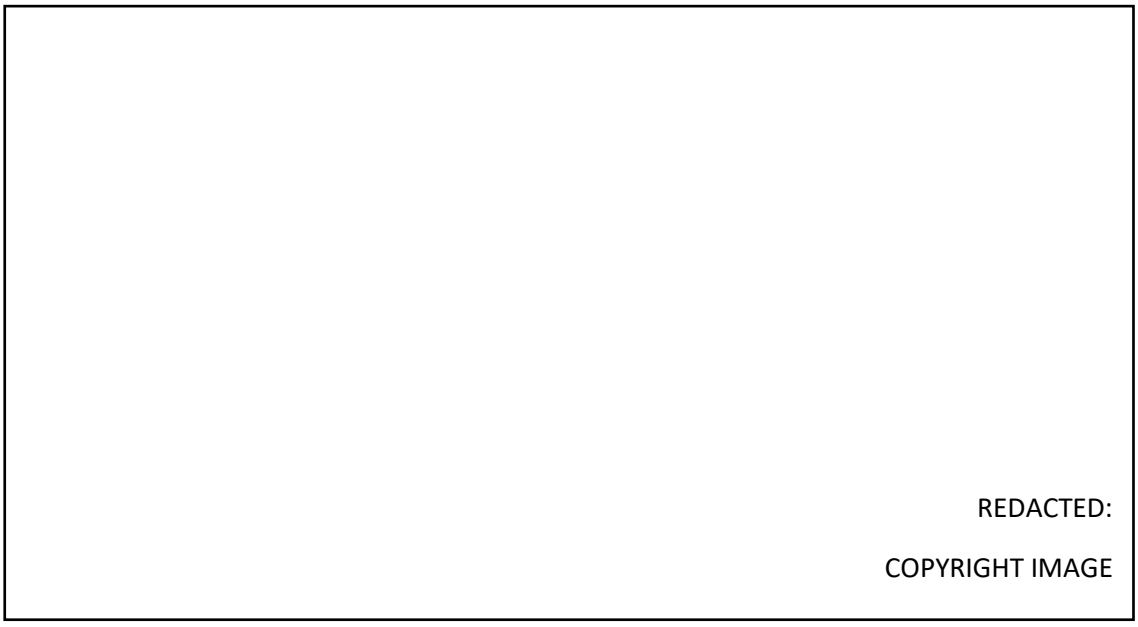


Figure 6.34: Jar 1.1 – Inward leaning, short necked jars from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.8, Fig. 3.7.1, 5).

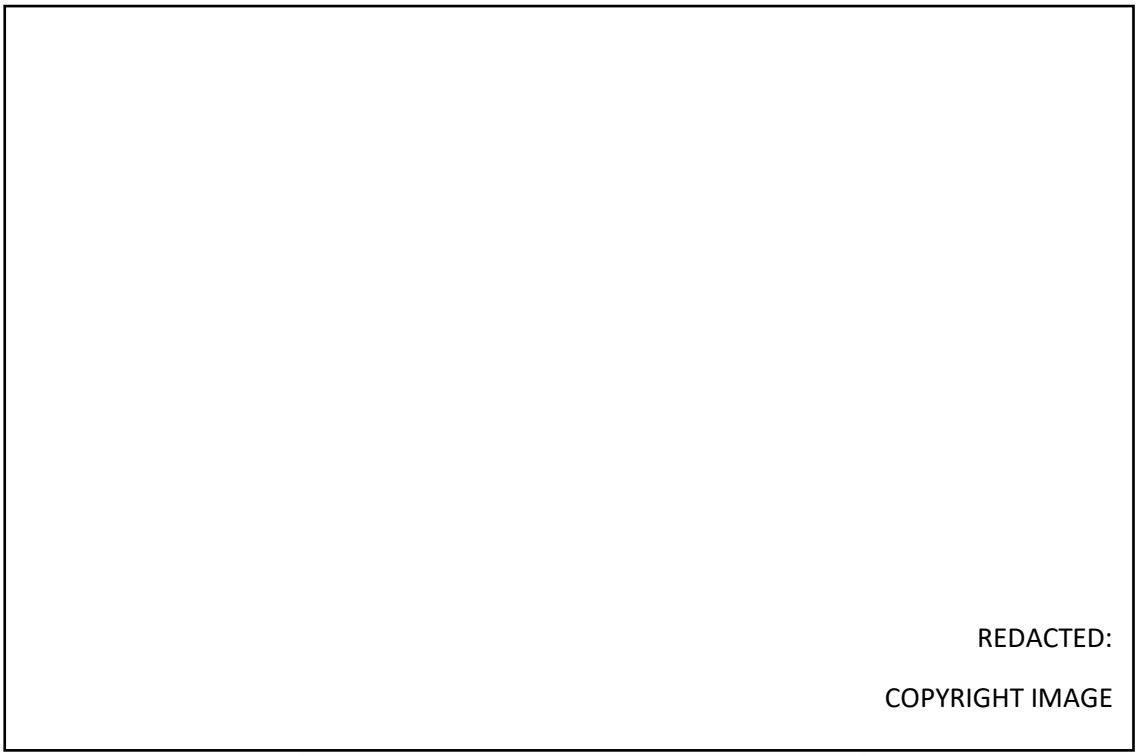


Figure 6.35: Examples of inward leaning, short necked jars from the sites of Aknalitch in Armenia, Agili Dere in Azerbaijan, and Hanago in eastern Anatolia (after Muradyan et al. 2014, Fig. 8.2; Huseynov 2007, Pl. III.5; Marro and Özfırat 2003, Pl. IV.3).

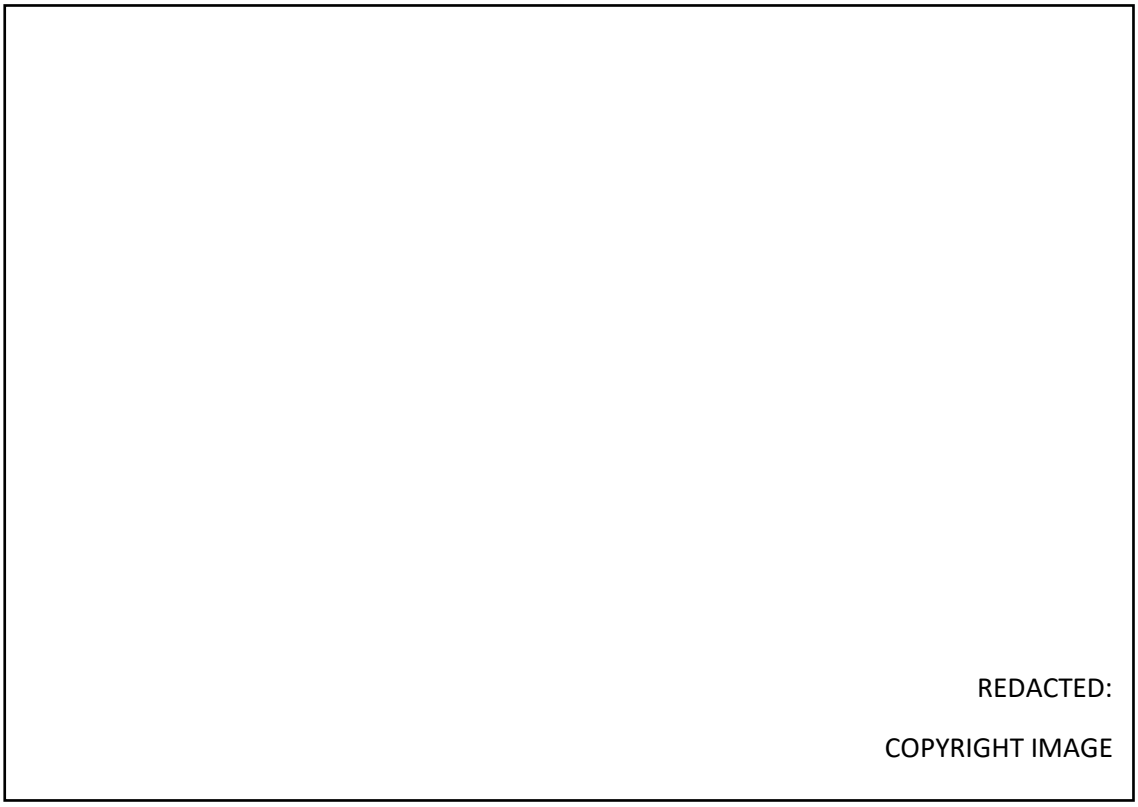


Figure 6.36: Jar 1.2 – Vertical necked jars from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.2, Fig, 3.7.5, 10, 12).

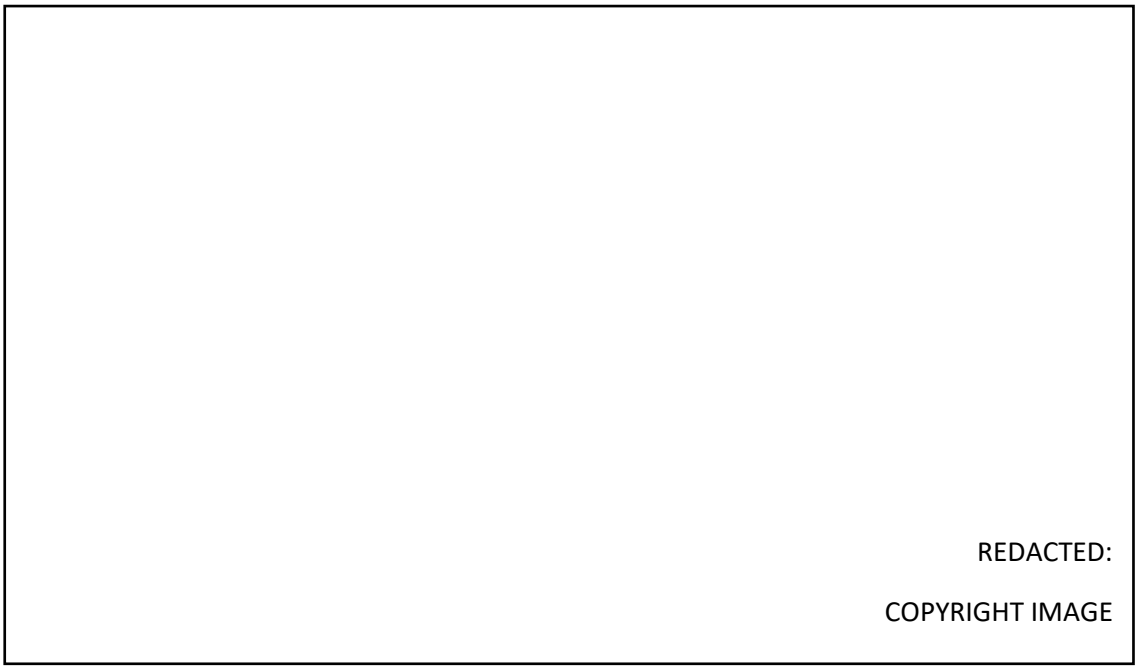


Figure 6.37: Jar 1.3 – Outward flaring jars with a gentle curvature between the neck and the shoulder from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.4, Fig. 3.7.9, 14).

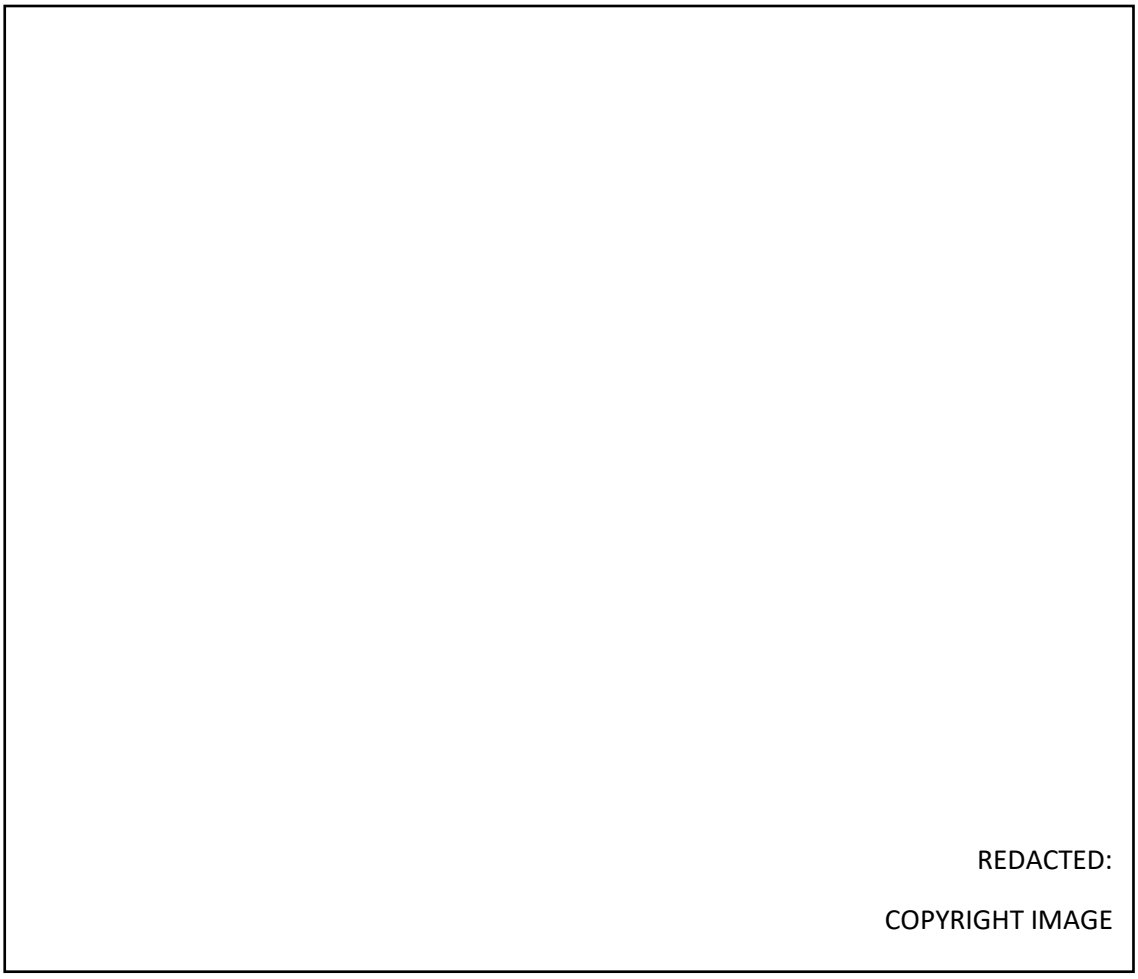


Figure 6.38: Examples of outward flaring jars with a gentle curvature between the neck and the shoulder from Ovçular Tepesi (after Marro et al. 2009, Pl. XVII.3-6).

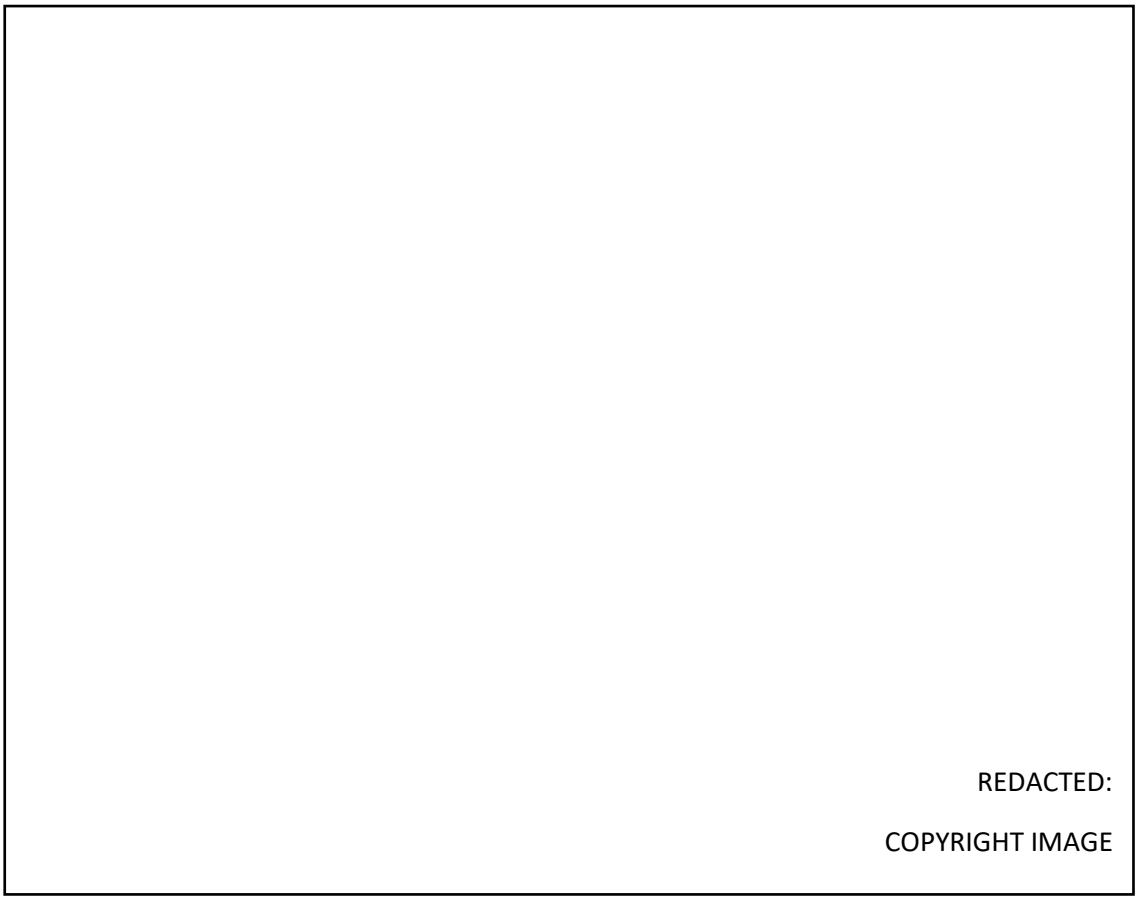


Figure 6.39: Jar 1.4 – Outward flaring jars with a strong curvature between the neck and the shoulder from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.6-7, Fig. 3.7.7, Fig. 3.8.2-3).

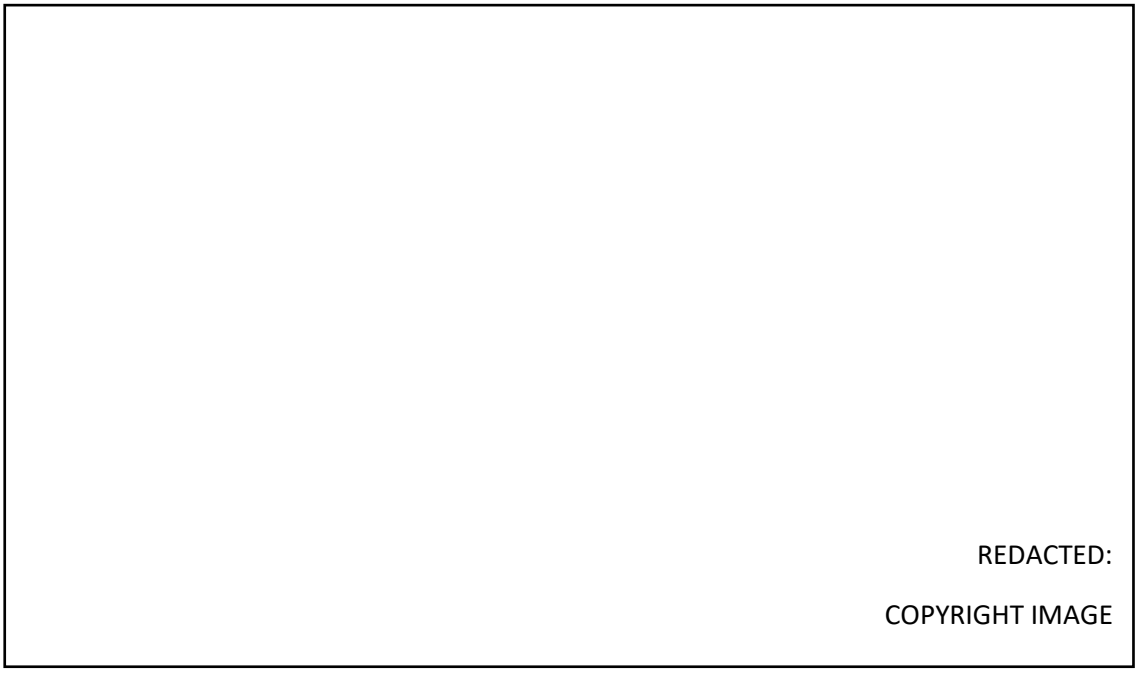


Figure 6.41: Examples of outward flaring jars with a strong curvature between the neck and the shoulder from Ovçular Tepesi and Mentesh Tepe (after Marro et al. 2009, Pl. XVII.8; Lyonnet et al. 2012, Fig. 148.3).

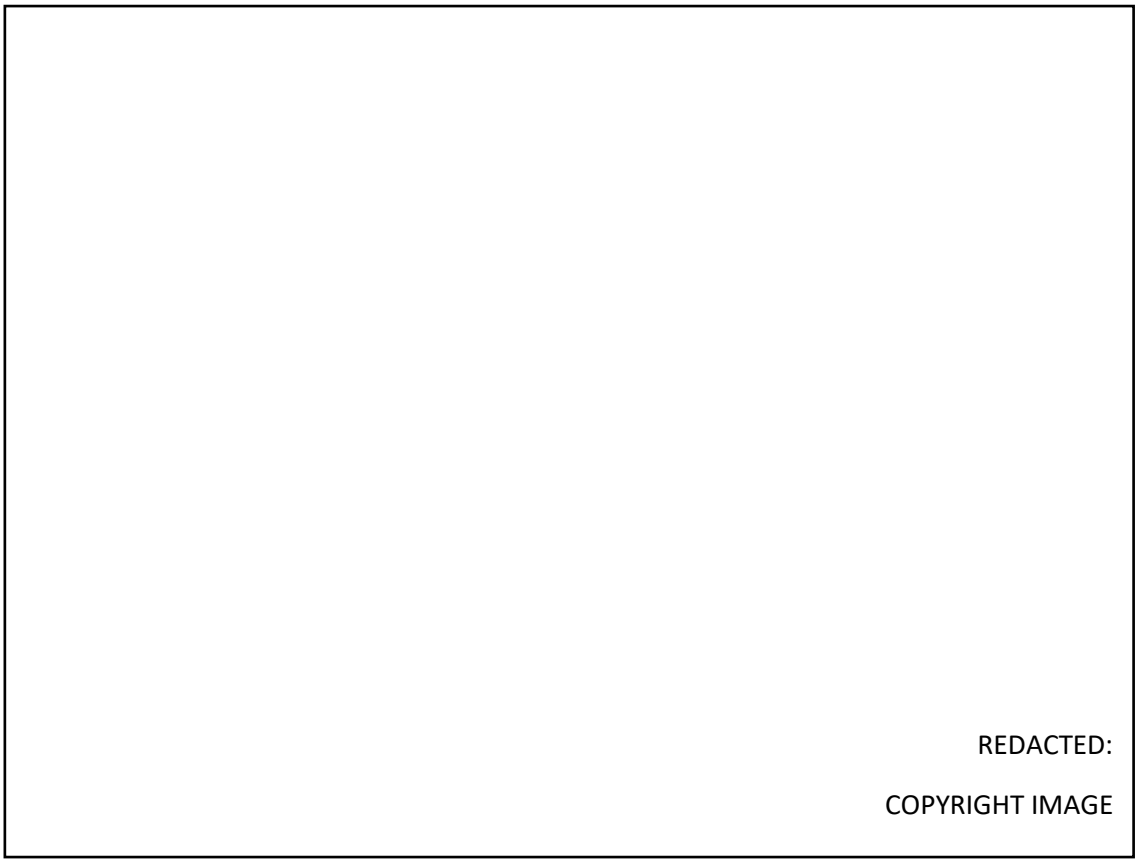


Figure 6.42: Jar 1.5 – Vertical necked jars with a distinct offset at the juncture between the neck and the shoulder from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.1., Fig. 3.7.2-3, Fig. 3.8.1, Fig. 3.9.5).

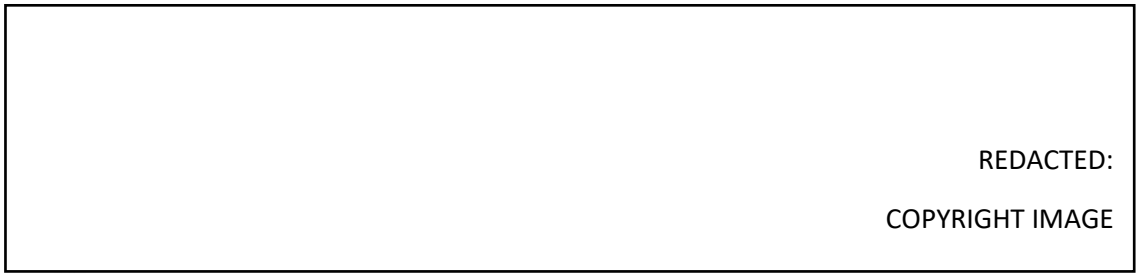


Figure 6.43: Example of a vertical necked jar with a distinct offset at the juncture between the neck and the shoulder from the site of Aknalitch (after Muradyan et al. 2014, Fig. 8.1).

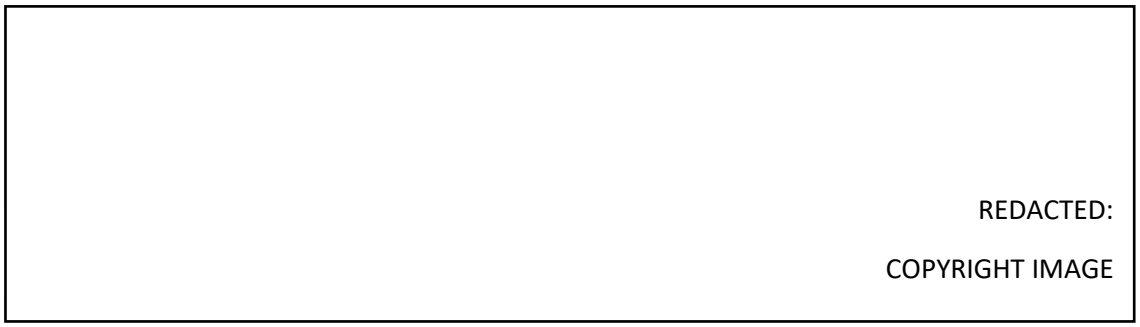


Figure 6.44: Example of a vertical necked jar with a distinct offset at the juncture between the neck and the shoulder from the site of Hanago (after Marro 2008, Fig. 1.4).

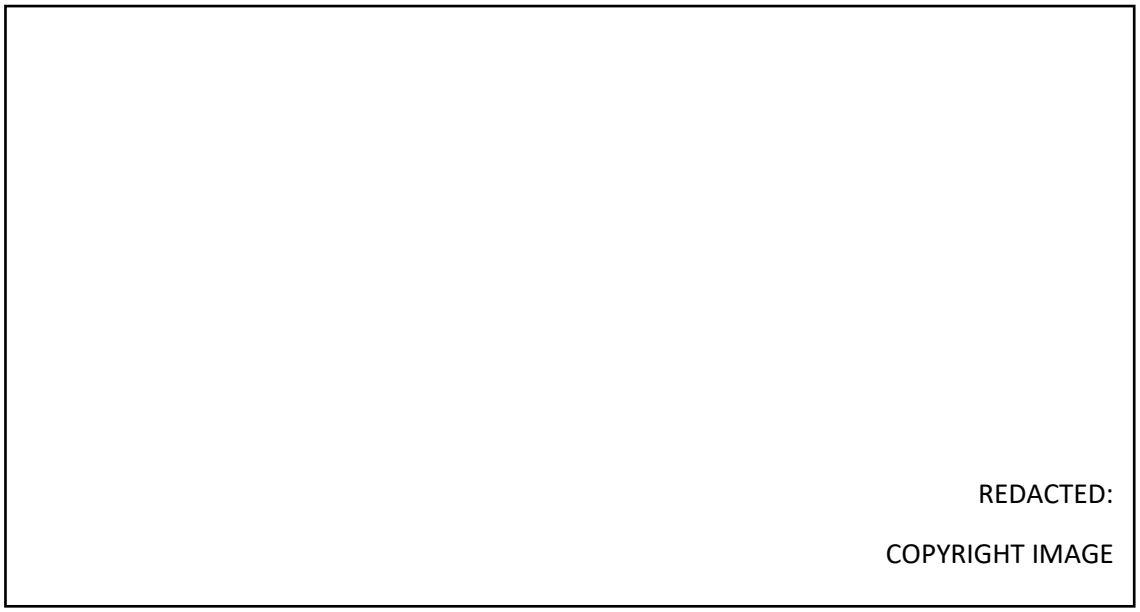


Figure 6.45: Jar 1.6 – Outward flaring jars with a sharp juncture between the neck and the shoulder from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.9, Fig. 3.8.4, Fig. 3.9.6).

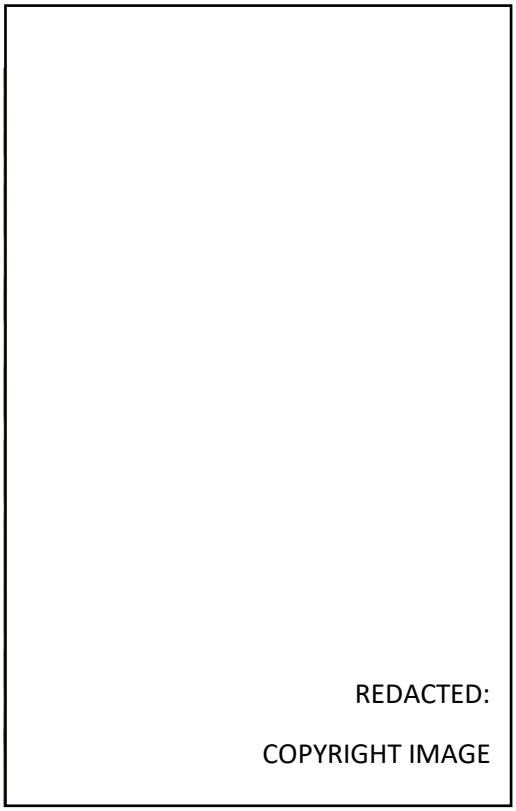


Figure 6.46: A partially reconstructed example of an outward flaring jar with a sharp juncture between the neck and the shoulder from Dzedzvebi IV.3 (after Gambashidze et al. 2016b, 110).

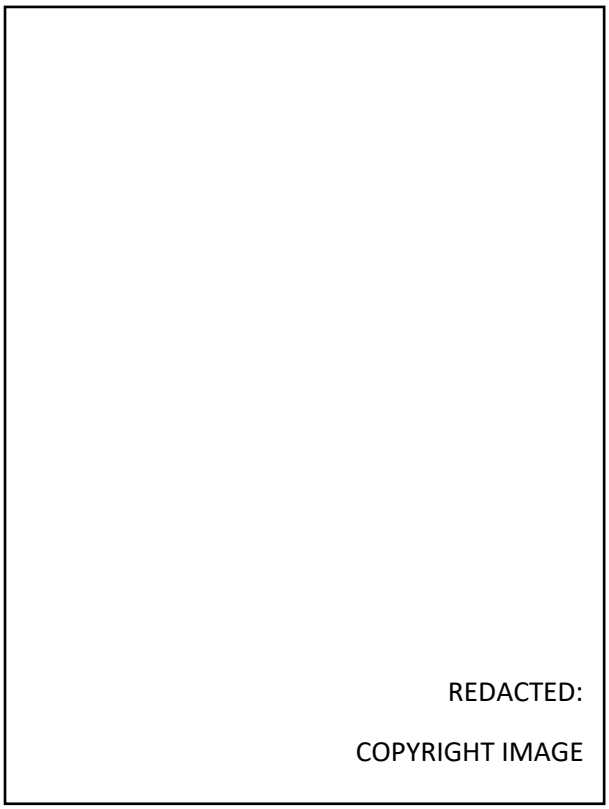


Figure 6.47: An example of a short necked, outward flaring jar with a sharp juncture between the neck and the shoulder from Poylu II (after Museibli 2008b, Pl. 6.3).

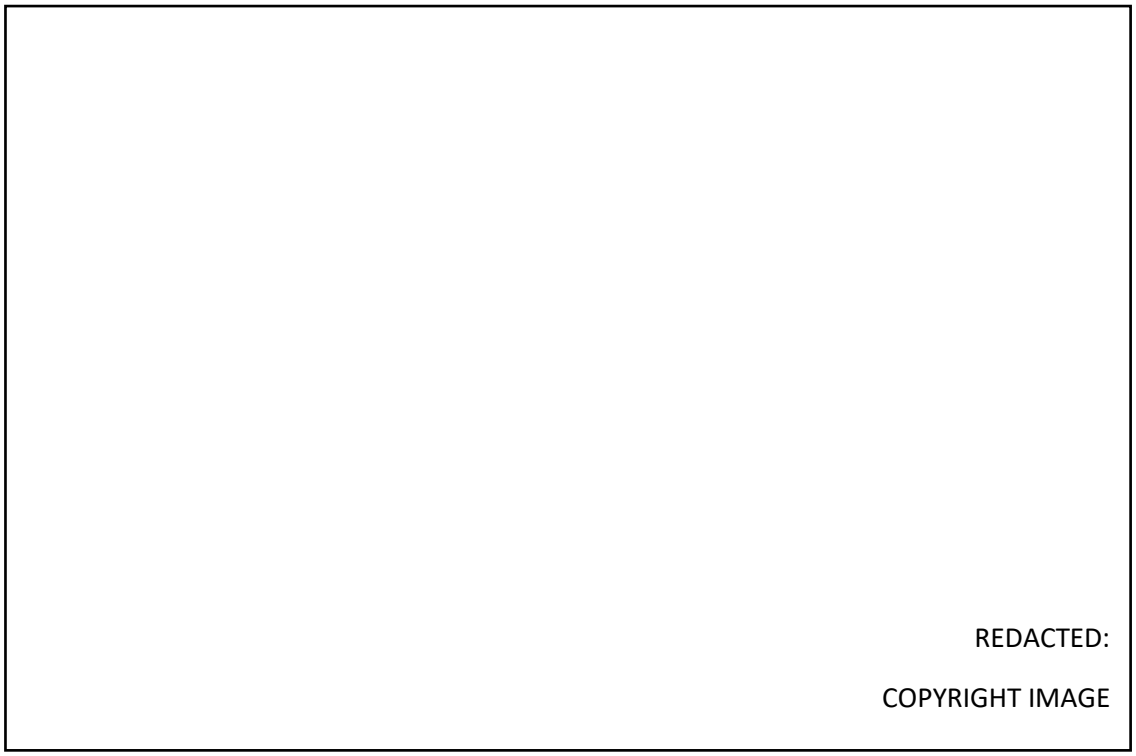


Figure 6.48: Jar 1.7 – Crinkled rim jars from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.5, Fig. 3.7.6,11).

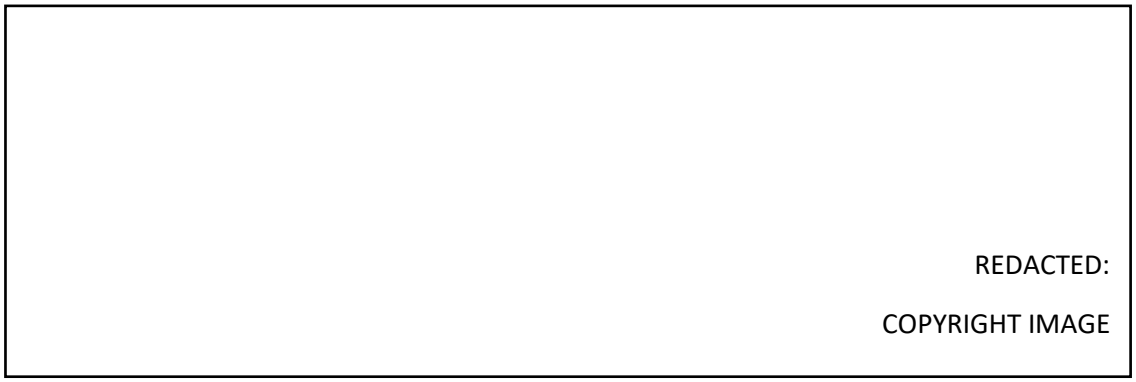


Figure 6.49: Rim fragments of obsidian tempered, crinkled rim jars from Aknalitch (after Muradyan et al. 2014, Fig. 7.1).

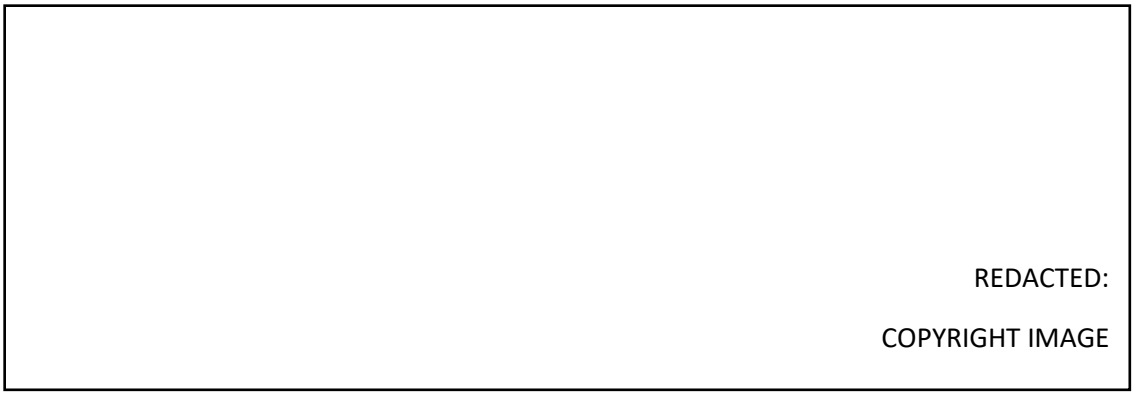


Figure 6.50: Crinkled rim jar fragments from Ovçular Tepesi (after Marro et al. 2009, Pl. XVIII.1, 3).

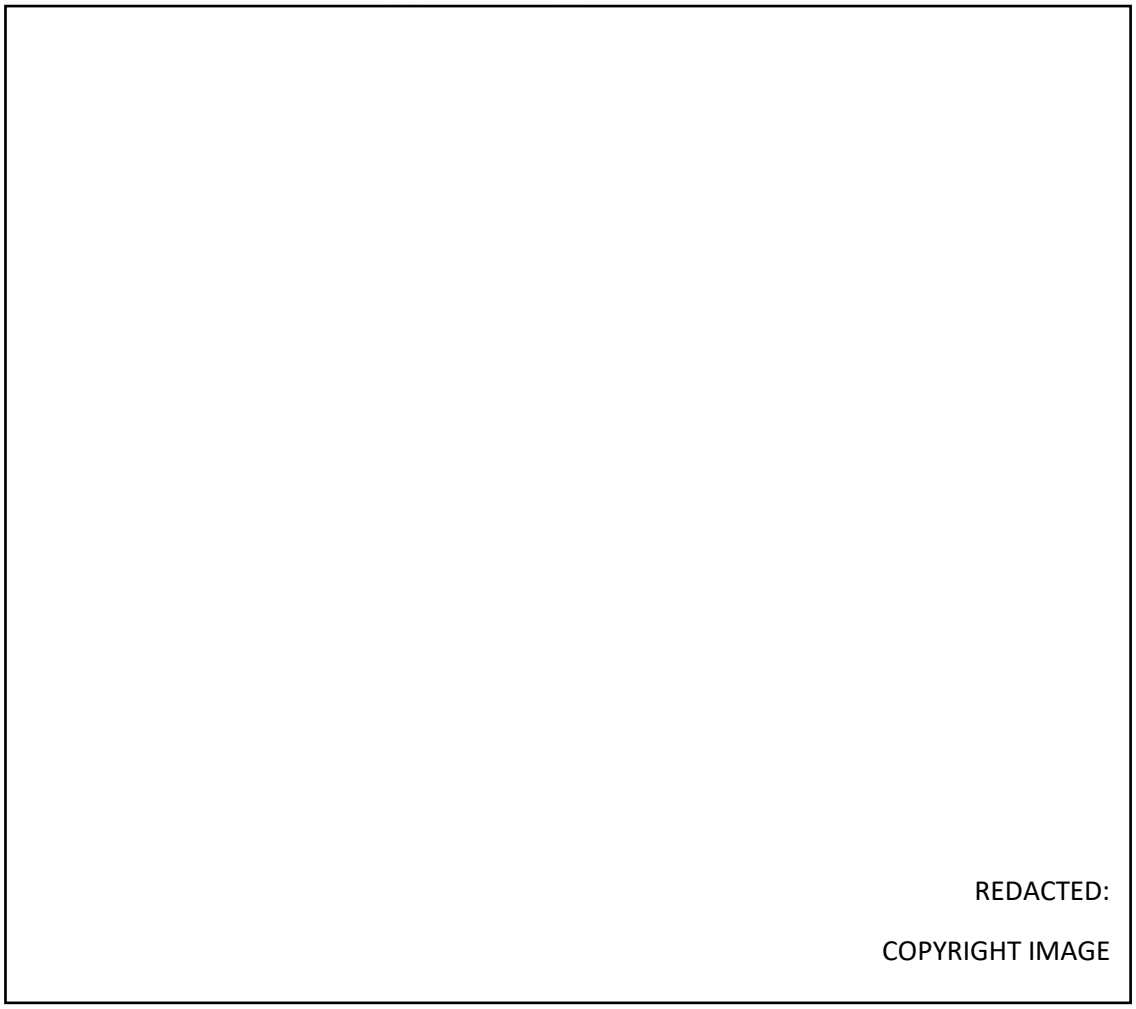


Figure 6.51: Jar 2 – Sinuous jars from Sioni (after Kiguradze and Sagona 2003, Fig. 3.6.3, Fig. 3.7.8, 13, Fig. 3.9.1).

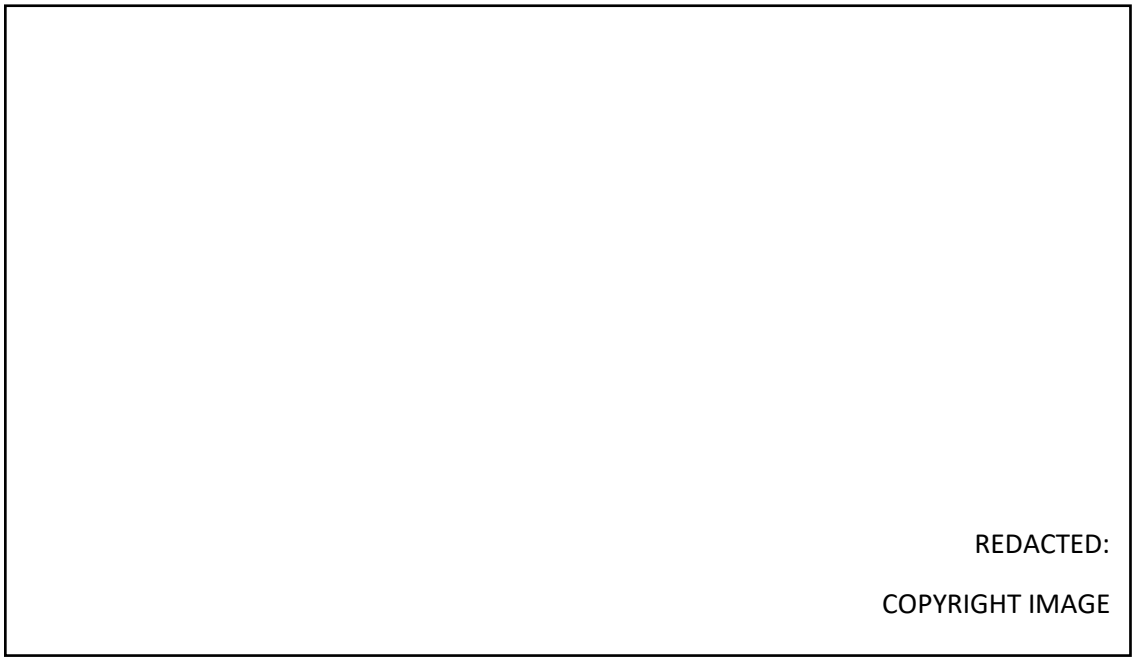


Figure 6.52: Sinuous jars from Shavtskala and Damtsvari Gora (after Kiguradze and Sagona 2003, Fig. 3.11.2, Fig. 3.14.3).

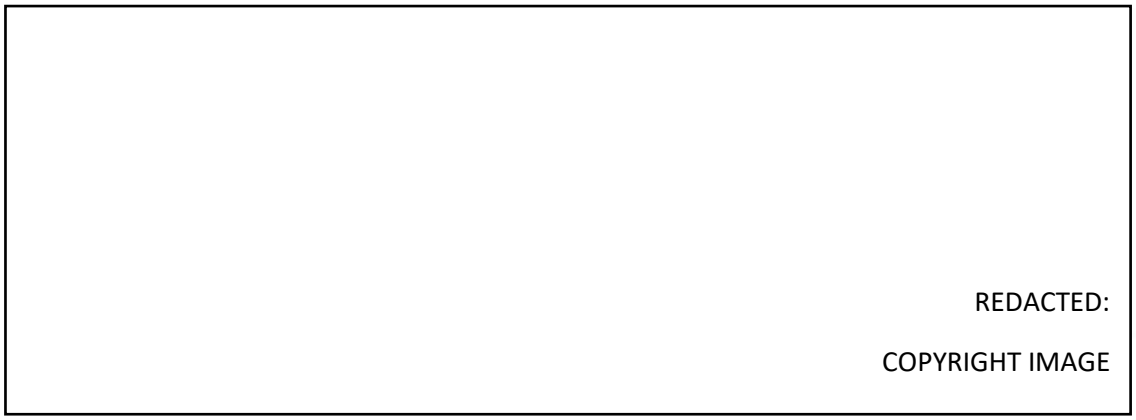


Figure 6.53: A fragment of a sinuous jar from the site of Hanago (after Marro 2008, Fig. 1.5).

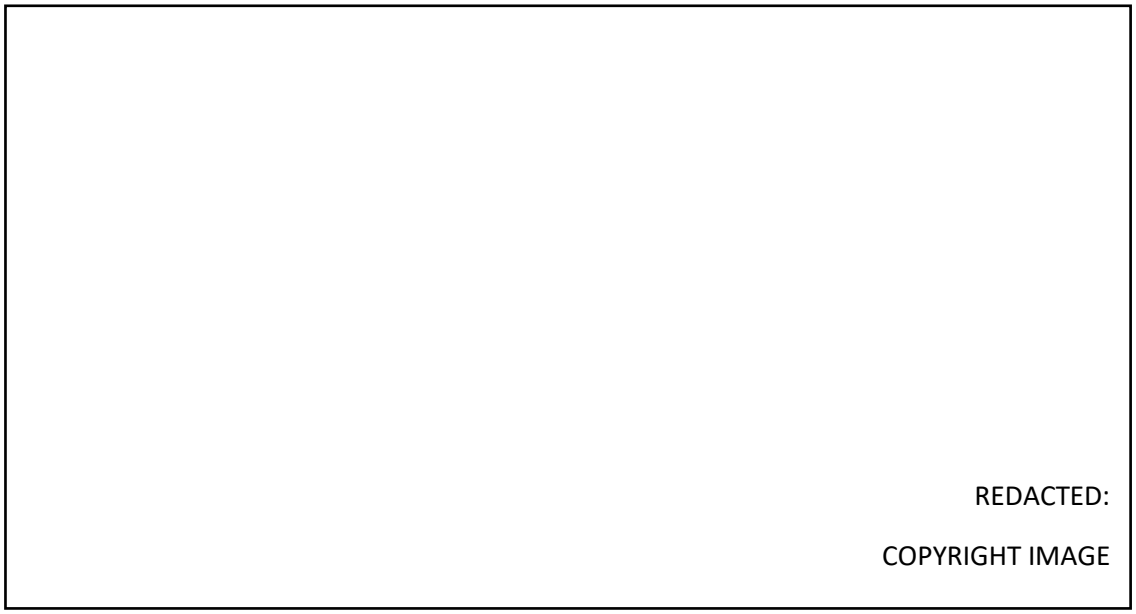


Figure 6.54: Jar 3 – Hole-mouthed jar fragments from Sioni (after Kiguradze and Sagona 2003, Fig. 3.8.5-7).

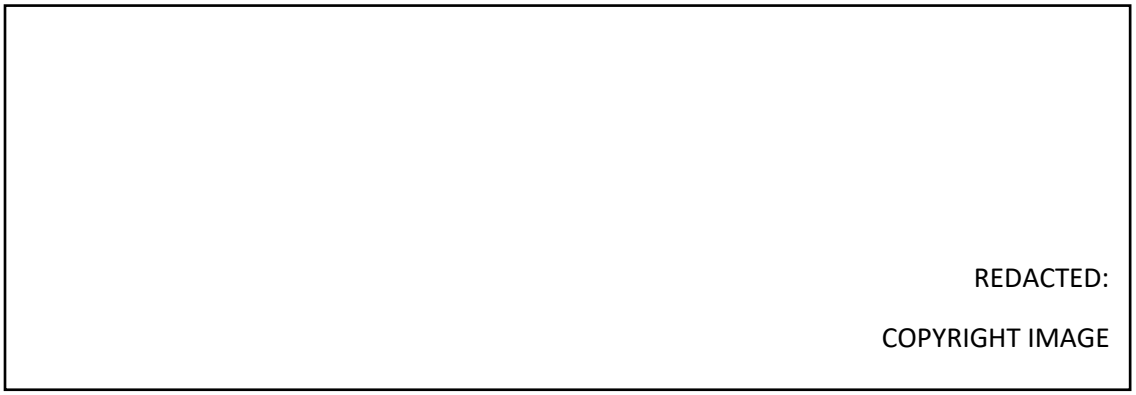


Figure 6.55: Hole-mouthed jar fragments from the Kitchen Ware assemblage of Mentesh Tepe, Period III (after Lyonnet et al. 2012, Fig. 148.8-9, 11).



Figure 6.56: Pan fragment from Sioni (Cat. no. 185; Inv. no. 82-976: 987; Photo: B. Shapardon).

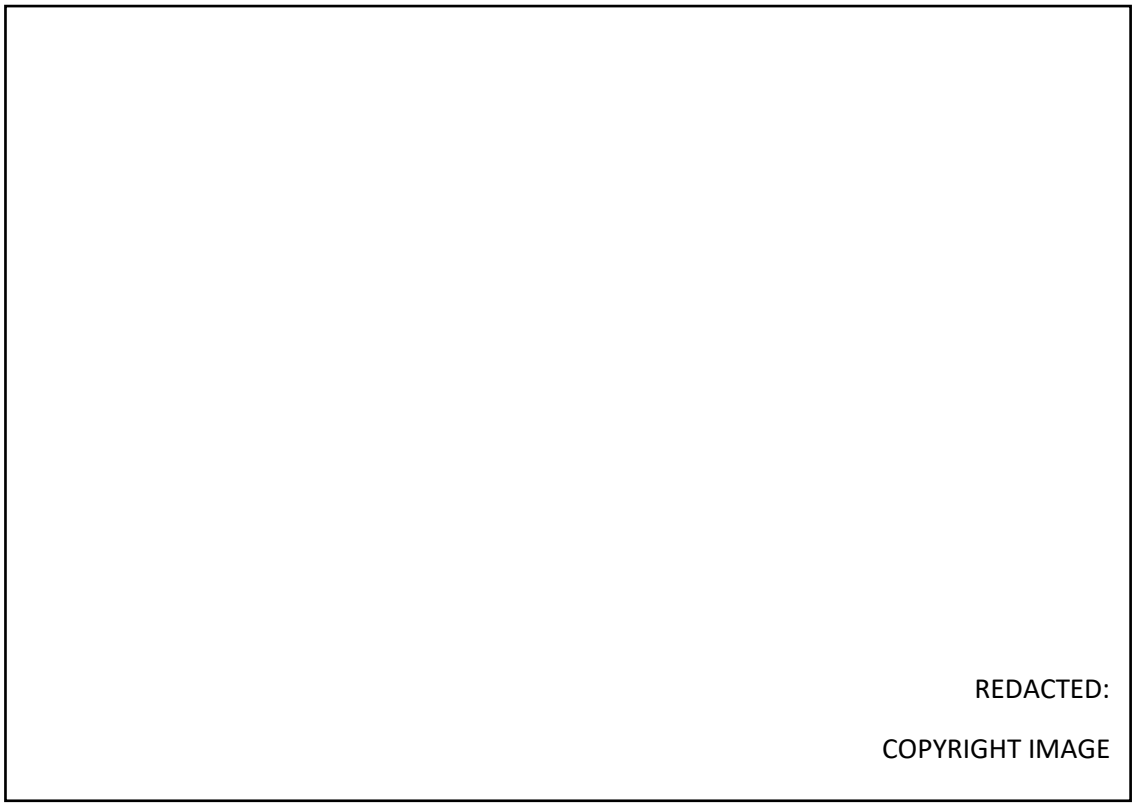


Figure 6.57: Pan fragments from Mentesh Tepe, Period III (after Lyonnet 2018, Fig. 10).

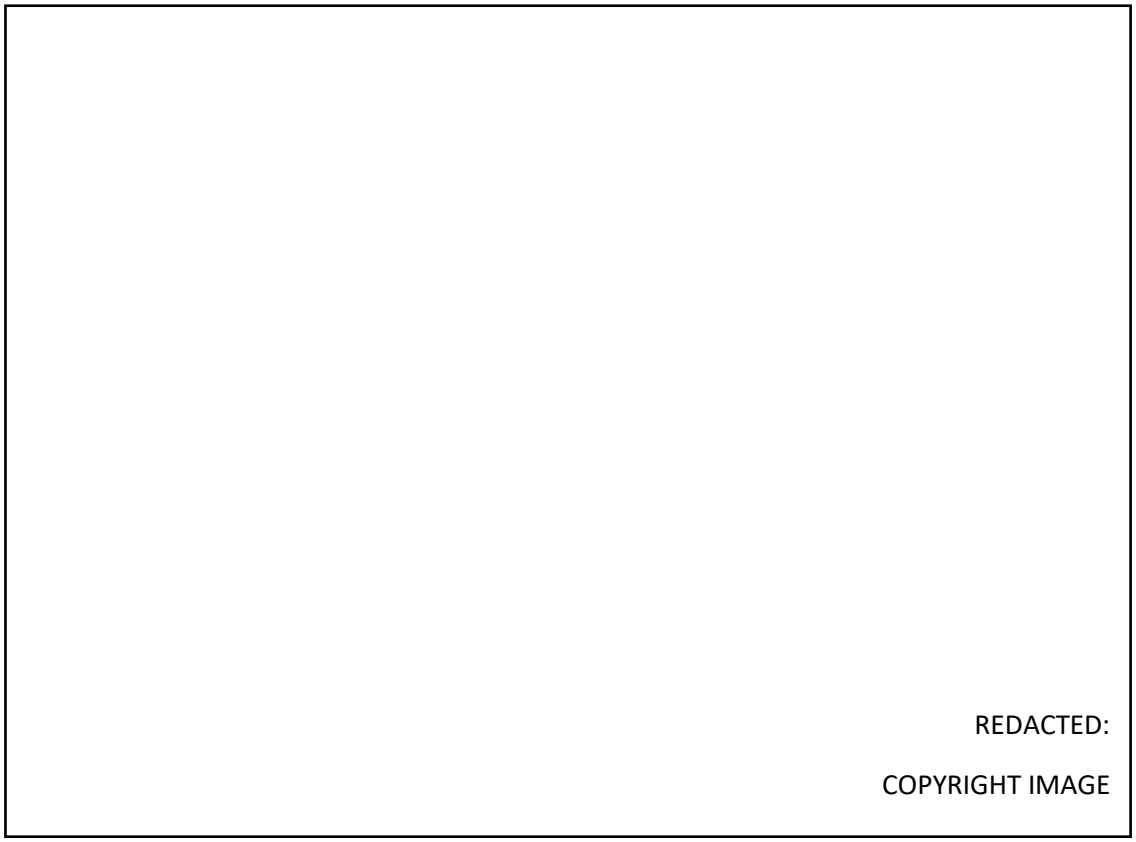


Figure 6.58: Perforated tray fragments from Alazani III and Damtsvari Gora (after Kiguradze and Sagona 2003, Fig. 3.13.1-2).

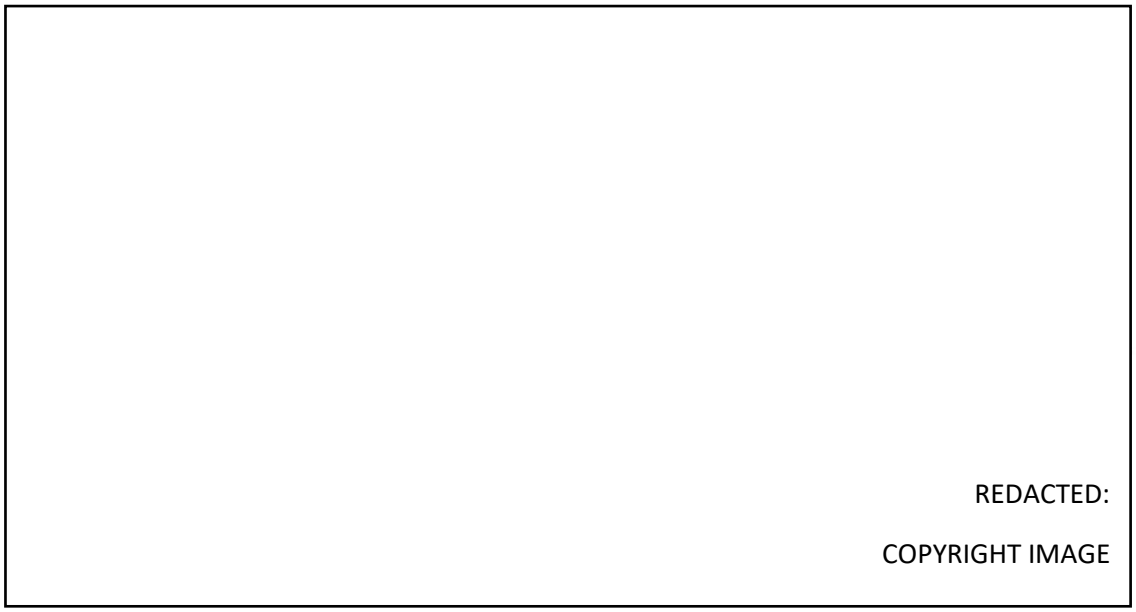


Figure 6.59: Partially reconstructed tray from Mentesh Tepe, Period III, with a comb scraped exterior surface (after Lyonnet 2018, Fig. 11.3).

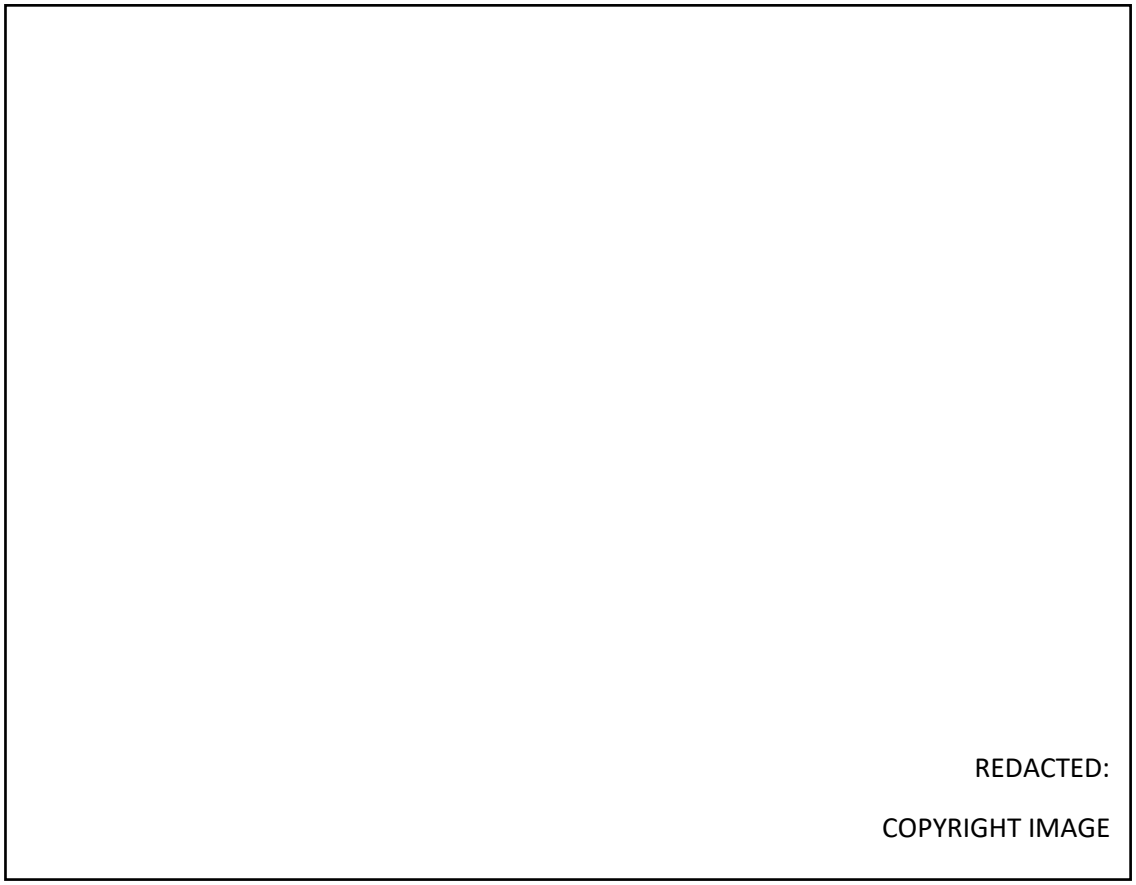


Figure 6.60: Tray fragment from Horizon I of the Areni-1 cave complex (after Zardaryan 2014, Fig. 3.1).

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Figure 6.61: Tray fragments from Köhne Pāsgāh Tepesi and Kul Tepe/Hadishahr (after Maziar 2010, Fig. 7.3-4; Abedi et al. 2014, Fig. 29.2).



Figure 6.62: Partially reconstructed tray with a scooped front from Berikldeebi on display at the Georgian National Museum in Tbilisi (Photo: B. Shapardon).

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Figure 6.63: Tray with a scooped front from the site of Galyugai I in the northern Caucasus (after Korenevskii 2004, Fig. 5.17).

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Figure 6.64: Tray fragments recovered from Pit 4 at Chobareti (after Kakhiani et al. 2013, Fig. 37.4-5).



Figure 6.65: Profile of a flat base sherd from Sioni (Cat. no. 193; Inv. no. 82-976: 822; Photo: B. Shapardon).

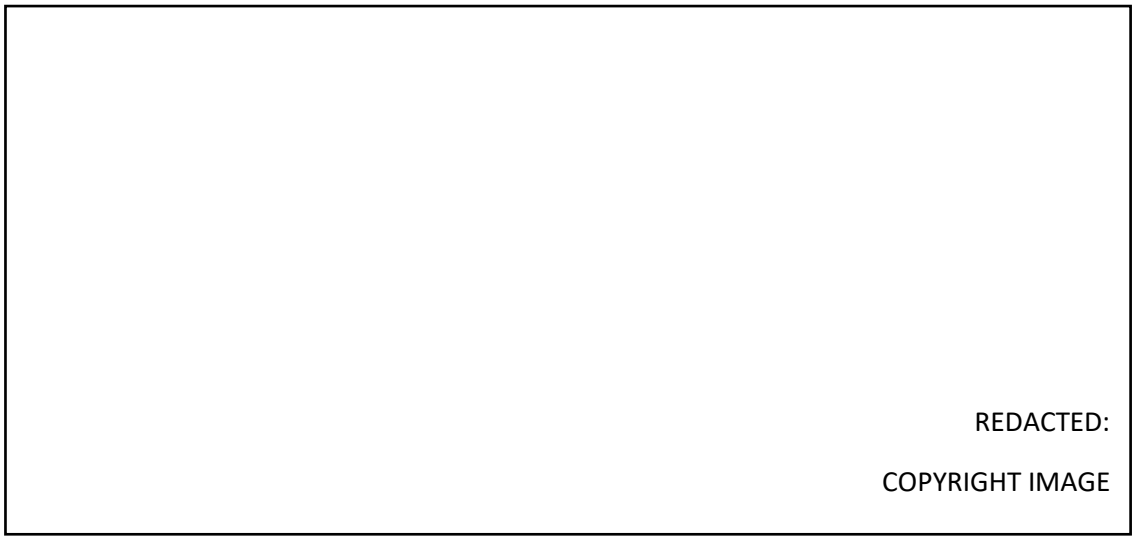


Figure 6.66: A collection of flat and heeled bases from Tandistkaro 1 (after Chikovani 1999, Fig. IV. 63-64, 69).

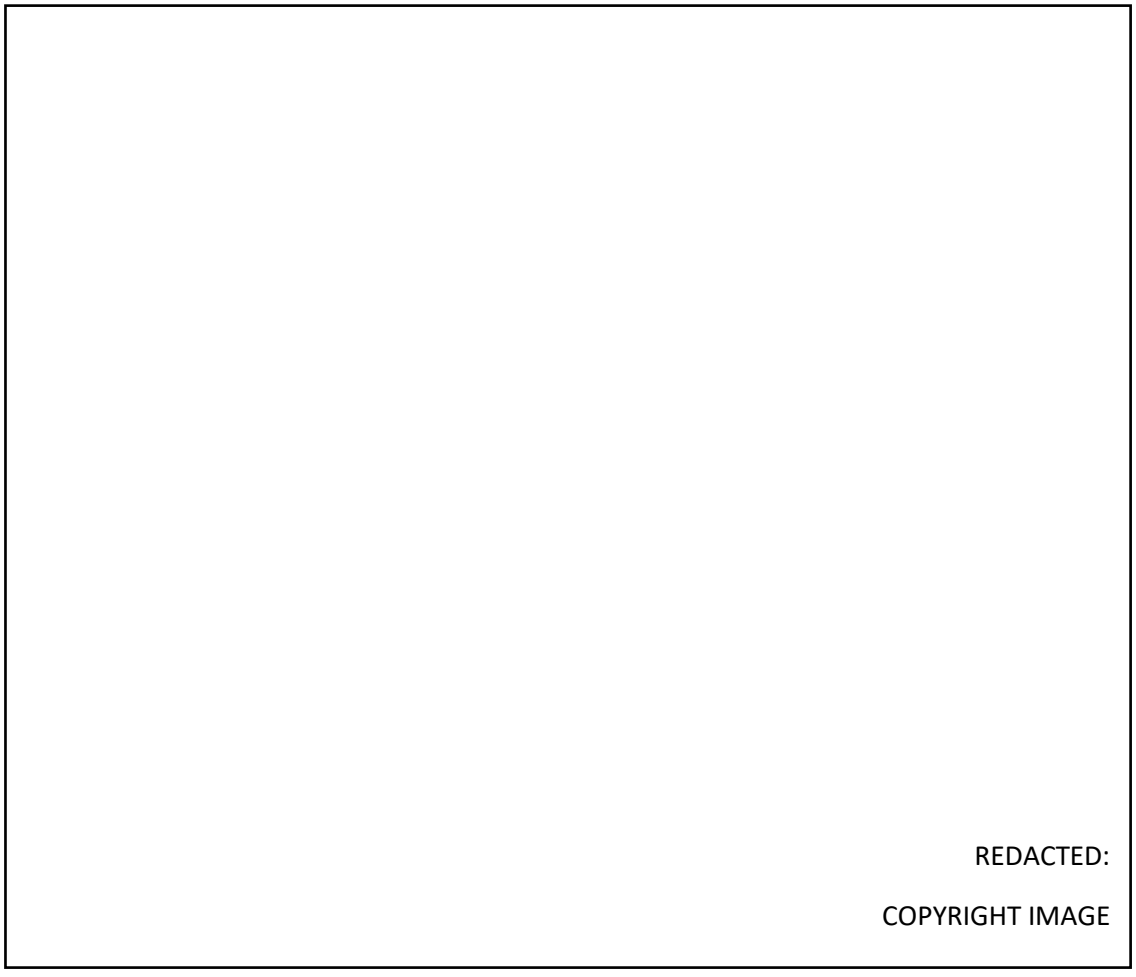


Figure 6.67: Base fragments from Dormishkanlu (after Maziar 2015, Fig. 6.4-6).

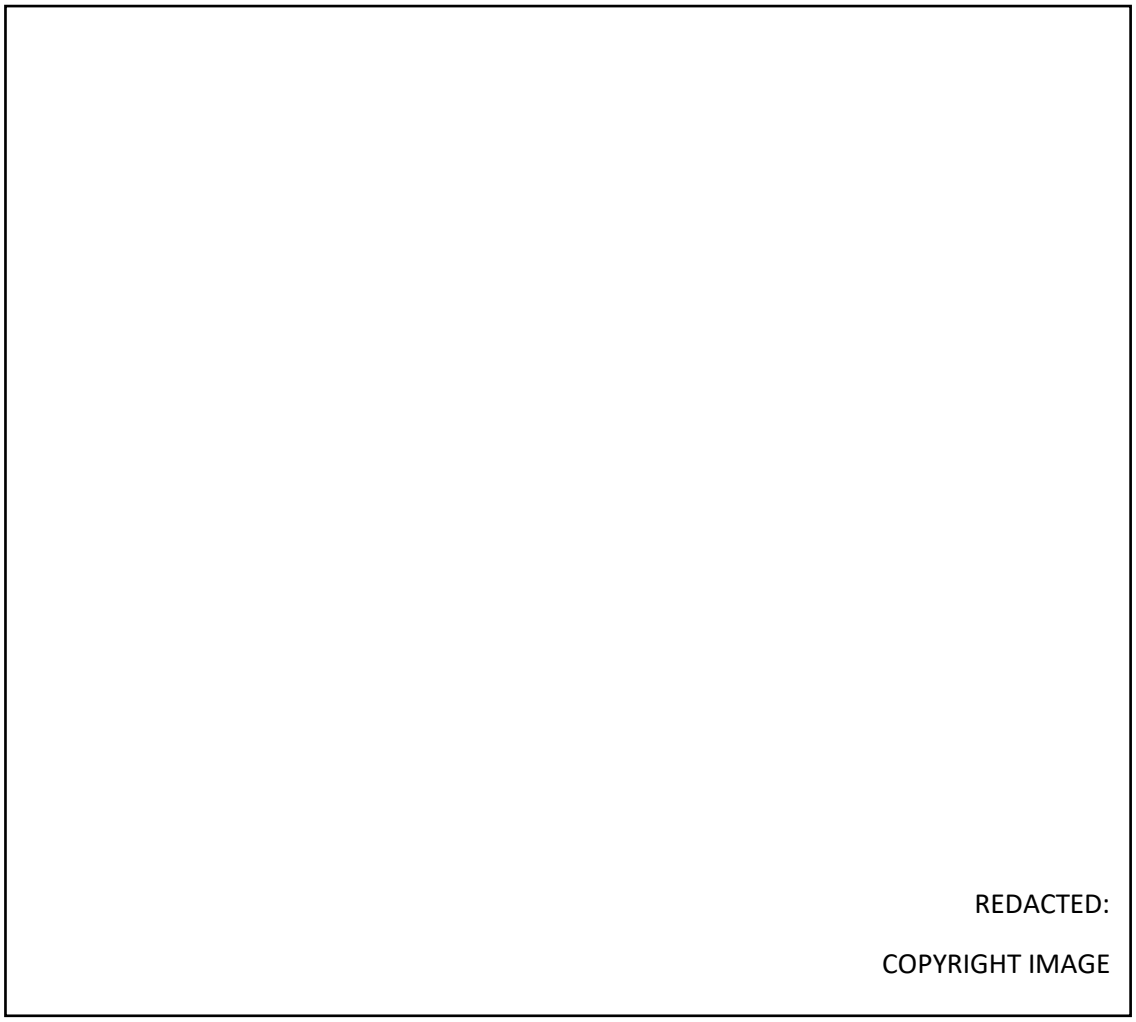


Figure 6.68: Partially reconstructed vessel with a rounded base from Galayeri (after Museibli 2014b, Fig. 21.4).

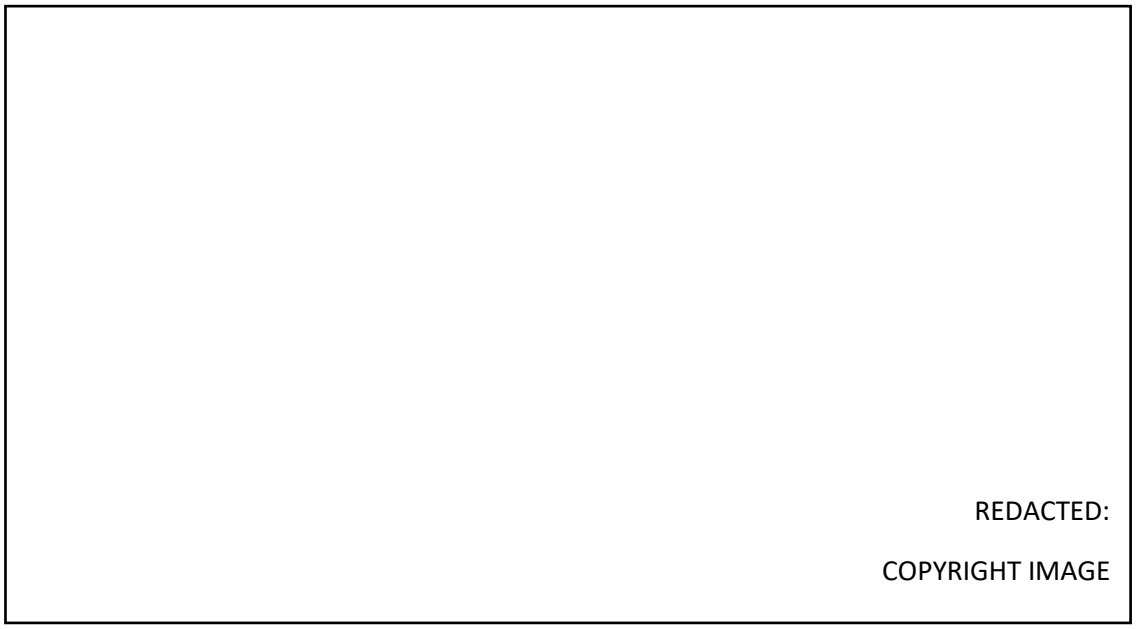


Figure 6.69: Handled jug from Nachivchavebi (after Chikovani et al. 2010, Pl. III.1).

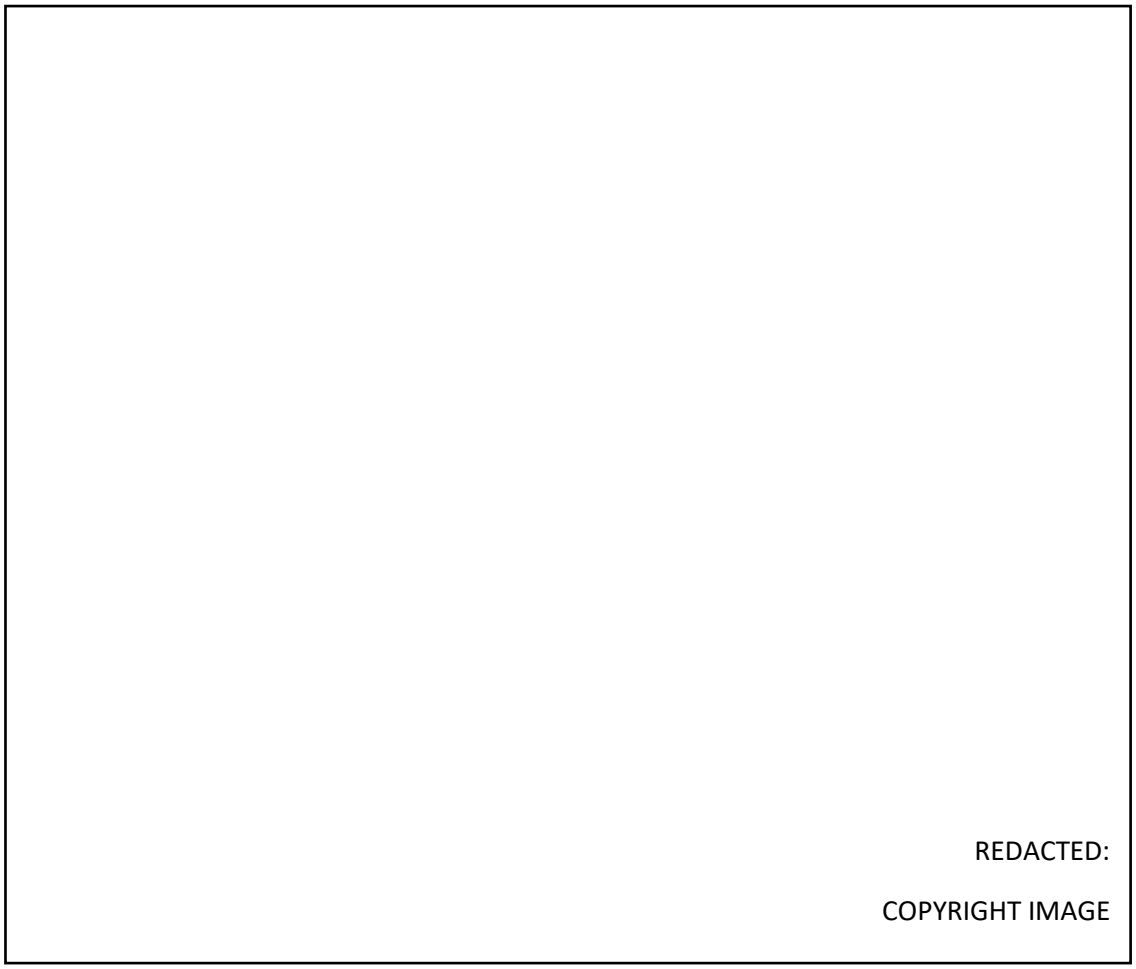


Figure 6.70: Jar with double looped handles from Nachivchavebi (after Chikovani et al. 2010, Pl. III.2).

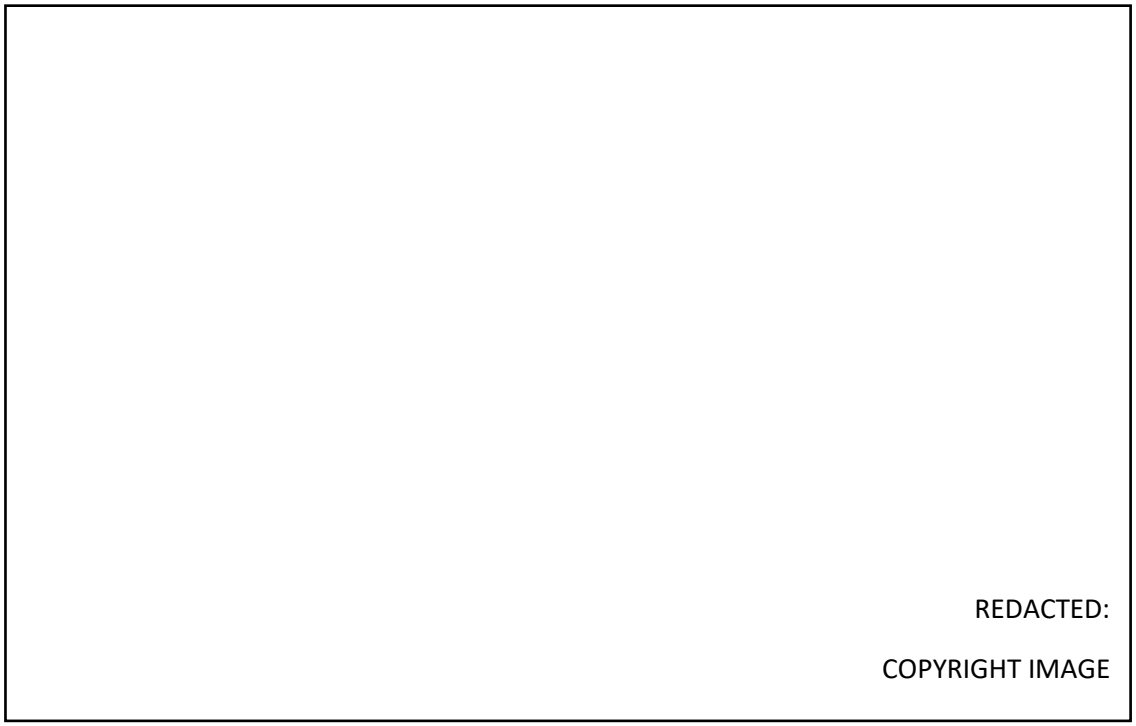


Figure 6.71: Jar with looped handles from Damtsvari Gora (after Varazashvili 1992, Pl. XXIV).

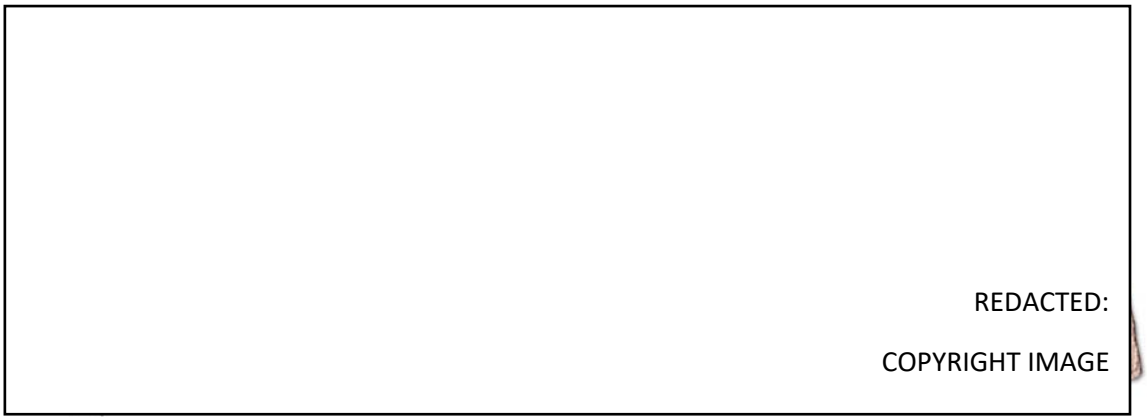


Figure 6.72: Spouted jar fragment from Aknalitch (after Muradyan et al. 2014, Fig. 8.3).

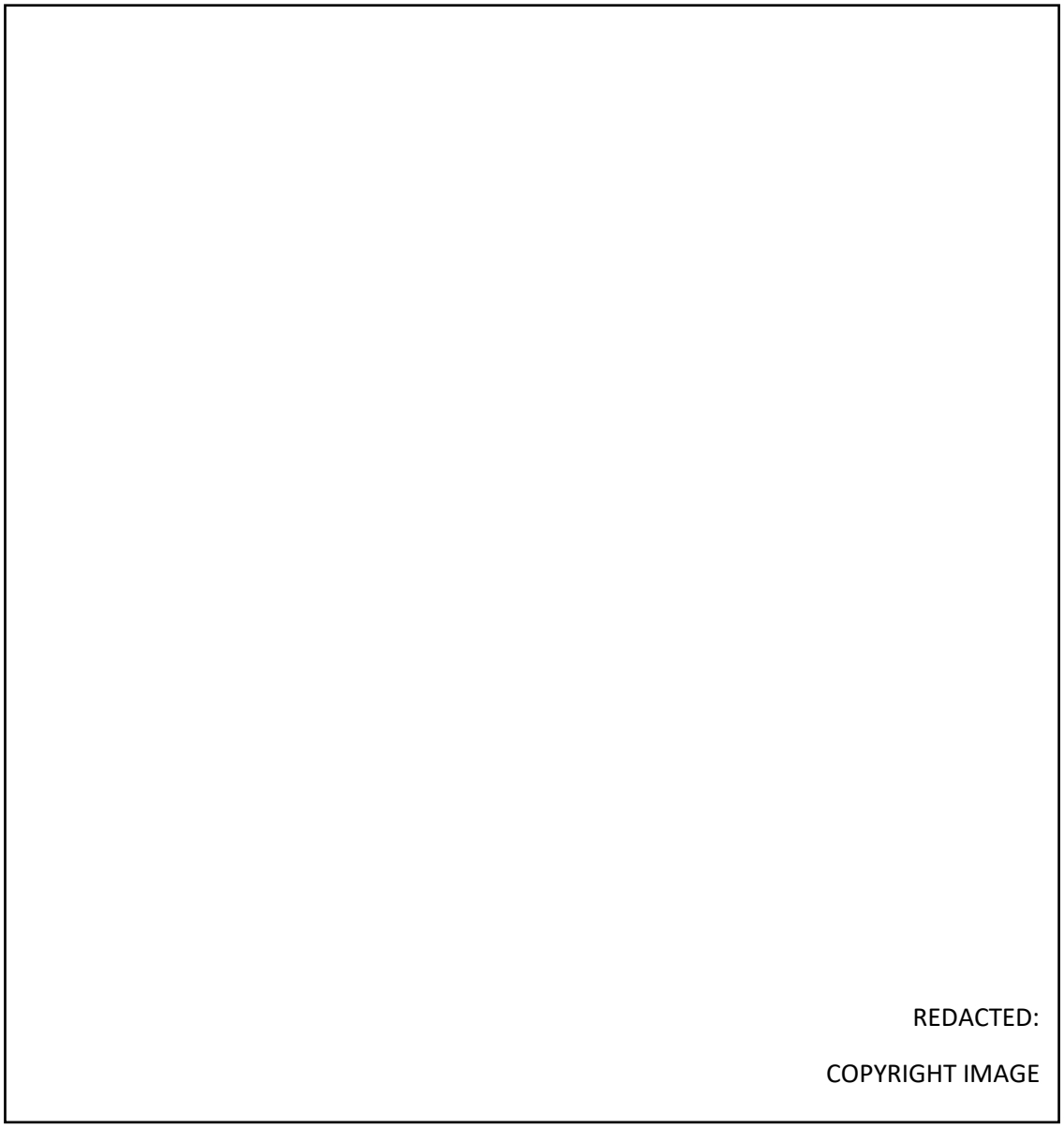


Figure 6.73: Coarse ware casseroles from Beyuk Kesik and Leilatepe (after Akhundov 2007, Fig. 17).

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Figure 6.74: Partially reconstructed cylindrical jar from Dzedzvebi (after Gambashidze et al. 2016b, 114).



Figure 6.75: Partially reconstructed wide-mouthed jar from Dzedzvebi on display at the Georgian National Museum, Tbilisi (Photo: B. Shapardon).



Figure 6.76: Wide-mouthed jar from Damtsvari Gora decorated with small pastilles on the exterior surface (after Kiguradze and Sagona 2003, Fig. 3.12).

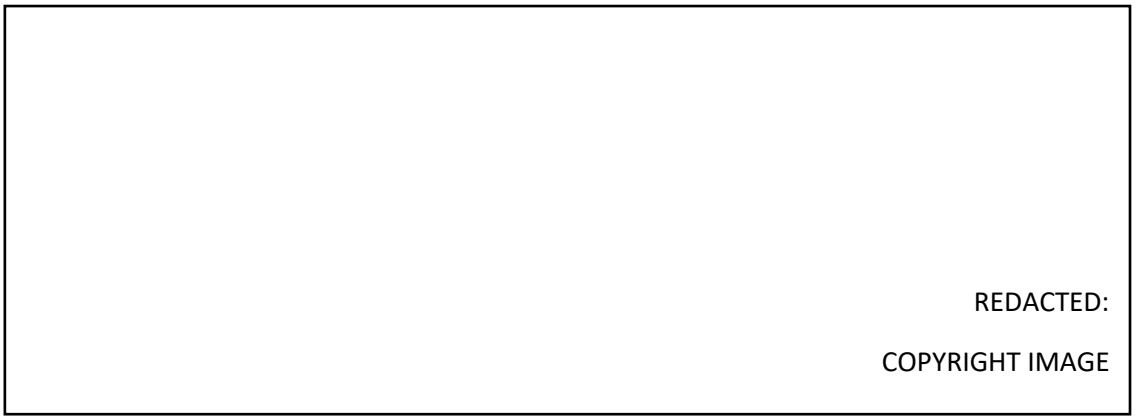


Figure 6.77: Hemi-spherical bowl fragment from Nachivchavebi (after Chikovani et al. 2010, Pl. II.4).

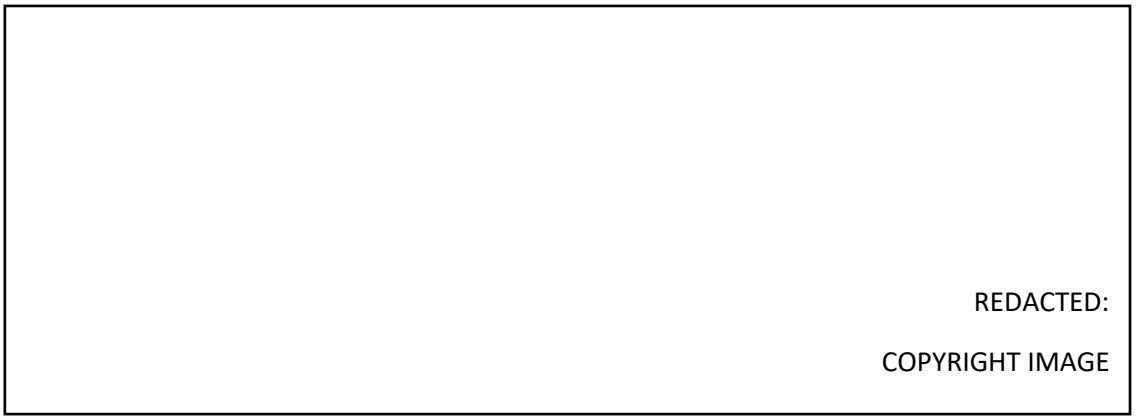


Figure 6.78: Fragments of deep bowls from Tandistkaro 1 (after Chikovani 1999, Fig. V.73, 75).

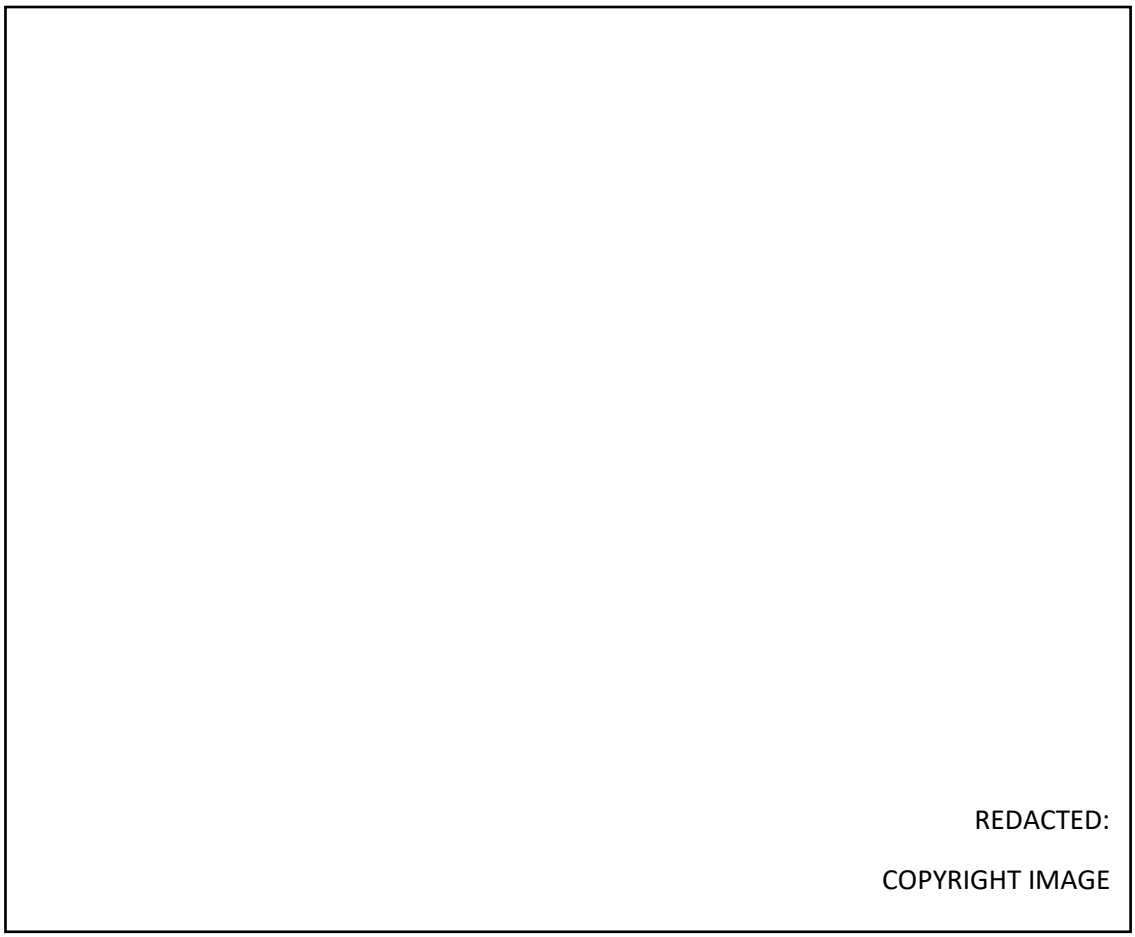


Figure 6.79: Partially reconstructed hemi-spherical bowl from Kurgan 6 at Aknalitch (after Muradyan et al. 2014, Fig.9.2).

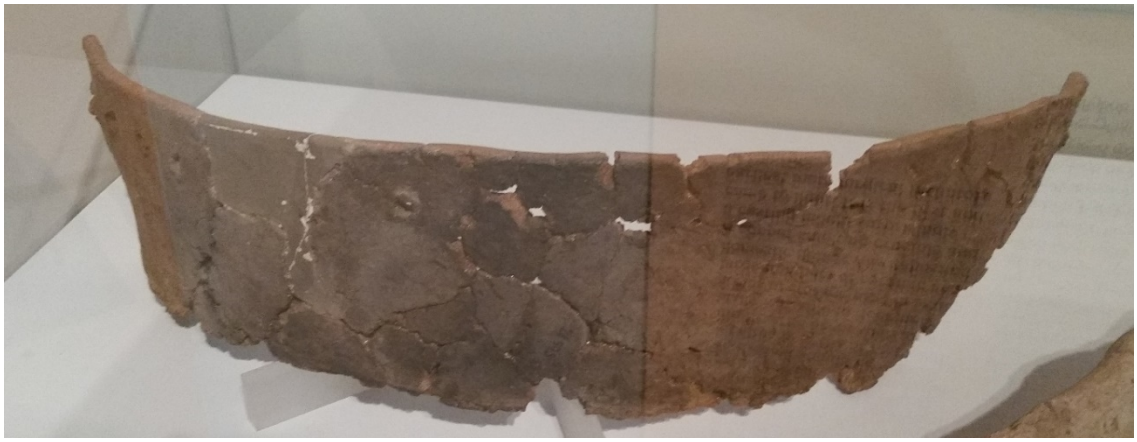


Figure 6.80: Partially reconstructed rim fragment from Dzedzvebi on display in the Georgian National Museum, Tbilisi (Photo: B. Shapardon).

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Figure 6.81: Perforated rim sherds from Orchosani (after Baramidze et al. 2007, Pl. XI, Pl. XXIII).

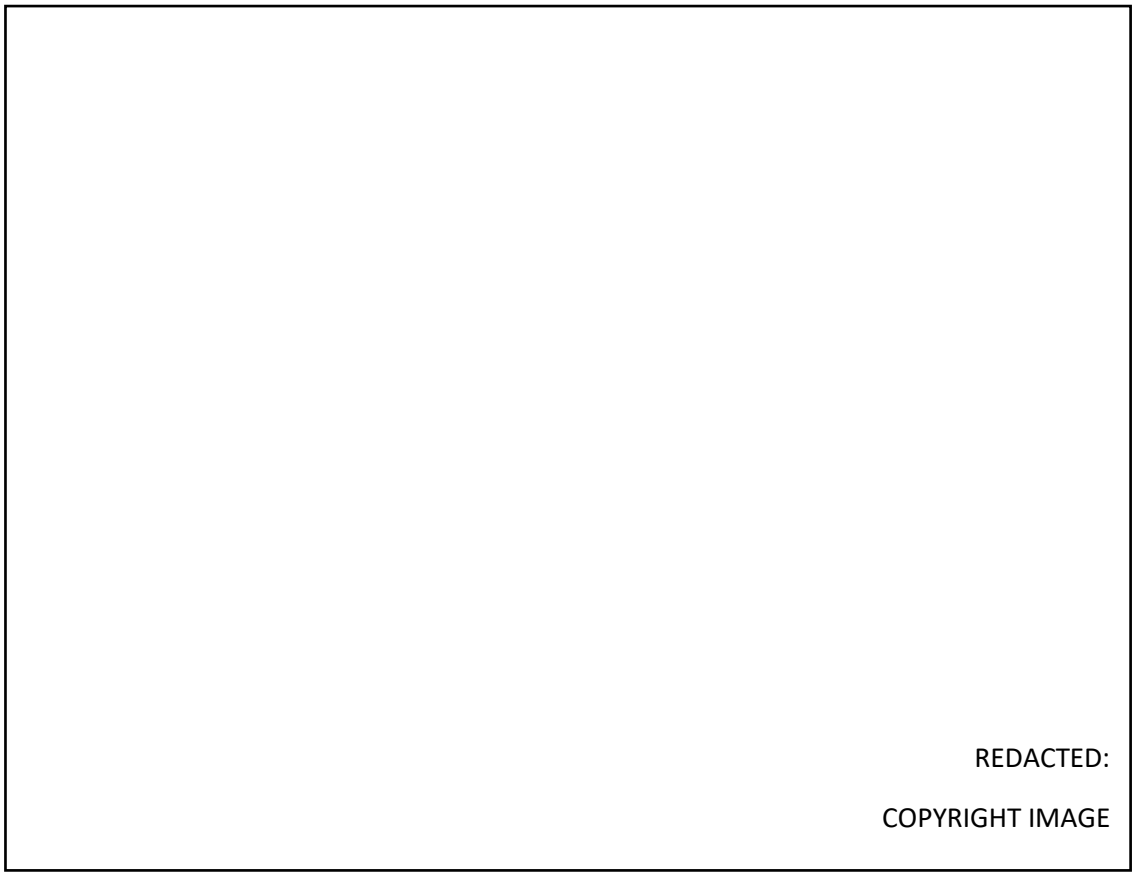


Figure 6.82: Perforated ceramics from Beyuk Kesik (after Museibli 2007, Pl. XXIII.1-5).

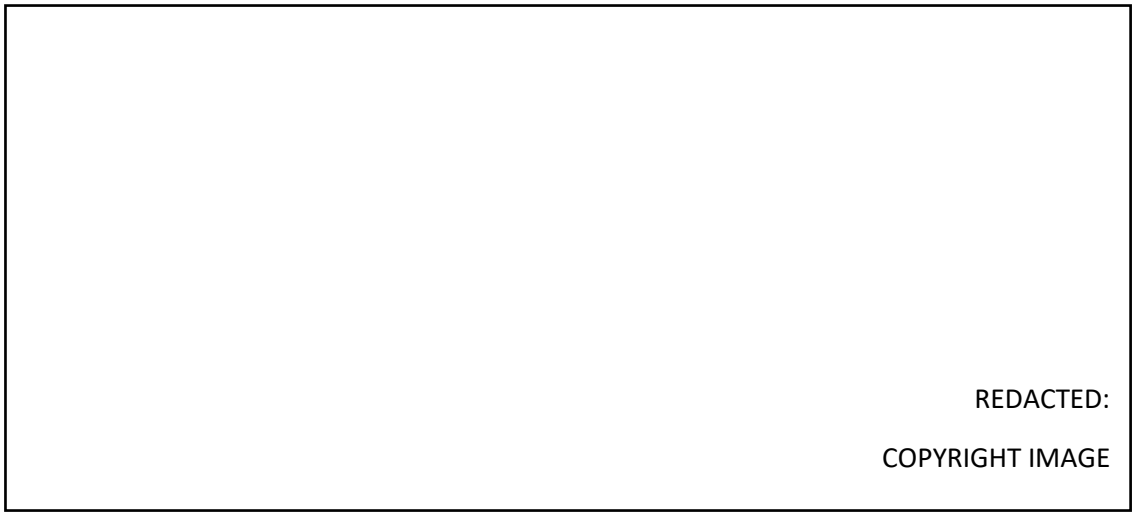


Figure 6.83: Perforated vessel from Galyugai I (after Korenevskii 2004, Fig. 5.8).



Figure 6.84: A collection of comb-shaped rims from Sioni sites along the Aragvi River Gorge, Dusheti Storehouse (Photo: B. Shapardon).

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Figure 6.85: Zoomorphic figurine recovered from Tsopi (after Kushnareva 1997, Fig. 12.16).

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Figure 6.86: Modified pottery sherds from Chobareti (after Kakhiani et al. 2013, Fig. 50.17-19).

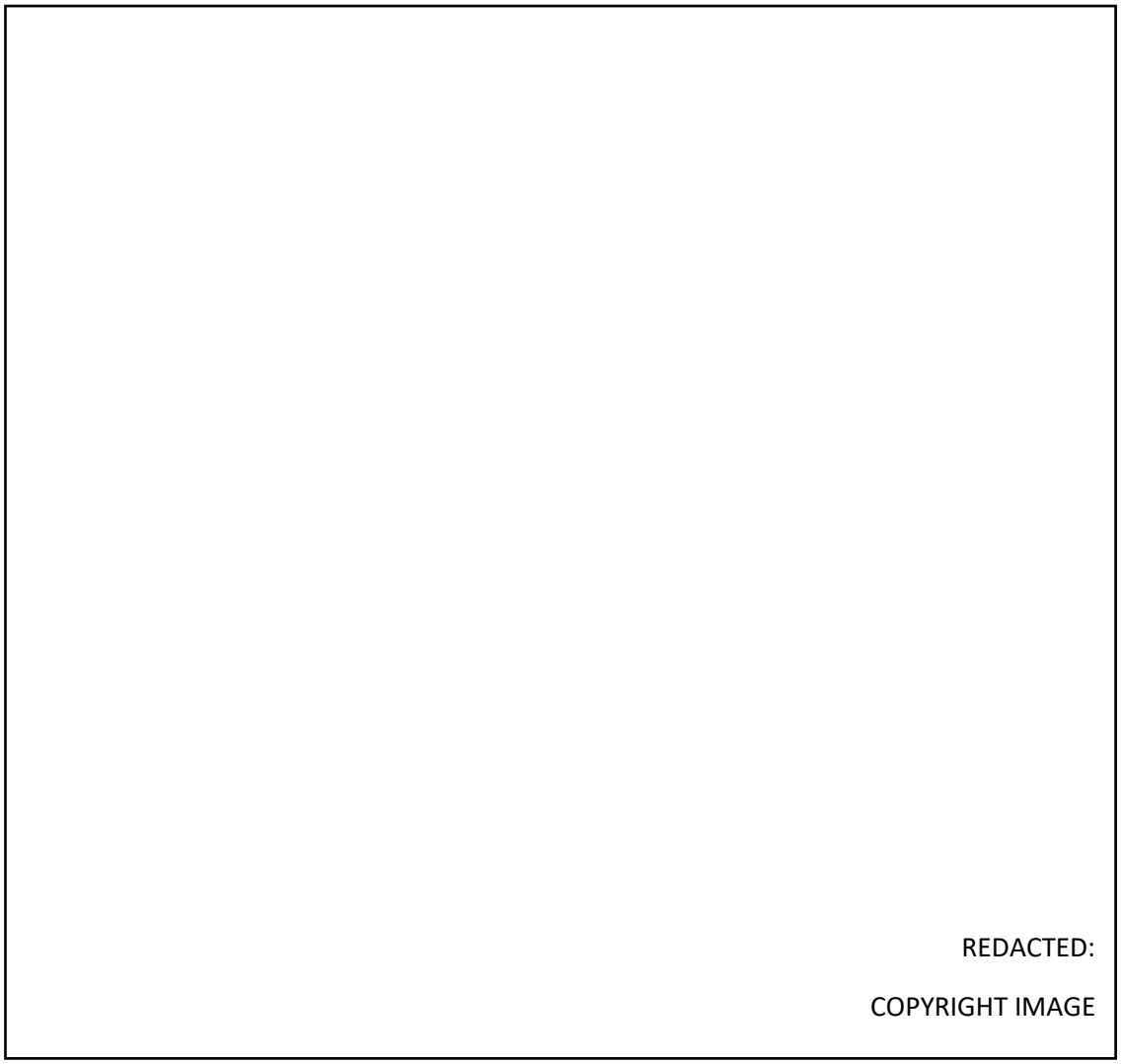


Figure 6.87: Clay crucibles and a mould from the site of Dzedzvebi (after Gambashidze et al. 2016b, 108-109).

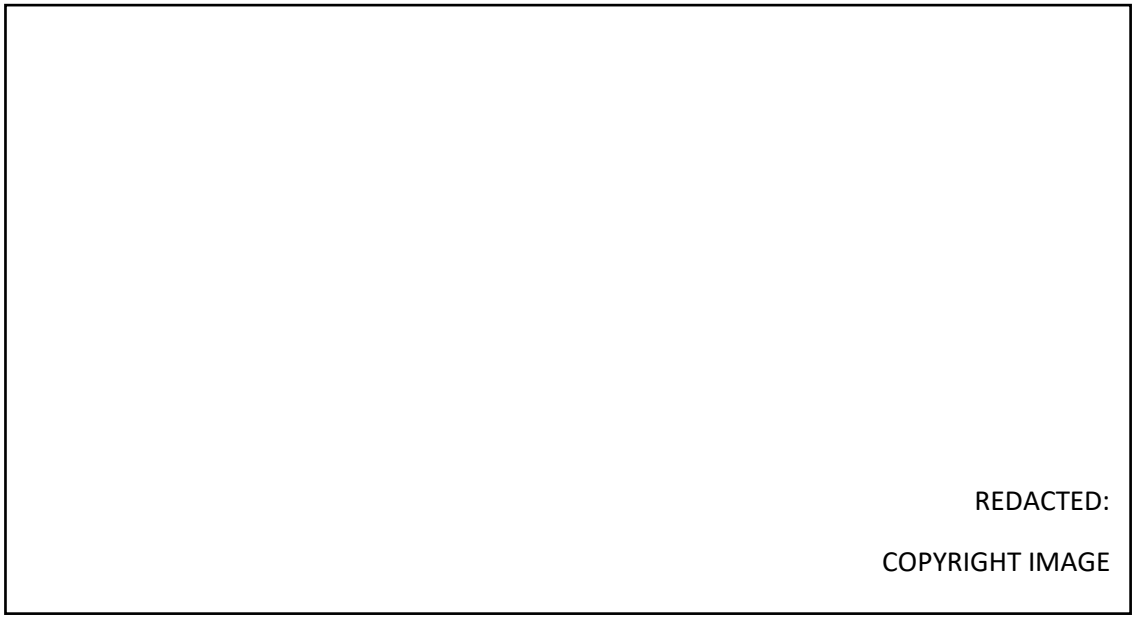


Figure 6.88: Tuyère fragments from Bavra Ablari (after Varoutsikos et al. 2018, Fig. 8.2).



Figure 6.89: Rims decorated with oblique notches from Sioni (Cat. no. 28; Inv. no. 82-976: 217; Cat. no. 6; Inv. no. 82-976: 217; Photo: B. Shapardon).



Figure 6.90: Rim decorated with vertical notches from Sioni (Cat. no. 156; Inv. no. 82-976: 115; Photo: B. Shapardon).



Figure 6.91: Rim decorated with circular impressions from Sioni (Cat. no. 155; Inv. no. 82-976: 115; Photo: B. Shapardon).



Figure 6.92: Rim decorated with oblique comb impressions from Sioni (Cat. no. 116; Inv. no. 82-976: 176; Photo: B. Shapardon).



Figure 6.93: Rim decorated with deep, circular impressions (Cat. no. 140; Inv. no. 82-976: 560; Cat. no. 138; Inv. no. 82-976: 559; Photo: B. Shapardon).

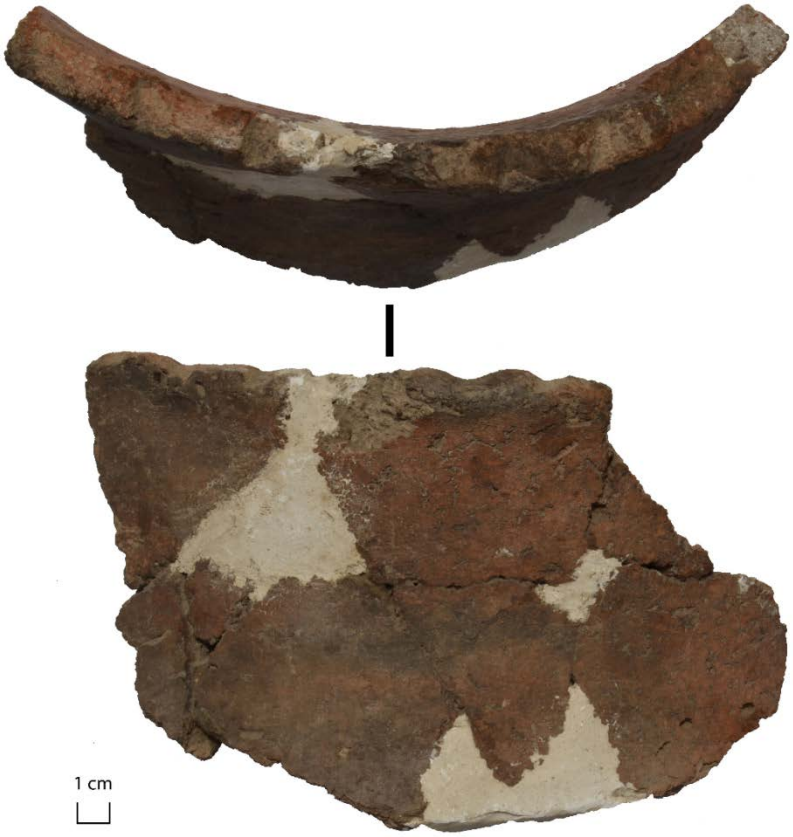


Figure 6.94: Finger impressed rim fragment from Tsopi, Otar Lordkipanidze Centre for Archaeological Studies, Tbilisi (Photo: B. Shapardon).

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Figure 6.95: A collection of notched and impressed rim fragments from Tandistkaro 1 (after Chikovani 1999, Fig. V.78-83, 85, 87, 91-92).

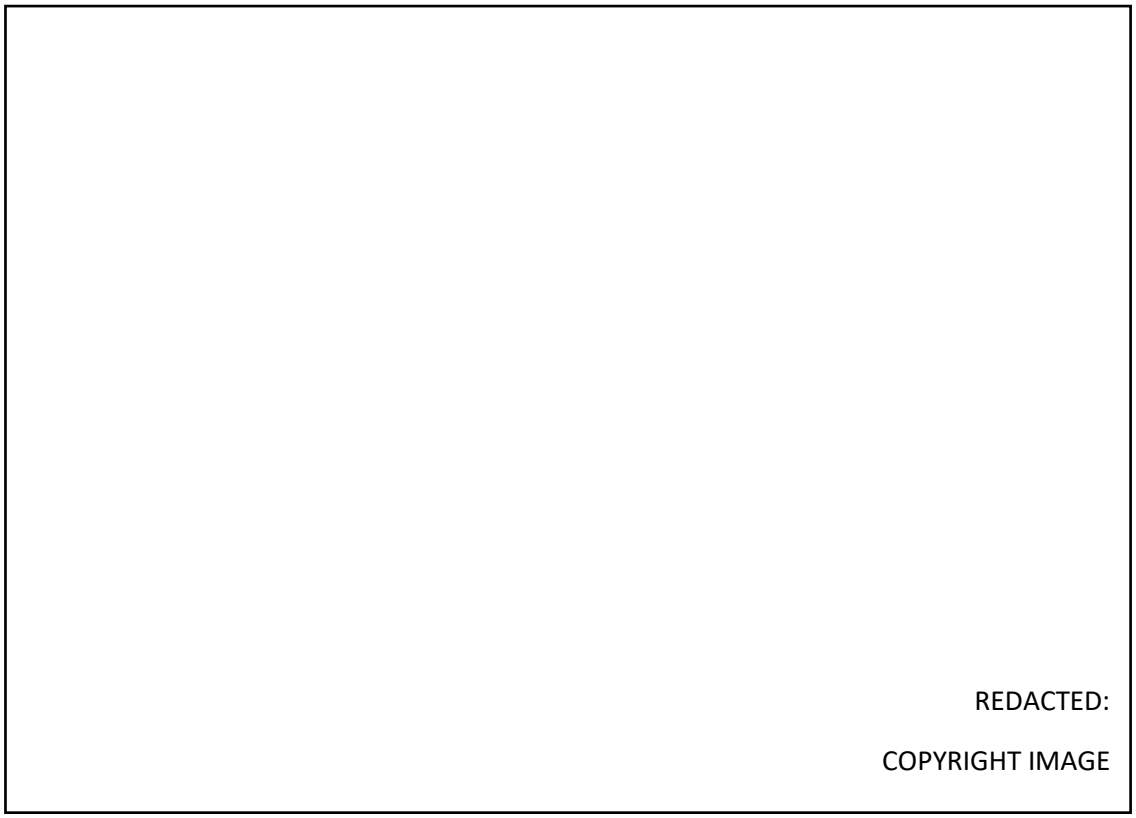


Figure 6.96: A collection of notched rim fragments from the Areni-1 cave complex (after Zardaryan 2014, Fig. 3.3-5, 12-14).

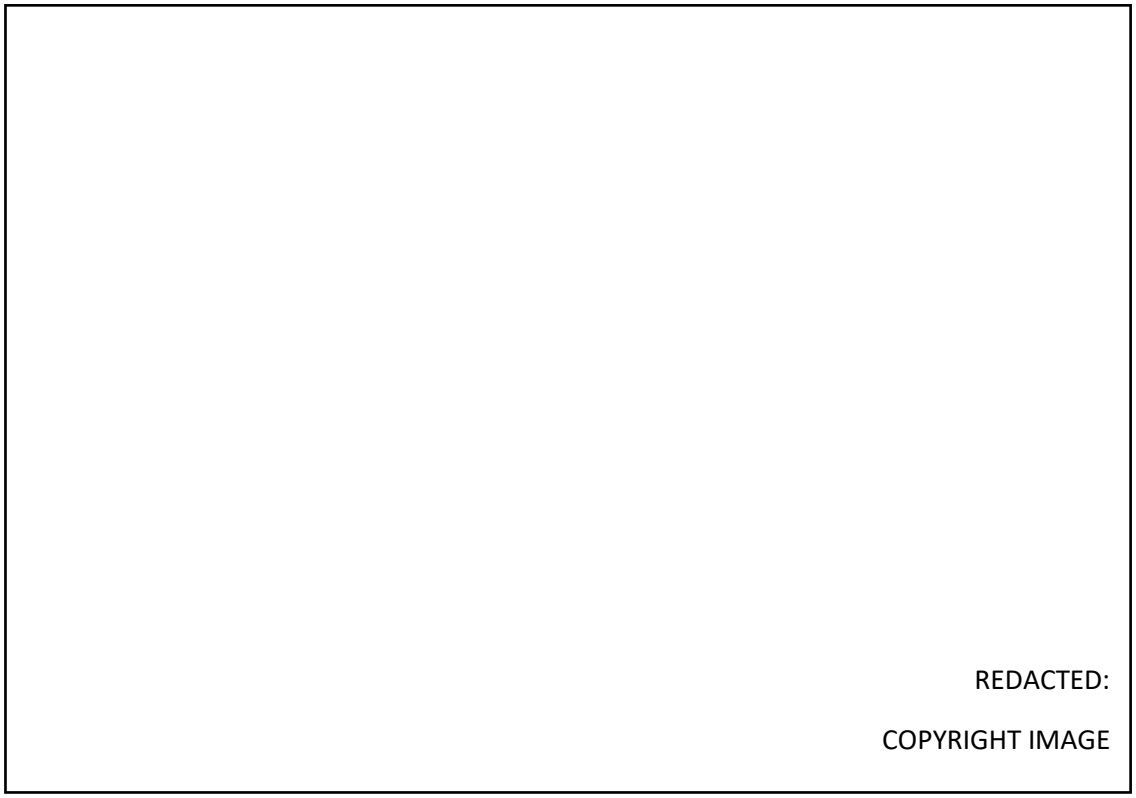


Figure 6.97: Incised and impressed obsidian tempered rim fragments from Aratashen (after Palumbi et al. 2014, Fig. 5).

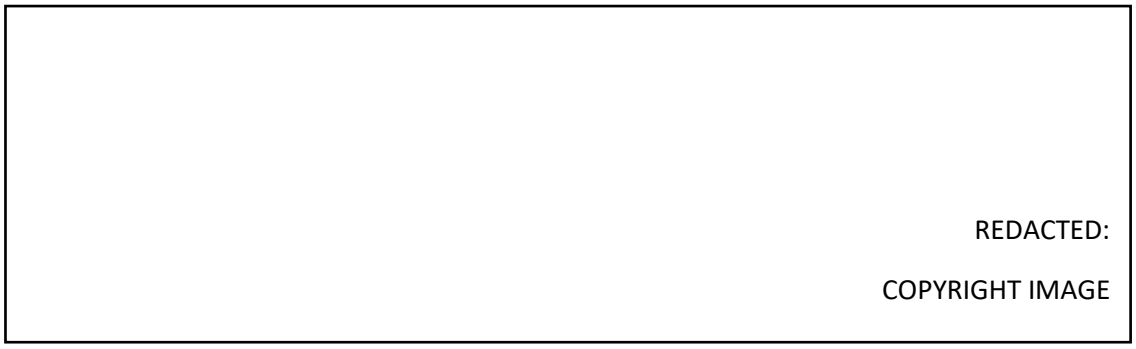


Figure 6.98: Incised rim fragments of kitchen ware from Mentesh Tepe (after Lyonnet 2017, Fig. 12.c-d).

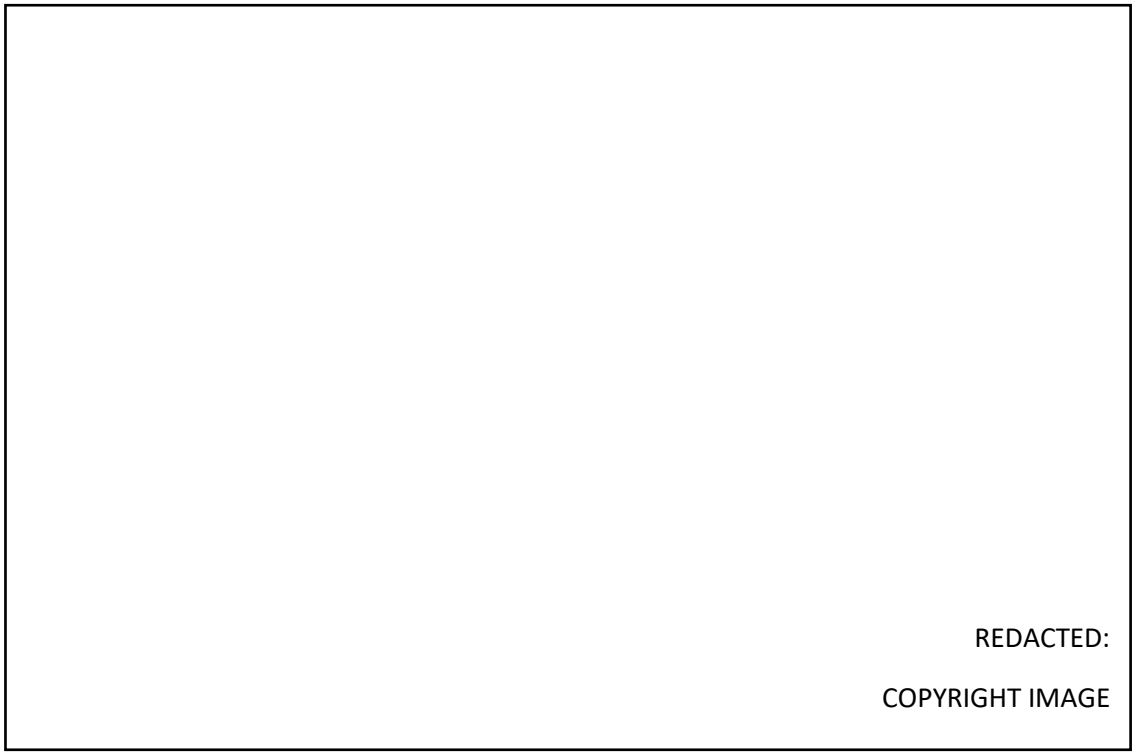


Figure 6.99: Impressed rim fragments from Beyuk Kesik (after Museibli 2007, Pl. XIX.1-3).

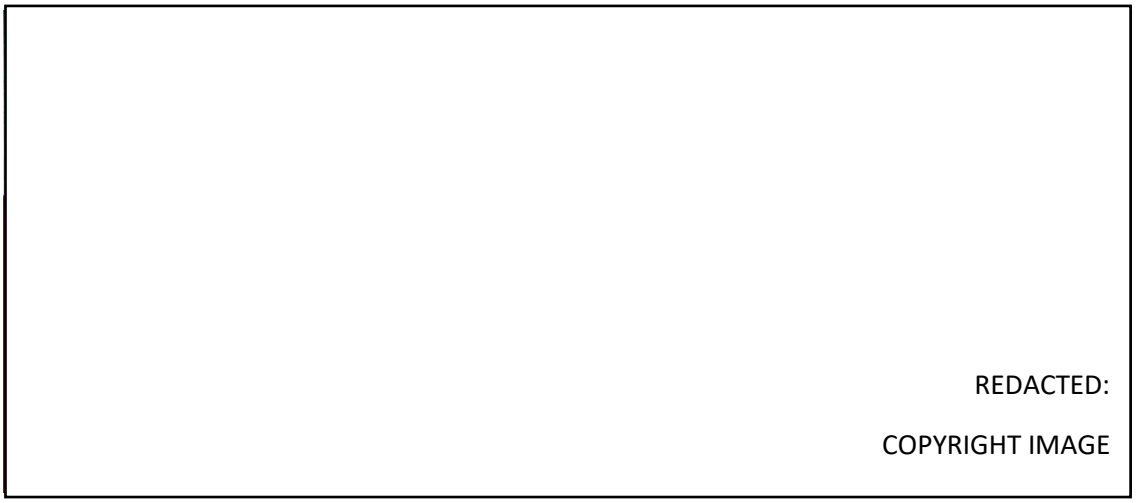


Figure 6.100: Incised rim fragment from Agili Dere (after Huseynov 2007, Photo 6).

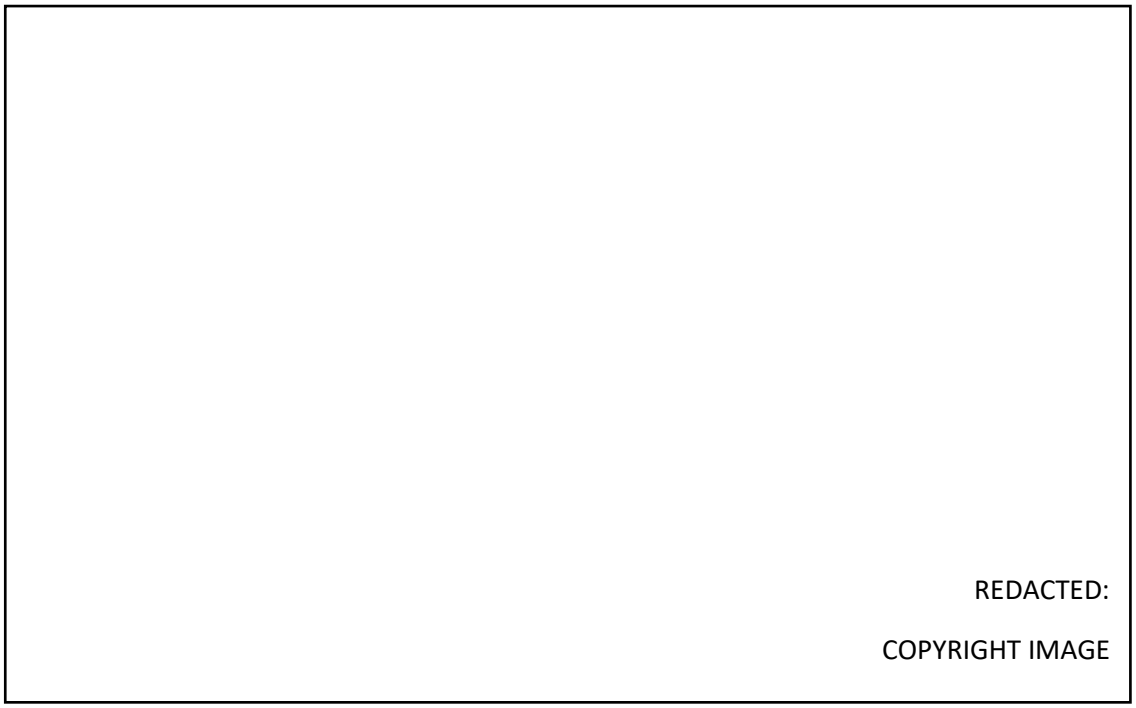


Figure 6.101: Incised rim fragments from Kul Tepe/Hadishahr (after Abedi et al. 2014, Fig. 21.10, Fig. 25.8, Fig. 26.6, Fig. 26.8).

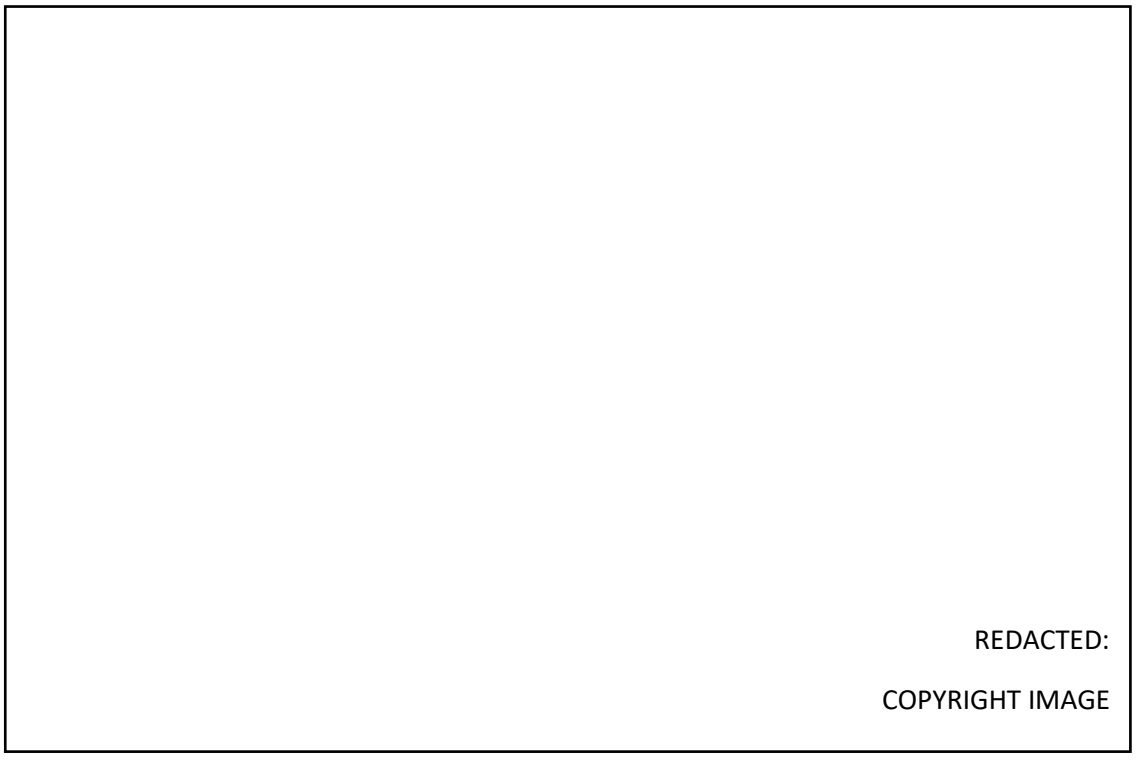


Figure 6.102: Vertical necked jar from Sioni decorated with small circular impressions along the neck (after Menabde and Kiguradze 1981, Fig. 3.2; Cat. no. 26; Inv. no. 82-976: 215; Photo: B. Shapardon).

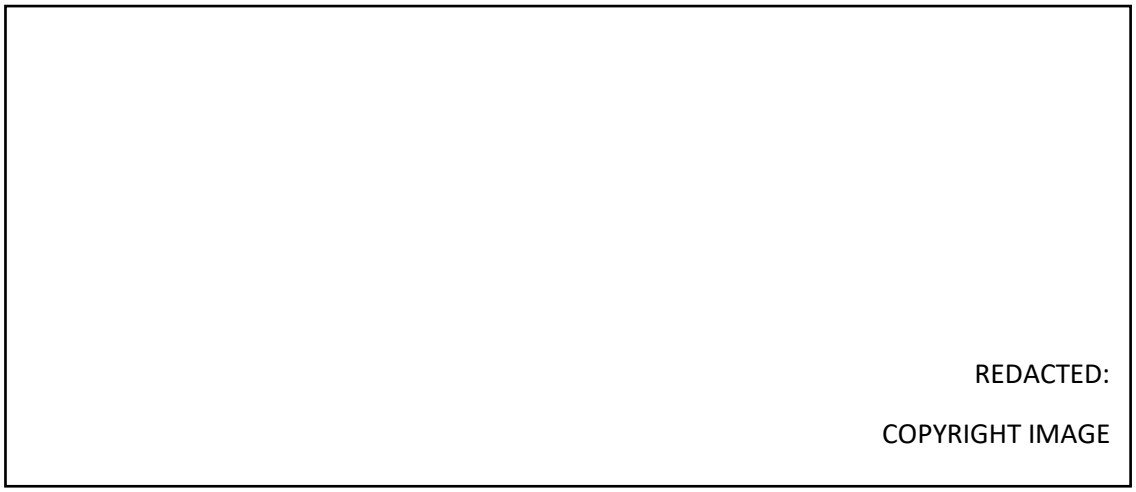


Figure 6.103: Incised body sherd from Nachivchavebi (after Chikovani et al. 2010, Pl. II.11)

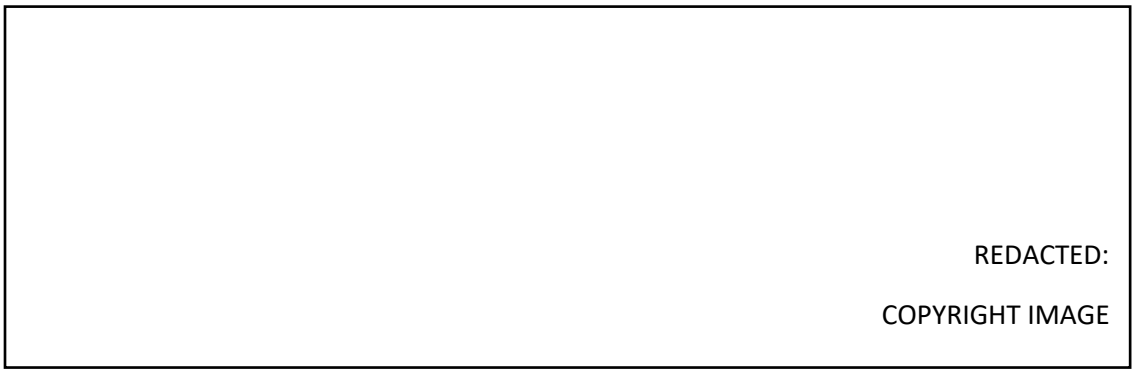


Figure 6.104: Incised body sherds from Damtsvari Gora (after Varazashvili 1992, Pl. IX.9-10).

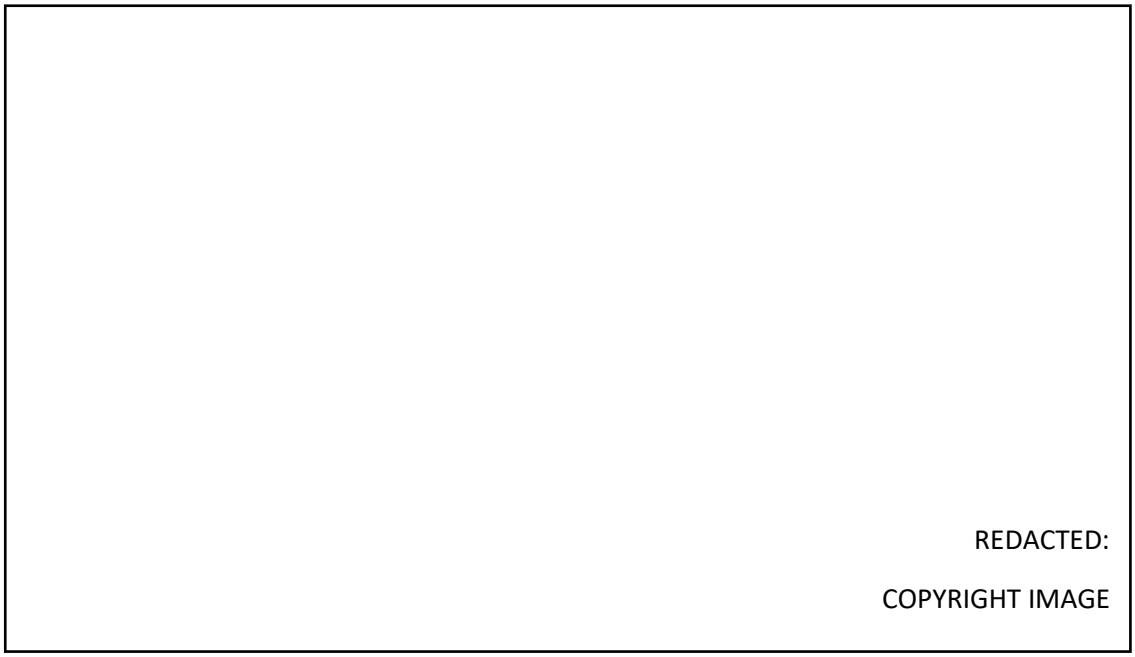


Figure 6.105: Incised and impressed sherds from Areni-1 (after Zardaryan 2014, Fig. 4.5-8).

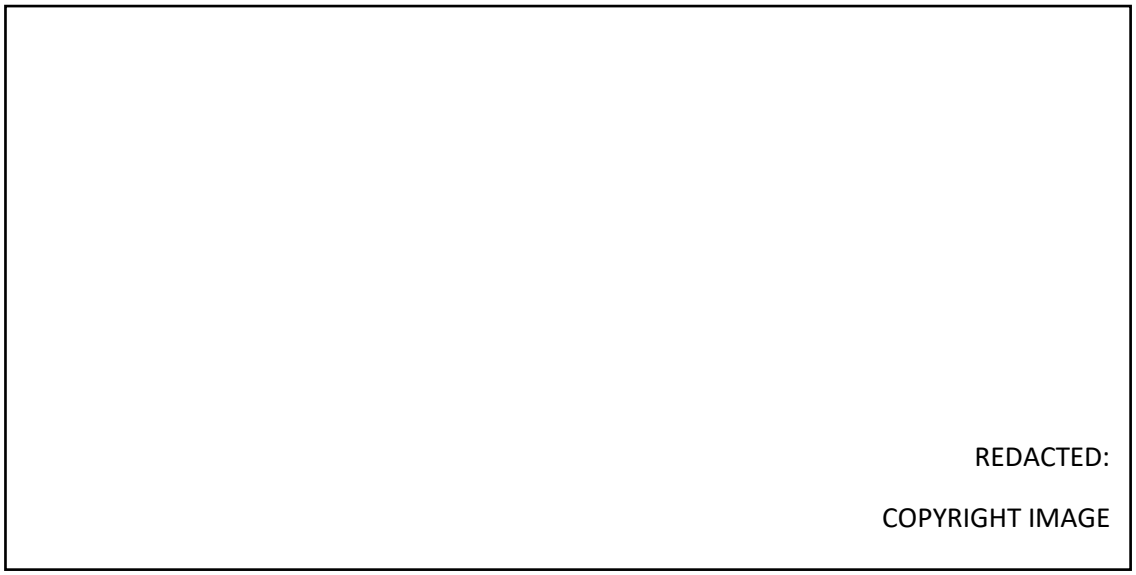


Figure 6.106: Mixed tempered, vertical necked jar from Ovçular Tepesi decorated with comb impressions (after Marro et al. 2009, Pl. XIX.1).

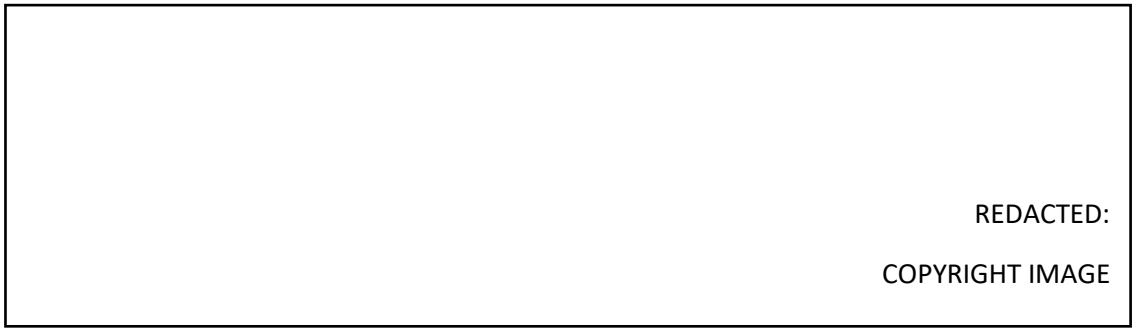


Figure 6.107: Incised and impressed body sherds from Ovçular Tepesi (after Marro et al. 2009, Pl. XVI. 1, Pl. XIX.3-4).

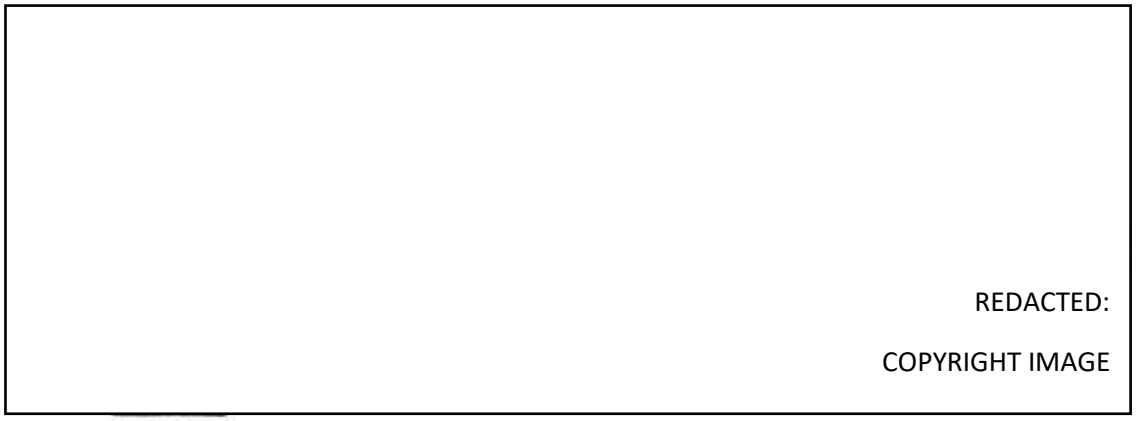


Figure 6.108: Coarse jars from Poylu II decorated with thumb and rhomboid impressions along the neck (after Museibli 2008b, Pl. 3.3, 5).

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Figure 6.109: Vessel fragments from Sarıgül decorated with nail impressions (after Marro 2008, Fig. 2.1 and Fig. 2.5).

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Figure 6.110: Incised, mixed tempered vessel fragments from Kul Tepe/Hadishahr (after Abedi et al. 2014, Fig. 21.3, Fig. 22.9).



Figure 6.111: Lugged body sherd recovered from Sioni (Cat. no. 234; Inv. no. 82-976: 247; Photo: B. Shapardon).

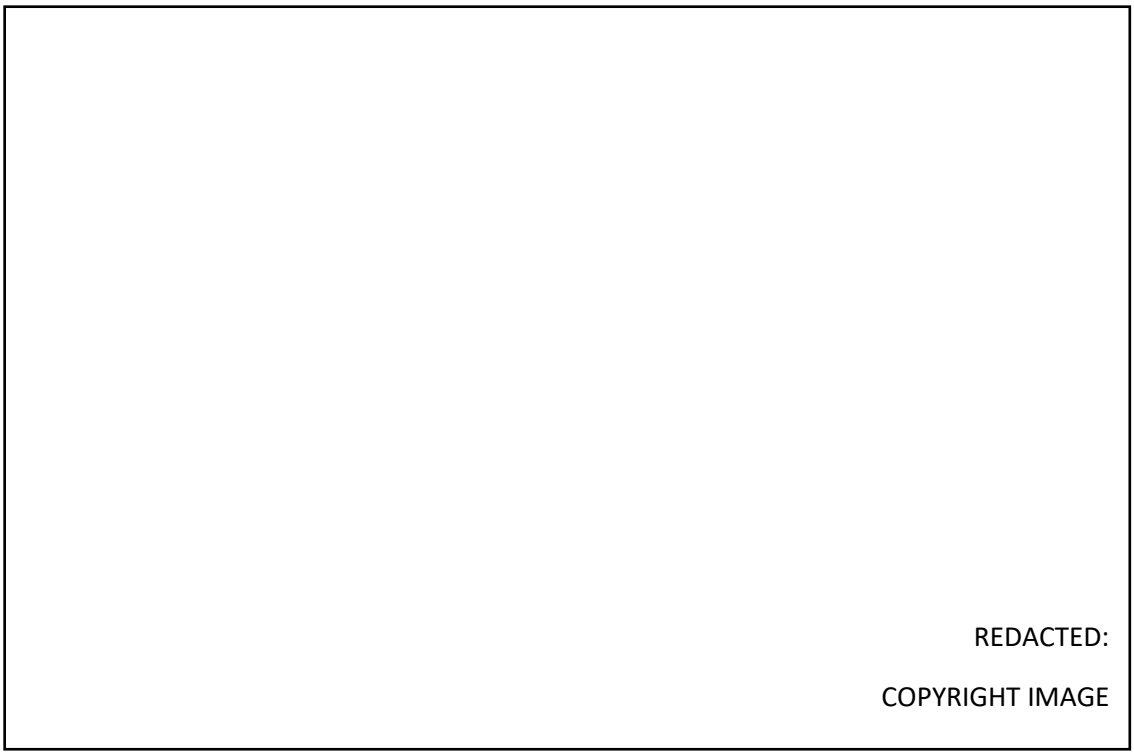


Figure 6.112: Jar fragments decorated with relief ornamentation from Samshvilde (after Demetradze and Mirtskhulava 2010, Fig. 6).

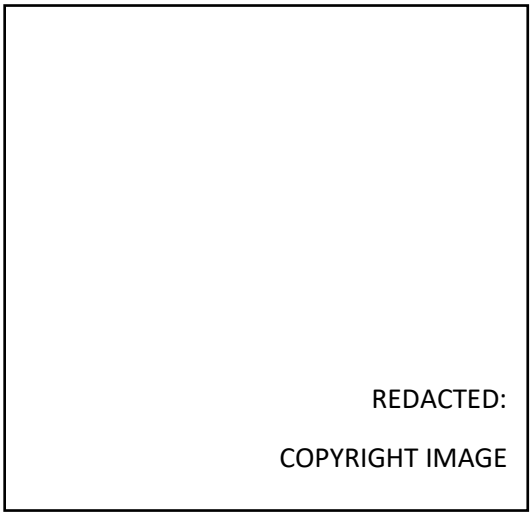


Figure 6.113: Rim fragment decorated with a series of conical lugs from Damtsvari Gora (after Kiguradze and Sagona 2003, Fig. 3.14.4).

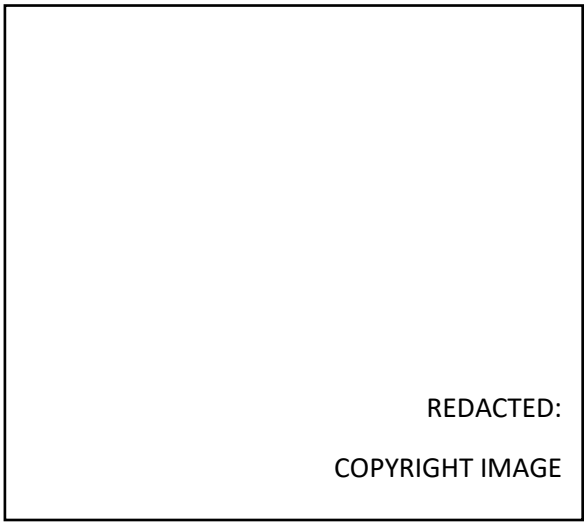


Figure 6.114: Sinuous jar fragment from Damtsvari Gora decorated with a horizonal relief band (after Kiguradze and Sagona 2003, Fig. 3.11.1).



Figure 6.115: Partially reconstructed sinuous jar from Chinti, decorated with a relief band, stored in a display cabinet at the Dusheti Storehouse (Photo: B. Shapardon).

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Figure 6.116: A body sherd with anthropomorphic relief decoration from Areni-1 (after Zardaryan 2014, Fig. 2.12).

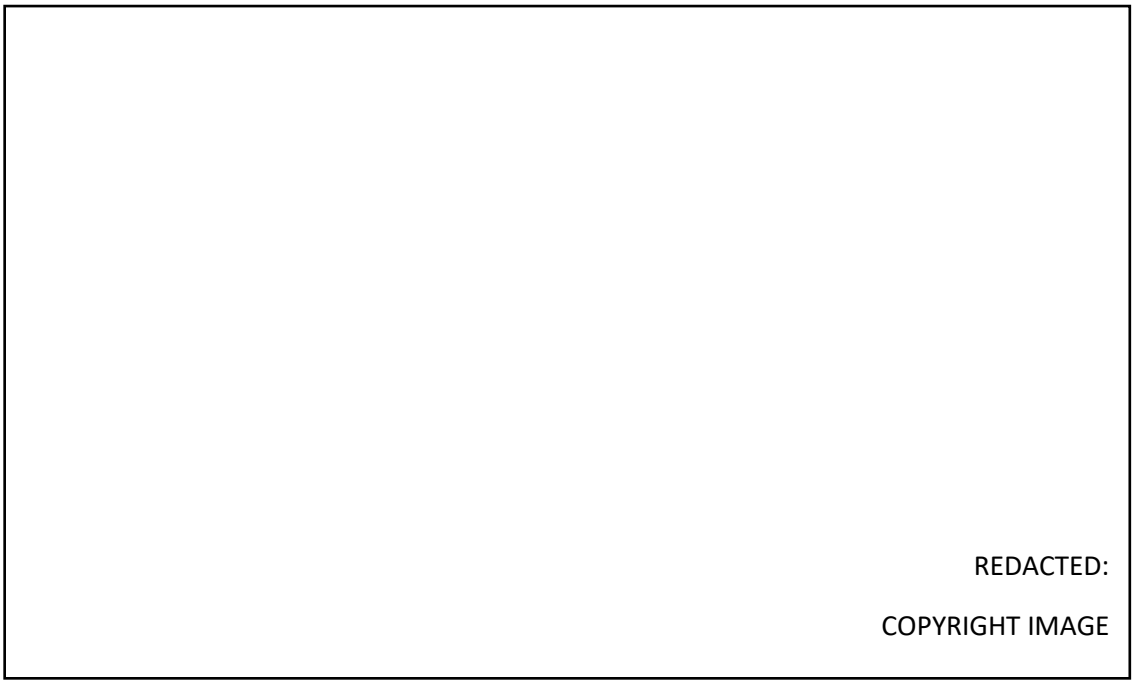


Figure 6.117: Relief decoration on fragments of Kitchen Ware from Mentesh Tepe (after Lyonnet 2017, Fig. 15, Fig. 16).

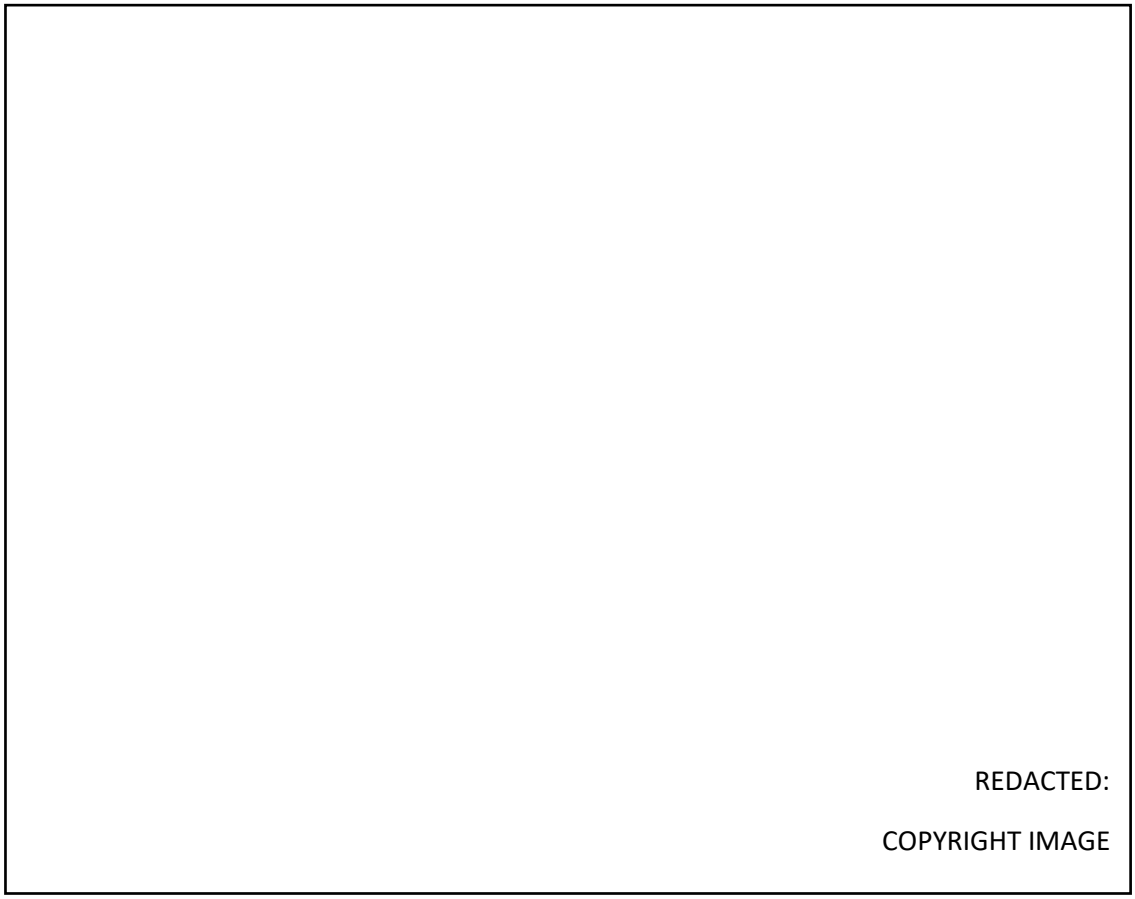


Figure 6.118: A collection of body sherds from Kul Tepe/Hadishahr demonstrating various types of relief decoration (after Abedi et al. 2014, Fig. 18.3, 7, Fig. 19.3, 6, Fig. 19.12, Fig. 20.7).

Chapter Seven: Conclusion

In the Transcaucasus, the Chalcolithic period is characterised by a myriad of contemporary horizons which, together, form a rich and unique episode, spanning 1500 years, within the archaeological record of the Caucasus.[1756] The emergence of the Chalcolithic period is distinguished by the departure from the sedentism and agricultural farming practices of the Neolithic in favour for dispersed settlement patterns and the adoption of agro-pastoral subsistence strategies.[1757] Within this context, the Chalcolithic period also saw the development of complex socio-economic dynamics as the Transcaucasus played an increasingly active role within the interregional network of exchange driven by the demand for natural resources and raw materials which laid the foundations of bourgeoning prestige goods economies.[1758]

Defining the Sioni Complex

In the 1970s, the discovery of Sioni paved the way for the articulation of a distinct Chalcolithic period within the Transcaucasus.[1759] The term 'Sioni' has since come to define the Chalcolithic period and the features of its ceramic assemblage have come to represent a chronological indicator within the region.[1760] However, the absence of a strict definition has resulted in the over-use of the term.[1761] Ceramics sharing similar features, or those that do not comfortably fit within the confines of the preceding

[1756] Sagona 2014, 47; Sagona 2018a, 132.
[1757] Kiguradze and Sagona 2003, 40; Connor and Sagona 2007, 30; Nechitajlo 2007, 163-164; Chikovani et al. 2010, 96; Nebieridze 2010, 144-146; Connor 2011, 232-234; Areshian et al. 2012, 116; Wilkinson et al. 2012, 23.
[1758] Kiguradze and Sagona 2003, 92; Sagona 2010b, 688; Marro 2011, 52; Sagona 2014, 40; Sagona 2018a, 211.
[1759] Menabde and Kiguradze 1981; Kiguradze 2001b, 44-47; Kiguradze and Sagona 2003, 40-42.
[1760] Palumbi 2010, 208; Palumbi et al. 2014, 43; Sagona 2014, 30; Palumbi 2015b; Palumbi et al. 2018, 122.
[1761] Sagona 2014, 27.

Neolithic traditions or the Kura-Araxes of the Early Bronze Age, have been subsumed under the umbrella of the Sioni complex. Consequently, the term carries little meaning within the archaeological literature and the prioritisation of 'Sioni' within the terminology inaccurately reflects the cultural and material diversity of other contemporary traditions within the archaeological record during this period.

On the basis of the research presented here, I have argued for a restricted approach to the Sioni complex in order to develop a concise definition. The term 'Sioni' should be limited to ceramics which share close affinities with the material recovered from the type site and to sites which demonstrate a high concentration of such materials within the ceramic assemblage.[1762] Consequently, the assemblage from the type site must form the foundation for the definition of the Sioni complex.

An analysis of the Chalcolithic assemblage from the type site has highlighted the major features of the Sioni ceramic tradition. The Sioni complex is characterised by a handmade ceramic production that was grit or obsidian tempered. The ceramics were inconsistently fired, incompletely oxidised, and demonstrate a wide variety of surface colours and blemishes. Exterior surfaces were smoothed, slipped, and/or inconsistently burnished. In some instances, vessels were also comb-scraped to level surfaces and remove impurities. The assemblage from the type site is characterised by a restricted morphological repertoire that was centred on the production of closed shapes, such as necked jars and sinuous jars, which were often decorated with a series of notches or impressions along the rim.

[1762] Sagona 2014, 27.

The narrow range of features at the type site may be supplemented by materials recovered from other contemporary Sioni sites that are found scattered throughout eastern and southern Georgia. Ceramics from these sites allow for the articulation of a wider morphological repertoire that also includes open forms such as pans, trays, bowls, cylindrical jars, and open-mouthed jars.[1763] Additionally, these contemporary assemblages also attest to a wider variety of stylistic and decorative traits such as incised and impressed motifs and relief ornamentation.[1764]

Stratified contextual data for the ceramics recovered from the type site and other contemporary Sioni sites is limited. Much of the material was recovered from pits or found scattered across thin occupational deposits.[1765] However, the analysis of assemblages from other related sites, such as Aratashen in Armenia and Mentesh Tepe in Azerbaijan, where notable collections of Sioni ceramics have been recovered, suggests that this tradition was linked to the domestic context and associated with the preparation and consumption of food.[1766]

Distribution of the Sioni Complex and its Regional Influence

The distribution of the Sioni complex can be traced through its ceramic assemblage where it is found concentrated at sites throughout eastern and southern

[1763] Varazashvili 1992, Pl. V.1-8, 11, Pl. VII.1-2, 11-12, Pl. VIII.14-21, Pl. XIV.1-2, 4, Pl. XVI.1-6, Pl. XVII.1-4, Pl. XXX.22-28; Chikovani 2001, Fig. 1.1, 5, 7-8, 10-11, 18; Kiguradze and Sagona 2003, Fig. 3.13.3-4; Baramidze et al. 2007, Pl. XI, Pl. XXIII; Demetradze and Mirtskhulava 2010, Fig. 6; Nebieridze 2010, Pl. XIX.8, Pl. XXI.1-2, Pl. XXXIII; Gambashidze et al. 2016b, 110-111; Varoutsikos et al. 2018, Fig. 8.1-2.
[1764] Kushnareva and Chubinishvili 1970, Fig. 9.4-5, Fig. 9.10; Varazashvili 1992, 21; Kushnareva 1997, Fig. 12.8; Chikovani 1999, 20; Kiguradze and Sagona 2003, Fig. 3.11.1-2, Fig. 3.12; Chikovani 2005, 64; Chikovani et al. 2010, Pl. II.3, 6, 9, 13; Nebieridze 2010, Pl. XXI.
[1765] Kiguradze 2000, 321-322; Kiguradze 2001b, 45; Kiguradze and Sagona 2003, 40-42; Marro 2007, 10-11; Demetradze and Mirtskhulava 2010, 160; Sagona 2018a, 203.
[1766] Palumbi 2007, 68; Lyonnet et al. 2012, 101; Palumbi et al. 2014, 53, Palumbi 2015b; Lyonnet 2017, 146; Palumbi et al. 2018, 132.

Georgia.[1767] Many of these sites are located in the Kvemo Kartli region, along the Alazani River Basin in Kakheti, and the Aragvi River Gorge in the area of Shida Kartli. These sites are characterised by thin occupational layers, a lack of architectural features, and a prevalence of pits, postholes, and ashy deposits.[1768] The ceramic assemblages from these sites also consist of grit tempered wares associated with the Sioni tradition. The concentration of Sioni sites throughout eastern and southern Georgia suggests that this region may have formed part of the original *oikoumene* of the Sioni complex.[1769]

Beyond Georgia, Sioni ceramics demonstrate a wide dispersal across the Caucasus and are found in small quantities at sites in Armenia, Azerbaijan, eastern Anatolia, north-western Iran, and the northern Caucasus.[1770] At these sites, Sioni ceramics occur alongside other contemporary traditions, particularly the Chaff-faced and Leilatepe horizons.[1771] Shared contexts at these sites suggests that contemporary Chalcolithic traditions in the Caucasus not only co-existed, but also interacted. The widespread occurrence of Sioni ceramics throughout the region may be due to a degree of mobility practised by communities bearing the tradition as is suggested by the thin occupational deposits and limited architectural remains at Sioni sites.[1772] Additionally, the small quantities of Sioni ceramics at sites outside of Georgia may be related to its conservative role within the domestic sphere as a form of cooking ware.[1773]

[1767] Kiguradze and Sagona 2003, 40; Kiguradze and Menabde 2004, 362; Demetradze and Mirtskhukava 2010, 160; Sagona 2010b, 689; Sagona 2014, 30; Sagona 2018a, 203.
[1768] Kiguradze 2000, 321; Kiguradze 2001b, 45; Kiguradze and Sagona 2003, 40; Marro 2007, 10-11; Demetradze and Mirtskhulava 2010, 160; Sagona 2018a, 204.
[1769] Kiguradze and Sagona 2003, 40; Kiguradze and Menabde 2004, 362; Demetradze and Mirtskhukava 2010, 160; Sagona 2010b, 689; Sagona 2014, 30; Sagona 2018a, 203.
[1770] Marro 2008, 11; Sagona 2018a, 203.
[1771] Sagona 2014, 41; Sagona 2018a, 211.
[1772] Lyonnet 2018, 564.
[1773] Palumbi 2007, 68; Lyonnet et al. 2012, 101; Palumbi et al. 2014, 53, Palumbi 2015b; Lyonnet 2017, 146; Palumbi et al. 2018, 132; Rothman 2018, 136.

With core sites restricted to eastern and southern Georgia, the influence of the Sioni complex is limited to the Caucasus region where it represents a local tradition.[1774] While the dispersal of this complex indicates that Sioni communities interacted with other contemporary traditions, its function within the domestic sphere suggests that it had little bearing on societies beyond the *oikoumene* and little influence over the wider regional network of exchange.[1775]

Shared Features among Contemporary Chalcolithic Traditions

The Chalcolithic period saw the emergence of a set of shared technological, morphological, and stylistic features among contemporary ceramic traditions across the Caucasus region.[1776] Shared features include technological traits, such as mixed tempered and comb-scraped ceramics, morphological forms, including pans, trays, perforated vessels, and hole-mouthed jars, and decorative techniques such as relief ornamentation and incised motifs.[1777] Within the archaeological literature, several of these features have become associated with Sioni, however, their occurrence across multiple traditions indicates that they cannot be used to define a single complex. Rather, these features are indicative of the development of a regional assemblage that was unique to the Caucasus during this period. These features crossed cultural and

[1774] Sagona 2014, 41; Rothman 2016, 236.
[1775] Sagona 2014, 41.
[1776] Sagona 2014, 30; Sagona 2018a, 211.
[1777] Varazashvili 1992, Pl. VIII.1-7, Pl. X.2-4, 7-8, Pl. XI.1-10, Pl. XIII.1-5, Pl. XVIII; Kiguradze 2000, 322; Aliev and Narimanov 2001, 18-19; Kiguradze 2001b, 51; Korenevskii 2004, Fig. 4, Fig. 5; Akhundov 2007, 108, 116; Badalyan et al. 2007, 60; Museibli 2007, 68-69, Pl. XXII, Pl. XXIII, Pl. XVIII.9; Palumbi 2007, 63; Museibli 2008b, 2; Marro et al. 2009, 48-49, Pl. XVIII.7; Museibli 2009, 52; Lyonnet and Guliyev 2010, 221-223; Maziar 2010, Fig. 6.5, Fig. 7.1-4, 6; Marro 2011, 44; Areshian et al. 2012, 127; Gülçur and Marro 2012, 312; Lyonnet and Guliyev 2012, 89; Lyonnet et al. 2012, 98; Wilkinson et al. 2012, 28; Abedi et al. 2014, Fig. 25.9, Fig. 26.7, Fig. 29.2; Palumbi et al. 2014, 45; Museibli 2014b, Fig. 34; Sagona 2014, 16; Palumbi 2015b; Lyonnet et al. 2017, 145-147; Kuliyeva and Bahşeliyev 2018, 42, Fig. 11; Lyonnet 2018, 557; Palumbi et al. 2018, 124; Sagona 2018a, 138, 203, Fig. 4.3.2-3; Sagona and Shapardon in preparation.

communal boundaries and linked contemporary assemblages across the region with a broadly shared tradition of ceramic manufacture.[1778] The development of a regional assemblage is likely tied to conservative domestic practices surrounding the preparation and consumption of food and the emergence of a region-specific, Chalcolithic cuisine.[1779]

Directions for Future Research

Lacunae within regional chronologies, poorly stratified sites, highly fragmented assemblages, and the inaccessibility and state of stored materials present challenges to the study of the Chalcolithic period within the Caucasus. As a result, the definition of the Sioni complex, outlined here, remains broad and must be refined as our understanding of this period develops in light of ongoing research and excavations.

As the majority of Sioni sites were excavated during the Soviet period, a re-evaluation of previously excavated sites and their materials must be considered. Ceramic assemblages from these sites are incompletely published and inaccessible. An analysis of these materials would supplement the observations made at the type site and further refine the definition of the Sioni complex. A re-evaluation of these sites may also aid in the identification of regional trends and variation within the Sioni ceramic tradition and its *oikoumene*. Where possible, samples, suitable for radiocarbon dating, should also be collected during the re-evaluation of these sites. Although recent excavations have seen the publication of many radiocarbon dates for the Chalcolithic period, many Sioni sites throughout eastern and southern Georgia remain undated. As

[1778] Palumbi et al. 2014, 53.
[1779] Palumbi 2015b; Palumbi et al. 2018, 132; Rothman 2018, 136; Sagona and Shapardon in preparation.

a result, the dates of these sites are hinged upon relative chronologies. The development of an absolute chronology for the Sioni complex would provide a means of tracing internal developments among sites and assemblages in addition to more accurately placing the tradition within a regional, chronological context.

Sioni represents a small piece of a wider regional phenomenon which occurred throughout the Caucasus during the Chalcolithic period. With the identification of shared features among contemporary ceramic traditions, we must continue to define local assemblages and place them within a regional context. It is these definitions which will come to support the next step in articulating the wider regional assemblage that had come to characterise the Caucasus during the Chalcolithic period.

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Appendix

Description of Ware Types

At Sioni, the Chalcolithic assemblage can be divided into six ware types based on a series of macroscopic differences seen in the ceramic pastes used to construct the vessels. In particular, the distinction of clay types between fine, medium, and coarse is based on the frequency of gritty inclusions and their size. The size of the inclusions is based on the Munsell classification of granular and crumb structures.

Fine Ware (Thumbnail 1)

Context – A small number of ceramics found spread across the Chalcolithic settlement. A number of sherds were collected as surface finds or found amongst the mixed upper layers. Some sherds were found within the eastern and western sections of Structure 1. Some examples were recovered from the floor of Structure 1 as well as from the ashy deposits of the central storage pit.

Manufacture – Handmade using the slab construction technique.

Fabric and Texture – Fine textured clay that is moderately levigated.

Inclusions – A low concentration of very fine (less than one millimetre in diameter) to fine (one to two millimetres in diameter) gritty inclusions including basalt, quartz, and mica in addition to fine grey gritty inclusions.

Firing – Poorly fired. Sherds demonstrate a darkened core indicative of an incomplete oxidisation process.

Hardness – Hard fired.

Nature of Breaks – Moderate sharp, angular breaks.

Colour Range – Sherds are fired to a variety of colours ranging from reddish yellow (5YR 6/6) to brown (7.5YR 5/4).

Surface Treatment – Surfaces may be smoothed, slipped, and burnished or a combination of these techniques.

Decoration – Rims decorated with oblique comb impressions, oblique notches, vertical notches, and shallow circular impressions. In one example, a sherd was decorated with a row of small, circular impressions beneath the rim.

Principle Shapes – Outward flaring jars with a pronounced juncture between the neck and the shoulder (Jar 1.4), inward leaning, short necked jars (Jar 1.1), and vertical necked jars (Jar 1.2).

Medium Ware (Thumbnail 2)

Context – The largest group of ceramics represented at Sioni. Medium Ware was found widely dispersed across the site as surface material, amongst the mixed upper layers, and in tombs of the Late Bronze and Early Iron Age. The highest concentration of material was found within and between structures 1 and 2.

Manufacture – Handmade using the slab construction technique.

Fabric and Texture – Medium textured clay with moderate to poor levigation.

Inclusions – A medium amount of very fine (less than one millimetre in diameter) to medium (between two and five millimetres in diameter) gritty inclusions including quartz, basalt, mica, and obsidian. The very fine nature of the obsidian in the clay (less than one millimetre in size) suggests that it may have occurred naturally in the clay

deposit. In some cases, tiny voids may also be indicative of the addition of finely chopped chaff.

Firing – Poorly and inconsistently fired. Some sherds were evenly fired, however, the majority of sherds demonstrate darkened cores indicating an incomplete oxidisation process.

Hardness – Hard fired.

Nature of Breaks – A combination of sharp, angular breaks and less severe, rounded edges.

Colour Range – Fired to a variety of colours from yellow (10YR 8/8) to red (2.5YR 5/6) and light yellowish brown (10YR 6/4) through to dark brown (7.5YR 3/2). The surfaces of sherds are often mottled.

Surface Treatment – Rarely left plain. Surfaces are often smoothed, slipped, burnished or demonstrate a combination of these techniques. The surfaces of some vessels were also comb scraped.

Decoration – Rims decorated with oblique comb impressions, oblique notches, vertical notches, and circular impressions. In one example, a rim was decorated with circular impressions made with a hollow tipped stylus.

Principle Shapes – Medium ware displays almost the full range of shapes including inward leaning, short necked jars (Jar 1.1), vertical necked jars (Jar 1.2 and 1.5), outward flaring jars (Jar 1.3, Jar 1.4, and Jar 1.6), crinkle rim jars (Jar 1.7), sinuous jars (Jar 2), and hole-mouthed jars (Jar 3). Flat bases (Base i) are also attested.

Coarse Ware (Thumbnail 3)

Context – A small group of ceramics found largely concentrated in and around Structure 1. Coarse Ware sherds were recovered from the eastern and sections of Structure 1 from both the floor levels and mixed upper layers.

Manufacture – Handmade using the slab construction technique. Mat impressed bases indicate that vessels were either constructed on woven basket mats or that slabs of clay were pressed into basket moulds.

Fabric and Texture – Coarse, poorly levigated clay often with large voids likely caused by dislodged coarse, gritty inclusions.

Inclusions – A high concentration of fine (one to two millimetres in diameter) to coarse (five to ten millimetres in diameter) gritty inclusions predominantly presented by crushed basalt. In some cases, a small amount of fine to medium chopped chaff was also added to the clay.

Firing – Poorly and inconsistently fired with many sherds demonstrating darkened cores indicative of an incomplete oxidisation process.

Hardness – Generally hard fired although some poorly fired examples are friable.

Nature of Breaks – Moderately angular to gently curving breaks.

Colour Range – Very pale brown (10YR 7/4) through to dark grey (10YR 4/1).

Surface Treatment – Exterior surfaces were mostly smoothed. However, some ceramics were also slipped or burnished demonstrated a combination of these techniques. Surfaces could also be comb scraped.

Decoration – None recorded.

Principle Shapes – Flat and heeled bases (Base i and Base ii), including one with a spiral basket impression, are the most common diagnostic among Coarse ware ceramics. Jars are poorly represented, but also include vertical necked jars (Jar 1.2) and outward flaring jars (Jar 1.4 and Jar 1.6). A thick based, pan fragment with a wide, flat handle-like projection was also recovered.

Obsidian Tempered Ware (Thumbnail 4)

Context – The second largest group of diagnostic ceramics attested at Sioni. The highest concentrations of Obsidian Tempered Ware were recovered from in and around Structure 1. Obsidian Tempered Ware was recovered from the floor levels of Structure 1 in addition to the central storage pit. Obsidian tempered ceramics were also recovered from Pit Grave 4, dating to the Middle Bronze Age, which was found cut into Structure 1. Ceramics were also found in the vicinity of Tomb 10, dating to the Late Bronze Age, and tombs 11, 28, 31, and 37 dating to the Early Iron Age.

Manufacture – Handmade using the slab construction technique.

Fabric and Texture – Medium to coarse clay with moderate to poor levigation.

Inclusions – A medium amount of very fine (less than one millimetre in diameter) to fine (one to two millimetres in diameter) gritty inclusions primarily consisting of basalt, quarts, and mica. Additionally, sherds also have a dense concentration of fine to coarse (five to ten millimetres in diameter) angular shaped obsidian inclusions.

Firing – Poorly and inconsistently fired with many sherds demonstrating darkened cores as a result of incomplete oxidisation.

Hardness – Hard fired.

Nature of Breaks – Moderately sharp, angular breaks.

Colour Range – Fired to a range of colours from reddish yellow (5YR 6/6) to very dark grey (10YR 3/1). Colours ranging from light brownish grey (10YR 6/2) through to very dark greyish brown (10YR 3/2) are predominant.

Surface Treatment – Surfaces and smoothed and slipped. Occasionally surfaces may also be burnished. Obsidian tempered ceramics often demonstrate comb scraped surfaces.

Decoration – Rims may be decorated with oblique comb impressions, oblique notches, vertical notches, circular impressions, and circular impressions made with a hollow tipped stylus. In one example, comb scraping is used as a functional and decorative feature along the neck of a vessel.

Principle Shapes – Obsidian Tempered Ware demonstrates almost the full range of jars attested at Sioni including inward leaning, short necked jars (Jar 1.1), vertical necked jars (Jar 1.2 and Jar 1.5), outward flaring jars (Jar 1.3, Jar 1.4, and Jar 1.6), crinkle rim jars (Jar 1.7), and sinuous jars (Jar 2).

Mixed Tempered Ware (Thumbnail 5)

Context – A small group of sherds largely uncovered in and around Structure 1. Mixed tempered ceramics were found amongst the mixed upper layers of Structure 1. Ceramics were also recovered from the floor levels of Structure 1 and the base of the central storage pit.

Manufacture – Handmade using the slab construction technique.

Fabric and Texture – A medium textured clay with poor to moderate levigation.

Inclusions – A fine to medium amount of very fine (less than one millimetre in diameter) to medium (two to five millimetres in diameter) gritty inclusions predominantly consisting of basalt, quartz, and mica. Small to medium voids, and impressions on the surface, indicate that chaff was also added to the clay. In some instances, chaff impressions are also apparent on the interior and exterior surfaces of the ceramics

Firing – Poorly fired with many sherds demonstrating a darkened core indicative of an incomplete oxidisation process.

Hardness – Hard fired. The addition of chaff to the temper produced sherds that were slightly less heavy when compared to other wares that were exclusively grit tempered.

Nature of Breaks – Moderately sharp, angular breaks.

Colour Range – Mixed tempered ceramics are fired to a variety of colours from yellow (10YR 8/8) through to red (2.5YR 5/6) and light yellowish brown (10YR 6/4) through to dark brown (7.5YR 3/2). The surfaces of sherds are often mottled.

Surface Treatment – Mixed tempered sherds are often smoothed, slipped, and burnished or demonstrate a combination of these techniques. In some cases, surfaces were also comb scraped.

Decoration – Rims were left largely undecorated, however, rims decorated with oblique notches are attested. In one particular example, the exterior surface of a mixed tempered sherd was decorated with a series of horizontal lines beneath the rim.

Principle Shapes – Shapes include inward leaning, short necked jars (Jar 1.1), vertical necked jars (Jar 1.2 and Jar 1.5), outward flaring jars (Jar 1.3, Jar 1.4, and Jar 1.6), sinuous jars (Jar 2), and hole-mouthed jars (Jar 3).

Chaff Tempered Ware (Thumbnail 6)

Context – Chaff Tempered ceramics represent the smallest group at Sioni with only three non-diagnostic examples identified. Sherds were recovered from the mixed upper layer in the western section of Structure 1. Another body fragment was found in a black ashy layer, beneath a series of stones, close to pit tombs 6 and 7 of the Late Bronze Age.

Manufacture – Handmade using the slab construction technique.

Fabric and Texture – Well levigated fine to medium textured clay.

Inclusions – Small to medium sized voids indicate the fine to medium chopped chaff was added to the clay. As a result, chaff impressions are also evident on the interior and exterior surfaces of the sherds. Some of the sherds also demonstrate low concentrations of very fine white carbonate inclusions which likely occurred naturally in the clay deposit.

Firing – Poorly fired with many sherds demonstrating a darkened, grey core indicative of an incomplete oxidisation process.

Hardness – Hard fired. The use of chaff as temper produced sherds that were light weight and crisp with an audible clink.

Nature of Breaks – Straight, sharp breaks.

Colour Range – Very pale brown (10YR 8/3 to 10YR 7/4).

Surface Treatment – Surfaces were smoothed or left plain.

Decoration – None recorded.

Principle Shapes – No diagnostic sherds were recovered.

Description of Principle Shapes

There are 194 diagnostic sherds included within the morphology. In terms of principle shapes, the Sioni material demonstrates a restricted morphology largely centred around closed vessel types. Much of the Sioni material can be divided into three major vessels shapes with the first category further subdivided into seven smaller subcategories. The subcategories of jars demonstrate variations of a similar concept.

Jar 1 – Necked Jars

Jar 1.1 – Inward leaning, short necked jar (Thumbnail 7)

Description – Jar 1.1 is a closed vessel characterised by an inward leaning, short neck and a gentle curvature between the neck and the shoulder. Twenty-two examples were recovered from the type site.

Variations – There are two variants based on the size of the rim diameters: Small (i) – 7 to 20 centimetres; Large (ii) – 20 to 32 centimetres. Of the 22 examples, ten are small and 11 are large.

Rim Types – Cut rim (14); rounded rim (4); thickened, rounded rim (1); irregular, rounded rim (1); irregular rim (2).

Ware Types – Fine Ware (6); Medium Ware (11); Obsidian Tempered Ware (4); Mixed Tempered Ware (1).

Decorative Treatments – No decorative treatment (12); oblique notches (5); oblique comb impressions (3); a single, deep oblique notch (1), circular impressions (1).

Contexts – Mixed upper layers; Structure 1; Early Agricultural ash layer; Burial 11; Burial 24; Burial 31.

Jar 1.2 – Vertical Necked Jar (Thumbnail 8)

Description – Jar 1.2 is a closed vessel characterised by a vertical neck from the shoulder to the lip in addition to a stronger curvature between the juncture of the neck and the shoulder when compared to vessels allocated to the category of Jar 1.1. Thirty-Two examples were recovered from the type site.

Variations – There are two variants based on the size of the rim diameters: Small (i) – 8 to 20 centimetres; Large (ii) – 20 to 40 centimetres. Of the 32 examples, 18 are small and 14 are large.

Rim Types – Cut rim (23); thickened, cut rim (2); flaring, cut rim (1); rounded rim (3); thickened, rounded rim (2); oblique rim (1).

Ware Types – Fine Ware (5); Medium Ware (10); Coarse Ware (1); Obsidian Tempered Ware (14); Mixed Tempered Ware (2).

Decorative Treatments – No decorative treatment (13); oblique notches (11); vertical notches (4); oblique comb impressions (2); circular impressions (1); elongated and overlapping oblique notches (1).

Contexts – Surface material; Outside the east section of Structure 1; Mixed upper layers of Structure 1; Wall of Structure 1; Around the storage pit of Structure 1; Storage pit of Structure 1; Burial 24; Burial 28; Burial 37.

Jar 1.3 – Outward flaring jar with a gentle curvature between the neck and the shoulder (Thumbnail 9)

Description – Jar 1.3 is a closed vessel characterised by an outward flaring profile with a gentle curvature between the neck and the shoulder. The curvature between the neck and the shoulder suggests that vessels of this type were also characterised by a globular body. Seventeen examples were recovered from the type site.

Variations – There are two variants based on the size of the rim diameters: Small (i) – 11 to 20 centimetres; Large (ii) – 20 to 30 centimetres. Of the 17 examples, 7 are small and 10 are large.

Rim Types – Rounded rim (8); thickened, rounded rim (6); irregular, rounded rim (1); cut rim (2).

Ware Types – Fine Ware (1); Medium Ware (5); Obsidian Tempered Ware (10); Mixed Tempered Ware (1).

Decorative Treatments – No decorative treatment (7); oblique comb impressions (4); oblique notches (2); vertical notches (2); vertical and oblique notches (1); circular impressions (1).

Contexts – Surface material; Mixed upper layers; Surrounding area of walls of Structure 1; Outside of the eastern section of Structure 1; Vicinity of Burial 10; Burial 31.

Jar 1.4 – Outward flaring jar with a strong curvature between the neck and the shoulder and a pronounced outward leaning profile (Thumbnail 10)

Description – Jar 1.4 is a closed vessel which is characterised by an outward flaring profile. It may be distinguished from Jar 1.3 based on a stronger curvature between the neck and the shoulder and a more pronounced outward leaning profile. Based on the curvature of the shoulder, it can be assumed that such vessels were also characterised

by a globular or ovoid shaped body. Thirty-eight examples were recovered from the type site.

Variations – There are two variants based on the size of the rim diameters: Small (i) 10 to 20 centimetres; Large (ii) 20 to 38 centimetres. Of the 38 examples, 22 are small and 16 are large.

Rim Types – Cut rim (24); irregular, cut rim (2); flaring, cut rim (1); cut, oblique rim (1); rounded rim (3); thickened, rounded rim (2); rounded, flaring rim (1); irregular, rounded rim (1); irregular rim (2); oblique rim (1).

Ware Types – Fine Ware (7); Medium Ware (19); Coarse Ware (1); Obsidian Tempered Ware (9); Mixed Tempered Ware (2).

Decorative Treatments – No decorative treatment (13); oblique notches (17); vertical notches (6); circular impressions (2).

Contexts – Surface material; West Trench; Mixed upper layers; Surrounding area of stone walls of Structure 1; Outside the eastern section of Structure 1; Mixed upper layers of the western section of Structure 1; Floor level of Structure 1; Ash layer and storage space of Structure 1; Around the storage pit of Structure 1; Bottom of the storage pit of Structure 1.

Jar 1.5 – Vertical, short necked jar with a distinct offset at the juncture between the neck and the shoulder (Thumbnail 11)

Description – Jar 1.5 is closed vessel characterised by a vertical neck and a distinct offset at the juncture between the neck and the shoulder. Both short and tall necked varieties are attested with some demonstrating an inclination towards an either inward leaning or outward leaning profile. The partial reconstruction of one vessel indicates that Jar 1.5

was also characterised by an elongated, globular body that gradually tapered towards the base. Twenty-six examples were recovered from the type site.

Variations – There are two variants based on the size of the rim diameters: Small (i) – 12 to 20 centimetres; Large (ii) – 20 to 38 centimetres. Of the 26 examples, nine are small and 17 are large.

Rim Types – Cut rim (17); thickened, cut rim (3); rounded rim (3); irregular, rounded rim (2); thickened, rounded rim (1).

Ware Types – Fine Ware (1); Medium Ware (17); Obsidian Tempered Ware (7); Mixed Tempered Ware (1).

Decorative Treatments – No decorative treatment; (10); oblique notches (6); circular impressions (5); vertical notches (2); oblique comb impressions (1); oblique notches and comb impressions (1); wide elliptical impressions (1).

Contexts – West Trench surface find; Mixed upper layers; Surrounding area and stone wall of Structure 1; Outside of the eastern section of Structure 1; Outside of the wall of Structure 1; Inside Structure 1; Western section of Structure 1; Chalcolithic storage layer; Burial 28.

Jar 1.6 – Outward flaring jar with a sharp juncture along the neck and the shoulder (Thumbnail 12)

Description – Jar 1.6 is a closed vessel characterised by a strong outward flaring profile between the neck and the rim and a sharp juncture along the neck and the shoulder. Jar 1.6 is also distinguished by a globular body that gradually tapers towards a flat base. Nine examples were recovered from the type site.

Variations **-** There are two variants based on the length of the neck: Short neck (i) and Tall neck (ii). Of the nine examples, there are five short necked jars and four tall necked jars. Rim diameters range from 8 to 38 centimetres.

Rim Types – Cut rim (6); rounded rim (2); thickened, rounded rim (1).

Ware Types – Medium Ware (3); Coarse Ware (1); Obsidian Tempered Ware (4); Mixed Tempered Ware (1).

Decorative Treatments – No decorative treatment (3); circular impressions made with a hollow tipped stylus (3); circular impressions (2); oblique notches (1).

Contexts – Between Structure 1 and the previous trench; Outside of the eastern section of Structure 1.

Jar 1.7 – Crinkled Rim Jar (Thumbnail 13)

Description – Jar 1.7 is a closed vessel characterised by a crinkled or wavy rim. Crinkled rim jars demonstrate an outward flaring neck. The curvature of the neck to the shoulder would also suggest that such jars had a globular body. Ten examples were recovered from the type site.

Variations – There are two variants based on the size of the rim diameters: Small (i) – 8 to 20 centimetres; Large (ii) – 20 to 24 centimetres. Of the ten examples, four are small and six are large.

Rim Types – crinkled rim (10).

Ware Types – Fine Ware (2); Medium Ware (5); Obsidian Tempered Ware (3).

Decorative Treatments – None recorded.

Contexts – West Trench; Mixed upper layers; Between structure 1 and the previous trench; Eastern section of Structure 1.

Jar 2 – Sinuous Jar (Thumbnail 14)

Description – Jar 2 is a closed vessel characterised by a bulging neck and globular body which, together, form a distinctive, serpentiform profile. Partially reconstructed vessels from other contemporary sites indicate that sinuous jars were also characterised by a flat base. Twenty-four examples were recovered from the type site.

Variations – There are two variants based on the size of the rim diameters: Small (i) – 10 to 20 centimetres; Large (ii) – 20 to 38 centimetres. Of the 24 examples, eight are small and 16 are large.

Rim Types – Cut rim (23); thickened, rounded rim (1).

Ware Types – Fine Ware (1); Medium Ware (10); Obsidian Tempered Ware (11); Mixed Tempered Ware (2).

Decorative Treatments – No decorative treatment (5); oblique notches (11); circular impressions (5); vertical notches (3).

Contexts – Surface material; Mixed upper layers; West Trench; Between Structure 1 and the previous trench; Eastern wall of Structure 1; Western section of Structure 1; Eastern section of Structure 1; Floor of Structure 1; Bottom of the pit in Structure 1; Early Agricultural storage space; Burial 11.

Jar 3 – Hole-mouthed Jar (Thumbnail 15)

Description – Jar 1.3 is a closed vessel characterised by an inward leaning profile and a rounded body. Six examples were recovered from the type site.

Variations – There are two variants based on the size of the rim diameters: Small (i) – 12 to 20 centimetres; Large (ii) – 20 to 24 centimetres. Of the six examples, four are small and two are large.

Rim Types – Cut rim (3); irregular, cut rim (2); rounded rim (1).

Ware Types – Medium Ware (4); Mixed Tempered Ware (2).

Decorative Treatments – None recorded.

Contexts – Cleaning of previously excavated areas; Mixed Upper layers; Outside of the eastern section of Structure 1; Western section of Structure 1; Burnt floor layer of Structure 1.

Pan (Thumbnail 16)

Description – The pan fragment is an open vessel that is round and flat with a profile that gently tapers towards the centre. The rim of the pan is rounded and characterised by a wide, flat handle-like projection. The base is coarse and flat. The diameter of the pan measures approximately 44 to 46 centimetres in size. One example was recovered from the type site.

Variations – N/A

Rim Types – rounded rim (1).

Ware Types – Coarse Ware (1).

Decorative Treatments – None recorded.

Contexts – Early Agricultural ash layer.

Bases (Thumbnail 17 and Thumbnail 18)

Description – Base fragments are flat and demonstrate a thick, coarse profile. Two adjoining fragments demonstrate a spiral basket impression. The bases range between seven and 12 centimetres in diameter. Eight examples were recovered from the type site.

Variations – There are two variants of base sherds: Flat (Base i) and Heeled (Base ii). Of the eight examples, five are flat and three are heeled.

Ware Types – Medium Ware (2); Coarse ware (6).

Decorative Treatments – None recorded.

Contexts – Mixed upper layers; Ash layer below a series of stones; Outside of the eastern section of Structure 1; Western section of Structure 1.

Diagnostic Catalogue

Jar 1 – Necked Jars

Jar 1.1 – Inward leaning, short necked jar (Thumbnail 7)

[1] inv. no. 82-976: 140; Box 133; context: unspecified; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); cut rim decorated with oblique comb impressions; **Fine Ware;** HM; burnt, black 10YR 2/1 fine clay with small voids and very fine to fine white and grey gritty and obsidian inclusions and one coarse grey gritty inclusion; very pale brown 10YR 7/3 to grey 10YR 5/1 exterior; very pale brown 10YR 7/3 to grey 10YR 5/1 interior; smoothed and burnt exterior surface with very fine black gritty inclusions; plain interior surface with very fine to fine white, grey, and black gritty inclusions; rim diameter: *ca.* 22-26cm; preserved height: 4cm.

[2] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of an inward leaning, short necked jar (Jar 1.1i); cut rim decorated with oblique notches; **Fine Ware;** HM; pale brown 10YR 7/3 to black 10YR 2/1 fine clay with very fine to fine obsidian inclusions; black 10YR 2/1 exterior; dark grey 10YR 4/1 interior; smoothed exterior surface with very fine to fine white gritty and obsidian inclusions; smoothed interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 16-20cm; preserved height: 2.7cm.

[3] inv. no. 82-976: 177; Box 133; context: western trench, XI-21; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); rounded rim decorated with oblique comb impressions; **Obsidian Tempered Ware;** HM; light brownish-grey 10YR 6/2 medium clay with small voids and very fine to fine grey gritty and fine to medium obsidian inclusions;

very pale brown 10YR 7/3 to grey 10YR 6/1 exterior; dark grey 10YR 4/1 interior; slipped and smoothed exterior surface with striation marks; smoothed interior surface with very fine grey gritty and obsidian inclusions; rim diameter: *ca.* 24-28cm; preserved height: 2.6cm.

[4] inv. no. 82-976: 177; Box 133; context: western trench, XI-21; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); cut rim decorated with a single deep oblique notch; **Medium Ware;** HM; reddish yellow 7.5YR 6/6 to grey 7.5YR 5/1 medium clay with small voids and very fine to fine grey gritty and obsidian inclusions; pale brown 10YR 6/3 to dark greyish brown 10YR 4/3 exterior; light brown 7.5YR 6/4 interior; slipped and smoothed exterior surface with very fine grey gritty and obsidian inclusions; slipped and smoothed interior surface with small voids and very fine to fine obsidian inclusions; rim diameter: *ca.* 24-28cm; preserved height: 3.5cm.

[5] inv. no. 82-976: 217; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); thickened, rounded rim decorated with oblique comb impressions; **Medium Ware;** HM; pale brown 10YR 6/3, light brownish grey 10YR 6/2, and grey 10YR 5/1 medium clay with very fine to fine grey gritty and obsidian inclusions; pale brown 10YR 6/3 to greyish brown 10YR 5/2 exterior surface; pale brown 10YR 6/3 to greyish brown 10YR 5/2 interior surface; smoothed exterior surface with very fine white gritty and obsidian inclusions; plain interior surface with very fine white gritty inclusions; rim diameter: *ca.* 22-26cm; preserved height: 2.5cm.

[6] inv. no. 82-976: 217; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); cut rim decorated with

oblique notches; **Medium Ware;** HM; very pale brown 10YR 7/3 to grey 10YR 6/1 medium clay with very fine to fine white and grey gritty and obsidian inclusions; brown 7.5YR 5/3 to dark grey 10YR 4/1 exterior; very pale brown 10YR 7/3 to dark grey 10YR 4/1 interior; smoothed exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with very fine obsidian inclusions; rim diameter: *ca.* 30cm; preserved height: 4cm.

[7] inv. no. 82-976: 392; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); rounded rim; **Medium Ware;** HM; reddish yellow 7.5YR 6/6 to light brown 7.5YR 6/3 medium clay with small voids, fine white and brick red gritty inclusions, and medium brown gritty inclusions; brown 7.5YR 5/2 exterior; light brown 7.5YR 6/4 interior; smoothed and slipped exterior surface with small voids, striation marks, crazing, and very fine white gritty inclusions; smoothed interior surface with small voids, crazing, and very fine white gritty inclusions; rim diameter: *ca.* 20-26cm; preserved height: 3cm.

[8] inv. no. 82-976: 392; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; rim fragment of an inward leaning, short necked jar (Jar 1.1i); cut rim decorated with oblique notches; **Medium Ware;** HM; light brownish grey 10YR 6/2 medium clay with small voids and medium to coarse white and brown gritty inclusions; pale brown 10YR 6/3 exterior; light yellowish brown 10YR 6/4 interior; smoothed and slipped exterior surface with small voids and medium grey gritty inclusions; smoothed interior surface with small voids and fine white and grey gritty inclusions; rim diameter: *ca.* 15cm; preserved height: 2cm.

[9] inv. no. 82-976: 447; Box 136; context: Square B-14, 15, 24, 25, between 0.90 and 1.5 metres below the surface, XIII-11; rim fragment of an inward leaning, short necked jar (Jar 1.1i); rounded rim; **Medium Ware;** HM; yellowish brown 10YR 5/4 medium clay with small voids and very fine brown gritty inclusions and fine to medium grey gritty inclusions; light grey 10YR 7/2 exterior; light grey 10YR 7/2 interior; plain exterior surface with very fine brown gritty and obsidian inclusions; plain interior surface with very fine brown gritty and obsidian inclusions; rim diameter: *ca.* 14-16cm; preserved height: 2.3cm.

[10] inv. no. 82-976: 464; Box 136; context: square B-26, 27, 36, 37, between 1.3 and 1.6 metres beneath the surface, XIII-13; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); cut rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine to fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 to dark grey 7.5YR 4/1 exterior; light brown 7.5YR 6/4 to dark grey 7.5YR 4/1 interior; smoothed, slipped, and lightly burnished exterior surface with very fine white gritty and obsidian inclusions; smoothed, slipped, and lightly burnished interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 24-28cm; preserved height: 3.5cm.

[11] inv. no. 82-976: 468; Box 136; context: square B-26, 27, 36, 37, 46, 47, between 0.20 and 0.44 metres below the surface, XIII-20; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); irregular, rounded rim; **Mixed Tempered Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine white and grey gritty inclusions; light brownish grey 10YR 6/2 to grey 10YR 5/1 exterior; light brownish grey 10YR 6/2 to grey 10YR 5/1 interior with yellow 10YR 7/6 discolouration; smoothed exterior surface

with chaff impressions and very fine white gritty inclusions; smoothed interior surface with one large void and very fine white gritty inclusions; rim diameter: *ca.* 28cm; preserved height: 2.5cm.

[12] inv. no. 82-976: 502; Box 136; context: square B-16, 17, 26, 27, between one and 1.6 metres below the surface, XIII-21; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); cut rim; **Fine Ware;** HM; light brown 7.5YR 6/4 fine clay with very fine white and grey gritty inclusions; dark grey 2.5Y 4/1 exterior; dark grey 2.5Y 4/1 interior; smoothed, slipped, and burnished exterior surface with very fine white gritty inclusions; smoothed and slipped interior surface with very fine white gritty inclusions; rim diameter: *ca.* 28-30cm; preserved height: 2cm.

[13] inv. no. 82-976: 513; Box 136; context: unspecified; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; brown 7.5YR 5/4 to very dark grey 10YR 3/1 medium clay with fine white and grey gritty inclusions and medium obsidian inclusions; brown 7.5YR 5/4 to dark greyish brown 10YR 4/2 exterior; brown 7.5YR 5/4 to dark greyish brown 10YR 4/2 interior; smoothed, slipped, and lightly burnished exterior surface with chaff impressions and fine white gritty inclusions; smoothed, slipped, and lightly burnished interior surface with fine white gritty and obsidian inclusions; rim diameter: *ca.* 28-32cm; preserved height: 5.4cm.

[14] inv. no. 82-976: 555; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of an inward leaning, short necked jar (Jar 1.1i); rounded rim; **Fine Ware;** HM; light grey 10YR 7/2 fine clay with yellow 10YR 7/6 discolouration and very fine to fine grey gritty and obsidian

inclusions; light brown 7.5YR 6/4 to brown 7.5YR 5/2 exterior; reddish yellow 5YR 7/6 interior with grey 10YR 5/1 discolouration; smoothed, slipped, and burnished exterior surface with very fine grey gritty and obsidian inclusions; smoothed, slipped, and burnished interior surface with very fine grey gritty and obsidian inclusions; rim diameter: *ca.* 12-14cm; preserved height: 3cm.

[15] inv. no. 82-976: 690; Box 141; context: uncovered during the excavation of the remnants of Burial 11, XV-24; rim fragment of an inward leaning, short necked jar (Jar 1.1i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; very pale brown 10YR 8/2 to light grey 10YR 7/1 medium clay with very fine brown and grey gritty and obsidian inclusions; very dark grey 10YR 3/1 exterior; very dark grey 10YR 3/1 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed and slipped interior surface with very fine white gritty and obsidian inclusions; diameter: *ca.* 12-16cm; preserved height: 3.2cm.

[16] inv. no. 82-976: 749; Box 142; context: square B-10, 19, 18, 17, 20, 29, 28, 27, 30, 39, 38, 37, 40, 49, 48, XVII-6; rim fragment of an inward leaning, short necked jar (Jar 1.1ii); cut rim decorated with circular impressions; **Fine Ware;** HM; dark grey 2.5Y 4/1 fine clay with very fine white gritty inclusions; dark grey 5YR 4/1 exterior; dark grey 2.5Y 4/1 interior; smoothed and slipped exterior surface with very fine white gritty inclusions; smoothed interior surface with very fine white gritty inclusions; rim diameter: *ca.* 21cm; preserved height: 3.7cm.

[17] inv. no. 82-976: 915; Box 146; context: Burial 24, XVIII-27; rim fragment of an inward leaning, short necked jar (Jar 1.1i); cut rim; **Medium Ware;** HM; grey 10YR 6/1 to very dark grey 10YR3/1 medium clay with very fine to fine white and grey gritty inclusions;

pale brown 10YR 6/3 exterior; pale brown 10YR 6/3 interior with grey 10YR5/1 discolouration; smoothed, slipped, and lightly burnished exterior surface with striation marks and very fine brown gritty inclusions; smoothed, slipped, and lightly burnished interior surface with very fine white gritty inclusions; rim diameter: *ca.* 8cm; preserved height: 4cm.

[18] inv. no. 82-976: 972; Box 147; context: unspecified; rim fragment of an inward leaning, short necked jar (Jar 1.1i); cut rim; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 to grey 2.5Y 5/1 medium clay with small voids, fine grey gritty inclusions, and fine to medium obsidian inclusions; dark greyish brown 10YR 4/2 to very dark grey 10YR 3/1 exterior; dark greyish brown 10YR 4/2 to very dark grey 10YR 3/1 interior; smoothed and slipped exterior surface with striation marks and very fine white gritty and obsidian inclusions; smoothed and slipped interior surface with striation marks and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 16-20cm; preserved height: 4cm.

[19] inv. no. 82-976: 1018; Box 148; context: surface material (1982?), XIX-2; rim fragment of an inward leaning, short necked jar (Jar 1.1i); cut rim; **Medium Ware;** HM; grey 10YR 5/1 medium clay with fine white and grey gritty inclusions; mottled exterior – pale brown 10YR 6/3, grey 10YR 5/1 to very dark grey 10YR 3/1; light brown 7.5YR 6/4 to grey 10YR 5/1 interior; smoothed, slipped, and lightly burnished exterior surface with fine white gritty inclusions; smoothed and slipped interior surface with fine white and grey gritty inclusions; rim diameter: *ca.* 12cm; preserved height: 5.4cm.

[20] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of an inward leaning, short necked jar (Jar

1.1i); irregular rim; **Fine Ware;** HM; greyish brown 10YR 5/2 fine clay with very fine grey gritty and obsidian inclusions and fine to medium white gritty inclusions; pale brown 10YR 6/3 exterior with dark grey 10YR 4/1 discolouration; brown 7.5YR 5/4 to dark greyish brown 10YR 4/2 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with very fine white gritty inclusions; rim diameter: *ca.* 14-18cm; preserved height: 3.6cm.

[21] inv. no. 82-976: 1176; Box 150; context: found amongst the upper layers of square A-09, 99, 89, 79, 98, 88, 78, XVI-31; rim fragment of an inward leaning, short necked jar (Jar 1.1i); irregular rim; **Medium Ware;** HM; yellowish brown 10YR 5/4 medium clay with very fine white, orange, and grey gritty inclusions; light brown 7.5YR 6/4 to grey 10YR 5/1 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with crazing and chaff impressions; smoothed and slipped interior surface with chaff impressions and very fine white gritty inclusions; rim diameter: *ca.* 7-12cm; preserved height: 3.6cm.

[22] inv. no. 82-976: 1484; Box 155; context: early agricultural period ash layer, square F-15, 25, 35, XXI-13; rim fragment of an inward leaning, short necked jar (Jar 1.1i); cut rim; **Medium Ware;** HM; light grey 10YR 7/1 medium clay with small voids and fine white gritty inclusions; pale brown 10YR 6/3 to grey 10YR 5/1 exterior; very pale brown 10YR 7/4 interior; smoothed exterior surface with fine white and grey gritty inclusions; smoothed interior surface with small voids and fine grey gritty inclusions; rim diameter: *ca.* 14-16cm; preserved height: 6.4cm.

Jar 1.2 – Vertical necked jar (Thumbnail 8)

[23] inv. no. 82-976: 127; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), close to the stones, XI-14; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with vertical notches; **Obsidian Tempered Ware;** HM; black 10YR 2/1 medium clay with a large void and very fine to fine grey gritty and obsidian inclusions; dark grey 10YR 4/1 to very dark grey 10YR 3/1 exterior; dark grey 10YR 4/1 to very dark grey 10YR 3/1 interior; smoothed exterior surface with fine obsidian inclusions; smoothed interior surface with fine obsidian inclusions; rim diameter: *ca.* 22-28cm; preserved height: 4cm.

[24] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of a vertical necked jar (Jar 1.2i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; pale brown 10YR 6/3 medium clay with very fine white and grey gritty inclusions and fine to medium obsidian inclusions; mottled exterior – greyish brown 10YR 5/2, dark greyish brown 10YR 4/2 to dark grey 10YR 4/1; mottled interior – very pale brown 10YR 7/4, grey 10YR 5/1 to dark grey 10YR 4/1; smoothed exterior surface with very fine to fine white gritty and obsidian inclusions; plain interior surface with very fine to fine white and grey gritty and obsidian inclusions; rim diameter: *ca.* 12-14cm; preserved height: 4.2cm.

[25] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of a vertical necked jar (Jar 1.2i); cut rim decorated with oblique notches; **Medium Ware;** HM; very pale brown 10YR 7/3 to yellowish brown 10YR 5/6 medium clay with very fine white and brown gritty and obsidian inclusions; yellowish brown 10YR 5/4 to dark grey 10YR 4/1 exterior; yellowish brown 10YR 5/4 to dark grey 10YR 4/1 interior; smoothed

exterior surface with very fine to fine white gritty and obsidian inclusions; plain interior surface with very fine to fine white gritty and obsidian inclusions; rim diameter: *ca.* 10-12cm; preserved height: 4.4cm.

[26] inv. no. 82-976: 215; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with oblique comb impressions; exterior surface decorated with a row of circular impressions beneath the rim; **Fine Ware;** HM; very pale brown 10YR 7/4 to grey 10YR 6/1 fine clay with very fine white and grey gritty and obsidian inclusions; very pale brown 10YR 7/4 exterior with grey 10YR 6/1 discolouration; very pale brown 10YR 7/4 interior with grey 10YR 6/1 discolouration; smoothed exterior surface with very fine black and brown gritty inclusions; smoothed interior surface with very fine to fine brown and grey gritty inclusions; rim diameter *ca.* 20-24cm; preserved height: 3.5cm.

[27] inv. no. 82-976: 216; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim; **Mixed Tempered Ware;** HM; very dark grey 10YR 3/1 medium clay with very fine white, brown, and grey gritty inclusions; brown 7.5YR 5/3 to dark grey 10YR 4/1 exterior; pale brown 10YR 6/3 interior; smoothed exterior surface with chaff impressions and very fine white gritty inclusions; smoothed interior surface with chaff impressions and very fine white gritty inclusions; rim diameter: *ca.* 24-30cm; preserved height: 3.8cm.

[28] inv. no. 82-976: 217; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with oblique notches; **Medium Ware;** HM; dark greyish brown 10YR 4/2 to very dark grey 10YR 3/1 medium clay with very fine to fine white and grey gritty and obsidian inclusions; brown 10YR 4/3

to dark grey 10YR 4/1 exterior; mottled interior – brown 10YR 4/3, grey 10YR 5/1 to dark grey 10YR 4/1; smoothed exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 26-30cm; preserved height: 4.5cm.

[29] inv. no. 82-976: 218; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim; **Medium Ware;** HM; very pale brown 10YR 7/3 to grey 10YR 6/1 medium clay with very fine grey gritty and obsidian inclusions; mottled exterior – pale brown 10YR 6/3, greyish brown 10YR 5/2 to grey 10YR 5/1; mottled interior – pale brown 10YR 6/3, greyish brown 10YR 5/2, light brown 7.5YR 6/4 to grey 10YR 5/1; smoothed exterior surface with striation marks and very fine white and grey gritty and obsidian inclusions; plain interior surface with small voids and very fine white and grey gritty and obsidian inclusions; rim diameter: *ca.* 30cm; preserved height: 6cm.

[30] inv. no. 82-976: 303; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; rim fragment of a vertical necked jar (Jar 1.2i); flaring, cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; light brownish grey 10YR 6/2 medium clay with small voids, very fine white and brown gritty inclusions, and fine to medium obsidian inclusions; very pale brown 10YR 7/4 to light brownish grey 10YR 6/2 exterior; light brownish grey 10YR 6/2 to grey 10YR 5/1 interior; comb scraped exterior surface with small voids, very fine white gritty inclusions, and fine to medium obsidian inclusions; smoothed interior surface with small voids, very fine white gritty inclusions, and fine to medium obsidian inclusions; rim diameter: *ca.* 18-20cm; preserved height: 5cm.

[31] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with oblique notches; **Medium Ware;** HM; pink 7.5YR 7/3 to grey 7.5YR 6/1 medium clay with one large void and very fine white and grey gritty inclusions; light brownish grey 10YR 6/2 to dark grey 10YR 4/1 exterior; light brown 7.5YR 6/3 to grey 7.5YR 5/1 interior; comb scraped and smoothed exterior surface with small voids and very fine white and grey gritty inclusions; smoothed and slipped interior surface with striation marks and very fine white and grey gritty inclusions; rim diameter: *ca.* 30cm; preserved height: 3.6cm.

[32] inv. no. 82-976: 323; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; rim fragment of a vertical necked jar (Jar 1.2i); thickened, rounded rim decorated with vertical notches; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with small to medium voids and fine white gritty and obsidian inclusions; reddish brown 10YR 5/2 exterior; very pale brown 10YR 7/3 to reddish brown 10YR 5/2 interior; smoothed and slipped exterior surface with small voids, striation marks, and fine obsidian inclusions; slipped interior surface with small to medium voids and fine white gritty and obsidian inclusions; rim diameter: *ca.* 16-18cm; preserved height: 4cm.

[33] inv. no. 82-976: 323; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; rim fragment of a vertical necked jar (Jar 1.2ii); thickened, rounded rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; light brownish grey 10YR 6/2 medium clay with small voids, and fine white, brown, and grey gritty inclusions, and fine to medium obsidian inclusions; grey 7.5YR 5/1 exterior; light grey 10YR 7/2 to grey 10YR 6/1 interior; smoothed and slipped exterior surface with small

voids and very fine white gritty and obsidian inclusions; smoothed interior surface with small voids, fine white gritty inclusions, and fine to medium obsidian inclusions; rim diameter: *ca.* 22-24cm; preserved height: 3.8cm.

[34] inv. no. 82-976: 323; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 medium clay with medium grey gritty and obsidian inclusions and one coarse white gritty inclusion; dark grey 10YR 4/1 exterior; dark grey 10YR 4/1 interior; smoothed, slipped, and lightly burnished exterior surface with fine obsidian inclusions; smoothed and slipped interior surface with small voids, fine white gritty inclusions, and fine to medium obsidian inclusions; rim diameter: *ca.* 24-30cm; preserved height: 3cm.

[35] inv. no. 82-976: 347; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of a vertical necked jar (Jar 1.2i); cut rim; **Coarse Ware;** HM; grey 10YR 6/1 coarse clay with small voids and medium to coarse white and grey gritty inclusions; reddish yellow 5YR 6/6 exterior; light grey 2.5Y 7/2 to grey 2.5Y 6/1 interior; smoothed, slipped, and lightly burnished exterior surface with small voids and medium white gritty inclusions; smoothed interior surface with fine to medium white and grey gritty inclusions; rim diameter: *ca.* 12-14cm; preserved height: 2.6cm.

[36] inv. no. 82-976: 347; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with small voids, fine white gritty inclusions, and medium obsidian inclusions; very pale brown 10YR 7/3 to grey 10YR 6/1 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with

large voids and fine obsidian inclusions; smoothed interior surface with small voids and fine to medium obsidian inclusions; rim diameter: *ca.* 20-26cm; preserved height: 3.7cm.

[37] inv. no. 82-976: 380; Box 134; context: square A-54, 55, 44, found around the central pit of Structure 1, XII-35; rim fragment of a vertical necked jar (Jar 1.2i); thickened, cut rim; **Obsidian Tempered Ware;** HM; light grey 2.5Y 7/2 to grey 2.5Y 6/1 medium to coarse clay with small voids and medium obsidian inclusions; dark grey 2.5Y 4/1 exterior; light grey 2.5Y 7/2 interior with very dark grey 2.5Y 3/1 discolouration; smoothed exterior surface with small to medium voids, chaff impressions, fine white gritty inclusions, and medium to coarse obsidian inclusions; smoothed interior surface with small voids and medium to coarse obsidian inclusions; rim diameter: *ca.* 10-12cm; preserved height: 4.3cm.

[38] inv. no. 82-976: 380; Box 134; context: square A-54, 55, 44, found around the central pit of Structure 1, XII-35; rim fragment of a vertical necked jar (Jar 1.2i); thickened, cut rim; **Obsidian Tempered Ware;** HM; light grey 2.5Y 7/2 to grey 2.5Y 6/1 medium clay with small voids and medium obsidian inclusions; dark grey 2.5Y 4/1 exterior; light grey 2.5Y 7/2 interior with very dark grey 2.5Y 3/1 discolouration; smoothed exterior surface with small to medium voids, chaff impressions, fine white gritty inclusions, and medium to coarse obsidian inclusions; smoothed interior surface with small voids and medium to coarse obsidian inclusions; rim diameter: *ca.* 10-12cm; preserved height: 4.3cm.

[39] inv. no. 82-976: 435; Box 136; context: found amongst a previously excavated wall whilst cleaning, XIII-2; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with oblique notches; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small

voids and very fine white gritty and obsidian inclusions; pale brown 10YR 6/3 to very dark greyish brown 10YR 3/2 exterior; grey 10YR 5/1 to dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; slipped interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 23cm; preserved height: 4.7cm.

[40] inv. no. 82-976: 468; Box 136; context: square B-26, 27, 36, 37, 46, 47, between 0.20 and 0.44 metres below the surface, XIII-20; rim fragment of a vertical necked jar (Jar 1.2i); cut rim; **Mixed Tempered Ware;** HM; olive yellow 10YR 6/6, light brownish grey 10YR 6/2 to very dark grey 10YR 3/1 medium clay with very fine to fine white, brown, and grey gritty inclusions; mottled exterior – yellow 10YR 7/6, very pale brown 10YR 7/3, strong brown 7.5YR 5/8 to grey 10YR 6/1; light brown 7.5YR 6/4 interior; smoothed, slipped, and burnished exterior surface with chaff impressions, crazing, and very fine white gritty and obsidian inclusions; smoothed and slipped interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 12-14cm; preserved height: 4cm.

[41] inv. no. 82-976: 464; Box 136; context: square B-26, 27, 36, 37, between 1.3 and 1.6 metres beneath the surface, XIII-13; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim; **Fine Ware;** HM; light grey 10YR 7/2 medium clay, with very fine white and orange gritty inclusions; brown 7.5YR 5/3 exterior with dark grey 7.5YR 4/1 discolouration; brown 7.5YR 5/3 interior with dark grey 7.5YR 4/1 discolouration; smoothed, slipped, and lightly burnished exterior surface with very fine white gritty inclusions; smoothed, slipped, and lightly burnished interior surface with very fine white gritty inclusions; rim diameter: *ca.* 32-40cm; preserved height: 3.9cm.

[42] inv. no. 82-976: 555; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of a vertical necked jar (Jar 1.2i); cut rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine to fine white and grey gritty and obsidian inclusions; brown 7.5YR 5/3 to dark grey 10YR 4/1 exterior; light brown 7.5YR 6/4 interior; smoothed and slipped exterior surface with very fine white gritty inclusions; smoothed and slipped interior surface with very fine obsidian inclusions; rim diameter: *ca.* 12-16cm; preserved height: 2cm.

[43] inv. no. 82-976: 578; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of a vertical necked jar (Jar 1.2i); cut rim; **Obsidian Tempered Ware;** HM; grey 10YR 6/1 medium clay with very fine to fine white and brown gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior with grey 10YR 5/1 discolouration; grey 10YR 5/1 interior; smoothed exterior surface with very fine obsidian inclusions; plain interior surface with striation marks, crazing, and very fine white and brown gritty inclusions; rim diameter: *ca.* 10-12cm; preserved height: 4cm.

[44] inv. no. 82-976: 578; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of a vertical necked jar (Jar 1.2i); cut rim; **Fine Ware;** HM; strong brown 7.5YR 5/6 fine clay with very fine white gritty and obsidian inclusions; pale brown 10YR 6/3 exterior; pale brown 10YR 6/3 interior with grey 10YR 5/1 discolouration; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 8-10cm: preserved height: 2cm.

[45] inv. no. 82-976: 580; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of a vertical necked jar (Jar 1.2i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 fine clay with very fine white, brown, and grey gritty and obsidian inclusions; dark greyish brown 10YR 4/2 to dark grey 10YR 4/1 exterior; dark greyish brown 10YR 4/2 to dark grey 10YR 4/1 interior; smoothed exterior surface with very fine white and brown gritty and obsidian inclusions; smoothed interior surface with very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 18-20cm; preserved height: 3cm.

[46] inv. no. 82-976: 581; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with elongated and overlapping oblique notches; **Obsidian Tempered Ware;** HM; brown 7.5YR 5/4 medium clay with very fine to fine white gritty inclusions and fine to medium obsidian inclusions; very pale brown 10YR 7/3 to dark greyish brown 10YR 4/2 exterior; very pale brown 10YR 7/3 interior; smoothed exterior surface with very fine white gritty and obsidian inclusions; smoothed and slipped interior surface with striation marks and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 20-24cm; preserved height: 2.5cm.

[47] inv. no. 82-976: 691; Box 141; context: uncovered during the cleaning of the eastern wall of Structure 1, XV-24; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; light brownish grey 10YR 6/2 medium clay with very fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 to greyish brown 10YR 4/2 exterior; light brown 7.5YR 6/4 interior;

smoothed and slipped exterior surface with small voids and very fine white gritty and obsidian inclusions; comb scrapped interior surface with very fine white gritty inclusions; rim diameter: *ca.* 32-36cm; preserved height: 5.8cm.

[48] inv. no. 82-976: 749; Box 142; context: square B-10, 19, 18, 17, 20, 29, 28, 27, 30, 39, 38, 37, 40, 49, 48, XVII-6; rim fragment of a vertical necked jar (Jar 1.2i); cut rim decorated with oblique comb impressions; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with very fine grey gritty inclusions and fine to medium brown gritty and obsidian inclusions; pale brown 10YR 6/3 exterior; very pale brown 10YR 7/4 interior; smoothed, slipped, and burnished exterior surface with chaff impressions and very fine white gritty and obsidian inclusions; smoothed, slipped, and burnished interior surface with very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 17cm; preserved height: 6.5cm.

[49] inv. no. 82-976: 915; Box 146; context: Burial 24, XVIII-27; rim fragment of a vertical necked jar (Jar 1.2i); rounded rim decorated with vertical notches; **Fine Ware;** HM; grey 10YR 6/1 medium clay with very fine white and grey gritty inclusions; reddish yellow 7.5YR 7/8 exterior; reddish yellow 7.5YR 7/6 interior with light grey 10YR 7/1 and grey 10YR 6/1 discolouration; slipped and smoothed exterior surface with very fine white, brown, and grey gritty inclusions; slipped interior surface with very fine white and grey gritty inclusions; rim diameter: *ca.* 10.5cm; preserved height: 3cm.

[50] inv. no. 82-976: 915; Box 146; context: Burial 24, XVIII-27; rim fragment of a vertical necked jar (Jar 1.2i); rounded rim decorated with vertical notches; **Fine Ware;** HM; grey 10YR 6/1 medium clay with very fine white and grey gritty inclusions; reddish yellow 7.5YR 7/8 exterior; reddish yellow 7.5YR 7/6 interior with light grey 10YR 7/1 and grey

10YR 6/1 discolouration; slipped and smoothed exterior surface with very fine white, brown, and grey gritty inclusions; slipped interior surface with very fine white and grey gritty inclusions; rim diameter: *ca.* 10.5cm; preserved height: 3.6cm.

[51] inv. no. 82-976: 942; Box 146; context: Burial 28, XVIII-35; rim fragment of a vertical necked jar (Jar 1.2i); cut rim; **Medium Ware;** HM; greyish brown 10YR 5/2 medium clay with very fine white and grey gritty and obsidian inclusions; greyish brown 10YR5/2 to grey 10YR5/1 exterior; brown 10YR5/3 interior; smoothed exterior surface with very fine white gritty inclusions; plain interior surface with very fine white gritty inclusions; rim diameter: *ca.* 12cm; preserved height: 5.2cm.

[52] inv. no. 82-976: 1000; Box 148; context: surface material (1982?), XIX-2; rim fragment of a vertical necked jar (Jar 1.2i); oblique rim decorated with oblique notches; **Medium Ware;** HM; brown 10YR 5/3 medium clay with fine white and brown gritty and obsidian inclusions; dark greyish brown 10YR 4/2 exterior; dark greyish brown 10YR 4/2 interior; smoothed, slipped, and lightly burnished exterior surface with fine white gritty inclusions; smoothed and slipped interior surface with chaff impressions and fine white and brown gritty inclusions; rim diameter: *ca.* 9.5cm; preserved height: 2.6cm.

[53] inv. no. 82-976: 1111; Box 150; context: Burial 37, XIX-46; rim fragment of a vertical necked jar (Jar 1.2ii); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; grey 10YR 5/1 medium clay with very fine white and grey gritty inclusions and fine to medium obsidian inclusions; brown 7.5YR 5/4 exterior; brown 7.5YR 5/4 interior; smoothed exterior surface with very fine white and grey gritty inclusions and fine to medium obsidian inclusions; plain interior surface with very fine white gritty inclusions,

very fine to medium brown gritty inclusions, and fine to coarse obsidian inclusions; rim diameter: *ca.* 18-24cm; preserved height: 4.8cm.

[54] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of a vertical necked jar (Jar 1.2i); rounded rim; **Medium Ware;** HM; grey 10YR 6/1 medium clay with small voids and fine white and grey gritty inclusions; brown 7.5YR 5/2 to dark greyish brown 10YR 4/2 exterior; greyish brown 10YR 5/2 to dark grey 10YR 4/1 interior; smoothed, slipped, and lightly burnished exterior surface with very fine white and orange gritty inclusions; smoothed and slipped interior surface with small voids and fine white and grey gritty inclusions; rim diameter: *ca.* 18-20cm; preserved height: 3.4cm.

Jar 1.3 – Outward flaring jar with a gentle curvature between the neck and the shoulder (Thumbnail 9)

[55] inv. no. 82-976: 121; Box 132; context: western section of the trench, surface find between 0.3 to 0.7 metres, XI-13; rim fragment of an outward flaring jar (Jar 1.3i); thickened, rounded rim decorated with oblique comb impressions; **Fine Ware;** HM; light brownish grey 10YR 6/2 fine clay with small voids and very fine white and grey gritty and obsidian inclusions; dark grey 10YR 4/1 exterior; light brownish grey 10YR 6/2 to grey 10YR 5/1 interior; slipped and smoothed exterior surface with very fine white gritty and obsidian inclusions; plain interior surface with one medium void and very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 16-20cm; preserved height: 2.5cm.

[56] inv. no. 82-976: 303; Box 134; Context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; rim fragment

of an outward flaring jar (Jar 1.3i); rounded rim decorated with a combination of vertical and oblique notches; **Medium Ware;** HM; light grey 2.5Y 7/2 medium clay with small to medium voids and very fine white gritty and obsidian inclusions; grey 10YR 5/1 to dark grey 10YR 4/1 exterior; grey 10YR 5/1 to dark grey 10YR 4/1 interior; smoothed, slipped, and lightly burnished exterior surface with small voids and very fine white and brown gritty and obsidian inclusions; smoothed and slipped interior surface with small voids and very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 14-18cm; preserved height: 2.6cm.

[57] inv. no. 82-976: 344; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of an outward flaring jar (Jar 1.3ii); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; dark grey 5YR4/1 medium to coarse clay with small voids and medium to coarse white gritty and obsidian inclusions; light reddish brown 5YR 6/3 to grey 2.5YR 6/1 exterior; light reddish brown 5YR 6/4 interior; smoothed and slipped exterior surface with mica and medium to coarse white and obsidian inclusions; plain interior surface with small voids, chaff impressions, mica, and medium to coarse brown gritty and obsidian inclusions; rim diameter: *ca.* 26-30cm; preserved height: 4.5cm.

[58] inv. no. 82-976: 345; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of an outward flaring jar (Jar 1.3ii); rounded rim decorated with vertical notches; **Obsidian Tempered Ware;** HM; very pale brown 10YR 8/3 medium to coarse clay with small voids and medium to coarse white and grey gritty and obsidian inclusions; pink 5YR 7/4 to grey 2.5Y 5/1 exterior; pale yellow 2.5Y 8/2 to grey 2.5Y 5/1 interior; smoothed and slipped exterior surface with small voids and fine

to medium brown gritty and obsidian inclusions; comb scraped interior surface with small voids, striation marks, and fine to medium white gritty and obsidian inclusions; rim diameter: *ca.* 22-26cm; preserved height: 4.7cm.

[59] inv. no. 82-976: 392; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; rim fragment of an outward flaring jar (Jar 1.3ii); rounded rim; **Medium Ware;** HM; grey 5YR 6/1 medium clay with small voids and very fine white gritty inclusions; light reddish brown 5YR 6/4 exterior; pink 5YR 7/3 interior; smoothed, slipped, and lightly burnished exterior surface with small voids, chaff impressions, and very fine brown gritty and obsidian inclusions; smoothed slipped interior surface with small voids, striation marks, and very fine brown gritty and obsidian inclusions; rim diameter: *ca.* 22cm; preserved height: 2.5cm.

[60] inv. no. 82-976: 392; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; rim fragment of an outward flaring jar (Jar 1.3i); thickened, rounded rim; **Obsidian Tempered Ware;** HM; light grey 7.5YR 7/1 medium clay with small voids and medium obsidian inclusions; reddish yellow 7.5YR 6/6 exterior; reddish yellow 7.5YR 6/6 to pinkish grey 7.5YR 6/2 interior; smoothed and slipped exterior surface with small voids and fine to medium obsidian inclusions; burnt, slipped interior surface with small voids and medium obsidian inclusions; rim diameter: *ca.* 16cm; preserved height: 3.5cm.

[61] inv. no. 82-976: 442; Box 136; context: unspecified; rim fragment of an outward flaring jar (Jar 1.3ii); cut rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine to fine white, orange, and black gritty inclusions and fine to medium brick red inclusions; brown 7.5YR 5/3 to light grey 10YR 7/2 exterior; brown 7.5YR 5/3 to light grey

10YR 7/2 interior; smoothed and slipped exterior surface with very fine white gritty inclusions; plain interior surface with very fine white gritty inclusions; rim diameter: *ca.* 24cm; preserved height: 3.5cm.

[62] inv. no. 82-976: 468; Box 136; context: square B-26, 27, 36, 37, 46, 47, between 0.20 and 0.44 metres below the surface, XIII-20; rim fragment of an outward flaring jar (Jar 1.3ii); rounded rim; **Mixed Tempered Ware;** HM; light grey 10YR 7/1 medium clay with small voids and very fine white and grey gritty and obsidian inclusions; pink 5YR 7/4 exterior; pink 5YR 7/4 interior; smoothed, slipped, and lightly burnished exterior surface with chaff impressions and very fine white gritty inclusions; smoothed, slipped, and lightly burnished interior surface with chaff impressions and very fine white, brown, and grey gritty inclusions; rim diameter: *ca.* 21cm; preserved height: 3cm.

[63] inv. no. 82-976: 468; Box 136; context: square B-26, 27, 36, 37, 46, 47, between 0.20 and 0.44 metres below the surface, XIII-20; rim fragment of an outward flaring jar (Jar 1.3ii); rounded rim decorated with oblique comb impressions; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with very fine obsidian inclusions; pale brown 10YR 6/3 exterior with dark grey 10YR 4/1 discolouration; pale brown 10YR 6/3 interior with dark grey 10YR 4/1 discolouration; smoothed and slipped exterior surface with very fine obsidian inclusions; plain interior surface with striation marks and very fine obsidian inclusions; rim diameter: *ca.* 30cm; preserved height: 4cm.

[64] inv. no. 82-976: 530; Box 136; context: around the pit of Burial 10, XIII-26; rim fragment of an outward flaring jar (Jar 1.3ii); thickened, rounded rim decorated with oblique comb impressions; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 medium clay with very fine to fine brown gritty and obsidian inclusions; brown 10YR 5/3

to dark greyish brown 10YR 4/2 exterior; mottled interior – very pale brown 10YR 7/3, yellowish brown 10YR 5/4 to dark grey 10YR 4/1; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; comb scraped and slipped interior surface with one large void and fine to medium obsidian inclusions; rim diameter: *ca.* 22cm; preserved height: 3.5cm.

[65] inv. no. 82-976: 687; Box 141; context: unspecified; rim fragment of an outward flaring jar (Jar 1.3ii); rounded rim; **Obsidian Tempered Ware;** HM; greyish brown 10YR 5/2 coarse clay with very fine white gritty inclusions and very fine to coarse obsidian inclusions; reddish yellow 5YR 6/6 exterior surface with very dark grey 10YR 3/1 discolouration; reddish yellow 5YR 6/6 interior surface with very dark grey 10YR 3/1 discolouration; plain exterior surface with very fine white, brown, and grey gritty inclusions and very fine to coarse obsidian inclusions; plain interior surface with very fine white and grey gritty inclusions and very fine to coarse obsidian inclusions; rim diameter: *ca.* 20cm; preserved height: 5.2cm.

[66] inv. no. 82-976: 726; Box 142; context: uncovered when cleaning the stone walls and surrounding area of Structure 1, XVII-1; rim fragment of an outward flaring jar (Jar 1.3i); rounded rim decorated with oblique comb impressions; **Obsidian Tempered Ware;** HM; very dark grey 7.5YR 3/1 medium clay with very fine to fine white and brown gritty and obsidian inclusions; pale brown 10YR 6/2 to very dark greyish brown 10YR 3/2 exterior; pale brown 10YR 6/2 to very dark greyish brown 10YR 3/2 interior; smoothed exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with chaff impressions and very fine obsidian inclusions; rim diameter: *ca.* 18cm; preserved height 3cm.

[67] inv. no. 82-976: 749; Box 142; context: square B-10, 19, 18, 17, 20, 29, 28, 27, 30, 39, 38, 37, 40, 49, 48, XVII-6; rim fragment of an outward flaring jar (Jar 1.3i); thickened, rounded rim decorated with oblique notches; **Medium Ware;** HM; light reddish brown 5YR 6/4 medium clay with very fine to fine white and grey gritty and obsidian inclusions; mottled exterior – very pale brown 10YR 7/3, light olive brown 10YR 5/4 to light brownish grey 10YR 6/2; very pale brown 10YR 8/3 to grey 10YR 5/1 interior; smoothed and slipped exterior surface with very fine obsidian inclusions; smoothed interior surface with very fine obsidian inclusions; rim diameter: *ca.* 17cm; preserved height: 4.7cm.

[68] inv. no. 82-976: 1000; Box 148; context: surface material (1982?), XIX-2; rim fragment of an outward flaring jar (Jar 1.3i); thickened, rounded rim; **Medium Ware;** HM; light brownish grey 10YR 6/2 to greyish brown 10YR 5/2 medium clay, with fine white and orange gritty inclusions and medium brown gritty inclusions; brown 7.5YR 5/2 exterior; brown 7.5YR 5/2 interior; comb scraped, smoothed, slipped, and lightly burnished exterior surface with fine white and brown gritty inclusions; smoothed interior surface with large voids and fine white and brown gritty inclusions; rim diameter: *ca.* 11cm; preserved height: 3.5cm.

[69] inv. no. 82-976: 1018; Box 148; context: Burial 31, XIX-23; rim fragment of an outward flaring jar (Jar 1.3ii); thickened, rounded rim decorated with vertical notches; **Obsidian Tempered Ware;** HM; brown 7.5YR 5/4 to dark grey 10YR 4/1 medium clay with small voids and very fine white gritty and obsidian inclusions; brown 7.5YR 5/3 to dark grey 10YR 4/1 exterior; dark grey 10YR 3/1 interior; smoothed, slipped, and lightly burnished exterior surface with very fine white gritty and obsidian inclusions; smoothed,

slipped, and lightly burnished interior surface with small voids, one medium white gritty inclusion, and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 28-30cm; preserved height: 1.5cm.

[70] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of an outward flaring jar (Jar 1.3ii); irregular, rounded rim; **Obsidian Tempered Ware;** HM; reddish yellow 7.5YR 7/6 medium clay with fine grey gritty inclusions and fine to medium obsidian inclusions; pink 7.5YR 7/4 to very pale brown 10YR 7/4 exterior; pale brown 10YR 8/4 interior with light grey 10YR 7/1 discolouration; comb scraped and smoothed exterior surface with fine white gritty and obsidian inclusions; plain interior surface with fine obsidian inclusions; rim diameter: *ca.* 22-28cm; preserved height: 4cm.

[71] inv. no. 82-976: 1176; Box 150; context: found amongst the upper layers of square A-09, 99, 89, 79, 98, 88, 78, XVI-31; rim fragment of an outward flaring jar (Jar 1.3i); rounded rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; very dark grey 10YR 3/1 medium clay with very fine obsidian inclusions; very pale brown 10YR 7/3 to pink 7.5YR 7/3 exterior; very pale brown 10YR 7/3 interior with grey 10YR 5/1 discolouration; smoothed, slipped, and lightly burnished exterior surface with very fine grey gritty and obsidian inclusions; smoothed, slipped, and lightly burnished interior surface with striation marks and very fine obsidian inclusions; rim diameter: *ca.* 12-18cm; preserved height: 2.8cm.

Jar 1.4 – Outward flaring jar with a strong curvature between the neck and the shoulder and a pronounced outward leaning profile (Thumbnail 10)

[72] inv. no. 82-976: ?; Box 133; context: unspecified; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim decorated with oblique notches; **Fine Ware;** HM; brown 7.5YR 5/4 to pale brown 10YR 6/3 fine clay with very fine brown and grey gritty and obsidian inclusions; dark grey 10YR 4/1 to dark greyish brown 10YR 4/2 exterior; dark grey 10YR 4/1 to dark greyish brown 10YR 4/2 interior; smoothed exterior surface with mica and very fine white gritty and obsidian inclusions; plain interior surface with striation marks and very fine obsidian inclusions; rim diameter: *ca.* 18-22cm; preserved height: 3.1cm.

[73] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim decorated with oblique notches; **Fine Ware;** HM; strong brown 7.5YR 5/6 fine clay with very fine to fine white and grey gritty and obsidian inclusions; dark greyish brown 10YR 4/2 to dark grey 10YR 4/1 exterior; dark grey 10YR 4/1 interior; slipped and smoothed exterior surface with very fine obsidian inclusions; plain interior surface with very fine obsidian inclusions; rim diameter: *ca.* 34-38cm; preserved height: 2.6cm.

[74] inv. no. 82-976: 216; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim; **Obsidian Tempered Ware;** HM; light brownish grey 10YR 6/2 medium clay with very fine to fine white, grey, and brown gritty and obsidian inclusions; brown 7.5YR 5/4 to grey 7.5YR 5/1 exterior; very pale brown 10YR 7/3 interior; smoothed exterior surface with fine brown gritty and obsidian inclusions; plain

interior surface with fine white and grey gritty inclusions and fine to medium obsidian inclusions; rim diameter: *ca.* 30cm; preserved height: 4cm.

[75] inv. no. 82-976: 246; Box 133; context: outside of the wall of Structure 1, XII-2; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); rounded rim decorated with oblique notches; **Medium Ware;** HM; black 10YR 2/1 medium clay with very fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; mottled interior – very pale brown 10YR 7/3, dark grey 10YR 4/1 to very dark grey 10YR 3/1; smoothed and slipped exterior surface with very fine obsidian inclusions; plain interior surface with very fine obsidian inclusions; rim diameter: *ca.* 24cm; preserved height: 6.6cm.

[76] inv. no. 82-976: 303; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with vertical notches; **Fine Ware;** HM; dark grey 10YR 4/1 fine clay with large voids and very fine to fine white gritty and obsidian inclusions; brown 7.5YR 5/2 to grey 10YR 5/1 exterior; grey 10YR 5/1 interior; smoothed and slipped exterior surface with very fine to fine white gritty and obsidian inclusions; smoothed and slipped interior surface with very fine to fine white gritty and obsidian inclusions; rim diameter: *ca.* 10-12cm; preserved height: 1.5cm.

[77] inv. no. 82-976: 303; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut, flaring rim decorated with oblique notches; **Medium Ware;** HM; light

yellowish brown 10YR 6/4, grey 10YR 5/1 to dark grey 10YR 4/1 medium clay with small voids and very fine to fine white gritty and obsidian inclusions; pale brown 10YR 6/3 exterior with grey 10YR 5/1 discolouration; very pale brown 10YR 7/4 interior; comb scraped and smoothed exterior surface with small voids and very fine white gritty and obsidian inclusions; comb scraped and smoothed interior surface with small voids and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 20-22cm; preserved height: 6.5cm.

[78] inv. no. 82-976: 304; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); irregular rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay, with small voids and very fine white, brown, and grey gritty inclusions; light reddish brown 5YR 6/4 exterior with light grey 10YR 7/2 discolouration; light grey 10YR 7/2 interior; smoothed and slipped exterior surface with small voids and very fine brown gritty and obsidian inclusions; smoothed interior surface with striation marks, crazing, and very fine to fine white gritty inclusions; rim diameter: *ca.* 12-16cm; preserved height: 4.4cm.

[79] inv. no. 82-976: 304; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); irregular rim; **Medium Ware;** HM; pale brown 10YR 6/3 medium clay with very fine white, brown, and grey gritty inclusions; light brown 7.5YR 6/4 exterior; light grey 10YR 7/2 interior; smoothed and slipped exterior surface with very fine to fine white

gritty inclusions; smoothed interior surface with very fine to fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 12-16cm; preserved height: 4cm.

[80] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut, oblique rim decorated with oblique notches; **Medium Ware;** HM; brown 7.5YR 4/3 medium clay with small voids, chaff impressions, and very fine white gritty and obsidian inclusions; mottled exterior – brown 7.5YR 5/3, dark grey 7.5YR 4/1 to very dark grey 7.5YR 3/1; mottled interior – brown 7.5YR 5/3, dark grey 7.5YR4/1 to very dark grey 7.5YR 3/1; smoothed and slipped exterior surface with small voids, chaff impressions, and very fine white gritty and obsidian inclusions; plain interior surface with chaff impressions and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 32-34cm; preserved height: 4cm.

[81] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim decorated with oblique notches; **Medium Ware;** HM; very dark grey 7.5YR 3/1 medium clay with medium voids and very fine white gritty and obsidian inclusions; brown 7.5YR 4/3 exterior with very dark grey 10YR 3/1 discolouration; light brown 7.5YR 6/4 interior; comb scraped, smoothed, and slipped exterior surface with small voids, chaff impressions, and very fine white gritty inclusions; plain interior surface with small to medium voids, chaff impressions, and very fine obsidian inclusions; rim diameter: *ca.* 20-22cm; preserved height: 8.5cm.

[82] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; rim fragment of an outward flaring jar with a pronounced juncture

between the neck and the shoulder (Jar 1.4ii); cut rim decorated with circular impressions; **Medium Ware;** HM; very dark grey 7.5YR 3/1 medium clay with small to medium voids, chaff impressions, and fine to medium white gritty inclusions; brown 7.5YR 5/3 exterior with very dark grey 7.5YR 3/1 discolouration; brown 7.5YR 5/3 to grey 7.5YR 5/1 interior; smoothed, slipped and lightly burnished exterior surface with small voids, chaff impressions, and very fine to fine white gritty inclusions; plain interior surface with small voids and very fine to fine white gritty and obsidian inclusions; rim diameter: *ca.* 30-34cm; preserved height: 5.5cm.

[83] inv. no. 82-976: 345; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); thickened, rounded rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium to coarse clay with small voids and medium to coarse obsidian inclusions; grey 10YR 6/1 exterior; very pale brown 10YR 7/3 to grey 10YR 6/1 interior; smoothed and slipped exterior surface with medium to coarse obsidian inclusions; smoothed interior surface with medium obsidian inclusions; rim diameter: *ca.* 22-26cm; preserved height: 3.5cm.

[84] inv. no. 82-976: 368; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; reddish yellow 5YR 6/6 to light grey 10YR 7/2 medium to coarse clay with small voids, fine white gritty inclusions, and medium to coarse obsidian inclusions; light reddish brown 5YR 6/4 exterior; light reddish brown 5YR 6/4 to light grey 10YR 7/2 interior; smoothed and

slipped exterior surface with fine white gritty and obsidian inclusions; smoothed interior surface with fine white gritty and obsidian inclusions; rim diameter: *ca.* 16cm; preserved height: 4cm.

[85] inv. no. 82-976: 368; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with vertical notches; **Medium Ware;** HM; light reddish brown 5YR 5/4 to grey 5YR 5/1 medium clay with small voids and very fine white gritty and obsidian inclusions; light reddish brown 5YR 6/4 exterior; light reddish brown 5YR 6/4 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 14-18cm; preserved height: 2.7cm.

[86] inv. no. 82-976: 368; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with vertical notches; **Medium Ware;** HM; reddish brown 5YR 5/4 to brown 7.5YR 5/2 medium clay with small to medium voids, very fine white gritty inclusions, and fine to medium obsidian inclusions; light reddish brown 5YR 6/4 exterior; pale grey 5YR 6/2 interior; smoothed and slipped exterior surface with small voids and very fine obsidian inclusions; smoothed interior surface with small voids and very fine white gritty and obsidian visions; rim diameter: *ca.* 14-18cm; preserved height: 2.7cm.

[87] inv. no. 82-976: 368; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; rim fragment of an outward flaring

jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with vertical notches; **Medium Ware;** HM; reddish brown 5YR 5/4 to brown 7.5YR 5/2 medium clay with small to medium voids, very fine white gritty inclusions, and fine to medium obsidian inclusions; light reddish brown 5YR 6/4 exterior; pale grey 5YR 6/2 interior; smoothed and slipped exterior surface with small voids and very fine obsidian inclusions; smoothed interior surface with small voids and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 14-18cm; preserved height: 2.7cm.

[88] inv. no. 82-976: 380; Box 134; context: square A-54, 55, 44, found around the central pit of Structure 1, XII-35; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); rounded, flaring rim decorated with oblique notches; exterior surface decorated with a band of vertical comb impressions along the neck of the vessel; **Obsidian Tempered Ware;** HM; pale yellow 2.5Y 7/3 medium clay with small voids and medium obsidian inclusions; pinkish grey 5YR 7/2 exterior with very dark grey 2.5Y 3/1 discolouration; grey 2.5Y 5/1 interior with black 2.5Y 2.5/1; comb scraped, smoothed, and slipped burnt exterior surface with fine brown and grey gritty inclusions and fine to medium white gritty and obsidian inclusions; comb scraped, smoothed, and slipped interior surface with striation marks, fine white gritty inclusions, and fine to medium obsidian inclusions; rim diameter: *ca.* 15cm; preserved height: 6.5cm.

[89] inv. no. 82-976: 468; Box 136; context: square B-26, 27, 36, 37, 46, 47, between 0.20 and 0.44 metres below the surface, XIII-20; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim; **Mixed Tempered Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine to

fine brown and grey gritty inclusions; light reddish brown 5YR 6/4 exterior with light grey 10YR 7/1 discolouration; brown 7.5YR 5/2 interior; slipped, smoothed, and lightly burnished exterior surface with chaff impressions and very fine brown and grey gritty inclusions; smoothed and smoothed interior surface with chaff impressions and very fine brown gritty and obsidian inclusions; rim diameter: *ca.* 10cm; preserved height: 4.5cm.

[90] inv. no. 82-976: 468; Box 136; context: square B-26, 27, 36, 37, 46, 47, between 0.20 and 0.44 metres below the surface, XIII-20; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); rounded rim; **Medium Ware;** HM; yellow 10YR 7/6 to light grey 10YR 7/1 medium clay with very fine white gritty inclusions; mottled exterior – pale brown 10YR 6/3, light grey 10YR 7/2 to grey 10YR 5/3; very pale brown 10YR 7/3 to grey 10YR 6/1 interior; smoothed exterior surface with chaff impressions and very fine white gritty inclusions; smoothed interior surface with chaff impressions and very fine white gritty inclusions; rim diameter: *ca.* 18cm; preserved height: 3.2cm.

[91] inv. no. 82-976: 502; Box 136; context: square B-16, 17, 26, 27, between one and 1.6 metres below the surface, XIII-21; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim decorated with circular impressions; **Medium Ware;** HM; reddish yellow 7.5YR 6/6 to very dark grey 10YR 3/1 medium clay with very fine white and grey gritty and obsidian inclusions; brown 7.5YR 5/2 to dark grey 7.5YR 4/1 exterior; light brown 7.5YR 6/4 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian

inclusions; smoothed interior surface with very fine grey gritty and obsidian inclusions; rim diameter: *ca.* 22-26cm; preserved height: 3.9cm.

[92] inv. no. 82-976: 555; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); irregular, cut rim; **Coarse Ware;** HM; strong brown 7.5YR 5/6 coarse clay with very fine to fine white and grey gritty and obsidian inclusions; greyish brown 10YR 5/2 to dark greyish brown 10YR 4/2 exterior; light brown 7.5YR 6/4 interior; smoothed exterior surface with small voids, striation marks, and very fine obsidian inclusions; smoothed interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 16-20cm; preserved height: 4.7cm.

[93] inv. no. 82-976: 556; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim decorated with vertical notches; **Obsidian Tempered Ware;** HM; brown 7.5YR 5/4 medium clay with very fine to fine white, brown, and grey gritty inclusions and fine to medium obsidian inclusions; dark grey 10YR 4/1 exterior; dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; slipped interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 20-26cm; preserved height: 3.3cm.

[94] inv. no. 82-976: 568; Box 137; context: the floor level of Structure 1, XIII-38; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); rounded rim; **Mixed Tempered Ware;** HM; grey 10YR 6/1

medium clay with yellow 10YR 7/6 discolouration, small voids, and very fine white gritty inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with chaff impressions and very fine white gritty inclusions; smoothed and slipped interior surface with chaff impressions and very fine white gritty inclusions; rim diameter: *ca.* 12-16cm; preserved height: 2.3cm.

[95] inv. no. 82-976: 576; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine white gritty inclusions and medium brown and grey gritty inclusions; yellowish brown 10YR 5/4 exterior with very dark grey 10YR 3/1 discolouration; reddish yellow 5YR 6/6 interior with light grey 2.5Y 7/1 discolouration; smoothed, slipped, and burnished exterior surface with striation marks and very fine white gritty and obsidian inclusions; smoothed and slipped interior surface with small voids and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 32-36cm; preserved height: 6.6cm.

[96] inv. no. 82-976: 576; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine white gritty inclusions and medium brown and grey gritty inclusions; yellowish brown 10YR 5/4 exterior with very dark grey 10YR 3/1 discolouration; reddish yellow 5YR 6/6 interior with light grey 2.5Y 7/1 discolouration; smoothed, slipped, and burnished exterior surface with striation marks and very fine white gritty and obsidian inclusions; smoothed

and slipped interior surface with small voids and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 32-36cm; preserved height: 6.6cm.

[97] inv. no. 82-976: 578; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with yellow 10YR 7/6 discolouration, small voids, and very fine white and grey gritty inclusions; dark grey 10YR 4/1 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with very fine white gritty inclusions; smoothed interior surface with striation marks, mica, and very fine white gritty inclusions; rim diameter: *ca.* 12-16cm; preserved height: 3.7cm.

[98] inv. no. 82-976: 579; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with vertical notches; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine to fine white gritty and obsidian inclusions; mottled exterior – very pale brown 10YR 7/3, light brownish grey 10YR 6/2 to grey 10YR 5/1; grey 10YR 5/1 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed and slipped interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 14-18cm; preserved height: 3cm.

[99] inv. no. 82-976: 691; Box 141; context: uncovered during the cleaning of the eastern wall of Structure 1, XV-24; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 medium clay with

very fine grey gritty and obsidian inclusions; dark greyish-brown 10YR 4/2 to dark grey 10YR 4/1 exterior; dark greyish brown 10YR 4/2 to dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with very fine obsidian inclusions; smoothed and slipped interior surface with very fine obsidian inclusions; rim diameter: *ca.* 14-18cm; preserved height: 2.1cm.

[100] inv. no. 82-976: 727; Box 142; context: uncovered when cleaning the stone walls and surrounding area of Structure 1, XVII-1; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; reddish yellow 5YR 6/6 to brown 7.5YR 5/3 medium clay with very fine to fine white and grey gritty and obsidian inclusions; very pale brown 10YR 7/3 to dark greyish brown 10YR 4/2 exterior; very pale brown 10YR 7/3 to dark greyish brown 10YR 4/2 interior; comb scraped and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed and slipped interior surface with very fine white and grey gritty and obsidian inclusions; rim diameter: *ca.* 18cm; preserved height: 4.5cm.

[101] inv. no. 82-976: 988; Box 147; context: found in an ash layer of an early agricultural period storage space, XVIII-43; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with oblique notches; **Fine Ware;** HM; black 10YR 2/1 fine clay with very fine white and grey gritty and obsidian inclusions; brown 7.5YR 5/3 to very dark grey 10YR 3/1 exterior; greyish brown 10YR 5/2 to dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with striation marks and very fine white gritty and obsidian inclusions; slipped interior

surface with fine white and grey gritty and obsidian inclusions; rim diameter: *ca.* 12-16cm; preserved height: 4cm.

[102] inv. no. 82-976: 988; Box 147; context: found in an ash layer of an early agricultural period storage space, XVIII-43; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); cut rim decorated with oblique notches; **Fine Ware;** HM; dark grey 2.5Y 4/1 fine clay with small voids, very fine white and red gritty inclusions, and fine grey gritty inclusions; dark grey 5YR 4/1 exterior; pale brown 10YR 6/3 to dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with striation marks and very fine white gritty inclusions; plain interior surface with small voids and very fine white gritty inclusions; rim diameter: *ca.* 20-22cm; preserved height: 5.4cm.

[103] inv. no. 82-976: 1000; Box 148; context: surface material (1982?), XIX-2; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); oblique rim; **Medium Ware;** HM; very dark grey 7.5YR 3/1 medium clay with very fine to fine white and grey gritty inclusions; very dark grey 7.5YR 3/1 exterior; very dark grey 7.5YR 3/1 interior; smoothed, slipped, and lightly burnished exterior surface with very fine white gritty inclusions; smoothed, slipped, and lightly burnished interior surface with very fine white and grey gritty inclusions; rim diameter: *ca.* 10cm; preserved height: 4cm.

[104] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); irregular, rounded rim; **Medium Ware;** HM; pink 5YR 7/4 medium clay with small voids and fine white and grey gritty

inclusions; reddish yellow 7.5YR 7/6 exterior; pink 7.5YR 7/4 to pale yellow 2.5Y 7/4 interior; slipped exterior surface with fine white and grey gritty inclusions; smoothed, slipped, and lightly burnished interior surface with small voids, striation marks, crazing, mica, and very fine white and grey gritty inclusions; rim diameter: *ca.* 30-32cm; preserved height: 3.3cm.

[105] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); thickened, rounded rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with fine white and grey gritty and obsidian inclusions; brown 7.5YR 5/2 to dark grey 10YR 4/1 exterior; pale brown 10YR 6/3 to dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with fine white gritty and obsidian inclusions; smoothed and slipped interior surface with crazing and fine white gritty and obsidian inclusions; rim diameter: *ca.* 10-12cm; preserved height: 4.2cm.

[106] inv. no. 82-976: 1176; Box 150; context: found amongst the upper layers of square A-09, 99, 89, 79, 98, 88, 78, XVI-31; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 medium clay with very fine grey gritty and obsidian inclusions; greyish brown 10YR 5/2 to dark grey 10YR 4/1 exterior; dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with very fine obsidian inclusions; smoothed interior surface with crazing and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 11-12cm; preserved height: 2.8cm.

[107] inv. no. 82-976: 1231; Box 152; context: found beneath the stones of a round building, Structure 0, XX-1; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with oblique notches; **Fine Ware;** HM; grey 10YR 5/1 fine clay with fine white and grey gritty and obsidian inclusions; mottled exterior – brown 7.5YR 5/4, dark greyish brown 10YR 4/2 to very dark grey; light brown 7.5YR 6/4 interior; smoothed and slipped exterior surface with very fine white gritty inclusions; smoothed and slipped interior surface with very fine white gritty inclusions; rim diameter: *ca.* 14-16cm; preserved height: 3.6cm.

[108] inv. no. 82-976: 1231; Box 152; context: found beneath the stones of a round building, Structure 0, XX-1; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4i); cut rim decorated with oblique notches; **Fine Ware;** HM; dark grey 10YR 4/1 fine clay with fine obsidian inclusions; brown 10YR 5/3 to very dark grey 10YR 3/1 exterior; brown 10YR 5/3 to very dark grey 10YR 3/1 interior; smoothed exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 10-14cm; preserved height: 4.4cm.

[109] inv. no. 82-976: 1395; Box 155; context: square A-08 and 98, found during the cleaning of previously excavated area, XXI-38; rim fragment of an outward flaring jar with a pronounced juncture between the neck and the shoulder (Jar 1.4ii); irregular, cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; reddish brown 5YR 5/4 to dark reddish grey 5YR 4/2 medium clay with fine to medium red gritty and obsidian inclusions; dark reddish grey 5YR 4/2 exterior; dark reddish grey 5YR 4/2 interior; comb scraped, smoothed, and slipped exterior surface with fine to medium red

gritty and obsidian inclusions; comb scraped, smoothed, and slipped interior surface with small voids and fine to medium obsidian inclusions; rim diameter: *ca.* 28-32cm; preserved height: 5cm.

Jar 1.5 – Vertical, short necked jar with a distinct offset at the juncture between the neck and the shoulder (Thumbnail 11)

[110] inv. no. 82-976: 115; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), XI-12; rim fragment of vertical, short necked jar (Jar 1.5i); thickened, cut rim decorated with a combination of oblique notches and comb impressions; **Medium Ware;** HM; pinkish grey 7.5YR 6/2 medium clay with small voids and very fine black gritty inclusions; mottled exterior – pale brown 10YR 6/3, grey 10YR 6/1 to dark grey 10YR 4/1; reddish yellow 5YR 6/6 and grey 10YR 6/1 interior; smoothed exterior surface with small voids, striation marks, and very fine grey and black gritty inclusions; smoothed interior surface with striation marks, one large void, and very fine white gritty inclusions; rim diameter: *ca.* 18cm; preserved height: 3cm.

[111] inv. no. 82-976: 121; Box 132; context: western section of the trench, surface find between 0.3 to 0.7 metres, XI-13; rim fragment of vertical, short necked jar (Jar 1.5i); irregular, rounded rim; **Medium Ware;** HM; brown 7.5YR 5/4 to grey 7.5YR 5/1 medium clay with small voids and very fine white gritty inclusions; light brownish grey 10YR 6/2 to grey 10YR 5/1 exterior; light brownish grey 10YR 6/2 to grey 10YR 5/1 interior; plain exterior surface with small voids; plain interior surface with small voids and very fine obsidian inclusions; rim diameter: *ca.* 12-14cm; preserved height: 3cm.

[112] inv. no. 82-976: 151; Box 133; context: inside Structure 1, the eastern section of the wall, XI-16-17; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim; **Medium**

Ware; HM; light brownish grey 10YR 6/2 medium clay with one coarse white gritty inclusion and very fine to fine white gritty inclusions; greyish-brown 10YR 5/2 exterior; very pale brown 10YR 7/3 interior; smoothed exterior surface with small voids and very fine obsidian inclusions; plain interior surface with small voids and very fine obsidian inclusions; rim diameter: *ca.* 24-28cm; preserved height: 3.5cm.

[113] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of vertical, short necked jar (Jar 1.5i); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; grey 10YR 5/1 medium clay with very fine to fine white gritty inclusions and fine to medium obsidian inclusions; dark grey 10YR 4/1 exterior; light brown 7.5YR 6/4 interior with grey 7.5YR 5/1 discolouration; smoothed exterior surface with very fine white gritty and obsidian inclusions; plain interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 14-18cm; preserved height: 3.2cm.

[114] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with circular impressions; **Medium Ware;** HM; light brownish grey 10YR 6/2 medium clay with very fine white and grey gritty inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior; smoothed exterior surface with mica and very fine white gritty and obsidian inclusions; smoothed interior surface with mica and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 24cm; preserved height: 5cm.

[115] inv. no. 82-976: 175; Box 133; context: western trench, XI-21; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with circular impressions; **Medium Ware;** HM; pinkish grey 7.5YR 6/2 medium clay with small voids and very fine to fine

white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior with grey 7.5YR 6/1 discolouration; smoothed exterior surface with very fine brown gritty and obsidian inclusions; smoothed interior surface with one medium brick red gritty inclusion and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 24cm; preserved height: 5cm.

[116] inv. no. 82-976: 176; Box 133; context: western trench, XI-21; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with oblique comb impressions; **Obsidian Tempered Ware;** HM; light brownish grey 10YR 6/2 medium clay with very fine white gritty and obsidian inclusions; pale brown 10YR 6/3 to dark grey 10YR 4/1 exterior; very pale brown 10YR 7/4 interior; smoothed exterior with mica and very fine obsidian inclusions; plain interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 32-38cm; preserved height: 2.7cm.

[117] inv. no. 82-976: 245; Box 133; context: outside of the wall of Structure 1, XII-2; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with oblique notches; **Medium Ware;** HM; brown 10YR 5/3 to dark grey 10YR 4/1 medium clay with very fine to fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 to light brownish grey 10YR 6/2 exterior with dark grey 10YR 4/1 discolouration; light brown 7.5YR 6/4 to brown 7.5YR 5/3 interior; comb scraped exterior surface with very fine white and grey gritty and obsidian inclusions; smoothed interior surface with very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 34-36cm; preserved height: 7.5cm.

[118] inv. no. 82-976: 346; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of vertical, short necked jar (Jar 1.5i); rounded rim

decorated with deep, wide elliptical impressions; **Obsidian Tempered Ware;** HM; light reddish brown 5YR 6/4 to dark grey 10YR 4/1 medium to coarse clay with medium voids and medium to coarse white and brown gritty and obsidian inclusions; pale brown 10YR 6/3 exterior with grey 10YR 5/1 discolouration; light grey 10YR 7/2 to grey 10YR 5/1 interior; comb scraped, smoothed, and slipped exterior surface with small voids and fine to medium obsidian inclusions; smoothed interior surface with small voids and fine to medium obsidian inclusions; rim diameter: *ca.* 18-20cm; preserved height: 3cm.

[119] inv. no. 82-976: 347; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of vertical, short necked jar (Jar 1.5i); rounded rim; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 medium to coarse clay with medium to coarse obsidian inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 interior; smoothed exterior surface with small voids and medium obsidian inclusions; plain interior surface with small voids and medium to coarse obsidian inclusions; rim diameter: *ca.* 12-16cm; preserved height: 5.5cm.

[120] inv. no. 82-976: 368; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; rim fragment of vertical, short necked jar (Jar 1.5ii); thickened, rounded rim decorated with circular impressions; **Medium Ware;** HM; light brownish grey 10YR 6/2 medium clay with very fine to fine white gritty and obsidian inclusions; reddish yellow 5YR 6/6 to grey 10YR 5/1 exterior; reddish yellow 5YR 6/6 to grey 10YR 5/1 interior; smoothed and slipped exterior surface with very fine to fine grey gritty and obsidian inclusions; comb scraped, smoothed, and slipped interior surface with very fine to fine grey gritty and obsidian inclusions; rim diameter: *ca.* 26-30cm; preserved height: 3.2cm.

[121] inv. no. 82-976: 392; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; rim fragment of vertical, short necked jar (Jar 1.5i); rounded rim; **Medium Ware;** HM; light reddish brown 5YR 6/4 medium clay with fine white gritty inclusions and medium red gritty inclusions; light reddish brown 5YR 6/4 exterior; light reddish brown 5YR 6/4 interior; smoothed and slipped exterior surface with small voids and very fine white and red gritty inclusions; smoothed and slipped interior surface with very fine white gritty inclusions and fine to medium red gritty inclusions; rim diameter: *ca.* 16-18cm; preserved height: 5.8cm.

[122] inv. no. 82-976: 392; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim; **Medium Ware;** HM; grey 5YR 5/1 medium clay with small voids and fine white and grey gritty inclusions; pinkish grey 5YR 6/2 exterior; pink 5YR 7/4 interior; smoothed, slipped, and lightly burnished exterior surface with striation marks and very fine obsidian inclusions; smoothed and slipped interior surface with small voids, crazing, and very fine white gritty and obsidian inclusions; rim diameter; *ca.* 32-38cm; preserved height: 5.3cm.

[123] inv. no. 82-976: 294; Box 134; context: unspecified; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with vertical notches; **Medium Ware;** HM; pale brown 10YR 6/3 medium clay with small voids and fine to medium black gritty inclusions; light brownish grey 10YR 6/2 exterior; light brownish grey 10YR 6/2 interior; smoothed exterior surface with very fine black gritty inclusions; plain interior surface with very fine black gritty inclusions; rim diameter: *ca.* 24-28cm; preserved height: 3cm.

[124] inv. no. 82-976: 468; Box 136; context: square B-26, 27, 36, 37, 46, 47, between 0.20 and 0.44 metres below the surface, XIII-20; rim fragment of vertical, short necked jar (Jar 1.5i); cut rim; **Medium Ware;** HM; yellow 10YR 7/6 to light grey 10YR 7/1 medium clay with small voids and very fine brown and grey gritty and obsidian inclusions; yellow 10YR 7/6 exterior; light brownish grey 10YR 6/2 interior; smoothed, slipped, and lightly burnished exterior surface with chaff impressions and very fine white gritty inclusions; smoothed interior surface with very fine obsidian inclusions; rim diameter: *ca.* 19cm; preserve height: 4.7cm.

[125] inv. no. 82-976: 502; Box 136; context: square B-16, 17, 26, 27, between one and 1.6 metres below the surface, XIII-21; rim fragment of vertical, short necked jar (Jar 1.5ii); irregular, rounded rim; **Obsidian Tempered Ware;** HM; grey 10YR 5/1 medium clay with very fine to fine white and grey gritty and obsidian inclusions; pale brown 10YR 6/3 exterior; reddish yellow 7.5YR 7/6 interior with grey 10YR 5/1 discolouration; smoothed exterior surface with very fine obsidian inclusions; smoothed interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 30-34cm; preserved height: 4.4cm.

[126] inv. no. 82-976: 555; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of vertical, short necked jar (Jar 1.5ii); thickened, cut rim; **Medium Ware;** HM; pink 7.5YR 7/4 medium clay with very fine to fine obsidian inclusions; very dark grey 10YR 4/1 exterior; very dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with mica and very fine white gritty and obsidian inclusions; smoothed and slipped interior surface

with mica and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 22-28cm; preserved height: 2.7cm.

[127] inv. no. 82-976: 557; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with oblique notches; **Mixed Tempered Ware;** HM; light brownish grey 10YR 6/2 to grey 10YR 5/1 medium clay with small voids and very fine to fine brown and grey gritty and obsidian inclusions; brown 7.5YR 5/4 exterior; light brown 7.5YR 6/4 interior; smoothed, slipped, and lightly burnished exterior surface with small voids, chaff impressions, and very fine white gritty and obsidian inclusions; smoothed, slipped, and lightly burnished interior surface with small voids, chaff impressions, and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 34cm; preserved height: 6cm.

[128] inv. no. 82-976: 577; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of vertical, short necked jar (Jar 1.5i); cut rim; **Mixed Tempered Ware;** HM; light grey 10YR 7/2 medium clay with yellow 10YR 7/6 discolouration, small voids, and very fine to fine white and grey gritty inclusions; mottled exterior – yellow 10YR 7/6, light grey 10YR 7/1 to grey 10YR 6/1; pink 7.5YR 7/4 interior with yellow 10YR 7/8 discolouration; smoothed, slipped, and burnished exterior surface with striation marks, chaff impressions, and very fine white and grey gritty inclusions; smoothed, slipped, and burnished interior surface with small voids, chaff impressions, and very fine white and grey gritty inclusions; rim diameter: *ca.* 14-16cm; preserved height: 7.3cm.

[129] inv. no. 82-976: 580; Box 137; context: western section of Structure 1, between 1.45 and 1.85 metres below the surface, XII-39; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine white and grey gritty and obsidian inclusions and one coarse brown gritty inclusion; mottled exterior- very pale brown 10YR 7/3, greyish brown 10YR 5/2 to grey 10YR 5/1; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with very fine grey gritty and obsidian inclusions; rim diameter: *ca.* 22-24cm; preserved height: 4cm.

[130] inv. no. 82-976: 726; Box 142; context: uncovered when cleaning the stone walls and surrounding area of Structure 1, XVII-1; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with very fine white gritty and obsidian inclusions; very dark greyish-brown 10YR 3/2 exterior; pink 7.5YR 7/4 to grey 10YR 5/1 interior; smoothed, slipped, and lightly burnished exterior surface with striation marks and very fine white gritty and obsidian inclusions; smoothed, slipped, and burnished interior surface with very fine white and grey gritty and obsidian inclusions; rim diameter: *ca.* 20cm; preserved height: 4.6cm.

[131] inv. no. 82-976: 942; Box 146; context: Burial 28, XVIII-35; rim fragment of vertical, short necked jar (Jar 1.5i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; yellowish brown 10YR 5/4 to grey 10YR 6/1 medium clay with very fine white and grey gritty inclusions and fine to medium obsidian inclusions; light brown 7.5YR 6/4 exterior; reddish yellow 7.5YR 6/6 to light brown 7.5YR 6/4 interior; smoothed, slipped, and lightly burnished exterior surface with small voids and very fine to fine obsidian

inclusions; smoothed interior surface with very fine to fine obsidian inclusions; rim diameter: *ca.* 14cm; preserved height: 3.3cm.

[132] inv. no. 82-976: 972; Box 147; context: unspecified; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with vertical notches; **Medium Ware;** HM; dark greyish brown medium clay with very fine white gritty inclusions and fine to medium brown and grey gritty and obsidian inclusions; brown 7.5YR 5/3 to dark grey 7.5YR 4/1 exterior; light brown 7.5YR 6/4 to brown 7.5YR 5/4 interior; smoothed and slipped exterior surface with striation marks and small voids and very fine white and grey gritty and obsidian inclusions; smoothed and slipped interior surface with striation marks and fine to medium white and grey gritty and obsidian inclusions; rim diameter: *ca.* 22-24cm; preserved height: 3.3cm.

[133] inv. no. 82-976: 976; Box 147; context: square A-00 peg to the south-southwest, Square A-09 and Square B-19 along the north boarder, was found placed in the floor of the early agricultural period, XVIII-40; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with oblique notches; **Medium Ware;** HM; very pale brown 10YR 7/3 to grey 10YR 5/1 medium clay with very fine white gritty inclusions and fine obsidian inclusions; brown 7.5YR 5/3 to dark grey 7.5YR 4/1 exterior; brown 7.5YR 5/3 to dark grey 7.5YR 4/1 interior; smoothed, slipped, and lightly burnished exterior surface with very fine white and brown gritty and obsidian inclusions; smoothed, slipped, and lightly burnished interior surface with very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 36-38cm; preserved height: 49cm.

[134] inv. no. 82-976: 1141; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of vertical, short necked jar (Jar 1.5ii);

thickened, cut rim decorated with oblique notches; **Medium Ware;** HM; grey 10YR 5/1 medium clay with small voids and very fine white gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior with grey 7.5YR 5/1 discolouration; smoothed and slipped exterior surface with striation marks and very fine white gritty and obsidian inclusions; smoothed interior surface with striation marks, crazing, and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 22-26cm; preserved height: 7.8cm.

[135] inv. no. 82-976: 1141; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of vertical, short necked jar (Jar 1.5ii); cut rim decorated with oblique notches; **Fine Ware;** HM; grey 10YR 5/1 fine clay very fine white and grey gritty and obsidian inclusions; brown 7.5YR 5/2 to dark grey 10YR 4/1 exterior; light greyish brown 10YR 6/2 to grey 10YR 5/1 interior; smoothed, slipped, and lightly burnished exterior surface with small voids and very fine white gritty inclusions; smoothed interior surface with small voids, striation marks, crazing, and very fine white gritty inclusions; rim diameter: *ca.* 20-24cm; preserved height: 4.8cm.

Jar 1.6 – Outward flaring jar with a sharp juncture along the neck and the shoulder (Thumbnail 12)

[136] inv. no. 82-976: 344; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6ii); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; pinkish grey 2.5YR 7/2 medium to coarse clay with large voids and medium to coarse obsidian inclusions; light reddish brown 5YR6/4 to grey 5YR6/1 exterior; very pale brown 10YR 7/3 to grey 2.5YR 6/1 interior; smoothed and

slipped exterior surface with small voids, striation marks, and medium to coarse obsidian inclusions; smoothed interior surface with small voids, striation marks, and medium to coarse obsidian inclusions; rim diameter: *ca.* 28-32cm; preserved height: 5cm.

[137] inv. no. 82-976: 347; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6i); thickened, rounded rim; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 to dark grey 10YR 4/1 medium to coarse clay with medium voids and medium to coarse obsidian inclusions; light grey 10YR 7/2 to grey 10YR 6/1 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with small voids and medium to coarse obsidian inclusions; smoothed interior surface with small voids, mica, fine white gritty inclusions, and coarse obsidian inclusions; rim diameter: *ca.* 21-24cm; preserved height: 4.7cm.

[138] inv. no. 82-976: 559; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6i); cut rim decorated with circular impressions made with a hollow tipped stylus; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with very fine white and grey gritty and obsidian inclusions; mottled exterior – very pale brown 10YR 7/3, light brown 7.5YR 6/4 to grey 10YR 6/1; pink 7.5YR 7/4 interior with light grey 10YR 7/2 discolouration; comb scraped, smoothed, and slipped exterior surface with very fine obsidian inclusions; smoothed and slipped interior surface with very fine obsidian inclusions; rim diameter: *ca.* 28-32cm; preserved height: 4.3cm.

[139] inv. no. 82-976: 559; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6i); cut rim decorated with circular impressions made with a hollow tipped stylus; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with very fine white and grey gritty and obsidian inclusions; mottled exterior – very pale brown 10YR 7/3, light brown 7.5YR 6/4 to grey 10YR 6/1; pink 7.5YR 7/4 interior with light grey 10YR 7/2 discolouration; comb scraped, smoothed, and slipped exterior surface with very fine obsidian inclusions; smoothed and slipped interior surface with very fine obsidian inclusions; rim diameter: *ca.* 28-32cm; preserved height: 4.3cm.

[140] inv. no. 82-976: 560; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6i); cut rim decorated with circular impressions made with a hollow tipped stylus; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with yellow 10YR 7/6 discolouration and very fine grey and obsidian gritty inclusions; pale brown 10YR 6/3 to light brown 7.5YR 6/4 exterior; pale brown 10YR 6/3 to light brown 7.5YR 6/4 interior; comb scraped, smoothed, and slipped exterior surface with very fine obsidian inclusions; comb scraped, smoothed, and slipped interior surface with very fine obsidian inclusions; rim diameter: *ca.* 32-38cm; preserved height: 4cm.

[141] inv. no. 82-976: 749; Box 142; context: square B-10, 19, 18, 17, 20, 29, 28, 27, 30, 39, 38, 37, 40, 49, 48, XVII-6; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6i); rounded rim decorated with circular

impressions; **Medium Ware;** HM; greyish brown 10YR 5/2 to very dark grey 10YR 3/1 medium clay, with large voids and very fine white and grey gritty and obsidian inclusions; light olive brown 10YR 5/3 to dark grey 10YR 4/1 exterior; very pale brown 10YR 7/4 to grey 10YR 5/1 interior; smoothed, slipped, and burnished exterior surface with very fine obsidian inclusions; comb scraped and smoothed interior surface with very fine obsidian inclusions; rim diameter: *ca.* 23cm; preserved height: 4cm.

[142] inv. no. 82-976: 824; Box 145; context: square B-48, 38, 28, uncovered in the eastern section below a series of stones in a black layer, XVII-46; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6ii); rounded rim decorated with oblique notches; **Medium Ware;** HM; dark grey 10YR 4/1 medium clay with very fine to fine white and grey gritty and obsidian inclusions; mottled exterior – pale brown 10YR 6/3, grey 10YR 5/1 to dark grey 10YR 4/1; mottled interior – pale brown 10YR 6/3, grey 10YR 5/1 to dark grey 10YR 4/1; smoothed and slipped exterior surface with very fine white and grey gritty inclusions; smoothed and slipped interior surface with small voids, crazing, and very fine white gritty and obsidian inclusions; diameter: *ca.* 8-12cm; preserved height: 6.5cm.

[143] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6ii); cut rim; **Coarse Ware;** HM; light grey 10YR 7/2 coarse clay with very fine brown and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior with grey 10YR 5/1 discolouration; smoothed, slipped, and lightly burnished exterior surface with small voids, crazing, and very fine orange and brown gritty inclusions; smoothed, slipped, and

lightly burnished interior surface with small voids, crazing, and fine brown and grey gritty and obsidian inclusions; rim diameter: *ca.* 28cm; preserved height: 5.6cm.

[144] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of an outward flaring jar with a sharp juncture between the neck and the shoulder (Jar 1.6ii); cut rim; **Mixed Tempered Ware;** HM; very dark grey 10YR 3/1 medium clay with chaff impressions and fine white gritty inclusions; mottled exterior – grey 10YR 5/1, dark grey 10YR 4/1 to very dark grey 10YR 3/1; greyish brown 10YR 5/2 to dark grey 10YR 4/1 interior; burnt, smoothed, and slipped exterior surface with chaff impressions and fine white gritty inclusions; smoothed and slipped interior surface with small voids, chaff impressions, and fine white gritty inclusions; rim diameter: *ca.* 12-14cm; preserved height: 5.2cm.

Jar 1.7 – Crinkled Rim Jar (Thumbnail 13)

[145] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of a crinkled rim jar (Jar 1.7ii); **Medium Ware;** HM; pale brown 10YR 6/3 medium clay with very fine white and grey gritty obsidian inclusions; pale brown 10YR 6/3 to greyish brown 10YR 5/2 exterior; light brown 7.5YR 6/4 interior; comb scraped exterior surface with small voids and very fine white and black gritty inclusions; comb scraped interior surface with very fine to fine white gritty and obsidian inclusions; rim diameter: *ca.* 24cm; preserved height: 5cm.

[146] inv. no. 82-976: 175; Box 133; context: western trench, XI-21; rim fragment of a crinkled rim jar (Jar 1.7ii); **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 to grey 10YR 6/1 medium clay with very fine to fine grey gritty and obsidian inclusions; mottled exterior – brown 7.5YR 5/4, very pale brown 10YR 7/3 to light brownish grey

10YR 6/2; very pale brown 10YR 7/3 to grey 10YR 5/1 interior; smoothed exterior surface with mica, small voids, and very fine to fine white gritty and obsidian inclusions; comb scraped interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 22cm; preserved height: 4.5cm.

[147] inv. no. 82-976: 175; Box 133; context: western trench, XI-21; rim fragment of a crinkled rim jar (Jar 1.7ii); **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; very pale brown 10YR 7/3 to light brownish grey 10YR 6/2 interior; smoothed exterior surface with very fine white gritty and obsidian inclusions; plain interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 20-24cm; preserved height: 4.5cm.

[148] inv. no. 82-976: 218; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of a crinkled rim jar (Jar 1.7ii); **Fine Ware;** HM; yellowish brown 10YR 5/4 to dark grey 10YR 4/1 fine clay with very fine white and grey gritty and obsidian inclusions; greyish brown 10YR 4/2 to dark grey 10YR 4/1 exterior; very pale brown 10YR 7/3 interior; smoothed exterior surface with very fine white gritty inclusions; plain interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 22-24cm; preserved height: 3.3cm.

[149] inv. no. 82-976: 218; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of a crinkled rim jar (Jar 1.7ii); **Fine Ware;** HM; yellowish brown 10YR 5/4 to dark grey 10YR 4/1 fine clay with very fine white and grey gritty and obsidian inclusions; greyish brown 10YR 5/2 to dark grey 10YR 4/1 exterior; very pale brown 10YR 7/3 interior; smoothed exterior surface with mica and very fine white gritty inclusions; plain

interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 22-24cm; preserved height: 3.1cm.

[150] inv. no. 82-976: 368; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; rim fragment of a crinkled rim jar (Jar 1.7i); **Medium Ware;** HM; light brownish grey 10YR 6/2 medium clay with small voids and very fine to fine white and grey gritty and obsidian inclusions; very pale brown 10YR 7/3 to light grey 10YR 7/1 exterior; very pale brown 10YR 7/3 to light grey 10YR 7/1 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with chaff impressions and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 10-12cm; preserved height: 3.4cm.

[151] inv. no. 82-976: 514; Box 136; context: unspecified; rim fragment of a crinkled rim jar (Jar 1.7i); **Obsidian Tempered Ware;** HM; light grey 10YR 5/1 to grey 10YR 7/2 medium clay with small voids and fine obsidian inclusions; reddish yellow 5YR 6/6 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with fine white gritty and obsidian inclusions; plain interior surface with one large void and fine to medium obsidian inclusions; rim diameter: *ca.* 16-18cm; preserved height: 5.5cm.

[152] inv. no. 82-976: 558; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of a crinkled rim jar (Jar 1.7i); **Medium Ware;** HM; light grey 10YR 7/1 to grey 10YR 6/1 medium clay with very fine white gritty and obsidian inclusions, fine to medium brown gritty inclusions, and one coarse brick red gritty inclusion; brown 7.5YR 5/2 to dark grey 7.5YR 4/1 exterior; brown 7.5YR 5/2 to dark grey 7.5YR 4/1 interior; smoothed and slipped exterior surface with small voids and very fine obsidian inclusions; slipped interior

surface with small voids and very fine white and grey gritty and obsidian inclusions; rim diameter: *ca.* 16-18cm; preserved height: 4.3cm.

[153] inv. no. 82-976: 1176; Box 150; context: found amongst the upper layers of square A-09, 99, 89, 79, 98, 88, 78, XVI-31; rim fragment of a crinkled rim jar (Jar 1.7i); **Medium Ware;** HM; grey 10YR 6/1 medium with small voids and very fine white, brown, and grey gritty and obsidian inclusions; very pale brown 10YR 7/3 to grey 10YR 6/1 exterior; very pale brown 10YR 7/4 interior; smoothed and slipped exterior surface with very fine obsidian inclusions; smoothed interior surface with crazing and very fine white, brown, and grey gritty and obsidian inclusions; rim diameter: *ca.* 8cm; preserved height: 4.5cm.

[154] inv. no. 82-976: 1183; Box 150; context: unspecified; rim fragment of a crinkled rim jar (Jar 1.7ii); **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with very fine white and grey gritty inclusions and fine obsidian inclusions; light grey 10YR 7/2 to dark greyish brown 10YR 4/2 exterior; light grey 10YR 7/2 to dark greyish brown 10YR 4/2 interior; smoothed exterior surface with striation marks and very fine white gritty and obsidian inclusions; comb scraped and smoothed interior surface with very fine white, brown, and grey gritty inclusions and fine to medium obsidian inclusions; rim diameter: *ca.* 20cm; preserved height: 4.2cm.

Jar 2 – Sinuous Jar (Thumbnail 14)

[155] inv. no. 82-976: 115; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), XI-12; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; light yellowish brown 10YR 6/3 medium clay with small voids and very fine white and brown gritty and obsidian inclusions; mottled exterior – reddish brown 5YR 5/4 to brown 7.5YR 5/4 with

grey discolouration 10YR 5/1; mottled interior – reddish brown 5YR 5/4 to brown 7.5YR 5/4 with grey discolouration 10YR 5/1; smoothed exterior surface with small voids, and very fine to fine white gritty and obsidian inclusions; plain interior surface with striation marks, medium voids and very fine obsidian inclusions; rim diameter: *ca.* 20-22cm; preserved height: 5cm.

[156] inv. no. 82-976: 115; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), XI-12; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with vertical notches; **Medium Ware;** HM; brown 7.5YR 5/4 medium clay with very dark grey discolouration 7.5YR 3/1, medium voids, and very fine white, brown, and red gritty and obsidian inclusions; brown 7.5YR 5/4 exterior with grey discolouration 7.5YR 6/1; mottled interior – pale brown 10YR 6/3 with white 10YR 8/1 and grey discolouration 7.5YR 5/1; smoothed exterior surface with chaff impressions, small voids, and very fine obsidian inclusions; plain interior with very fine obsidian inclusions; rim diameter: *ca.* 26-28cm; preserved height: 7.3cm.

[157] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of a sinuous jar (Jar 2i); cut rim decorated with oblique notches; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine to fine white and grey gritty and obsidian inclusions; brown 7.5YR 5/3 to light brown 7.5YR 6/4 exterior with grey 7.5YR 5/1 discolouration; light brown 7.5YR 6/4 to grey 7.5YR 5/1 interior; smoothed, slipped, and lightly burnished exterior surface with small voids and very fine white gritty inclusions; smoothed interior surface with striation marks, small voids, and very fine white gritty inclusions; rim diameter: *ca.* 12cm; preserved height: 6.1cm.

[158] inv. no. 82-976: 174; Box 133; context: western trench, XI-21; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with very fine white gritty inclusions and fine to medium grey gritty and obsidian inclusions; dark grey 10YR 4/1 exterior; very pale brown 10YR 7/4 to light brownish grey 10YR 6/2 interior; smoothed exterior surface with striation marks and very fine white gritty and obsidian inclusions; comb scraped interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 20cm; preserved height: 3.5cm.

[159] inv. no. 82-976: 216; Box 133; context: eastern section of Structure 1, XII-1; rim fragment of a sinuous jar (Jar 2ii); cut rim; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with small voids and very fine white, grey, and black gritty inclusions; yellowish red 5YR 5/6 exterior with dark grey 10YR 4/1 discolouration; yellowish red 5YR 5/6 interior with dark grey 10YR 4/1 discolouration; smoothed and slipped exterior surface with very fine white and brown gritty and obsidian inclusions; smoothed and slipped interior surface with striation marks, calcium deposits, and very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 20-22cm; preserved height: 5.5cm.

[160] inv. no. 82-976: 303; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; light grey 10YR 7/1 medium clay with one large void and very fine to fine white gritty and obsidian inclusions; light reddish brown 5YR 6/4 exterior with light grey 2.5Y 7/1 discolouration; light reddish brown 5YR 6/4 interior with grey

2.5Y 5/1 discolouration; smoothed and slipped exterior surface with very fine to fine white and grey gritty and obsidian inclusions; smoothed and slipped interior surface with crazing and very fine to fine white and grey gritty and obsidian inclusions; rim diameter: *ca.* 22-26cm; preserved height; 5.8cm.

[161] inv. no. 82-976: 323; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; rim fragment of a sinuous jar (Jar 2i); cut rim; **Mixed Tempered Ware;** HM; very pale brown 10YR 6/4 to grey 10YR 5/1 medium clay with small to medium voids and fine to medium white gritty inclusions; pink 7.5YR 7/4 to grey 2.5Y 6/1 exterior; very pale brown 10YR 7/4 interior; smoothed and slipped exterior surface with chaff impressions and fine obsidian inclusions; smoothed interior surface with small voids, chaff impressions, and fine white gritty and obsidian inclusions; rim diameter: *ca.* 10-12cm; preserved height: 5cm.

[162] inv. no. 82-976: 368; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; rim fragment of a sinuous jar (Jar 2i); thickened, rounded rim decorated with vertical notches; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with fine white gritty inclusions and fine to medium obsidian inclusions; pale brown 10YR 6/3 to grey 10YR 5/1 exterior; pale brown 10YR 6/3 interior with grey 10YR 5/1 discolouration; smoothed and slipped exterior surface with small voids, striation marks, and medium obsidian inclusions; smoothed interior surface with small voids, fine to medium white and grey gritty inclusions, and medium to coarse obsidian inclusions; rim diameter: *ca.* 14-18cm; preserved height: 3.6cm.

[163] inv. no. 82-976: 556; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; rim fragment of a sinuous jar (Jar 2i); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; dark grey 10YR 4/1 medium clay with very fine white gritty and obsidian inclusions; light brown 7.5YR 6/4 to greyish brown 10YR 5/2 exterior; light brown 7.5YR 6/4 to greyish brown 10YR 5/2 interior; smoothed and slipped exterior surface with very fine to fine obsidian inclusions; plain interior surface with very fine to fine obsidian inclusions; rim diameter: *ca.* 14-16cm; preserved height: 3.5cm.

[164] inv. no. 82-976: 569; Box 137; context: the floor level of Structure 1, XIII-38; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; reddish yellow 7.5YR 6/6 to brown 7.5YR 5/2 medium clay with very fine to fine obsidian inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior; smoothed and slipped exterior surface with very fine obsidian inclusions; smoothed and slipped interior surface with small voids and very fine obsidian inclusions; rim diameter: *ca.* 24-28cm; preserved height: 3cm.

[165] inv. no. 82-976: 690; Box 141; context: uncovered during the excavation of the remnants of Burial 11, XV-24; rim fragment of a sinuous jar (Jar 2i); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; dark grey 10YR 4/1 medium with very fine white gritty and obsidian inclusions; brown 7.5YR 5/3 exterior; brown 7.5YR 5/3 interior with grey 10YR 6/1 discolouration; smoothed and slipped exterior surface with very fine white and brown gritty and obsidian inclusions; smoothed and slipped interior surface with very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 16-18cm; preserved height: 3.6cm.

[166] inv. no. 82-976: 691; Box 141; context: uncovered during the cleaning of the eastern wall of Structure 1, XV-24; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with oblique notches; exterior surface decorated with a single smoothed band; **Obsidian Tempered Ware;** HM; grey 10YR 5/1 medium clay with very fine grey gritty and obsidian inclusions; very pale brown 10YR 7/3 to grey 10YR 5/1 exterior; mottled interior – very brown 10YR 6/3, light yellowish brown 10YR 6/4 to greyish brown 10YR 5/2; comb scraped and slipped exterior surface with very fine to fine brown gritty and obsidian inclusions; smoothed interior surface with very fine to fine brown gritty and obsidian inclusions; rim diameter: *ca.* 36-38cm; preserved height: 6cm.

[167] inv. no. 82-976: 736; Box 142; context: uncovered during the cleaning of the western section of Structure 1, XVII-4; rim fragment of a sinuous jar (Jar 2i); cut rim; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay, with very fine white and grey gritty inclusions; very pale brown 10YR 7/3 to dark grey 10YR 4/1 exterior; very pale brown 10YR 7/3 to dark grey 10YR 4/1 interior; smoothed exterior surface with very fine white and grey gritty inclusions; plain interior surface with very fine white and grey gritty inclusions; rim diameter: *ca.* 11cm; preserved height: 4cm.

[168] inv. no. 82-976: 749; Box 142; context: square B-10, 19, 18, 17, 20, 29, 28, 27, 30, 39, 38, 37, 40, 49, 48, XVII-6; rim fragment of a sinuous jar (Jar 2i); cut rim decorated with circular impressions; **Medium Ware;** HM; reddish yellow 5YR 6/6 to light brownish grey 10YR 6/2 medium clay with very fine white gritty and obsidian inclusions; mottled exterior – 2.5Y 7/3 pink, reddish yellow 5YR 6/6 to grey 2.5Y 6/1; very pale brown 10YR 7/4 to grey 10YR 6/1 interior; smoothed and slipped exterior surface with very fine grey gritty and obsidian inclusions; comb scraped and smoothed interior surface with small

voids and very fine white gritty and obsidian inclusions; rim diameter: *ca.* 18cm; preserved height: 5.3cm.

[169] inv. no. 82-976: 972; Box 147; context: unspecified; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with oblique notches; **Medium Ware;** HM; reddish brown 5YR 5/4 to brown 7.5YR 5/2 medium clay with fine white gritty inclusions and medium brown gritty inclusions; brown 7.5YR 5/3 exterior; brown 7.5YR 4/2 interior; smoothed and slipped exterior surface with striation marks and very fine white, brown, and grey gritty inclusions; smoothed and slipped interior surface with small voids, striation marks, and very fine white, brown, and grey gritty inclusions; rim diameter: *ca.* 28-32cm; preserved height: 5.5cm.

[170] inv. no. 82-976: 972; Box 147; context: unspecified; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with oblique notches; **Medium Ware;** HM; very pale brown 10YR 7/4 to light brownish grey 10YR 6/2 medium clay with small voids and very fine white, brown, and grey gritty and obsidian inclusions; brown 7.5YR 5/3 to dark grey 7.5YR 4/1 exterior; light brown 7.5YR 6/4 to greyish brown 10YR 5/2 interior; smoothed, slipped, and lightly burnished exterior surface with striation marks and fine white gritty and obsidian inclusions; plain interior surface with fine to medium white gritty and obsidian inclusions; rim diameter: *ca.* 24-26cm; preserved height: 5cm.

[171] inv. no. 82-976: 972; Box 147; context: unspecified; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with oblique notches; **Medium Ware;** HM; very pale brown 10YR 7/4 to light brownish grey 10YR 6/2 medium clay with small voids and very fine white, brown, and grey gritty and obsidian inclusions; brown 7.5YR 5/3 to dark grey 7.5YR 4/1 exterior; light brown 7.5YR 6/4 to greyish brown 10YR 5/2 interior; smoothed,

slipped, and lightly burnished exterior surface with striation marks and fine white gritty and obsidian inclusions; plain interior surface with fine to medium white gritty and obsidian inclusions; rim diameter: *ca.* 24-26cm; preserved height: 5cm.

[172] inv. no. 82-976: 988; Box 147; context: found in an ash layer of an early agricultural period storage space, XVIII-43; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; pale brown 10YR 6/3 to dark greyish brown 10YR 4/2 medium clay with fine to medium white gritty and obsidian inclusions; greyish brown 10YR 5/2 to very dark grey 10YR 3/1 exterior; very pale brown 10YR 8/4 interior; smoothed and slipped exterior surface with fine obsidian inclusions; plain interior surface with fine to medium obsidian inclusions; rim diameter: *ca.* 20cm; preserved height: 4.4cm.

[173] inv. no. 82-976: 988; Box 147; context: found in an ash layer of an early agricultural period storage space, XVIII-43; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with circular impressions; **Obsidian Tempered Ware;** HM; brown 7.5YR 4/2 medium clay with very fine to fine white and obsidian inclusions; brown 7.5YR 5/3 to very dark grey 10YR 3/1 exterior; brown 7.5YR 5/3 to very dark grey 10YR 3/1 interior; smoothed and slipped exterior surface with striation marks and very fine white gritty and obsidian inclusions; slipped interior surface with very fine white gritty and obsidian inclusions; rim diameter: *ca.* 22-26cm; preserved height: 4.5cm.

[174] inv. no. 82-976: 1000; Box 148; context: surface material (1982?), XIX-2; rim fragment of a sinuous jar (Jar 2i); cut rim decorated with oblique notches; **Medium Ware;** HM; brown 7.5YR 5/3 medium clay, with very fine to fine white, brown, and grey gritty inclusions; brown 7.5YR 4/2 to dark grey 7.5YR 4/1 exterior; brown 7.5YR 4/2 to

dark grey 7.5YR 4/1 interior; smoothed, slipped, and lightly burnished exterior surface with small voids and very fine white and brown gritty and obsidian inclusions; smoothed, slipped, and lightly burnished interior surface with striation marks and very fine white and brown gritty and obsidian inclusions; rim diameter: *ca.* 10-12cm; preserved height: 6cm.

[175] inv. no. 82-976: ?; Box 148; context: unspecified; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with vertical notches; **Fine Ware;** HM; very pale brown 10YR 7/3 fine clay with small voids, one medium grey gritty inclusion, and very fine to fine grey gritty inclusions; dark grey 10YR 4/1 exterior; grey 10YR 5/1 interior; smoothed and slipped exterior surface with small voids; smoothed interior surface with small voids; rim diameter: *ca.* 28cm; preserved height: 2cm.

[176] inv. no. 82-976: 1141; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of a sinuous jar (Jar 2ii); cut rim decorated with oblique notches; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 to very dark grey 10YR 3/1 medium clay with fine white and grey gritty and obsidian inclusions; pinkish grey 7.5YR 6/2 to very dark grey 10YR 3/1 exterior; very pale brown 10YR 7/3 to dark grey 10YR 4/1 interior; smoothed, slipped, and lightly burnished exterior surface with fine white gritty and obsidian inclusions; smoothed and slipped interior surface with striation marks, very fine white gritty inclusions, and fine to medium obsidian inclusions; rim diameter: *ca.* 18-24cm; preserved height: 7.5cm.

[177] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of a sinuous jar (Jar 2ii); cut rim; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with fine white gritty and obsidian

inclusions; brown 7.5YR 5/2 to dark grey 10YR 4/1 medium exterior; pale brown 10YR 6/3 to brown 7.5YR 5/3 interior; comb scraped, smoothed, slipped, and lightly burnished exterior surface with very fine obsidian inclusions; smoothed interior surface with fine white gritty and obsidian inclusions; rim diameter: *ca.* 20-22cm; preserved height: 4.2cm.

[178] inv. no. 82-976: 1231; Box 152; context: found beneath the stones of a round building, Structure 0, XX-1; rim fragment of a sinuous jar (Jar 2ii); cut rim; exterior surface decorated with a series of horizontal lines incised beneath the rim; **Mixed Tempered Ware;** HM; dark grey 2.5Y 4/1 medium clay with chaff impressions and medium grey gritty and obsidian inclusions; very pale brown 10YR 7/4 to reddish yellow 7.5YR 6/6 exterior; dark grey 7.5YR 4/1 interior; smoothed and slipped exterior surface with small voids and fine to medium grey gritty and obsidian inclusions; smoothed interior surface with chaff impressions and medium obsidian inclusions; rim diameter: *ca.* 20cm; preserved height: 7cm.

Jar 3 – Hole-mouthed Jar (Thumbnail 15)

[179] inv. no. 82-976: 304; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; rim fragment of a hole mouthed jar (Jar 3i); cut rim; **Mixed Tempered Ware;** HM; light brownish grey 10YR 6/2 medium clay with small to large voids, chaff temper, and very fine to fine white and grey gritty inclusions; pale brown 10YR 6/3 to grey 10YR 6/1 exterior; pale brown 10YR 6/3 to grey 10YR 6/1 interior; comb scraped and smoothed exterior surface with small voids, chaff impressions, and very fine white gritty and obsidian inclusions; smoothed interior surface with small voids, chaff impressions, and

very fine white gritty and obsidian inclusions; rim diameter: *ca.* 14-16cm; preserved height: 7cm.

[180] inv. no. 82-976: 347; Box 134; context: found outside the eastern section of Structure 1, XII-31; rim fragment of a hole mouthed jar (Jar 3ii); cut rim; **Mixed Tempered Ware;** HM; very pale brown 10YR 7/2 to grey 10YR 5/1 medium clay with small voids, chaff impressions, and fine obsidian inclusions; light yellowish brown 10YR 6/4 to grey 10YR 5/1 exterior; light brownish grey 10YR 6/2 interior; smoothed, slipped, and lightly burnished exterior surface with fine obsidian inclusions; comb scraped interior surface with small voids, chaff impressions, and fine obsidian inclusions; rim diameter: *ca.* 18-22cm; preserved height: 5.7cm.

[181] inv. no. 82-976: 392; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; rim fragment of a hole mouthed jar (Jar 3i); rounded rim; **Medium Ware;** HM; grey 10YR 6/1 medium clay with small voids, chaff impressions, and very fine white and orange gritty inclusions; light grey 10YR 7/2 exterior with grey 10YR 6/1 discolouration; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with small voids, striation marks, chaff impressions, and very fine white gritty inclusions; smoothed interior surface with small voids, crazing, very fine white gritty inclusions, and one coarse brown gritty inclusion; rim diameter: *ca.* 14-16cm; preserved height: 5.5cm.

[182] inv. no. 82-976: 439; Box 136; context: Structure 1, burnt floor layer, XIII-4; rim fragment of a hole mouthed jar (Jar 3i); irregular, cut rim; **Medium Ware;** HM; black 10YR 2/1 medium clay with very fine grey gritty and obsidian inclusions; brown 10YR 5/3 to dark grey 10YR 4/1 exterior; black 10YR 2/1 interior; smoothed exterior surface with

very fine obsidian inclusions; smoothed and burnt interior surface with very fine obsidian inclusions; rim diameter: *ca.* 17-20cm; preserved height: 5cm.

[183] inv. no. 82-976: 1142; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; rim fragment of a hole mouthed jar (Jar 3i); cut rim; **Medium Ware;** HM; dark grey 10YR 4/1 medium clay with fine white gritty and obsidian inclusions; dark greyish brown 10YR 5/2 to very dark grey 10YR 3/1 exterior; light brownish grey 10YR 6/2 interior with red 10R 4/6 discolouration; burnt, smoothed, and slipped exterior surface with small voids and fine white gritty and obsidian inclusions; smoothed and slipped interior surface with striation, crazing, and fine white gritty and obsidian inclusions; rim diameter: *ca.* 12cm; preserved height: 4.4cm.

[184] inv. no. 82-976: 1395; context: square A-08 and 98, found during the cleaning of previously excavated area, XXI-38; rim fragment of a hole mouthed jar (Jar 3ii); irregular, cut rim; **Medium Ware;** HM; grey 10YR 6/1 medium clay with medium grey gritty inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with medium grey gritty inclusions; plain interior surface with medium grey gritty inclusions; rim diameter: *ca.* 22-24cm; preserved height: 3.5cm.

Pan (Thumbnail 16)

[185] inv. no. 82-976: 987; Box 147; context: found in an ash layer of an early agricultural period storage space, XVIII-43; pan fragment with a wide, flat, handle-like projection; **Coarse Ware;** HM; very pale brown 10YR 7/3 to dark grey 2.5Y 4/1 coarse clay with small voids, chaff impressions, and medium to coarse white, brown, and grey gritty inclusions; light brown 7.5YR 6/4 exterior with grey 10YR 5/1 discolouration; reddish yellow 7.5YR

7/6 interior; plain exterior surface with medium to coarse white, brown, and grey gritty inclusions; smoothed and slipped interior surface with chaff impressions and fine to medium brown and grey gritty inclusions; base diameter: 44-46cm; preserved height: 3.5cm.

Bases (Thumbnail 17 and Thumbnail 18)

[186] inv. no. 82-976: 118; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), XI-12; fragment of a flat base (Base i); **Medium Ware;** HM; light yellowish brown 10YR 6/4 to grey 10YR 6/1 medium tempered clay with medium voids, silica, and very fine to fine white and brown gritty inclusions; mottled exterior – yellowish brown 10YR 5/4 with dark grey 10YR 4/1 and very dark grey discolouration 10YR 3/1; reddish brown 5YR 5/4 interior; smoothed, slipped and lightly burnished exterior surface with medium voids and chaff imprints; smoothed, slipped, and lightly burnished interior surface with small voids and very fine white gritty inclusions; base diameter: 8cm; preserved height: 4.5cm.

[187] inv. no. 82-976: 118; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), XI-12; fragment of a flat base (Base i); **Medium Ware;** HM; very pale brown 10YR 7/3 to brownish yellow 10YR 6/6 medium clay with small to medium voids and very fine to fine white and grey gritty inclusions; brownish yellow 10YR 6/6 exterior with grey discolouration 10YR 5/1; brownish yellow 10YR 6/6 interior with grey discolouration 10YR 5/1; smoothed and slipped exterior surface with crazing, small voids, chaff imprints, and very fine obsidian inclusions; plain interior surface with small to medium voids, chaff imprints, and very fine brown and grey gritty and obsidian inclusions; base diameter: 8-9cm; preserved height: 4cm.

[188] inv. no. 82-976: 219; Box 133; context: eastern section of Structure 1, XII-1; fragment of a flat base (Base i); **Coarse Ware;** HM; pale yellow 2.5Y 8/3 to grey 10YR 6/1 coarse clay with large white and grey gritty inclusions; pale yellow 2.5Y 8/3 exterior; light yellowish brown 7.5YR 6/4 interior; smoothed exterior surface with crazing, large voids, chaff impressions, and large white and brown gritty inclusions; plain interior surface with very fine to fine brown and grey gritty inclusions; base diameter: 10-12cm; preserved height: 2.5cm.

[189] inv. no. 82-976: 305; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; fragment of a heeled base with a spiral basket impression (Base ii); **Coarse Ware;** HM; light grey 2.5Y 7/1, grey 2.5Y 5/1 to black 2.5Y 2.5/1 coarse clay with very fine white gritty inclusions and medium to coarse grey gritty inclusions; mottled exterior – very pale brown 10YR 7/3, grey 10YR 6/1 to dark greyish brown 10YR 4/2; mottled interior – very pale brown 10YR 7/4, grey 10YR 6/1 to very dark grey 10YR 3/1; smoothed and slipped exterior surface with small to medium voids, crazing, and medium grey gritty inclusions; burnt, smoothed interior surface with large voids, chaff impressions, crazing, and medium to coarse grey gritty inclusions; base diameter: 12cm; preserved height: 5cm.

[190] inv. no. 82-976: 305; Box 134; context: square A-88, 89, 97, 98, 99, found in a mixed upper layer amongst stones in the western section of Structure 1, XII-17; fragment of a heeled base with a spiral basket impression (Base ii); **Coarse Ware;** HM; light grey 2.5Y 7/1, grey 2.5Y 5/1 to black 2.5Y 2.5/1 coarse clay with very fine white gritty inclusions and medium to coarse grey gritty inclusions; mottled exterior – very pale brown 10YR 7/3, grey 10YR 6/1 to dark greyish brown 10YR 4/2; mottled interior – very

pale brown 10YR 7/4, grey 10YR 6/1 to very dark grey 10YR 3/1; smoothed and slipped exterior surface with small to medium voids, crazing, and medium grey gritty inclusions; burnt, smoothed interior surface with large voids, chaff impressions, crazing, and medium to coarse grey gritty inclusions; base diameter: 12cm; preserved height: 5cm.

[191] inv. no. 82-976: 348; Box 134; context: found outside the eastern section of Structure 1, XII-31; fragment of a heeled base (Base ii); **Coarse Ware;** HM; light brownish grey 2.5Y 6/2 to dark grey 2.5Y 4/1 coarse clay with medium voids, and fine to medium white gritty inclusions, and coarse obsidian inclusions; light brownish grey 2.5Y 6/2 to grey 2.5Y 5/1 exterior; grey 2.5Y 6/1 interior; smoothed and slipped exterior surface with medium voids, striation marks, and fine to medium white gritty inclusions; plain interior surface with medium voids, crazing, and medium to coarse white gritty inclusions; base diameter: *ca.* 8-12cm; preserved height: 3cm.

[192] inv. no. 82-976: 393; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; fragment of a flat base (Base i); **Coarse Ware;** HM; brown 7.5YR 5/4 to light grey 10YR 7/2 coarse clay with small voids and very fine white and brown gritty inclusions; very pale brown 10YR 7/3 exterior; light grey 10YR 7/1 interior; smoothed and slipped exterior surface with crazing and very fine brown gritty inclusions; plain interior surface with small voids and very fine brown gritty inclusions; base diameter: 8cm; preserved height: 2.5cm.

[193] inv. no. 82-976: 822; Box 145; context: square B-48, 38, 28, uncovered in the eastern section below a series of stones in a black layer, XVII-46; fragment of a flat base (Base i); **Coarse Ware**; HM; light brown 7.5YR 6/4 to very dark grey 10YR 3/1 coarse clay with very fine white and brown gritty inclusions and medium to coarse grey gritty

inclusions; mottled exterior – very pale brown 10YR 7/3, reddish yellow 7.5YR 6/6 to dark greyish brown 10YR 4/2; pale brown 10YR 6/3 to reddish yellow 7.5YR 6/6 interior; smoothed, slipped, and lightly burnished exterior surface with one large void and very fine white gritty inclusions and fine to medium brown gritty inclusions; smoothed and slipped interior surface with very fine white gritty and obsidian inclusions and fine to medium grey gritty inclusions; base diameter: 7-8cm; preserved height: 8.5cm.

Body Sherds

[194] inv. no. 82-976: 117; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), XI-12; body sherd fragment; **Medium Ware;** HM; grey 10YR 5/1 medium clay with small voids and very fine to fine brown and grey gritty and obsidian inclusions; pale brown 10YR 6/3 to grey 10YR 5/1 exterior; light grey 10YR 7/2 to grey 10YR 5/1 interior; smoothed exterior surface with small voids and very fine white gritty inclusions; comb scraped interior surface with small voids, chaff imprints, and very fine white gritty and obsidian inclusions; preserved length: 9.5cm.

[195] inv. no. 82-876: 120; Box 132; context: western section of the trench, surface find between 0.3 to 0.7 metres (one to 2.3 feet), XI-13; body sherd fragment; **Coarse Ware;** HM; red 2.5YR 6/6, reddish yellow 7.5YR 6/6, grey 10YR 5/1 to very dark grey 10YR 3/1 coarse clay with medium to large voids and coarse white, brown, and grey gritty inclusions; light yellowish brown 2.5Y 6/3 exterior; dark grey 10YR 4/1 to very dark grey 10YR 3/1 interior; rough, laminated exterior surface with exposed basket impression (?), large voids, and medium to coarse red, brown, and grey gritty inclusions; smoothed interior surface with chaff impressions; preserved length: 12cm.

[196] inv. no. 82-976: 117; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), XI-12; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with small to medium voids and very fine to fine white gritty and obsidian inclusions; dark grey 10YR 4/1 exterior; pale brown 10YR 6/3 interior; smoothed exterior surface with striation marks, small voids, and very fine white gritty inclusions; comb scraped interior with chaff impressions very fine to fine grey gritty and obsidian inclusions; preserved length: 5cm.

[197] inv. no. 82-976: 117; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), XI-12; body sherd fragment; **Medium Ware;** HM; dark grey 7.5YR 4/1 medium clay with small voids and very fine white and grey gritty inclusions; dark grey 7.5YR 4/1 exterior; pale brown 10YR 7/3 interior; smoothed exterior surface with chaff impressions and very fine white gritty inclusions; comb scraped interior surface with very fine white and grey gritty inclusions; preserved length: 2cm.

[198] inv. no. 82-976: 127; Box 132; context: western section of the trench, found inside of the stone building (Structure 1?), close to the stones, XI-14; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine white and grey gritty inclusions; pale brown 10YR 6/3 to grey 10YR 6/1 exterior; light brown 7.5YR 6/4 interior; smoothed and slipped exterior surface with small voids and very fine white gritty and obsidian inclusions; comb scraped interior surface with very fine white gritty and obsidian inclusions; preserved length: 6cm.

[199] inv. no. 82-976: 221; Box 132; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; brown 7.5YR 5/4 medium clay with small voids,

very fine to fine black and grey gritty inclusions, and one coarse grey gritty inclusion; pink 7.5YR 7/3 exterior with grey discolouration 10YR 5/1; light brown 7.5YR 6/3 interior with grey discolouration 10YR 5/1; comb scraped exterior surface with small voids, chaff impressions, and very fine white and black gritty inclusions; smoothed interior surface with small voids and very fine white, brown, and black gritty inclusions; preserved length: 10.5cm.

[200] inv. no. 82-976: 140; Box 133; context; unspecified; body sherd fragment; **Obsidian Tempered Ware;** HM; yellowish brown 10YR 5/4 to very dark grey 10YR 3/1 medium clay with very fine to fine white, brown, and black gritty and obsidian inclusions; pale brown 10YR 6/3 to dark grey 2.5Y 4/1 exterior; very pale brown 10YR 7/4 to dark grey 10YR 4/1 interior; comb scraped, smoothed, and slipped exterior surface with small voids and very fine white gritty and obsidian inclusions; plain interior surface with small voids and fine to medium obsidian inclusions; preserved length: 5.7cm.

[201] inv. no. 82-976: 140; Box 133; context: unspecified; body sherd fragment; **Obsidian Tempered Ware;** HM; grey 10YR 5/1 medium clay with small voids and very fine to fine white gritty and obsidian inclusions; light yellowish brown 2.5Y 6/3 exterior with dark grey 10YR 4/1 discolouration; pale brown 10YR 6/3 interior; comb scraped, smoothed, and slipped exterior surface with mica and very fine to fine white gritty and obsidian inclusions; smoothed interior surface with small voids and very fine to fine white gritty and obsidian inclusions; preserved length: 7cm.

[202] inv. no. 82-976: 151; Box 133; context: inside Structure 1, the eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; light brownish grey 10YR 6/2 medium clay with very fine grey gritty inclusions; pale brown 10YR 6/3 exterior; pale

brown 10YR 6/3 interior; comb scraped exterior surface; plain interior surface with very fine grey gritty inclusions; preserved length: 3.7cm.

[203] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 to dark grey 10YR 4/1 medium clay with very fine white gritty and obsidian inclusions; very pale brown 10YR 7/3 exterior; greyish brown 10YR 5/2 to very dark grey 10YR 3/1 interior; comb scraped exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with small voids and very fine white and grey gritty inclusions; preserved length: 5.3cm.

[204] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 to dark grey 10YR 4/1 medium clay with very fine to fine white gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; very pale brown 10YR 7/3 to grey 10YR 5/1 interior; comb scraped exterior surface with very fine brown and grey gritty inclusions; plain interior surface with one large void, very fine white gritty inclusions, and fine to medium obsidian inclusions; preserved length: 6cm.

[205] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 medium clay with very fine to fine grey and obsidian inclusions; pale brown 10YR 6/3 exterior with light brownish grey 10YR 6/2 discolouration; comb scraped exterior surface with very fine white and grey gritty inclusions; plain interior surface with small voids and very fine white gritty inclusions; preserved length: 6.3cm.

[206] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with small voids and very fine white and grey gritty inclusions; pale brown 10YR 6/3 to grey 10YR 6/1 exterior; pale brown 10YR 6/3 to grey 10YR 6/1 interior; comb scraped exterior surface with small voids and very fine white gritty inclusions; plain interior surface with small voids and very fine white and grey gritty and obsidian inclusions; preserved length: 6.2cm.

[207] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; reddish yellow 7.5YR 6/6 to very dark grey 10YR 3/1 medium clay with very fine to fine white, brown, brick red, and grey gritty and obsidian inclusions; very pale brown 10YR 7/4 exterior; very dark grey 10YR 3/1 interior; comb scraped exterior surface with very fine grey gritty inclusions; plain interior surface with very fine white and grey gritty inclusions; preserved length: 7cm.

[208] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with very fine grey gritty and obsidian inclusions; very pale brown 10YR 7/4 exterior; very pale brown 10YR7/4 interior with light brownish-grey 10YR 6/2 discolouration; comb scraped exterior surface with very fine white and black gritty inclusions; burnt, plain interior surface with very fine obsidian inclusions; preserved length: 5.5cm.

[209] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; very

pale brown 10YR 7/3 medium clay with small voids and very fine to fine brown and grey gritty and obsidian inclusions; mottled exterior – reddish yellow 5YR 6/6, pale brown 10YR 6/3 to light brownish grey 10YR 6/2; pale brown 10YR 6/3 to grey 10YR5/1 interior; comb scraped exterior surface with small voids, mica, and very fine obsidian inclusions; plain interior surface with striation marks and very fine obsidian inclusions; preserved length: 7.3cm.

[210] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine white and grey gritty and obsidian inclusions; pale brown 10YR 6/3 exterior; very pale brown 10YR 7/3 to grey 10YR 5/1 interior; comb scraped exterior surface with very fine obsidian inclusions; plain interior surface with small voids and very fine white gritty and obsidian inclusions; preserved length: 5cm.

[211] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; reddish yellow 7.5YR 6/6 to grey 10YR 6/1 medium clay with very fine white and grey gritty and obsidian inclusions; pink 7.5YR 7/4 exterior with grey 10YR 6/1 discolouration; pink 7.5YR 7/4 interior with grey 10YR 6/1 discolouration; comb scraped exterior surface with mica and very fine white, brown, and grey gritty inclusions; plain interior surface with mica and very fine white, brown, and grey gritty inclusions; preserved length: 5.7cm.

[212] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine white and grey gritty and obsidian inclusions;

pale brown 10YR 6/3 to dark grey 10YR 4/1 exterior; pale brown 10YR 6/3 to dark grey 10YR 4/1 interior; comb scraped exterior surface with very fine white gritty inclusions; plain interior surface with striation marks and very fine white gritty inclusions; preserved length: 4.5cm.

[213] inv. no. 82-976: 153; Box 133; context: western trench, inside of Structure 1, eastern section of the wall, XI-16-17; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 to grey 10YR 6/1 medium clay with small voids, very fine grey gritty inclusions, and fine to medium obsidian inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 interior; comb scraped exterior surface with very fine obsidian inclusions; plain interior surface with very fine obsidian inclusions; preserved length: 4cm.

[214] inv. no. 82-976: 171; Box 133; context: west trench, XI-20-21; body sherd fragment; **Coarse Ware;** HM; very pale brown 10YR 7/3 to pale yellow 10YR 7/4 coarse clay with very fine to fine grey gritty and obsidian inclusions; mottled exterior – very pale brown 10YR 7/3, pale brown 10YR 6/3 to light brown 7.5YR 6/4; greyish brown 10YR 5/2 to grey 10YR 5/1 interior; comb scraped exterior surface with very fine white gritty and obsidian inclusions; plain interior surface with one coarse grey gritty inclusion and very fine to fine white, brown, and grey gritty and obsidian inclusions; preserved length: 10.3cm.

[215] inv. no. 82-976: 171; Box 133; context: west trench, XI-20-21; body sherd fragment; **Medium Ware;** HM; light brown 7.5YR 6/4 to brown 7.5YR 5/2 medium clay with very fine white and grey gritty inclusions; mottled exterior – pale brown 10YR 6/3, light grey 10YR 7/2 to very dark greyish brown 10YR 3/2; very pale brown 10YR 7/4 to

grey 10YR 5/1 interior; smoothed exterior surface with mica and very fine obsidian inclusions; comb scraped interior surface with very fine white gritty inclusions; preserved length: 10cm.

[216] inv. no. 82-976: 171; Box 133; context: west trench, XI-20-21; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 medium clay with very fine white gritty and obsidian inclusions and medium to coarse grey gritty inclusions; greyish brown 10YR 5/2 exterior with very pale brown 10YR 7/4 discolouration; greyish brown 10YR 5/2 interior with very pale brown 10YR 7/4 discolouration; comb scraped exterior surface with very fine to medium obsidian inclusions; plain interior surface with very fine white gritty inclusions and fine to medium obsidian inclusions; preserved length: 6cm.

[217] inv. no. 82-976: 171; Box 133; context: west trench, XI-20-21; body sherd fragment; **Medium Ware;** HM; yellow 10YR 7/6 medium clay with very fine to fine white and grey gritty and obsidian inclusions; reddish yellow 7.5YR 7/8 to reddish yellow 7.5YR 6/8 exterior; reddish yellow 7.5YR 7/8 to reddish yellow 7.5YR 6/8 interior; comb scraped exterior surface with very fine obsidian inclusions; comb scraped interior surface with chaff impressions, one large void, and very fine obsidian inclusions; preserved length: 5.7cm.

[218] inv. no. 82-976: 171; Box 133; context: west trench, XI-20-21; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine to fine white, brown, and grey gritty and obsidian inclusions; light brownish grey 10YR 6/2 to light grey 10YR 7/2 exterior; light brownish grey 10YR 6/2 to light grey 10YR 7/2 interior; plain exterior surface with small voids and very fine grey gritty and obsidian inclusions;

comb scraped interior surface with very fine brown and grey gritty and obsidian inclusions; preserved length: 6.2cm.

[219] inv. no. 82-976: 171; Box 133; context: west trench, XI-20-21; body sherd fragment; **Medium Ware;** HM; grey 10YR 5/1 to very dark grey 10YR 3/1 medium clay with very fine grey gritty and obsidian inclusions; light brownish grey 10YR 6/2 to dark grey 10YR 4/1 exterior; light brownish grey 10YR 6/2 to dark grey 10YR 4/1 interior; comb scraped exterior surface with very fine white gritty inclusions; plain interior surface with very fine white and grey gritty inclusions; preserved length: 3.7cm.

[220] inv. no. 82-976: 171; Box 133; context: west trench, XI-20-21; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 to very dark grey 10YR 3/1 medium clay with very fine white gritty and obsidian inclusions and fine to medium grey gritty inclusions; very pale brown 10YR 7/4 to dark grey 10YR 4/1 exterior; very pale brown 10YR 7/4 to dark grey 10YR 4/1 interior; comb scraped exterior surface with very fine white, brown, and grey gritty inclusions; plain interior surface with very fine white and grey gritty and obsidian inclusions; preserved length: 7cm.

[221] inv. no. 82-976: 171; Box 133; context: west trench, XI-20-21; body sherd fragment; **Medium Ware;** HM; grey 10YR 5/1 medium clay with very fine white and grey gritty and obsidian inclusions; brown 10YR 5/3 exterior with dark grey 10YR 4/1 discolouration; light brownish grey 10YR 6/2 interior; smoothed exterior surface with striation marks, small voids, and very fine white gritty and obsidian inclusions; comb scraped interior surface with very fine white gritty and obsidian inclusions; preserved length: 6.8cm.

[222] inv. no. 82-976: 186; Box 133; context: western trench, Pit Grave No. 4, XI-23, 18; body sherd fragment; **Obsidian Tempered Ware;** HM; brown 7.5YR 5/4 to dark grey 7.5YR 4/1 medium clay with fine to medium white and brown gritty and obsidian inclusions; very pale brown 10YR 7/3 to grey 10YR 6/1 exterior with very dark grey 10YR 3/1 discolouration; very pale brown 10YR 7/3 interior; comb scraped exterior surface with very fine white gritty and obsidian inclusions; comb scraped interior surface with mica and very fine white, brown, and grey gritty and obsidian inclusions; preserved length: 12cm.

[223] inv. no. 82-976: 186; Box 133; context: western trench, Pit Grave No. 4, XI-23, 18; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 to grey 10YR 5/1 medium clay with fine obsidian inclusions; light brown 7.5YR 6/4 exterior; light grey 10YR 7/1 to grey 10YR 5/1 interior; smoothed exterior surface with fine white gritty and obsidian inclusions; comb scraped interior surface with fine white gritty and obsidian inclusions; preserved length: 6cm.

[224] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 to very dark grey 10YR 3/1 medium clay with small voids and fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 to grey 7.5YR 6/1 exterior; very pale brown 10YR 7/3 to grey 10YR 5/1 interior; comb scraped exterior surface with very fine grey gritty and obsidian inclusions; comb scraped interior surface with striation marks and very fine white and grey gritty and obsidian inclusions; preserved length: 5.5cm.

[225] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment**; Medium Ware;** HM; reddish yellow 7.5YR 6/6 medium clay with fine

white and brick red gritty and obsidian inclusions; light grey 10YR 7/2 exterior; light brown 7.5YR 6/3 interior; comb scraped and slipped exterior surface with fine white and grey gritty inclusions; plain interior surface with fine white, brown, and black gritty inclusions; preserved length: 4.5cm.

[226] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 to dark grey 10YR 4/1 medium clay with fine white and grey gritty and obsidian inclusions; light grey 10YR 7/2 exterior with grey 10YR 6/1 discolouration; light grey 10YR 7/2 interior with grey 10YR 6/1 discolouration; comb scraped and slipped exterior surface with very fine white and brown gritty and obsidian inclusions; plain interior surface with mica, white and brown gritty and obsidian inclusions; preserved length: 5cm.

[227] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; reddish yellow 7.5YR 6/6 to very dark grey 7.5YR 3/1 medium clay with fine grey gritty and obsidian inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 to dark grey 10YR 4/1 interior; comb scraped exterior surface with very fine white and grey gritty and obsidian inclusions; burnt, comb scraped interior surface with fine white gritty and obsidian inclusions; preserved length: 4.5cm.

[228] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; brown 7.5YR 5/4 medium clay with fine white, brick red, and grey gritty and obsidian inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 interior; comb scraped exterior surface with very fine grey gritty and obsidian inclusions; smoothed interior surface with striation marks and very fine to fine grey gritty inclusions; preserved length: 7cm.

[229] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; reddish yellow 7.5YR 6/6 to grey 7.5YR 5/1 medium clay with one large void and fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; pinkish grey 7.5YR 6/2 to grey 7.5YR 5/1 interior; smoothed exterior surface with very fine obsidian inclusions; comb scraped interior surface with striation marks and very fine white gritty and obsidian inclusions; preserved length: 4.2cm.

[230] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with very fine to fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/3 to grey 10YR 6/1 exterior; light brown 7.5YR 6/3 to grey 10YR 6/1 interior; comb scraped and slipped exterior surface with very fine brown gritty and obsidian inclusions; plain interior surface with very fine white and grey gritty and obsidian inclusions; preserved length: 9.2cm.

[231] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; very dark grey 10YR 3/1 medium clay with very fine to fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light brownish grey 10YR 6/2 to grey 10YR 5/1 interior; comb scraped exterior surface with small voids and very fine obsidian inclusions; plain interior surface with very fine white gritty and obsidian inclusions; preserved length: 6cm.

[232] inv. no. 82-976: 221; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; light brown 7.5YR 6/3 medium clay with very fine to fine white gritty and obsidian inclusions; light brown 7.5YR 6/3 exterior; light brown

7.5YR 6/3 interior; comb scraped exterior surface with very fine white and grey gritty and obsidian inclusions; comb scraped interior surface with very fine white and grey gritty and obsidian inclusions; preserved length: 7.5cm.

[233] inv. no. 82-976: 223; Box 133; context: eastern section of Structure 1, XII-1; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine to fine white and grey gritty and obsidian inclusions; light grey 10YR 7/2 exterior with dark grey 10YR 4/1 discolouration; light grey 10YR 7/2 interior with dark grey 10YR 4/1 discolouration; smoothed exterior surface with very fine white gritty and obsidian inclusions; comb scraped interior surface with small voids and very fine obsidian inclusions; preserved length: 6.8cm.

[234] inv. no. 82-976: 247; Box 133; context: unspecified; body sherd fragment with an elliptical shaped lug on the surface; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids, fine obsidian inclusions, and fine to medium brick-red and grey gritty inclusions; very pale brown 10YR 7/3 exterior with dark grey 10YR 4/1 discolouration; very pale brown 10YR 7/3 to grey 10YR 5/1 interior; smoothed exterior surface with small voids and fine grey gritty and obsidian inclusions; plain interior surface with small voids and fine white gritty and obsidian inclusions; preserved length: 6cm.

[235] inv. no. 82-976: 248; Box 133; context: unspecified; body sherd fragment; **Obsidian Tempered Ware;** HM; grey 10YR 7/2 medium clay with very fine to fine grey gritty and obsidian inclusions; very pale brown 10YR 7/4 exterior surface; very pale brown 10YR 7/4 interior surface with grey 10YR 6/1 discolouration; comb scraped exterior surface with very fine to fine grey gritty and obsidian inclusions; smoothed

interior surface with very fine to fine grey gritty and obsidian inclusions; preserved length: 6cm.

[236] inv. no. 82-976: 248; Box 133; context: unspecified; body sherd fragment; **Medium Ware;** HM; strong brown 7.5YR 5/6 to dark grey 7.5YR 4/1 medium clay with very fine obsidian inclusions and fine white and black gritty inclusions; light yellowish brown 7.5YR 6/4 to brown 7.5YR 4/2 exterior surface with dark grey 10YR 3/1 discolouration; light yellowish brown 7.5YR 6/4 interior surface; comb scraped and smoothed exterior surface with very fine to fine white gritty and obsidian inclusions; plain interior surface with very fine to fine white and black gritty and obsidian inclusions; preserved length: 5.7cm.

[237] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; body sherd fragment; **Medium Ware;** HM; black 7.5YR 2.5/1 medium clay with small voids and very fine to fine white and brown gritty inclusions; brown 7.5YR 4/3 exterior with dark grey 7.5YR 4/1 discolouration; pink 7.5YR 7/3 interior; comb scraped, smoothed, and slipped exterior surface with striation marks and very fine white and brown gritty inclusions; plain interior surface with very fine grey gritty and obsidian inclusions; preserved length: 5.5cm.

[238] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; body sherd fragment; **Obsidian Tempered Ware;** HM; brown 7.5YR 4/2 medium clay with small voids and very fine to fine white gritty and obsidian inclusions; very dark grey 7.5YR 3/1 exterior with black 7.5YR 2.5/1 discolouration; pinkish grey 7.5YR 6/2 interior; comb scraped, smoothed, and slipped exterior surface with small voids, chaff impressions, mica, and very fine white gritty and obsidian

inclusions; plain interior surface with small voids and very fine obsidian inclusions; preserved length: 6cm.

[239] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; body sherd fragment; **Obsidian Tempered Ware;** HM; pink 7.5YR 7/4 to black 7.5YR 2.5/1 medium to coarse clay with small voids and very fine white gritty and obsidian inclusions; very pale brown 10YR 7/3 to grey 10YR 5/1 exterior; dark grey 10YR 4/1 interior; comb scraped exterior surface with medium voids, chaff impressions, and very fine obsidian inclusions; plain interior surface with medium to coarse obsidian inclusions; preserved length: 4.6cm.

[240] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with small voids and very fine white and grey gritty and obsidian inclusions; pale brown 10YR 6/3 exterior; pale brown 10YR 6/3 interior; comb scraped and smoothed exterior surface with one large void and very fine white and brown gritty inclusions; plain interior surface with small voids, chaff impressions, and very fine white and brown gritty and obsidian inclusions; preserved length 4.5cm.

[241] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; body sherd fragment; **Mixed Tempered Ware;** HM; very pale brown 10YR 7/4 to grey 10YR 6/1 medium clay with medium to large voids and very fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/3 to grey 7.5YR 6/1 exterior; light brown 7.5YR 6/3 to grey 7.5YR 6/1 interior; comb scraped, smoothed, and slipped exterior surface with small to medium voids, chaff impressions, and very fine white gritty

inclusions; smoothed interior surface with one large void, striation marks, chaff impressions, and very fine white gritty and obsidian inclusions; preserved length: 6cm.

[242] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine to fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/3 exterior; grey 7.5YR 5/1 interior; smoothed exterior surface with very fine grey gritty and obsidian inclusions; comb scraped, smoothed, and slipped interior surface with small voids, striation marks, and very fine to fine white gritty and obsidian inclusions; preserved length: 5cm.

[243] inv. no. 82-976: 317; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 to very dark grey 7.5YR 3/1 medium clay with small to medium voids and very fine to fine white gritty and obsidian inclusions; mottled exterior – light brown 7.5YR 6/4 reddish brown 5YR 5/4, grey 7.5YR 5/1 to dark grey 7.5YR 4/1; grey 7.5YR 5/1 to dark grey 7.5YR 4/1 interior; comb scraped, smoothed, slipped, and lightly burnished exterior surface with small to medium voids, chaff impressions, and very fine white gritty and obsidian visions; plain interior surface with small voids, chaff impressions, and very fine to fine white gritty and obsidian inclusions; preserved length: 12cm.

[244] inv. no. 82-976: 324; Box 134; context: found at the bottom of the central pit of Structure 1, XII-28; body sherd fragment; **Medium Ware;** HM; grey 10YR 6/1 medium clay with fine obsidian inclusions and coarse white gritty inclusions; light brownish grey 10YR 6/2 exterior; light brownish grey 10YR 6/2 interior; comb scraped, smoothed, and

slipped exterior surface with one large void and medium white gritty inclusions; plain interior surface with crazing and fine white gritty inclusions; preserved length: 3cm.

[245] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small to medium voids and very fine white gritty and obsidian inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 interior; comb scraped and smoothed exterior surface with very fine white and brown gritty inclusions; smoothed interior surface with small voids, striation marks, and very fine brown gritty and obsidian inclusions; preserved length: 5.5cm.

[246] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; light brown 7.5YR 6/4 to grey 2.5Y 6/1 medium clay with small to medium voids and very fine to fine white and brick red gritty and obsidian inclusions; pale brown 10YR 6/3 exterior with grey 10YR 5/1 to dark grey 10YR 4/1 discolouration; light brown 7.5YR 6/4 interior; comb scraped, smoothed, and slipped exterior surface with small voids, crazing, and very fine to fine white gritty and obsidian inclusions; smoothed and slipped interior surface with small voids, striation marks, and very fine brick red gritty and obsidian inclusions; preserved length: 9cm.

[247] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; light brown 7.5YR 6/4 to dark brown 7.5YR 3/3 medium clay with small voids and very fine to fine brown and grey gritty and obsidian inclusions; brown 7.5YR 5/3 exterior; brown 7.5YR 5/3 interior; comb scraped, smoothed, and slipped exterior surface with very fine to fine brown and grey

gritty and obsidian inclusions; comb scraped, smoothed, and slipped interior surface with chaff impressions and very fine to fine obsidian inclusions; preserved length: 4.8cm.

[248] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine to fine brown and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light grey 10YR 7/2 interior; comb scraped and smoothed exterior surface with very fine brown gritty and obsidian inclusions; smoothed interior surface with very fine brown gritty and obsidian inclusions; preserved length: 4.8cm.

[249] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 to grey 10YR 5/1 medium clay with small voids, very fine to fine grey gritty and obsidian inclusions, and fine to medium white gritty inclusions; light brown 7.5YR 6/4 exterior; light brownish grey 10YR 6/2 interior; comb scraped, smoothed, and slipped exterior surface with very fine obsidian inclusions; plain interior surface with chaff impressions and very fine to fine grey gritty and obsidian inclusions; preserved length: 5.5cm.

[250] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 to dark grey 10YR 4/1 medium clay with small voids and very fine to fine white gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior with grey 7.5YR 5/1 to dark grey 7.5YR 4/1 discolouration; grey 7.5YR 5/1 interior; comb scraped, smoothed, and slipped exterior surface with small voids and very fine obsidian inclusions; burnt, smoothed

interior surface with small voids and very fine obsidian inclusions; preserved length: 6.2cm.

[251] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; reddish brown 5YR 5/4 to light brownish grey 10YR 6/2 medium clay with small voids and very fine to fine brown gritty and obsidian inclusions, and fine to medium white gritty inclusions; very pale brown 10YR 7/4 exterior with grey 10YR 5/1 discolouration; light brown 7.5YR 6/4 interior; comb scraped, smoothed, and slipped exterior surface with very fine white gritty inclusions; smoothed interior surface with small voids and very fine brown gritty inclusions; preserved length: 6cm.

[252] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Obsidian Tempered Ware;** HM; brown 7.5YR 5/4 to dark grey 7.5YR 4/1 medium clay with small voids and very fine to fine white and brick red gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior with grey 10YR 6/1 discolouration; brown 7.5YR 5/3 to grey 10YR 6/1 interior; comb scraped and smoothed exterior surface with very fine to fine brown gritty and obsidian inclusions; plain interior surface with small voids, striation marks, and very fine to fine obsidian inclusions; preserved length: 7.8cm.

[253] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; pinkish grey 7.5YR 7/2 medium clay with small to large voids, very fine to fine white gritty and obsidian inclusions, and fine to medium grey gritty inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior; comb scraped, smoothed, and slipped exterior surface

with very fine white and grey gritty and obsidian inclusions; smoothed interior surface with small voids, striation marks, very fine to fine white and grey gritty and obsidian inclusions; preserved length: 6.3cm.

[254] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; yellowish red 5YR 5/6 medium clay with small voids and very fine to fine brown and grey gritty and obsidian inclusions; brown 7.5YR 5/4 exterior; brown 7.5YR 5/3 interior; comb scraped and smoothed exterior surface with small voids and very fine obsidian inclusions; plain interior surface with striation marks, crazing, and very fine to fine white and brown gritty and obsidian inclusions; preserved length: 9cm.

[255] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3, strong brown 7.5YR 5/6 to grey 7.5YR 5/1 medium clay, with small to medium voids and very fine to fine brown and grey gritty and obsidian inclusions; light yellowish brown 7.5YR6/4 exterior; light brownish grey 10YR 6/2 interior; plain exterior surface with small voids, chaff impressions, and very fine obsidian inclusions; plain interior surface with striation marks, and very fine to fine white gritty and obsidian inclusions; preserved length: 9.5cm.

[256] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; olive brown 7.5YR 4/4 to brown 7.5YR 4/2 medium clay with small to medium voids, fine obsidian inclusions, and fine to medium white and brown gritty inclusions; pink 7.5YR 7/4 to grey 10YR 5/1 exterior; greyish brown 10YR 5/2 interior; comb scraped, smoothed, and slipped exterior

surface with small voids, chaff impressions, and very fine obsidian inclusions; plain interior surface with striation marks, chaff impressions, and very fine white gritty and obsidian inclusions; preserved length: 6.5cm.

[257] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with small to large voids and very fine to fine white, brown, and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 to grey 10YR 5/1 interior; comb scraped, smoothed, and slipped exterior surface with small voids, chaff impressions, and very fine obsidian visions; comb scraped and smoothed interior surface with very fine obsidian inclusions; preserved length: 7cm.

[258] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; dark grey 10YR 4/1 medium clay with medium voids and very fine grey gritty and obsidian inclusions; light brown 7.5YR 6/4 to light reddish brown 5YR 6/4 exterior; pale brown 10YR 6/3 to grey 2.5Y 6/1 interior; smoothed, slipped, and lightly burnished exterior surface with chaff impressions and very fine obsidian inclusions; comb scraped interior surface with small voids and very fine obsidian inclusions; preserved length: 8cm.

[259] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; grey 10YR 5/1 medium clay with small voids and very fine white gritty and obsidian inclusions; light yellowish brown 10YR 6/4 exterior with grey 10YR 6/1 discolouration; light grey 10YR 7/2 interior; comb scraped, smoothed, and slipped exterior surface with chaff impressions and very

fine brown gritty and obsidian inclusions; plain interior surface with very fine to fine brown gritty and obsidian inclusions; preserved length: 6.5cm.

[260] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; light brownish grey 10YR 6/2 medium clay with small to medium voids and very fine grey gritty and obsidian inclusions; dark grey 10YR 4/1 exterior; pale brown 10YR 6/3 interior with dark grey 10YR 4/1 discolouration; comb scraped, smoothed, and slipped exterior surface with small to medium voids and very fine obsidian inclusions; plain interior surface with small to medium voids and very fine obsidian inclusions; preserved length: 7cm.

[261] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Obsidian Tempered Ware;** HM; brown 7.5YR 5/4 medium clay with very fine to fine white and brick red gritty and obsidian inclusions; brown 7.5YR 5/4 to grey 7.5YR 5/1 exterior; light yellowish brown 7.5YR 6/4 to light grey 10YR 7/2 interior; comb scraped and smoothed exterior surface with small voids and very fine white gritty and obsidian inclusions; smoothed interior surface with striation marks and very fine to fine obsidian inclusions; preserved length: 7cm.

[262] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; grey 10YR 5/1 medium clay with small voids and very fine white gritty and obsidian inclusions; light yellowish brown 7.5YR 6/4 exterior; pale brown 10YR 6/3 to grey 10YR 5/1 interior; comb scraped, smoothed, and slipped exterior surface with very fine brown gritty inclusions; plain interior surface with small voids and very fine white and grey gritty and obsidian inclusions; preserved length: 7cm.

[263] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with small voids and very fine to fine white and brick red gritty and obsidian inclusions; reddish brown 5YR 5/4 to grey 10YR 5/1 exterior; reddish brown 5YR 5/4 to grey 10YR 5/1 interior; comb scraped, smoothed, and slipped exterior surface with small voids and very fine obsidian inclusions; plain interior surface with small voids, striation marks, and very fine white gritty and obsidian inclusions; preserved length: 6.7cm.

[264] inv. no. 82-976: 349; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; pinkish grey 7.5YR 7/2 medium clay with very fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior; comb scraped exterior surface with small voids and fine white and brown gritty and obsidian inclusions; plain interior surface with very fine white and brown gritty and obsidian inclusions; preserved length: 12cm.

[265] inv. no. 82-976: 351; Box 134; context: found outside of the eastern section of Structure 1, XII-31; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine to fine white and grey gritty and obsidian inclusions; mottled exterior – reddish yellow 5YR 6/6, light grey 2.5Y 7/1 to grey 2.5Y 6/1 with white 10YR 8/1 discolouration; reddish yellow 5YR 7/6 interior; comb scraped, smoothed, slipped, and lightly burnished exterior surface with small voids and fine white gritty inclusions; smoothed and slipped interior surface with small voids and very fine white and brown gritty inclusions; preserved length: 8.7cm.

[266] inv. no. 82-976: 369; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; body sherd fragment; **Obsidian**

Tempered Ware; HM; pale brown 10YR 6/3 to grey 10YR 5/1 medium to coarse clay, with small voids, fine white gritty inclusions, and medium to coarse obsidian inclusions; pale brown 10YR 6/3 to grey 10YR 5/1 exterior; pale brown 10YR 6/3 to light brownish grey 10YR 6/2 interior; comb scraped and smoothed exterior surface with coarse obsidian inclusions; plain interior surface with small voids, fine white gritty inclusions, and fine to medium obsidian inclusions; preserved length: 3.5cm.

[267] inv. no. 82-976: 369; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; body sherd fragment; **Obsidian Tempered Ware;** HM; light brownish grey 10YR 6/2 coarse clay with small voids and medium to coarse grey gritty inclusions; light brown 7.5YR 6/4 to light grey 10YR 7/2 exterior; light brown 7.5YR 6/4 to light grey 10YR 7/2 interior; comb scraped and smoothed exterior surface with small voids, chaff impressions, and medium obsidian inclusions; plain interior surface with chaff impressions and medium grey gritty and obsidian inclusions; preserved length: 6cm.

[268] inv. no. 82-976: 369; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; body sherd fragment; **Medium Ware;** HM; light reddish brown 5YR 6/4 to light grey 5YR 7/1 medium clay with small voids and very fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior; comb scraped and smoothed exterior surface with chaff impressions and very fine white and grey gritty and obsidian inclusions; comb scraped and smoothed interior surface with striation marks, chaff impressions, and very fine to fine white, brown, and grey gritty inclusions; preserved length: 6.5cm.

[269] inv. no. 82-976: 369; Box 134; context: square A-06, 07, 96, 97, 98, 99, 87, 88, 89, found in the western section of Structure 1, XII-33; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/3 medium clay with small voids, very fine obsidian inclusions, and fine to medium white and brown gritty inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with very fine obsidian inclusions; comb scraped interior surface with very fine brown and grey gritty and obsidian inclusions; preserved length: 6cm.

[270] inv. no. 82-976: 381; Box 134; context: square A-54, 55, 44, found around the central pit of Structure 1, XII-35; body sherd fragment; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with fine white gritty inclusions and fine to medium grey gritty and obsidian inclusions; pink 7.5YR 7/3 exterior; light grey 10YR 7/2 interior; comb scraped and smoothed exterior surface with striation marks and fine obsidian inclusions; plain interior surface with fine to medium white gritty and obsidian inclusions; preserved length: 5.5cm.

[271] inv. no. 82-976: 393; Box 134; context: square A-27, 37, 47, 28, 38, 48, 58, between 0.07 and 0.34 metres below the surface, XII-37; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/1 medium clay with one large void and very fine red and obsidian gritty inclusions; pink 5YR 7/4 exterior; light reddish brown 5YR 6/3 interior; smoothed, slipped, and lightly burnished exterior surface with chaff impressions, crazing, and very fine white gritty inclusions; comb scraped and smoothed interior surface with chaff impressions, crazing, and very fine white gritty inclusions; preserved length: 6.5cm.

[272] inv. no. 82-976: 456; Box 136; context: unspecified; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine to fine white, orange, brick

red, grey, and black gritty inclusions; reddish yellow 5YR 6/6 exterior; pale brown 10YR 6/3 to grey 10YR 6/1 interior; smoothed, slipped, and comb scraped exterior surface with very fine grey gritty inclusions; plain interior surface with crazing and very fine white and grey gritty inclusions; preserved length: 5.2cm.

[273] inv. no. 82-976: 447; Box 136; context: square B-14, 15, 24, 25, between 0.90 and 1.5 metres below the surface, XIII-11; body sherd fragment; **Obsidian Tempered Ware;** HM; very dark grey 10YR 3/1 coarse clay with one large void, and fine to medium grey gritty and obsidian inclusions, and coarse white gritty inclusions; reddish yellow 7.5YR 6/6 to very pale brown 10YR 7/3 exterior; light grey 10YR 7/2 interior; smoothed exterior surface with very fine grey gritty and obsidian inclusions; comb scraped interior surface with very fine grey gritty and obsidian inclusions; preserved length: 3.7cm.

[274] inv. no. 82-976: 464; Box 136; context: square B-26, 27, 36, 37, between 1.3 and 1.6 metres beneath the surface, XIII-13; body sherd fragment; **Medium Ware;** HM; very dark grey 10YR 3/1 medium clay with very fine white and grey gritty and obsidian inclusions; very pale brown 10YR 7/3 exterior; very pale brown 10YR 7/3 interior with dark greyish brown 10YR 4/2 discolouration; comb scraped exterior surface with very fine grey gritty inclusions; plain interior surface with very fine grey gritty and obsidian inclusions; preserved length: 6.8cm.

[275] inv. no. 82-976: 503; Box 136; context: square B-16, 17, 26, 27, between one and 1.6 metres below the surface, XIII-21; body sherd fragment; **Medium Ware;** HM; grey 2.5Y 5/1 coarse clay with very fine to fine white and grey gritty inclusions; pink 7.5YR 7/4 to very pale brown 10YR 7/3 exterior; pink 5YR 7/4 interior; comb scraped, smoothed, and slipped exterior surface with small voids and very fine white and grey

gritty inclusions; plain interior surface with chaff impressions and very fine white gritty inclusions; preserved length: 6.2cm.

[276] inv. no. 82-976: 503; Box 136; context: square B-16, 17, 26, 27, between one and 1.6 metres below the surface, XIII-21; body sherd fragment; **Obsidian Tempered Ware;** HM; grey 10YR 5/1 medium clay with very fine white and grey gritty and obsidian inclusions; reddish yellow 5YR 6/6 exterior with pale brown 10YR 5/3 discolouration; reddish yellow 5YR 6/6 interior with pale brown 10YR 6/3 discolouration; comb scraped, smoothed, and slipped exterior surface with fine to medium obsidian inclusions; smoothed interior surface with very fine white and grey gritty and obsidian inclusions; preserved length: 6.2cm.

[277] inv. no. 82-976: 517; Box 136; context: unspecified; body sherd fragment; **Medium Ware;** HM; light yellowish brown 10YR 6/3 to pinkish grey 7.5YR 6/2 medium clay with very fine to fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; pale brown 10YR 6/3 to grey 10YR 6/1 interior; comb scraped exterior surface with one coarse obsidian inclusion and one medium void; plain interior surface with very fine to fine white gritty and obsidian inclusions; preserved length: 5.7cm.

[278] inv. no. 82-976: 526; Box 136; context: square B-16, 17, 26, 27, between 0.55 and 0.75 metres below the surface, XIII-24; body sherd fragment; **Obsidian Tempered Ware;** HM; very pale brown 10YR 7/2 medium clay with small voids and very fine obsidian inclusions; very pale brown 10YR 7/3 exterior; pale brown 10YR 6/3 interior; comb scraped and smoothed exterior surface with very fine brown gritty and obsidian inclusions; plain interior surface with very fine brown and grey gritty and obsidian inclusions; preserved length: 4.3cm.

[279] inv. no. 82-976: 561; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very fine obsidian inclusions, and fine to medium brown and grey gritty inclusions, and one coarse yellow gritty inclusion; mottled exterior – pale brown 10YR 6/3, light brownish grey 10YR 6/2 to grey 10YR 5/1; light brown 7.5YR 6/3 interior; comb scraped and slipped exterior surface with very fine obsidian inclusions; slipped interior surface with very fine obsidian inclusions; preserved length: 6.5cm.

[280] inv. no. 82-976: 561; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; body sherd fragment; **Medium Ware;** HM; dark grey 10YR 4/1 medium clay with small voids and very fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 to reddish yellow 7.5YR 6/6 exterior; pale brown 10YR 6/3 to grey 10YR 5/1 interior; comb scraped, smoothed, and slipped exterior surface with small voids and very fine white gritty inclusions; plain interior surface with very fine white, brown, and grey gritty inclusions; preserved length: 7.5cm.

[281] inv. no. 82-976: 561; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 to grey 10YR 5/1 medium clay with very fine white gritty and obsidian inclusions; light brown 7.5YR 6/3 to grey 10YR 5/1 exterior; very pale brown 10YR 7/3 interior; smoothed and slipped exterior surface with very fine white gritty and obsidian inclusions; comb scraped interior surface with very fine white and grey gritty and obsidian inclusions; preserved length: 5.8cm.

[282] inv. no. 82-976: 561; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; body sherd fragment; **Medium Ware;** HM; strong brown 7.5YR 5/6 medium clay with small voids and very fine to fine white and grey gritty and obsidian inclusions; light yellowish brown 10YR 6/4 exterior with greyish brown 10YR 5/2 discolouration; light brown 7.5YR 6/4 interior; comb scraped, smoothed, slipped, and burnished exterior surface with small voids and very fine obsidian inclusions; smoothed, slipped, and burnished interior surface with small voids, striation marks, and very fine obsidian inclusions; preserved length: 11cm.

[283] inv. no. 82-976: 561; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; body sherd fragment; **Coarse Ware;** HM; yellow 10YR 7/6, reddish yellow 7.5YR 6/6 to grey 10YR 5/1 coarse clay with very fine white and grey gritty and obsidian inclusions; pale brown 10YR 6/3 to light brownish grey 10YR 6/2 exterior with yellow 10YR 7/8 discolouration; pale brown 10YR 3/1 to brownish yellow 10YR 6/6 interior; comb scraped and slipped exterior surface with one coarse grey gritty inclusion; smoothed interior surface with very fine obsidian inclusions; preserved length: 7.2cm.

[284] inv. no. 82-976: 561; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; body sherd fragment; **Medium Ware;** HM; light brown 7.5YR 6/4 to grey 10YR 5/1 medium clay with small voids and very fine white, orange and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; light brown 7.5YR 6/4 interior; comb scraped, smoothed, and slipped exterior surface with one large void and very fine obsidian inclusions; smoothed and

slipped interior surface with small voids and very fine obsidian inclusions; preserved length: 8cm.

[285] inv. no. 82-976: 561; Box 137; context: between Structure 1 and the previous trench, between 0.5 to 1.8 metres below the surface, XIII-27; body sherd fragment; **Medium Ware;** HM; grey 10YR 6/1 medium clay with small voids and very fine white gritty and obsidian inclusions; mottled exterior – pale brown 10YR 6/3, light reddish brown 5YR 6/4 to grey 10YR 6/1 exterior; grey 10YR 6/1 interior; comb scraped, smoothed, and slipped exterior surface with very fine white and obsidian inclusions; plain interior surface with small voids and very fine white gritty inclusions; preserved length: 5cm.

[286] inv. no. 82-976: 570; Box 137; context: floor of Structure 1, XIII-38; body sherd fragment; **Fine Ware;** HM; strong brown 7.5YR 5/6 fine clay with very fine white gritty and obsidian inclusions; light yellowish brown 10YR 6/4 exterior; very pale brown 10YR 7/3 to grey 10YR 6/1 interior; comb scraped exterior surface with very fine brown gritty and obsidian inclusions; smoothed interior surface with very fine white gritty and obsidian inclusions; preserved length: 6.3cm.

[287] inv. no. 82-976: 570; Box 137; context: floor of Structure 1, XIII-38; body sherd fragment; **Medium Ware;** HM; very dark grey 10YR 3/1 medium clay with very fine white gritty and obsidian inclusions; pink 7.5YR 7/3 to light brownish grey 10YR 6/2 exterior; brown 10YR 5/3 to very dark grey 10YR 3/1 interior; comb scraped and slipped exterior surface with very fine white gritty and obsidian inclusions; smoothed interior surface with striation marks and very fine white gritty and obsidian inclusions; preserved length: 4.5cm.

[288] inv. no. 82-976: 692; Box 141; context: uncovered during the cleaning of the eastern wall of Structure 1, XV-24; body sherd fragment; **Obsidian Tempered Ware** HM; light grey 10YR 7/2 medium to coarse clay with large voids and very fine to fine white, grey, and black gritty inclusions; light yellowish brown 10YR 6/4 exterior; light yellowish brown 10YR 6/4 interior with grey 10YR 6/1 discolouration; plain exterior surface with very fine white and grey gritty and obsidian inclusions; comb scraped interior surface with large voids and very fine white and grey gritty and obsidian inclusions; preserved length: 4.2cm.

[289] inv. no. 82-976: 727; Box 142; context: uncovered when cleaning the stone walls and surrounding area of Structure 1, XVII-1; body sherd fragment; **Medium Ware;** HM; reddish yellow 5YR 6/6 to brown 7.5YR 5/3 medium clay with very fine white and grey gritty and obsidian inclusions and very fine to fine brown gritty inclusions; very pale brown 10YR 7/3 to dark greyish brown 10YR 4/2 exterior; very pale brown 10YR 7/3 to dark greyish brown 10YR 4/2 interior; comb scraped and slipped exterior surface with very fine white and black gritty inclusions; plain interior surface with very fine white, brown and grey gritty and obsidian inclusions; preserved length: 6cm.

[290] inv. no. 82-976: 822; Box 145; context: square B-48, 38, 28, uncovered in the eastern section below a series of stones in a black layer, XVII-46; body sherd fragment; **Medium Ware;** HM; brown 7.5YR 5/4 medium clay with very fine to fine white, brown, and grey gritty inclusions; light brown 7.5YR 6/4 to grey 10YR 5/1 exterior; light brown 7.5YR 6/4 to grey 10YR 5/1 interior; comb scraped exterior surface with small voids and very fine brown gritty inclusions; plain interior surface with very fine white, brown, and grey gritty inclusions; preserved length: 6.5cm.

[291] inv. no. 82-976: 824; Box 145; context: square B-48, 38, 28, uncovered in the eastern section below a series of stones in a black layer, XVII-46; body sherd fragment; **Medium Ware;** HM; very dark grey 10YR 3/1 medium clay with very fine white, brown, and grey gritty inclusions; light brownish grey 10YR 6/2 to grey 10YR 5/1 exterior; light brownish grey 10YR 6/2 to grey 10YR 5/1 interior; comb scraped exterior surface with small voids and very fine grey gritty inclusions; smoothed interior surface with very fine brown and grey gritty inclusions; preserved length: 7.5cm

[292] inv. no. 82-976: 824; Box 145; context: square B-48, 38, 28, uncovered in the eastern section below a series of stones in a black layer, XVII-46; body sherd fragment; **Medium Ware;** HM; dark grey 10YR 4/1 medium clay with very fine white gritty and obsidian inclusions; mottled exterior – pink 7.5YR 7/4, light brownish grey 10YR 6/2 to dark grey 10YR 4/1; mottled interior – light brownish grey 10YR 6/2, grey 10YR 5/1 to dark grey 10YR 4/1; comb scraped and smoothed exterior surface with very fine white gritty and obsidian inclusions; plain interior surface with very fine white and grey gritty and obsidian inclusions; preserved length: 7cm.

[293] inv. no. 82-976: 824; Box 145; context: square B-48, 38, 28, uncovered in the eastern section below a series of stones in a black layer, XVII-46; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with small voids and very fine to fine white and grey gritty inclusions; mottled exterior – light brown 7.5YR 6/4, grey 10YR 5/1 to dark grey 10YR 4/1; reddish yellow 7.5YR 7/6 interior; comb scraped and smoothed exterior surface with very fine white and grey gritty and obsidian inclusions; plain interior surface with very fine white and grey gritty and obsidian inclusions; preserved length: 5.5cm.

[294] inv. no. 82-976: 990; Box 147; context: found in an ash layer of an early agricultural period storage space, XVIII-43; body sherd fragment; **Obsidian Tempered Ware;** HM; dark grey 2.5Y 4/1 medium clay with small voids, very fine white gritty inclusions, and fine to medium grey gritty inclusions; dark grey 2.5Y 4/1 exterior; brown 7.5YR 5/3 to dark grey 10YR 4/1 interior; comb scraped, smoothed, and slipped exterior surface with fine to medium obsidian inclusions; plain interior surface with fine to medium grey gritty and obsidian inclusions; preserved length: 5cm.

[295] inv. no. 82-976: 990; Box 147; context: found in an ash layer of an early agricultural period storage space, XVIII-43; body sherd fragment; **Obsidian Tempered Ware;** HM; light brown 7.5YR 6/4 to grey 10YR 5/1 medium clay with fine to medium obsidian inclusions; brown 7.5YR 5/2 exterior; grey 7.5YR 5/1 interior; comb scraped, smoothed, and slipped exterior surface with very fine to fine obsidian inclusions; plain interior surface with fine to medium obsidian inclusions; preserved length: 7cm.

[296] inv. no. 82-976: 996; Box 147; context: surface finds (1982?), XI-15; body sherd fragment; pale brown 10YR 6/3 to dark grey 10YR 4/1 medium clay with very fine white gritty inclusions and fine to medium grey gritty and obsidian inclusions; **Obsidian Tempered Ware;** HM; pale brown 10YR 6/3 exterior; very pale brown 10YR 7/3 interior; comb scraped, smoothed, slipped, and lightly burnished exterior surface with very fine obsidian inclusions; comb scraped interior surface with fine to medium obsidian inclusions; preserved length: 6.5cm.

[297] inv. no. 82-976: 1052; Box 149; context: unspecified; body sherd fragment; **Obsidian Tempered Ware;** HM; dark grey 2.5Y 4/1 medium clay with very fine white, brown, and grey gritty inclusions and very fine obsidian inclusions; light brown 7.5YR 6/4

exterior; light brownish grey 2.5Y 6/2 interior; comb scraped exterior surface with very fine grey gritty and obsidian inclusions; plain interior surface with very fine white, brown, and black gritty inclusions and very fine to fine obsidian inclusions; preserved length: 6cm.

[298] inv. no. 82-976: 1111; Box 150; context: Burial 37, XIX-46; body sherd fragment; **Medium Ware;** HM; grey 7.5YR 6/1 medium clay with one coarse white gritty inclusion, very fine obsidian inclusions, and fine to coarse orange and brown gritty inclusions; very pale brown 10YR 7/3 to light brown 7.5YR 6/4 exterior; brown 7.5YR 5/3 interior; comb scraped, smoothed, and slipped exterior surface with mica and very fine white gritty and obsidian inclusions; plain interior surface with very fine grey gritty and obsidian inclusions and fine to coarse white gritty inclusions; preserved length: 4.2cm.

[299] inv. no. 82-976: 1143; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, and 35, found in an ashy layer, XIX-54; body sherd fragment; **Medium Ware;** HM; light grey 10YR 7/2 medium clay with very white, grey, and black gritty inclusions and fine to medium brown gritty inclusions; very pale brown 10YR 7/4 exterior; light brownish grey 10YR 6/2 interior; comb scraped exterior surface with very fine white gritty inclusions; smoothed interior surface with striation marks and very fine white gritty inclusions; preserved length: 4.7cm.

[300] inv. no. 82-976: 1143; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; body sherd fragment; **Medium Ware;** HM; yellowish brown 10YR 5/6 medium clay with very fine to fine white, brown, and black gritty inclusions and medium brick red gritty inclusions; pale brown 10YR 6/3 to grey 10YR 5/1 exterior; grey 10YR 5/1 interior; comb scraped, smoothed, and slipped exterior surface

with very fine white, brown, and black gritty inclusions; smoothed interior surface with striation marks, small voids, and very fine white, brick red, and grey gritty inclusions; preserved length: 9cm.

[301] inv. no. 82-976: 1143; Box 150; context: square B-57, 47, 37, 56, 46, 36, 55, 45, 35, found in an ashy layer, XIX-54; body sherd fragment; **Mixed Tempered Ware;** HM; light grey 10YR 7/2 to grey 10YR 5/1 medium clay with chaff impressions and very fine white gritty inclusions and fine to medium grey gritty inclusions; very pale brown 10YR 7/4 to light brownish grey 10YR 6/2 exterior; reddish yellow 7.5YR 7/6 interior; comb scraped, smoothed, and slipped exterior surface with chaff impressions and very fine white gritty inclusions; smoothed and slipped interior surface with chaff impressions and very fine white gritty inclusions; preserved length: 6cm.

[302] inv. no. 82-976: 1177; Box 150; context: found amongst the upper layers of square A-09, 99, 89, 79, 98, 88, 78, XVI-31; body sherd fragment; **Obsidian Tempered Ware;** HM; light grey 10YR 7/2 medium clay with very fine white and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 to pink 7.5YR 7/4 exterior with very dark grey 10YR 3/1 discolouration; mottled interior – very pale brown 10YR 7/3, grey 10YR 6/1 to very dark grey 10YR 3/1 interior; comb scraped, smoothed, and slipped exterior surface with very fine to fine white and grey gritty and obsidian inclusions; burnt, plain interior surface with crazing, small voids, and very fine to fine white and grey gritty and obsidian inclusions; preserved length: 8cm.

[303] inv. no. 82-976: 1232; Box 152; context: found beneath the stones of a round building, Structure 0, XX-1; body sherd fragment; **Obsidian Tempered Ware;** HM; brown 7.5YR 5/3 medium clay with small voids and fine to medium brown gritty and obsidian

inclusions; light brown 7.5YR 6/3 to grey 7.5YR 5/1 exterior; light brown 7.5YR 6/4 interior; comb scraped and slipped exterior surface with chaff impressions fine to medium grey gritty and obsidian inclusions; comb scraped interior surface with small voids, chaff impressions, and fine to medium grey gritty and obsidian inclusions; preserved length: 6cm.

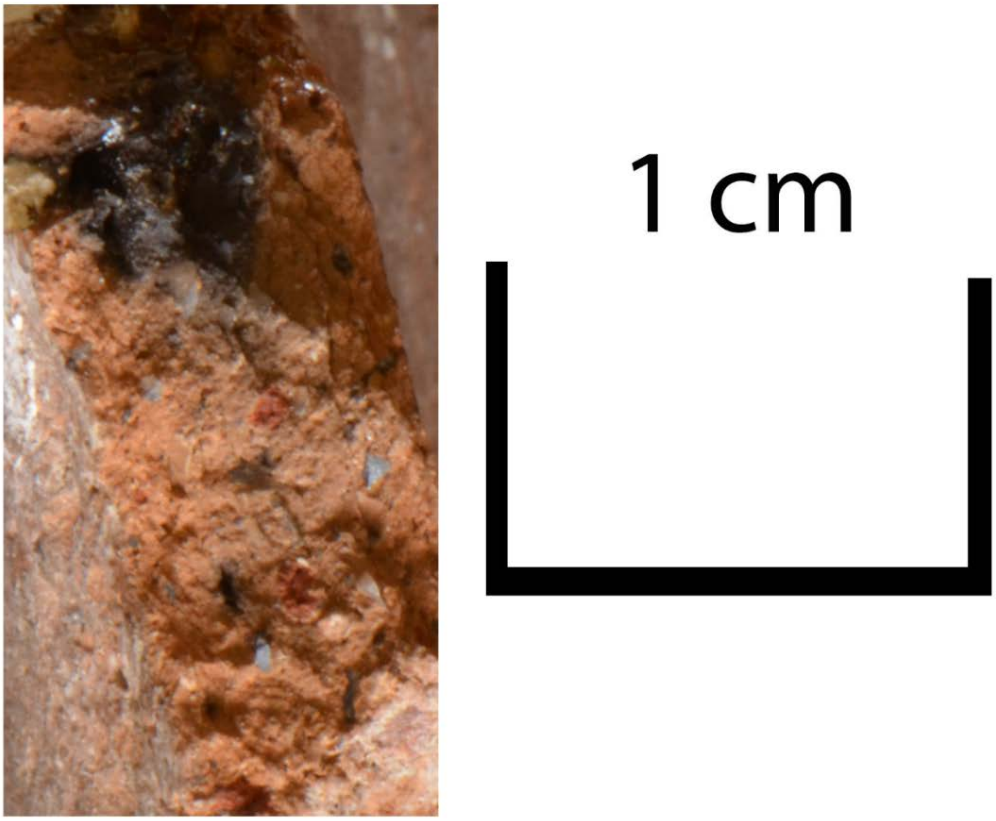
[304] inv. no. 82-976: 1232; Box 152; context: found beneath the stones of a round building, Structure 0, XX-1; body sherd fragment; **Medium Ware;** HM; very pale brown 10YR 7/3 medium clay with fine to medium grey gritty inclusions; light reddish brown 5YR 6/4 exterior; pale brown 10YR 6/3 interior; comb scraped, smoothed, slipped, and lightly burnished exterior surface with fine grey gritty and obsidian inclusions; plain interior surface with fine to medium grey gritty and obsidian inclusions; preserved length: 4.5cm.

[305] inv. no. 82-976: 1396; Box 155; context: square A-08 and 98, found during the cleaning of previously excavated area, XXI-38; body sherd fragment; **Obsidian Tempered Ware;** HM; strong brown 7.5YR 5/6 to light yellowish brown 10YR 6/4 medium clay with fine white gritty inclusions and fine to medium red and grey gritty and obsidian inclusions; light brown 7.5YR 6/4 exterior; dark grey 7.5YR 4/1 interior; smoothed and slipped exterior surface with very fine white gritty inclusions; comb scraped interior surface with fine to medium obsidian inclusions; preserved length: 2cm.

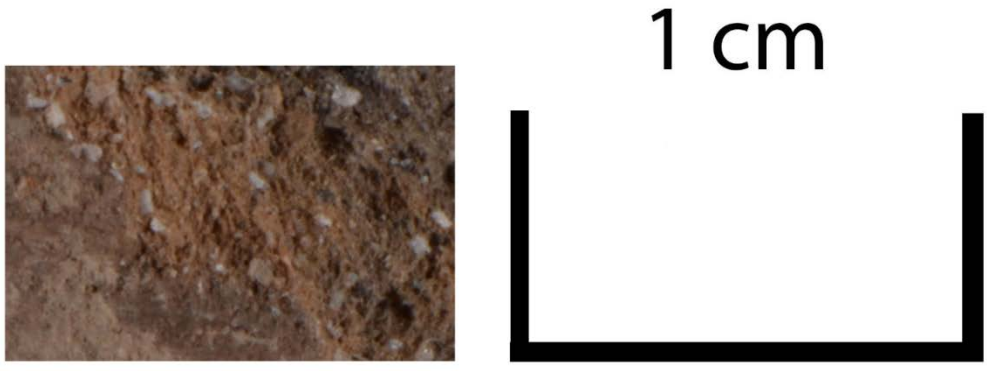
[306] inv. no. 82-976: 1396; Box 155; context: square A-08 and 98, found during the cleaning of previously excavated area, XXI-38; body sherd fragment; **Obsidian Tempered Ware;** HM; reddish yellow 7.5YR 6/6 to grey 7.5YR 5/1 medium clay with fine to medium white and grey gritty and obsidian inclusions; light yellowish brown 10YR 6/4 exterior;

pale brown 10YR 6/3 to dark grey 10YR 4/1 interior; smoothed and slipped exterior surface with mica and very fine white gritty and obsidian inclusions; comb scraped interior surface with small voids and fine to medium obsidian inclusions; preserved length: 7cm.

Thumbnails of Ware Types and Principle Shapes



Thumbnail 1: Thumbnail showing a section of a Fine ware ceramic (Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 115; Photo: B. Shapardon).



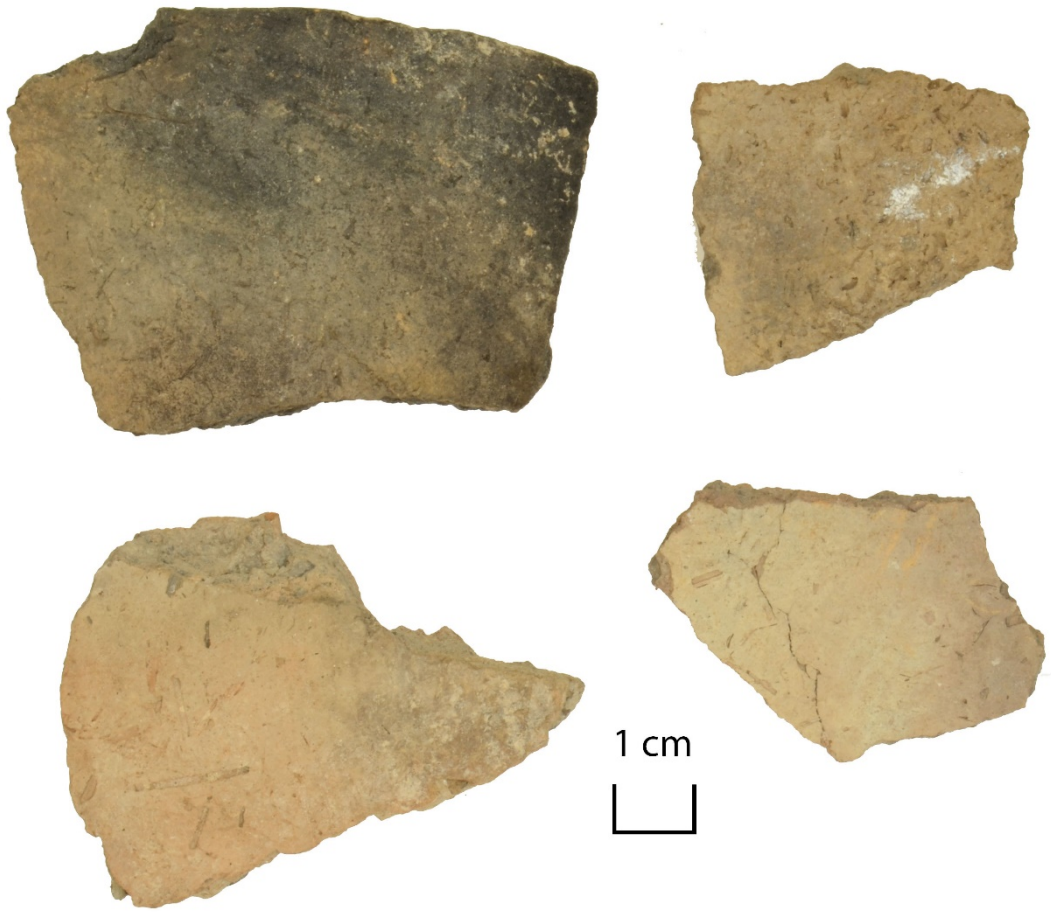
Thumbnail 2: Thumbnail showing a section of a Medium ware ceramic (Cat. no. 153; Inv. no. 82-976: 1176; Photo: B. Shapardon).



Thumbnail 3: Thumbnail showing the interior surface of a Coarse ware ceramic (Cat. no. 198, 190; Inv. no. 82-976: 305; Photo: B. Shapardon).



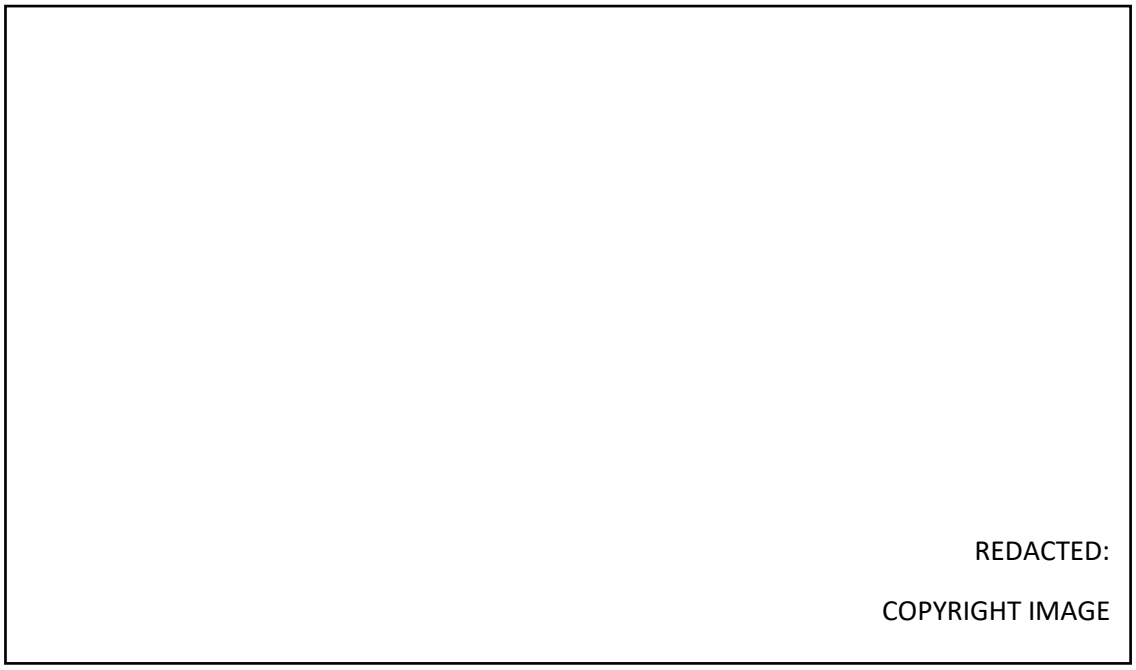
Thumbnail 4: Thumbnail showing the interior surface of an obsidian tempered sherd (Cat. no. 53; Inv. no. 82-976: 1111; Photo: B. Shapardon).



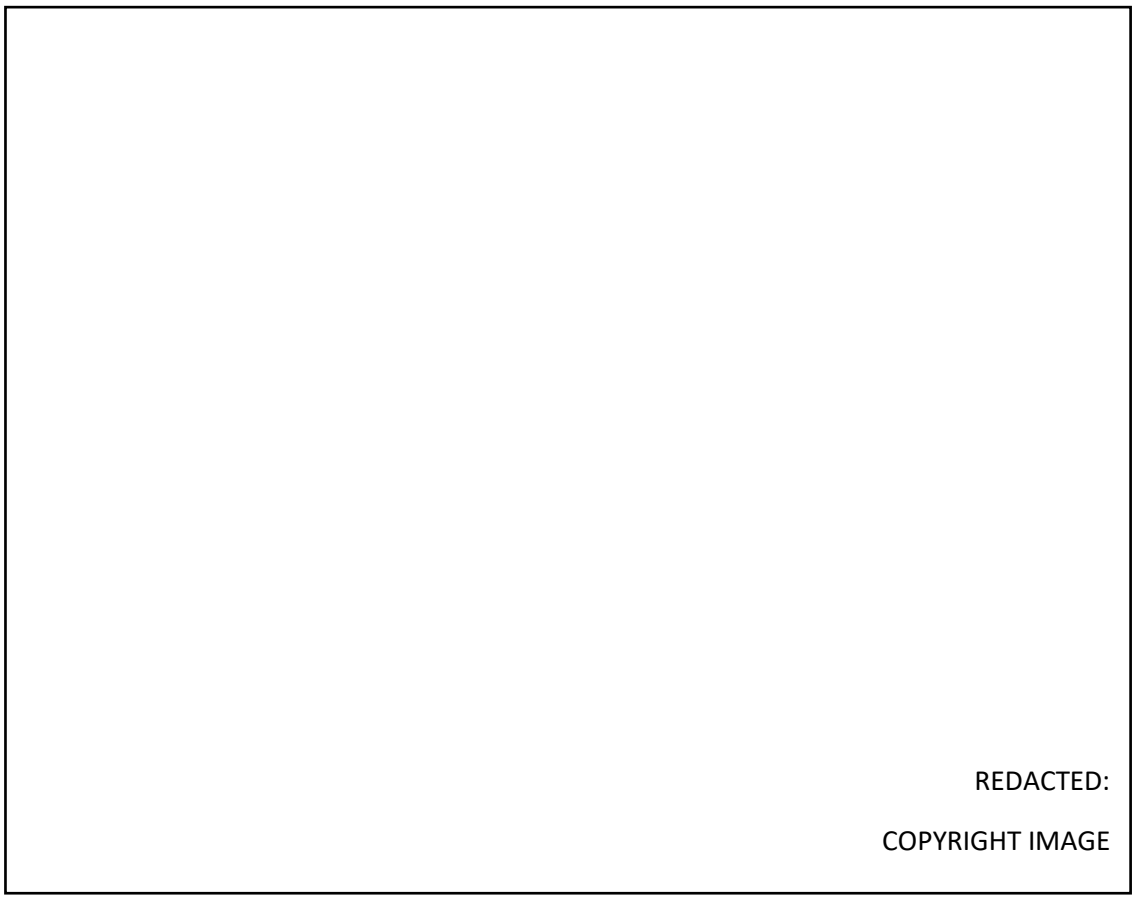
Thumbnail 5: A small collection of mixed tempered ceramics from Sioni (Top to bottom and left to right: Cat. no. 144; Inv. no. 82-976: 1142; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 1145; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 1143; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 1143; Photo: B. Shapardon).



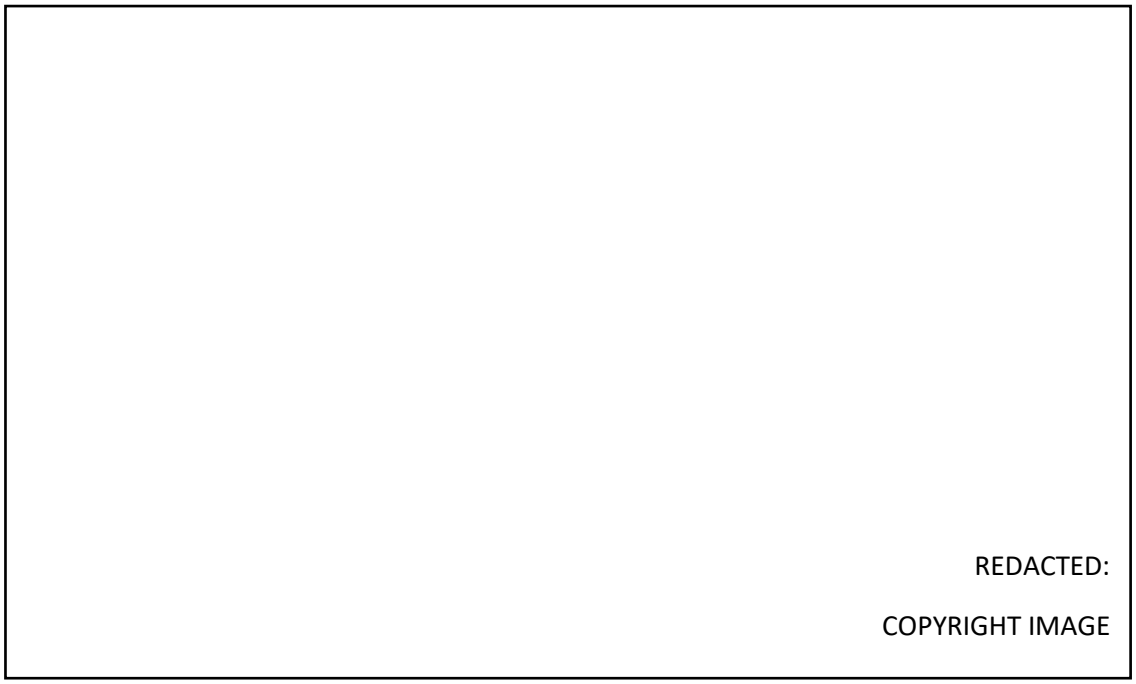
Thumbnail 6: Examples of Chaff Tempered ware from Sioni (Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 824; Cat. no. N/A (non-diagnostic); Inv. no. 82-976: 440; Photo: B. Shapardon).



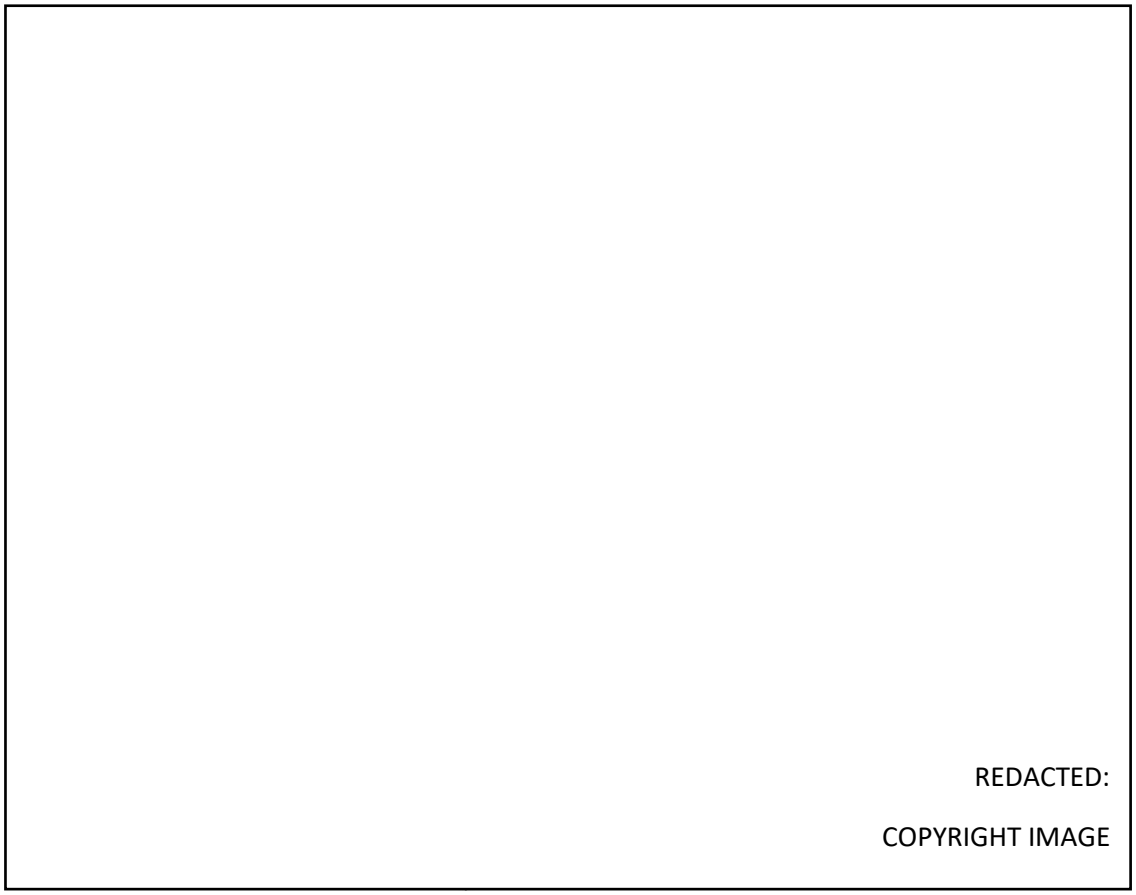
Thumbnail 7: Jar 1.1 – Inward leaning, short necked jars from Sioni (Kiguradze and Sagona 2003, Fig. 3.6.8, Fig. 3.7.1, and Fig. 3.7.5).



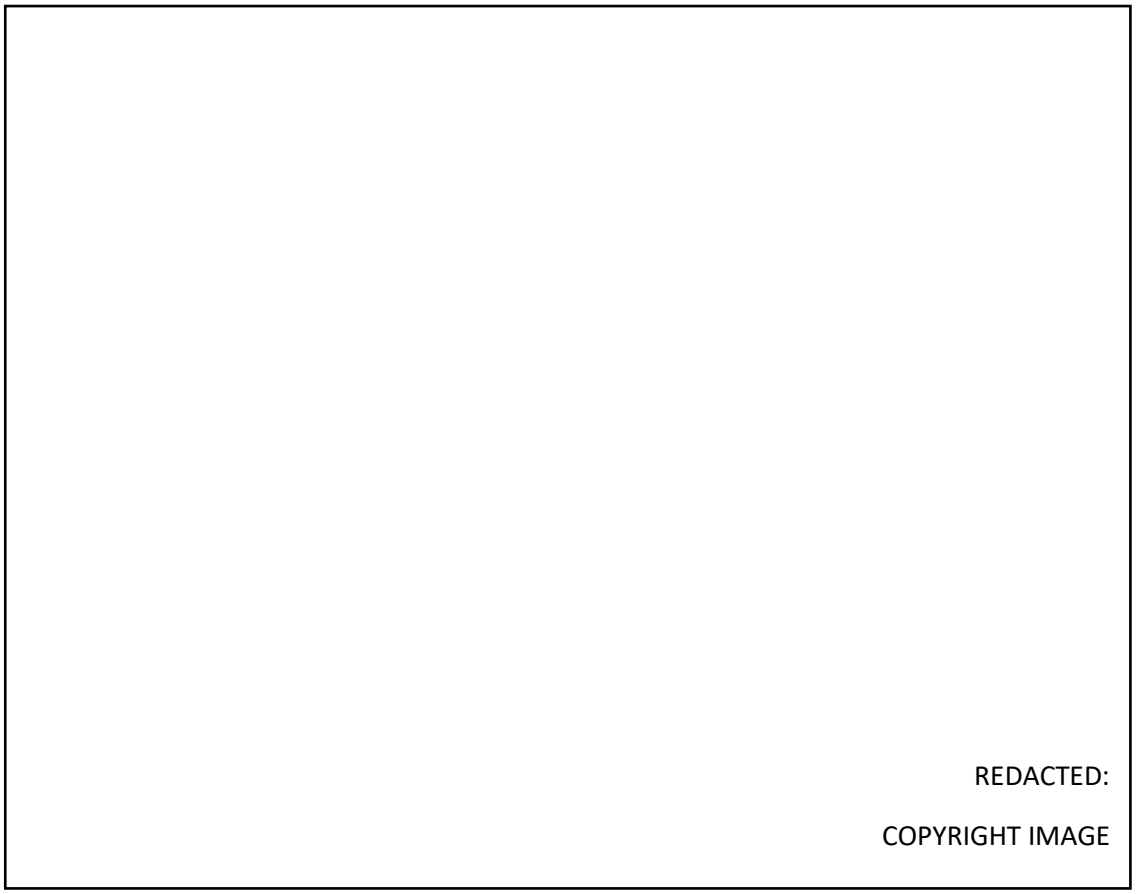
Thumbnail 8: Jar 1.2 – Vertical necked jars from Sioni (Kiguradze and Sagona 2003, Fig. 3.6.2, Fig, 3.7.5, 10, and 12).



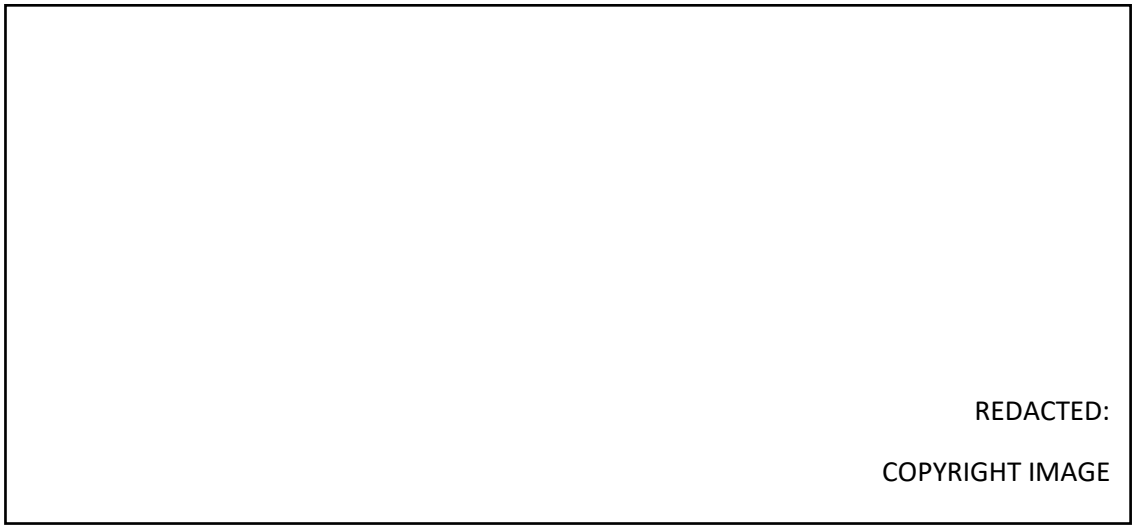
Thumbnail 9: Jar 1.3 – Outward flaring jars with a gentle curvature between the neck and the shoulder from Sioni (Kiguradze and Sagona 2003, Fig. 3.6.4, Fig. 3.7.9, and Fig. 3.7.14).



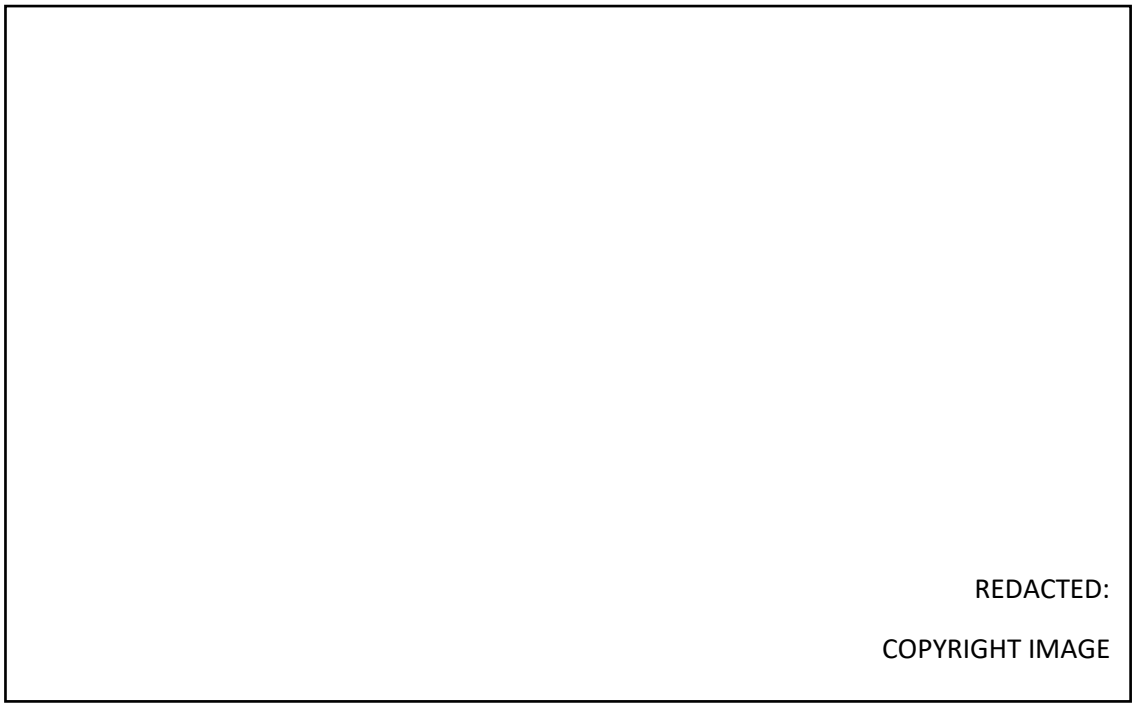
Thumbnail 10: Jar 1.4 – Outward flaring jars with a strong curvature between the neck and the shoulder from Sioni (Kiguradze and Sagona 2003, Fig. 3.6.6-7, Fig. 3.7.7, and Fig. 3.8.2-3).



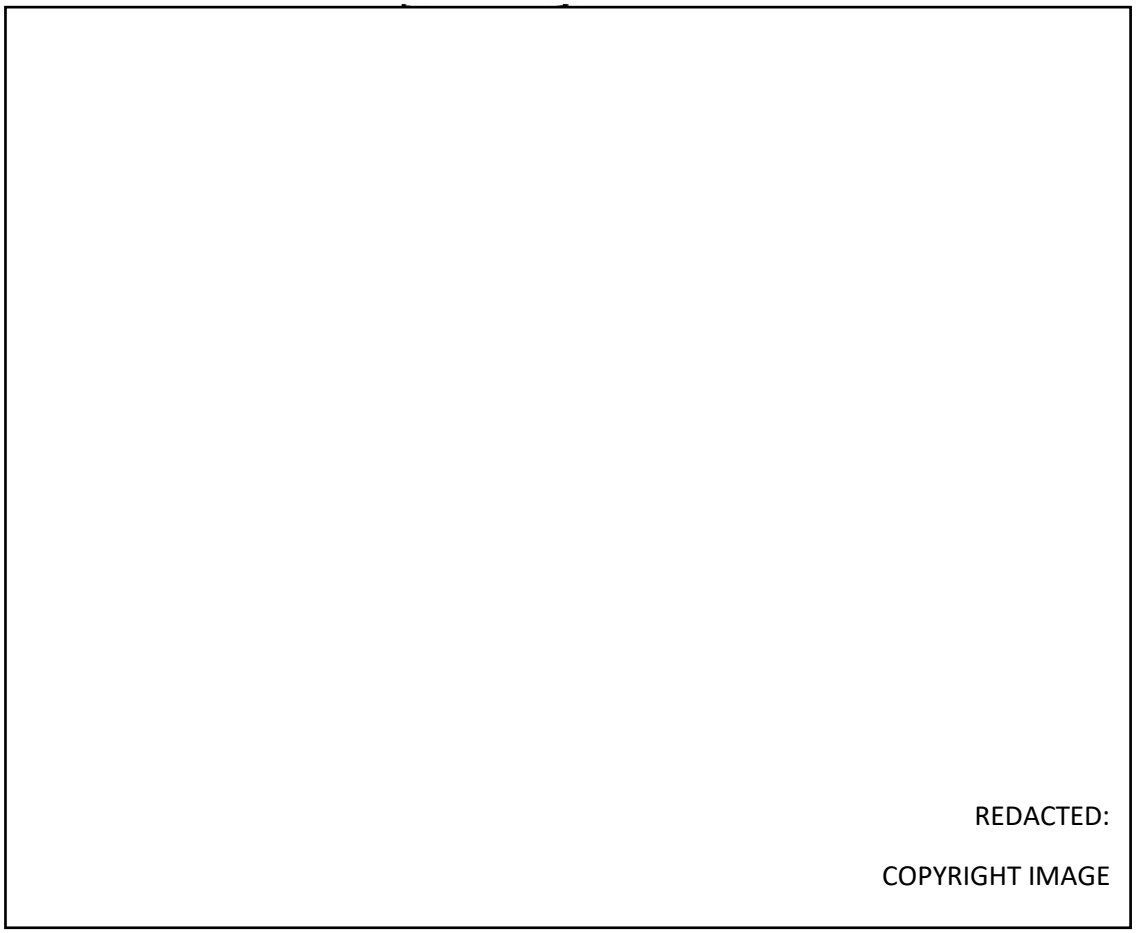
Thumbnail 11: Jar 1.5 – Vertical necked jars with a distinct offset at the juncture between the neck and the shoulder from Sioni (Kiguradze and Sagona 2003, Fig. 3.6.1., Fig. 3.7.2-3, Fig. 3.8.1, and Fig. 3.9.5).



Thumbnail 12: Jar 1.6 – Outward flaring jars with a sharp juncture between the neck and the shoulder from Sioni (Kiguradze and Sagona 2003, Fig. 3.6.9, Fig. 3.8.4, and Fig. 3.9.6).



Thumbnail 13: Jar 1.7 – Crinkled rim jars from Sioni (Kiguradze and Sagona 2003, Fig. 3.6.5, Fig. 3.7.6, and Fig. 3.7.11).



Thumbnail 14: Jar 2 – Sinuous jars from Sioni (Kiguradze and Sagona 2003, Fig. 3.6.3, Fig. 3.7.8, Fig. 3.7.13, and Fig. 3.9.1).

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Thumbnail 15: Jar 3 – Hole-mouthed jar fragments from Sioni (Kiguradze and Sagona 2003, Fig. 3.8.5-7).



Thumbnail 16: Pan fragment from Sioni (Cat. no. 185; Inv. no. 82-976: 987; Photo: B. Shapardon).



Thumbnail 17: Profile of a flat base sherd from Sioni (Cat. no. 193; Inv. no. 82-976: 822; Photo: B. Shapardon).



Thumbnail 18: Adjoining spiral basket impressed base fragments from Sioni (Cat. no. 189, 190; Inv. no. 82-976: 305; Photo: B. Shapardon).

Maps and Tables

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Map 1: Map showing the major sites of the Maikop, Sioni, and Chaff-faced traditions (map drawn by C. Jayasuriya after Sagona 2018a, 135).

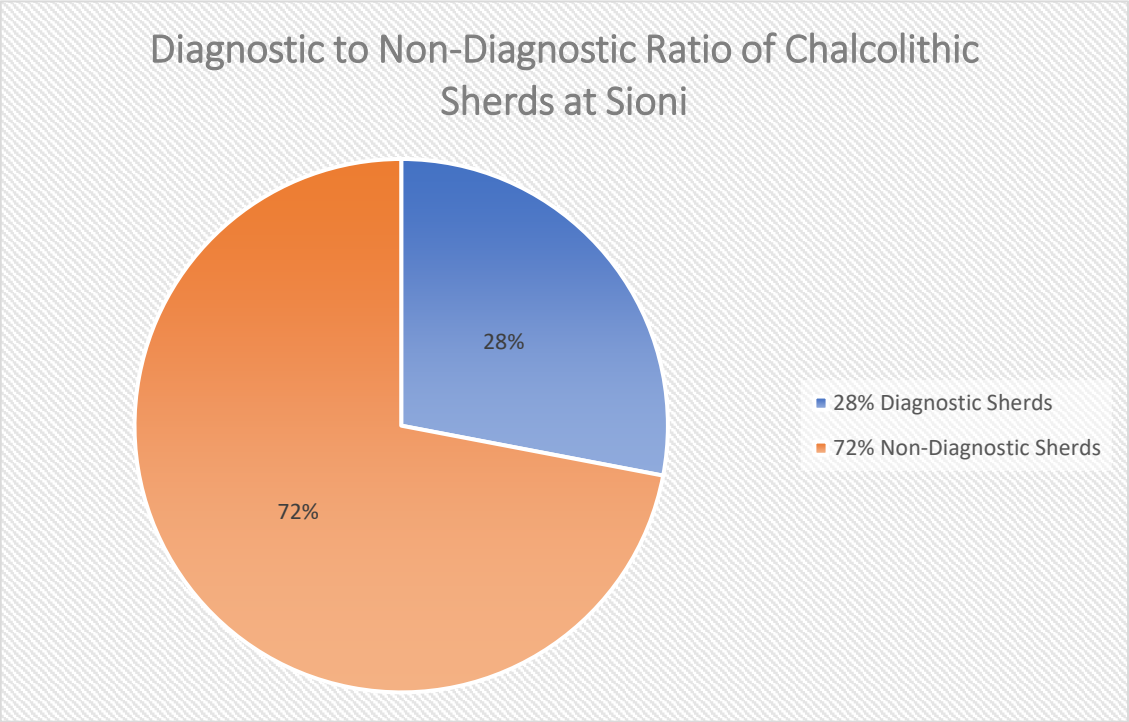


Table 1: Pie chart showing the ratio of diagnostic to non-diagnostic Chalcolithic sherds at Sioni.

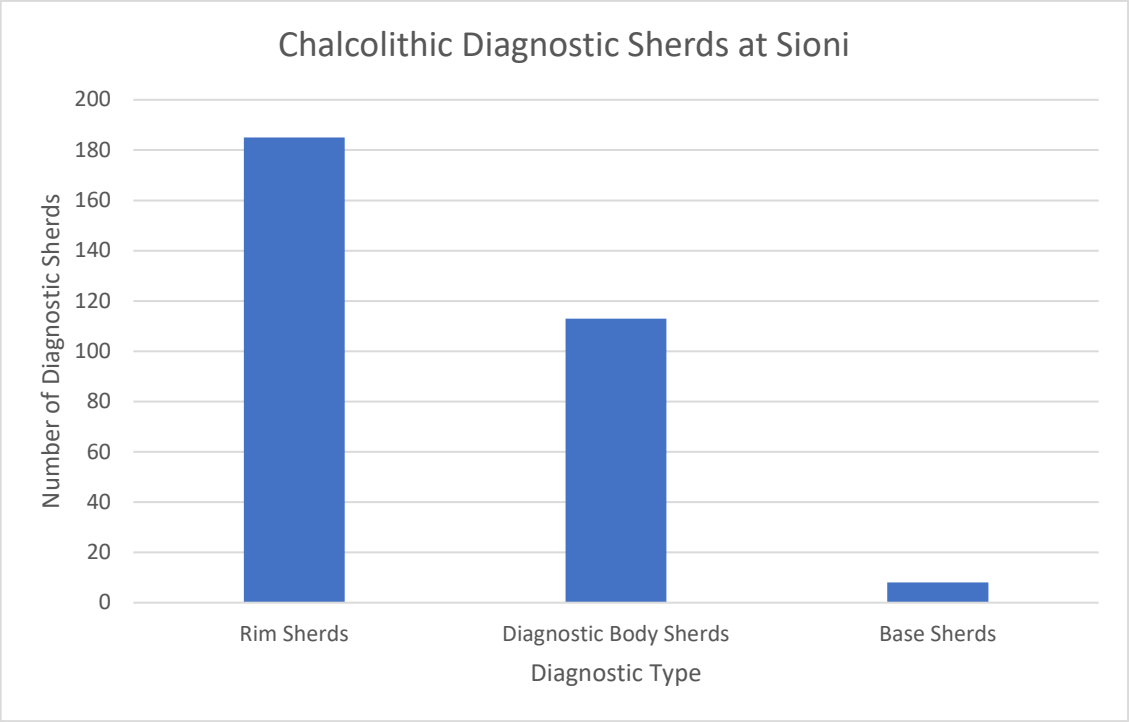


Table 2: Column graph showing the quantities of different diagnostics among the Chalcolithic assemblage at Sioni.

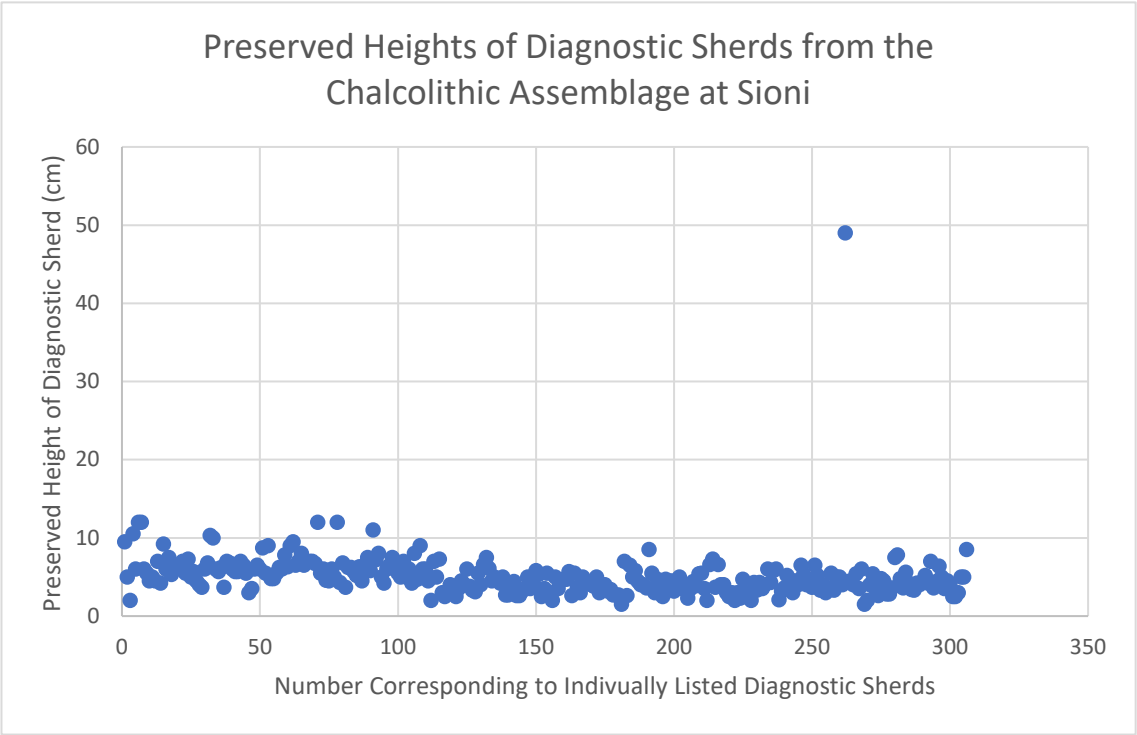


Table 3: Scatter plot showing the preserved heights of diagnostic sherds from the Chalcolithic assemblage at Sioni.

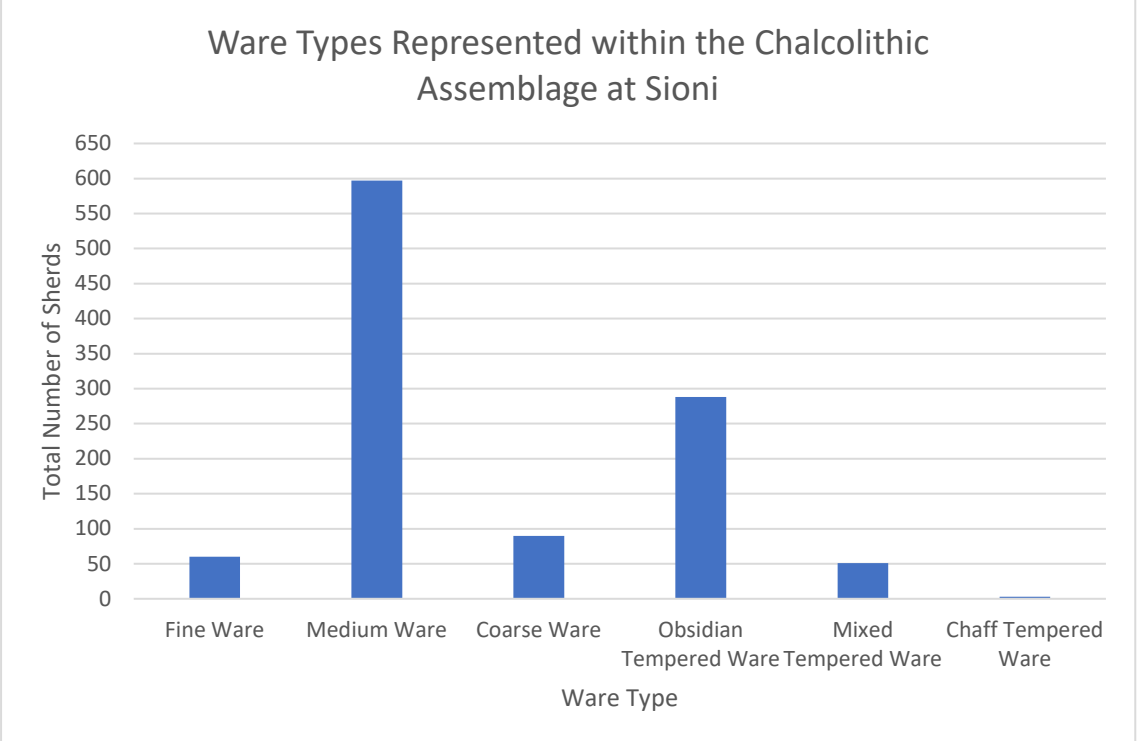


Table 4: Column graph showing the number of sherds attributed to each of the ware types within the Chalcolithic assemblage.

Summary Table of Ware Types across the Chalcolithic Assemblage at Sioni

Ware Type	Total Number of Sherds	Total Number of Diagnostics	Total Number of Rim Sherds	Total Number of Base Sherds	Total Number of Diagnostic Body Sherds
Fine Ware	60	24	23	0	1
Medium Ware	597	159	83	2	74
Coarse Ware	90	13	4	6	3
Obsidian Tempered Ware	288	95	62	0	33
Mixed Tempered Ware	51	15	13	0	2
Chaff Tempered Ware	3	0	0	0	0

Table 5: Table summarising the total number of sherds, diagnostics, and diagnostic types across each ware type at Sioni.

Summary Table of Exterior Surface Treatments of Chalcolithic Ceramics at Sioni

	Fine Ware	Medium Ware	Coarse Ware	Obsidian Tempered Ware	Mixed Tempered Ware	Chaff Tempered Ware	Total
Plain	0	12	2	5	0	1	20
Smoothed	21	176	35	90	13	2	337
Slipped	0	1	0	0	0	0	1
Burnished	0	0	0	0	0	0	0
Smoothed and Slipped	26	208	24	114	19	0	391
Smoothed and Burnished	0	2	1	0	0	0	3
Smoothed, Slipped, and Burnished	12	127	26	45	16	0	226
Comb Scraped	1	27	1	8	0	0	37
Comb Scraped and Smoothed	0	10	0	7	1	0	18
Comb Scrapped and Slipped	0	6	1	4	0	0	11
Comb Scraped, Smoothed, and Slipped	0	24	0	13	2	0	39
Comb Scraped, Smoothed, Slipped, and Lightly Burnished	0	4	0	2	0	0	6
Total	60	597	90	288	51	3	1089

Table 6: Table showing the frequency of different exterior surface treatments across each ware type at Sioni.

Summary Table of Interior Surface Treatments of Chalcolithic Ceramics at Sioni

	Fine Ware	Medium Ware	Coarse Ware	Obsidian Tempered Ware	Mixed Tempered Ware	Chaff Tempered Ware	Total
Plain	25	272	45	174	13	2	531
Smoothed	20	176	18	60	14	1	289
Slipped	3	6	1	3	0	0	13
Burnished	0	0	0	0	0	0	0
Smoothed and Slipped	9	77	18	23	15	0	142
Smoothed and Burnished	0	0	1	0	0	0	1
Smoothed, Slipped, and Burnished	3	43	7	9	8	0	70
Comb Scraped	0	16	0	13	1	0	30
Comb Scraped and Smoothed	0	5	0	3	0	0	8
Comb Scrapped and Slipped	0	0	0	1	0	0	1
Comb Scraped, Smoothed, and Slipped	0	2	0	2	0	0	4
Comb Scraped, Smoothed, Slipped, and Lightly Burnished	0	0	0	0	0	0	0
Total	60	597	90	288	51	3	1089

Table 7: Table showing the frequency of different interior surface treatments across each ware type at Sioni.

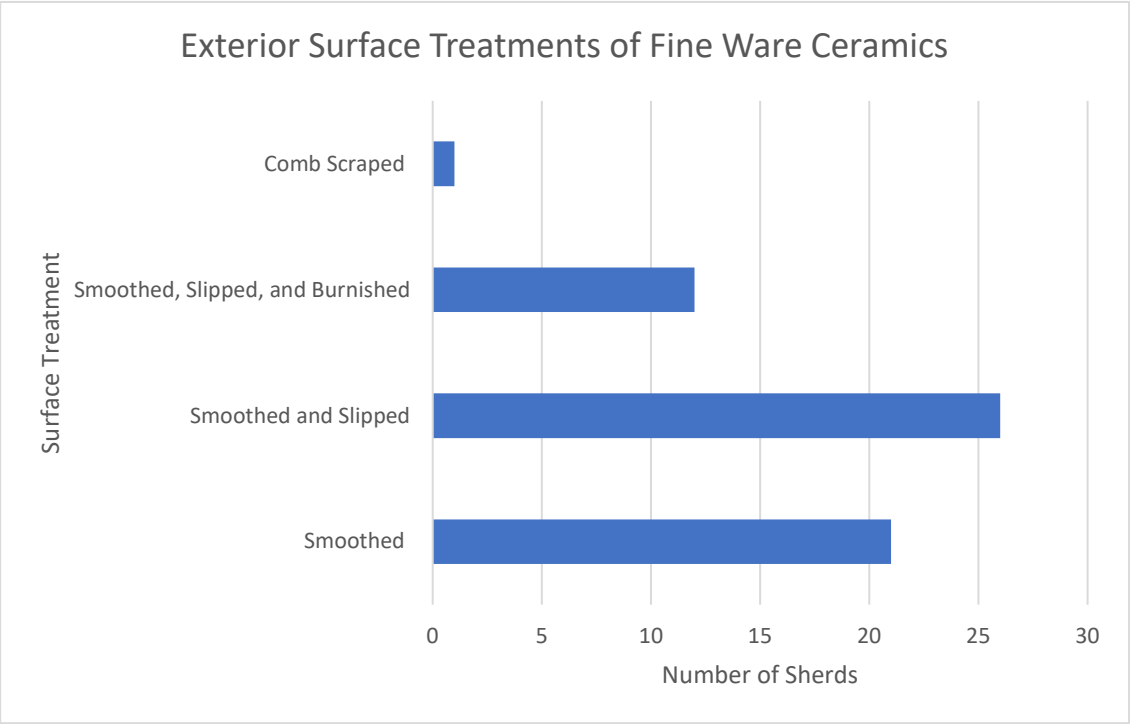


Table 8: Bar graph showing the types of exterior surface treatments attested among Fine ware ceramics at Sioni.

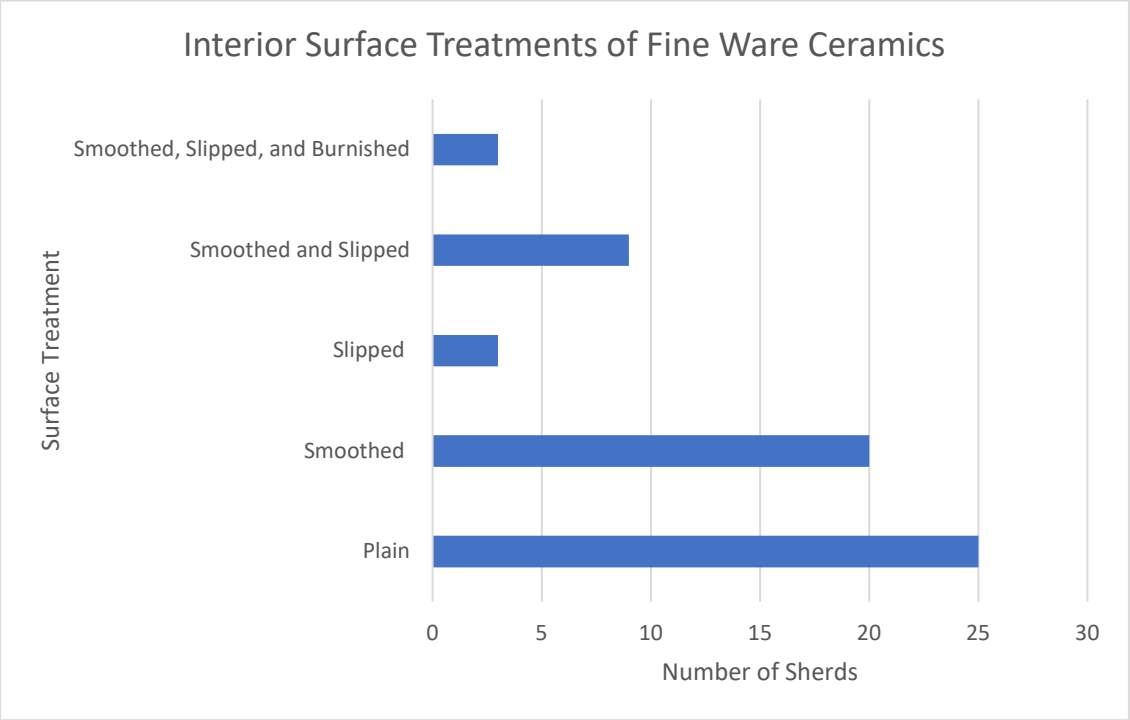


Table 9: Bar graph showing the types of interior surface treatments attested among Fine ware ceramics at Sioni.

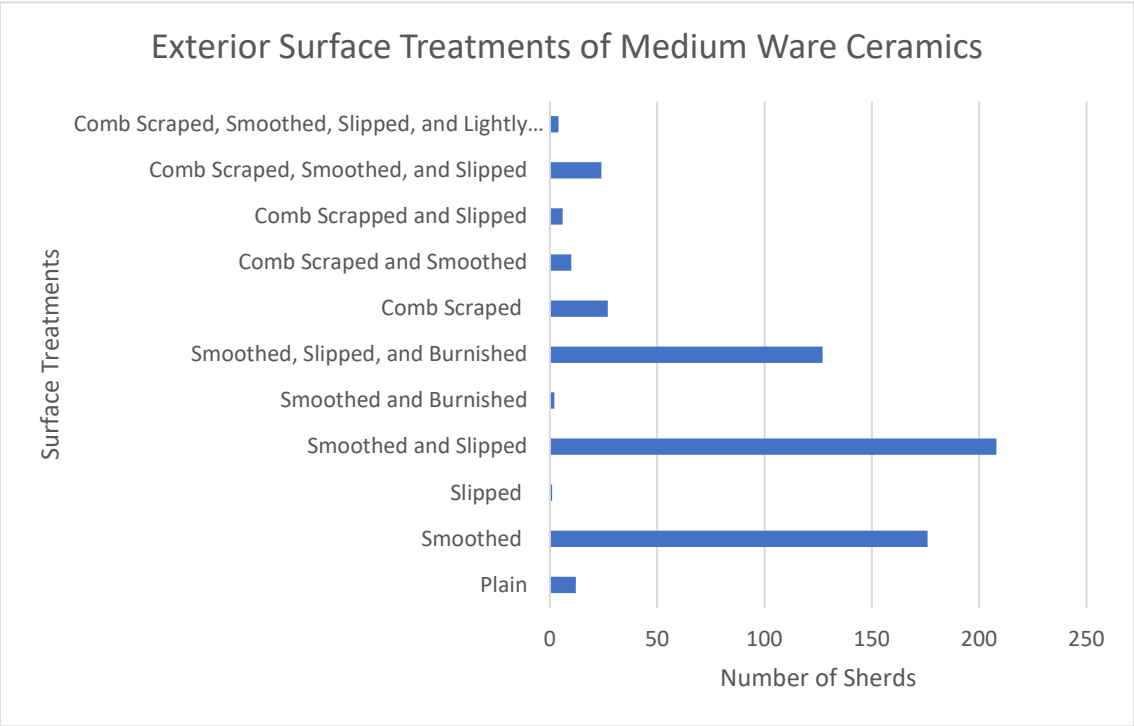


Table 10: Bar graph showing the types of exterior surface treatments attested among Medium ware ceramics at Sioni.

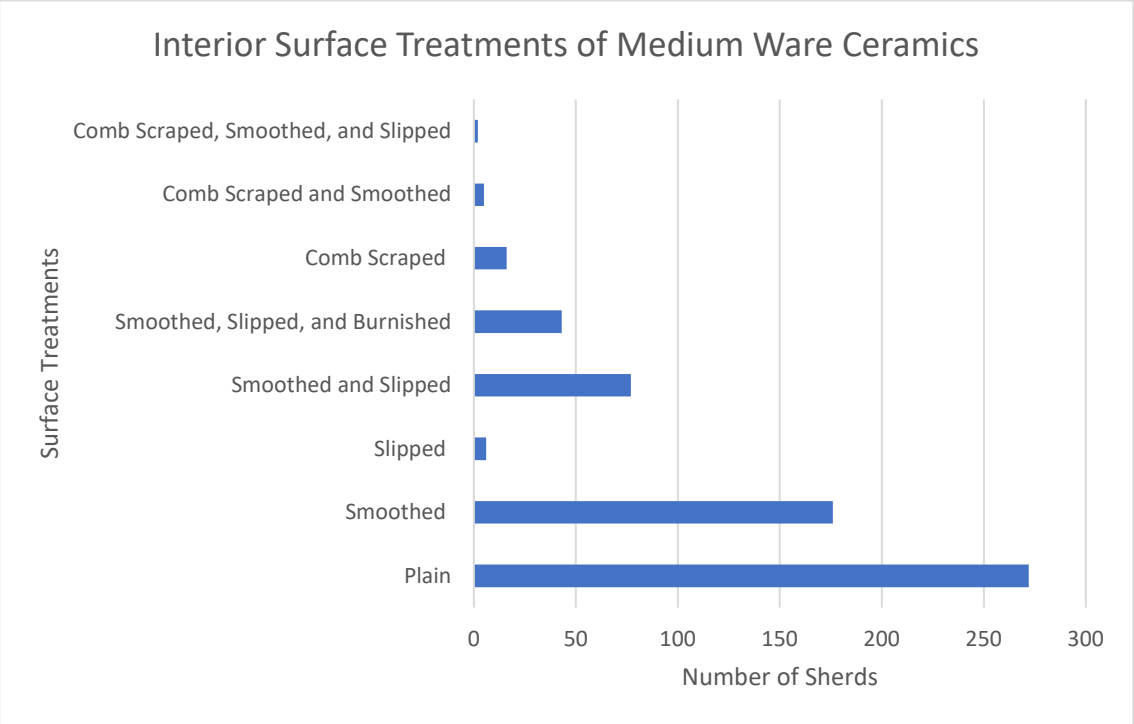


Table 11: Bar graph showing the types of interior surface treatments attested among Medium ware ceramics at Sioni.

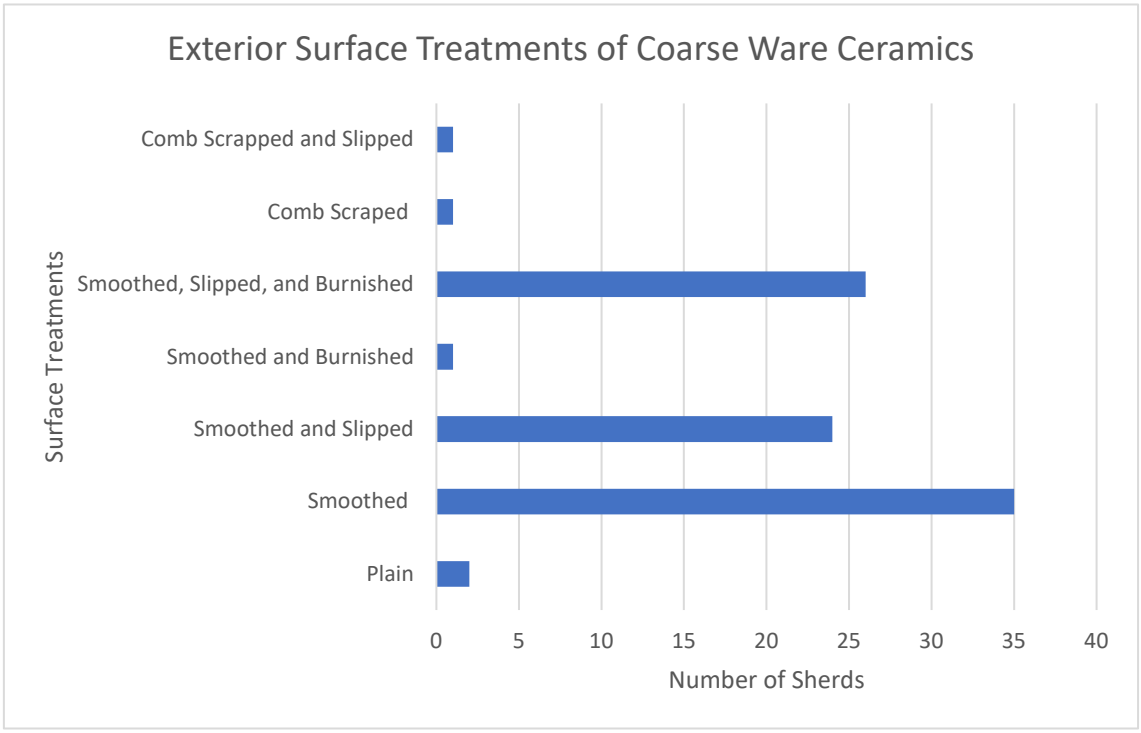


Table 12: Bar graph showing the types of exterior surface treatments attested among Coarse ware ceramics at Sioni.

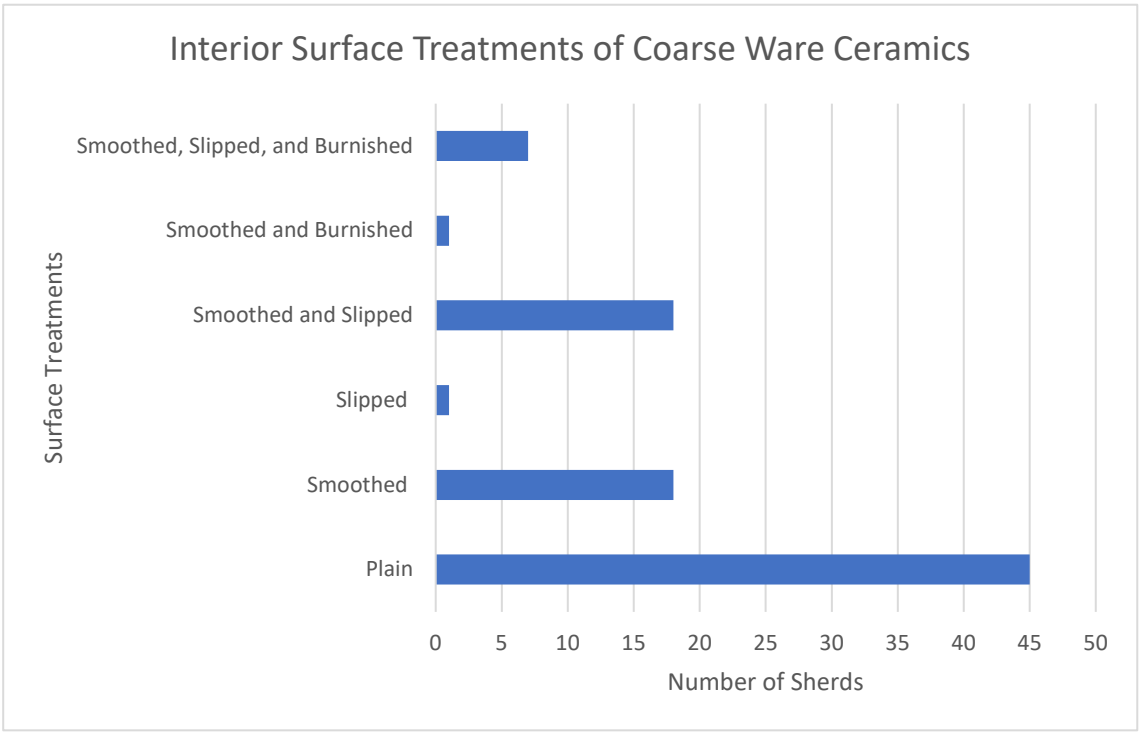


Table 13: Bar graph showing the types of interior surface treatments attested among Coarse ware ceramics at Sioni.

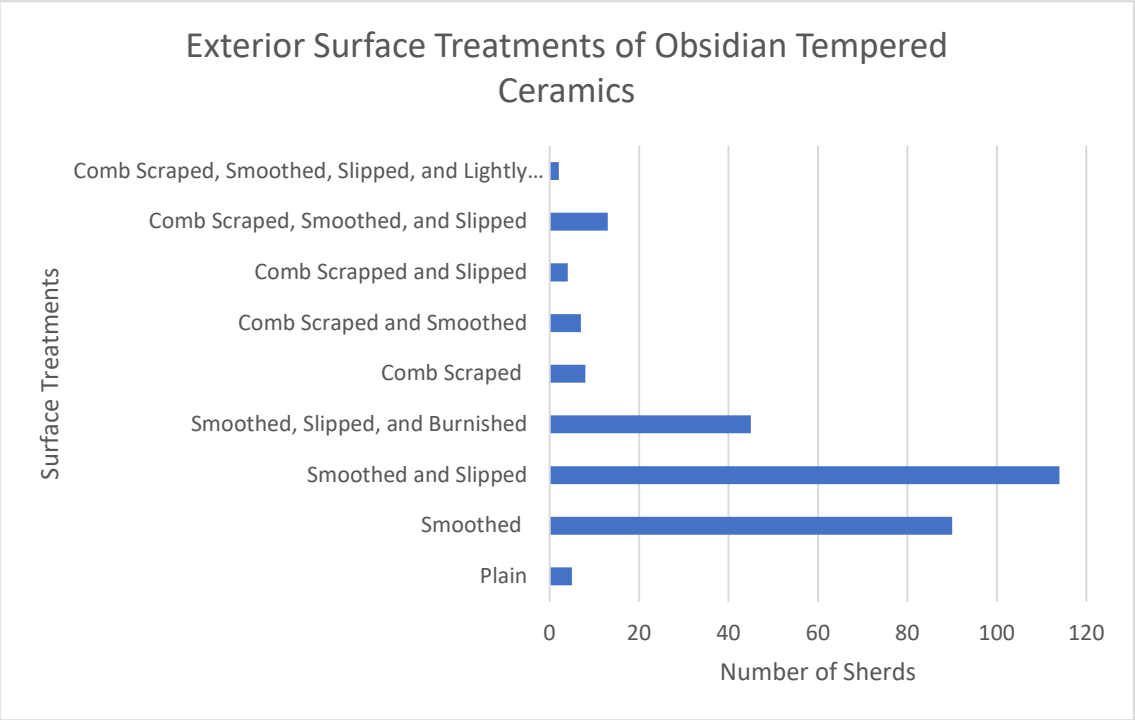


Table 14: Bar graph showing the types of exterior surface treatments attested among Obsidian Tempered ware ceramics at Sioni.

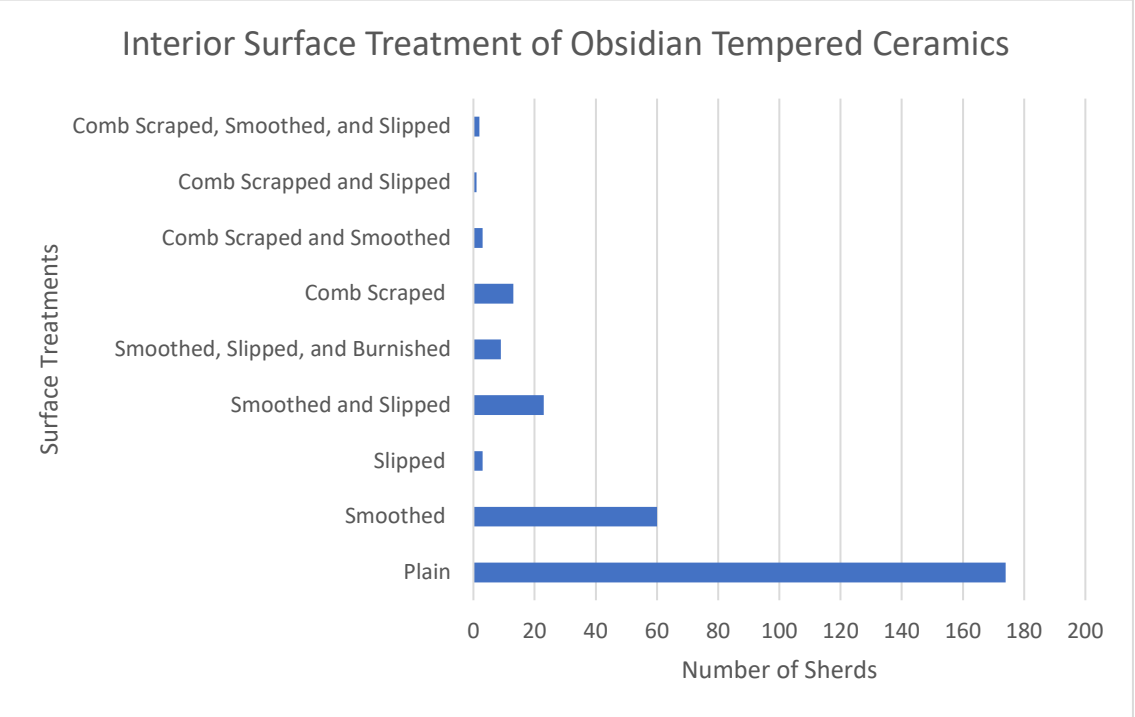


Table 15: Bar graph showing the types of interior surface treatments attested among Obsidian Tempered ware ceramics at Sioni.

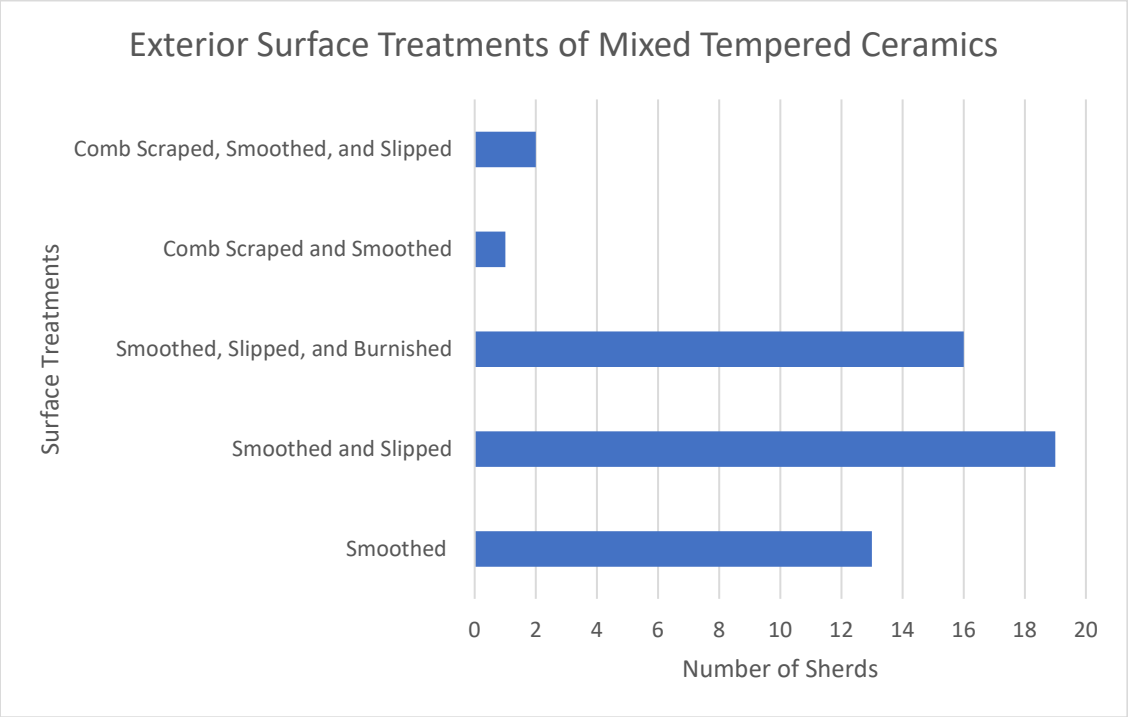


Table 16: Bar graph showing the types of exterior surface treatments of Mixed Tempered ware ceramics at Sioni.

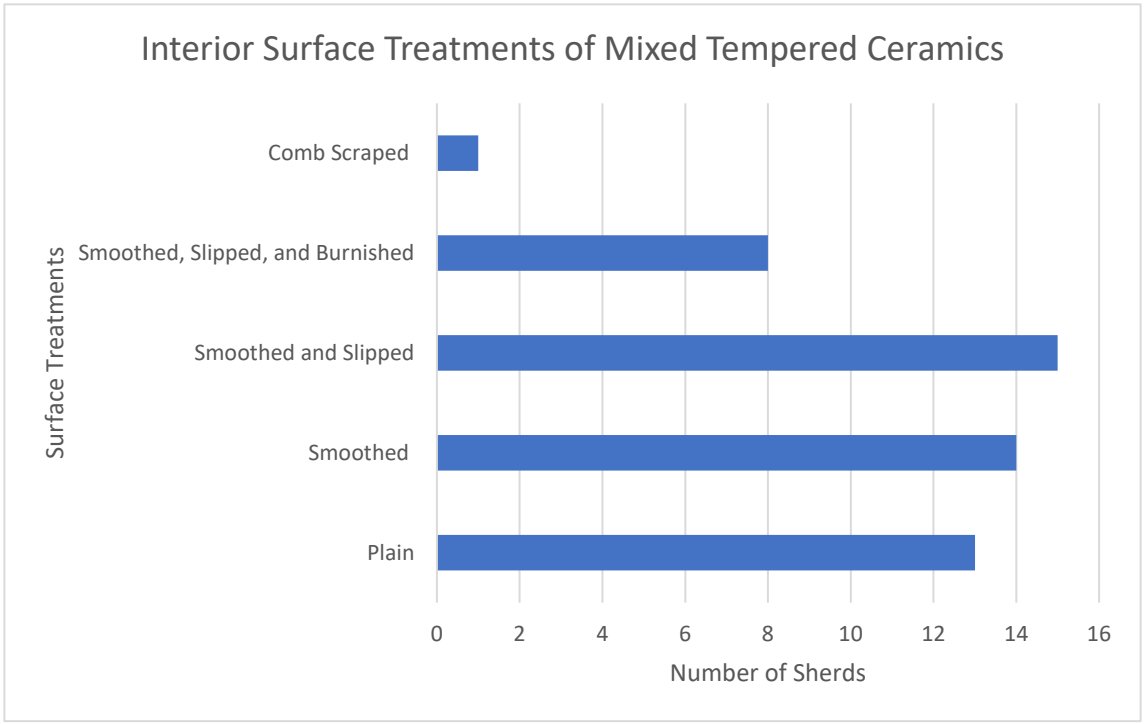


Table 17: Bar graph showing the types of interior surface treatments of Mixed Tempered ware ceramics at Sioni.

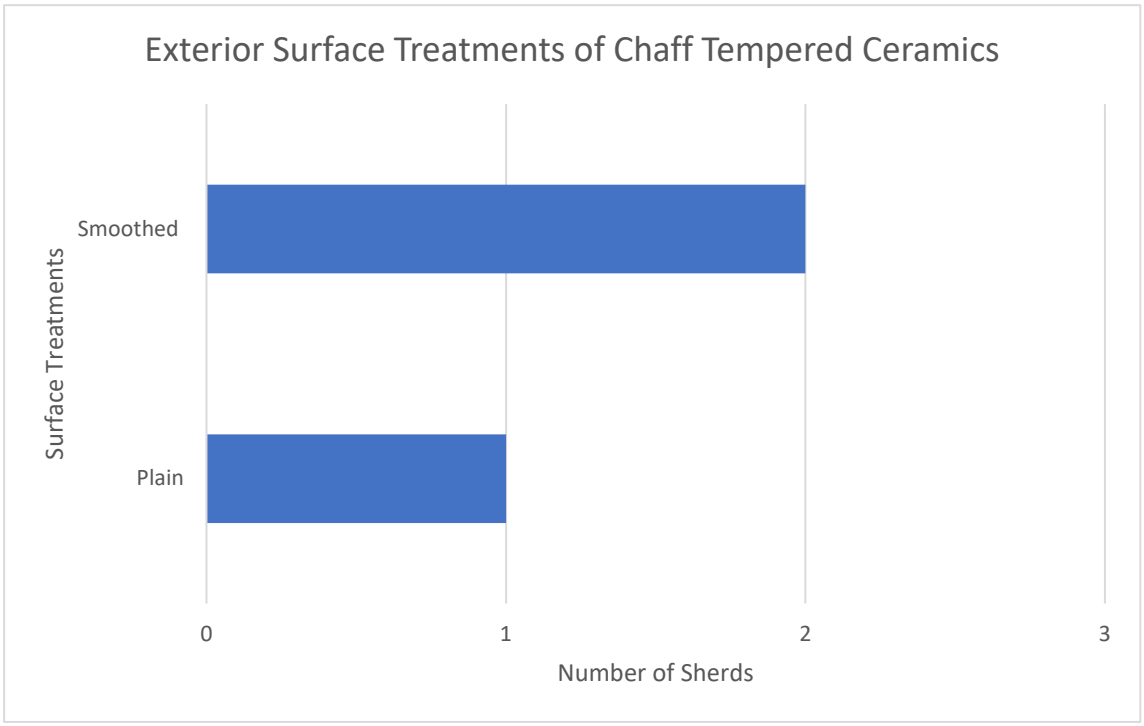


Table 18: Bar graph showing the types of exterior surface treatments among Chaff Tempered ware ceramics at Sioni.

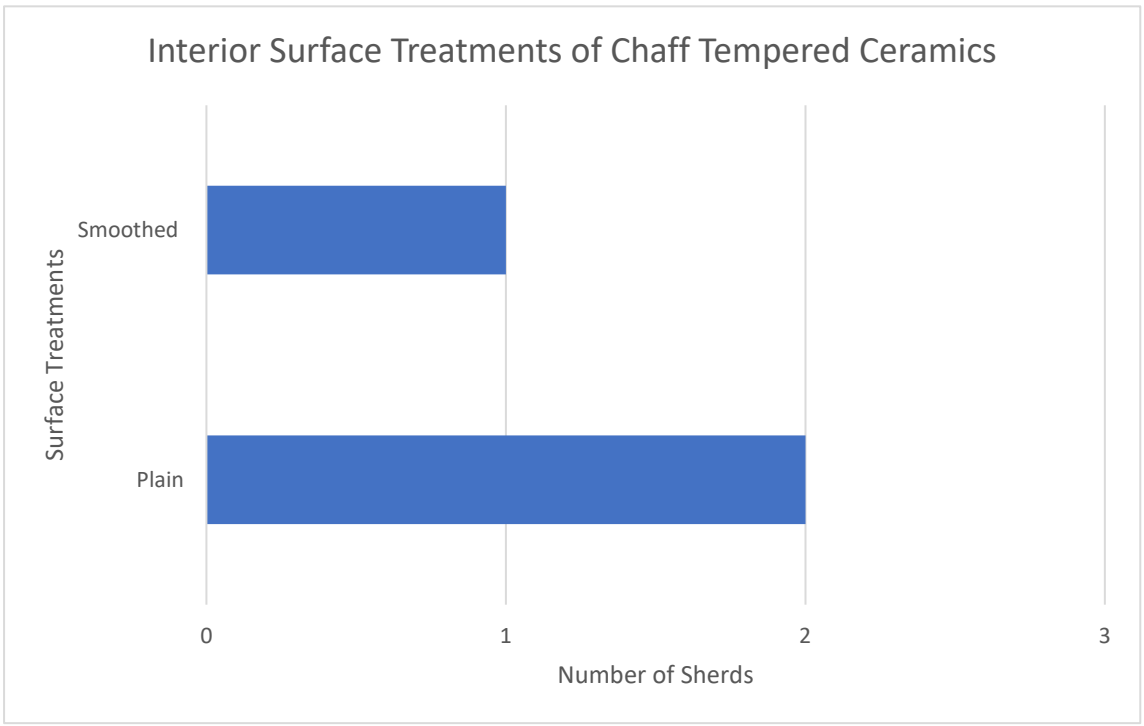


Table 19: Bar graph showing the types of interior surface treatments among Chaff Tempered ware ceramics at Sioni.



Table 20: Bar graph showing the frequency of comb scraped exterior surfaces across each ware type at Sioni.

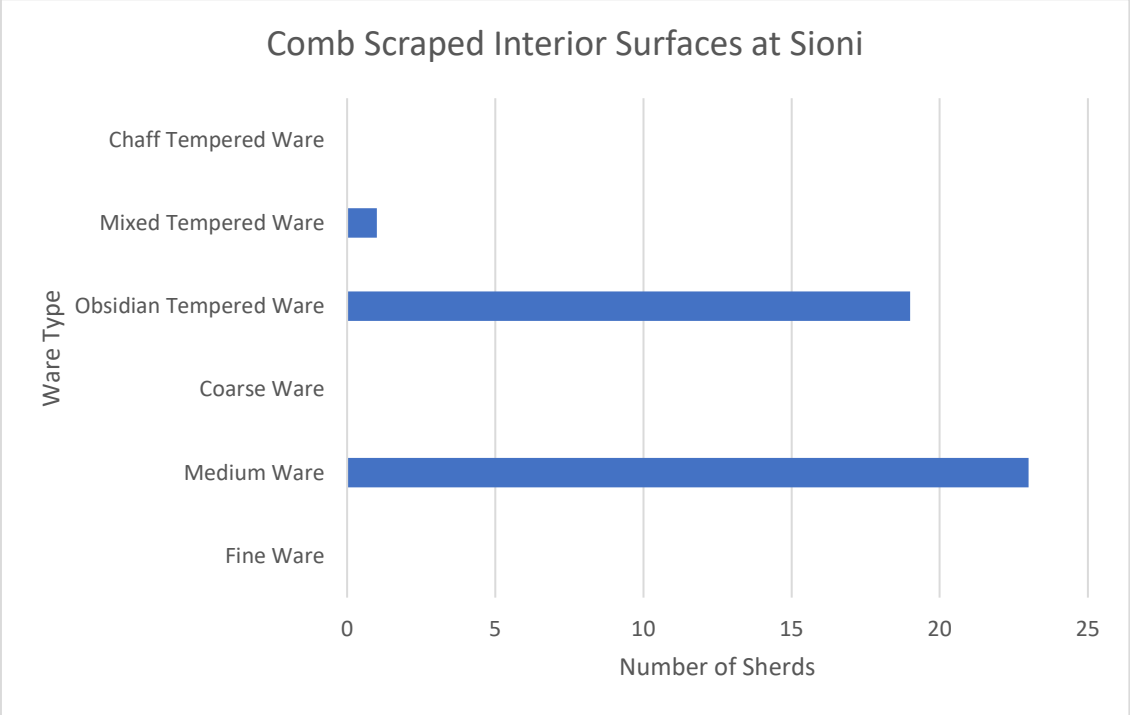


Table 21: Bar graph showing the frequency of comb scraped interior surfaces across each ware type at Sioni.

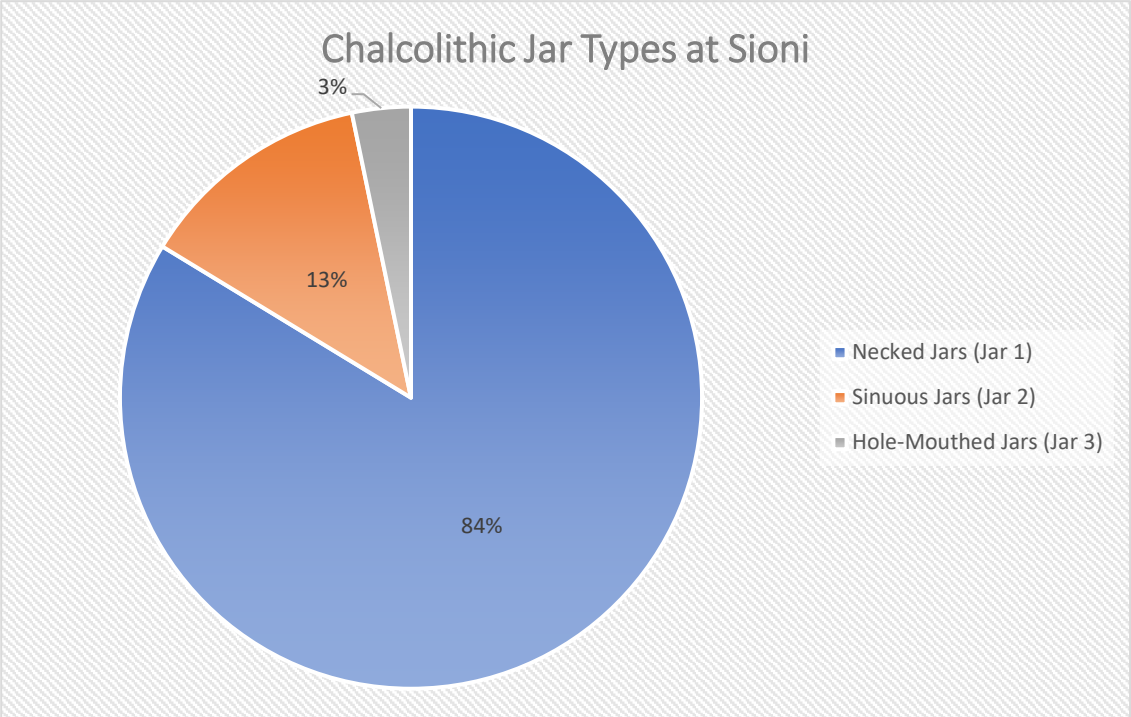


Table 22: Jar types attested among the Chalcolithic assemblage at Sioni.

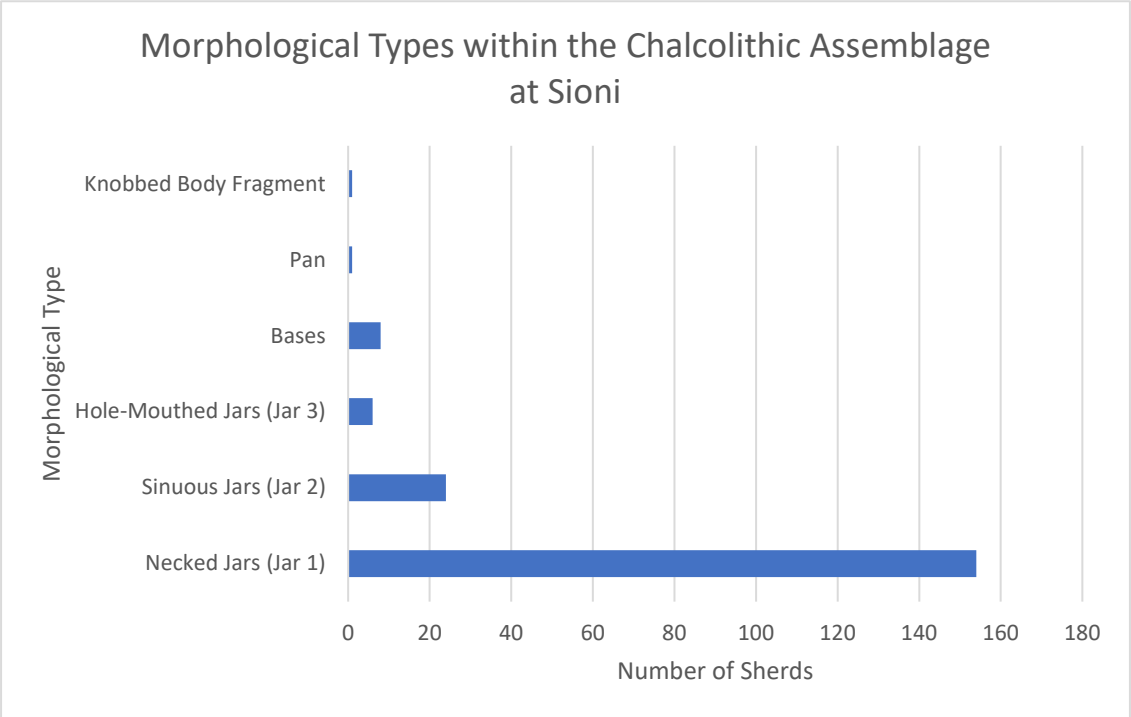


Table 23: Morphological types attested among the Chalcolithic assemblage at Sioni.

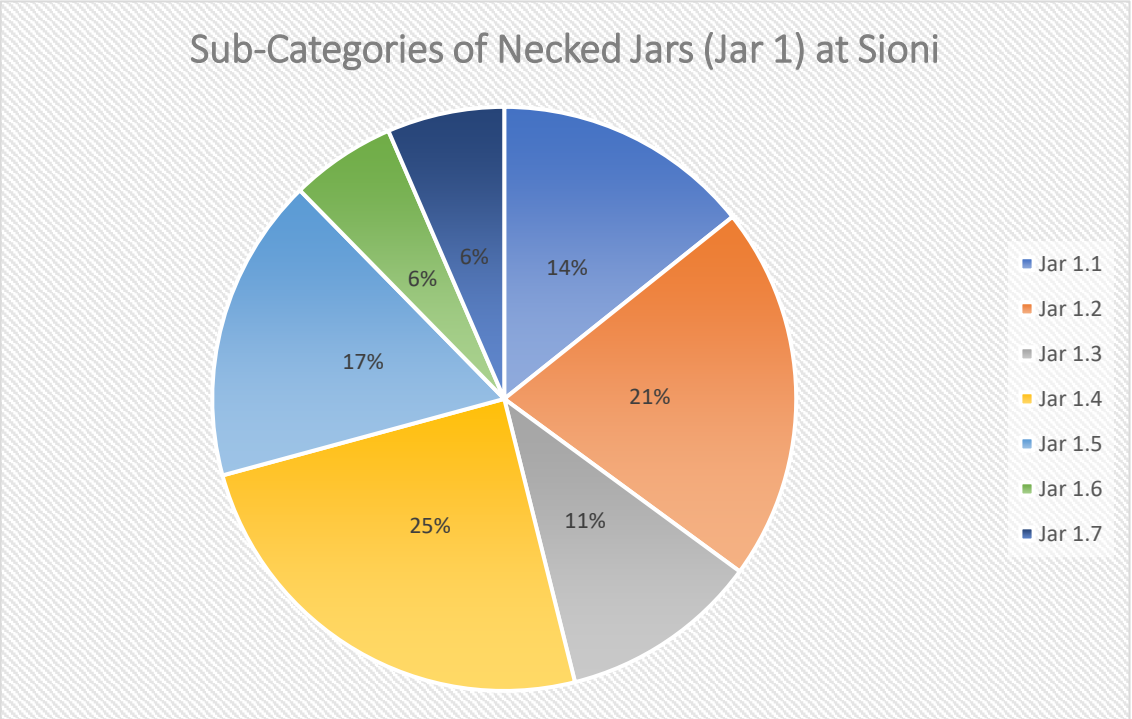


Table 24: Sub-categories of necked jars (Jar 1) among the Chalcolithic assemblage at Sioni.

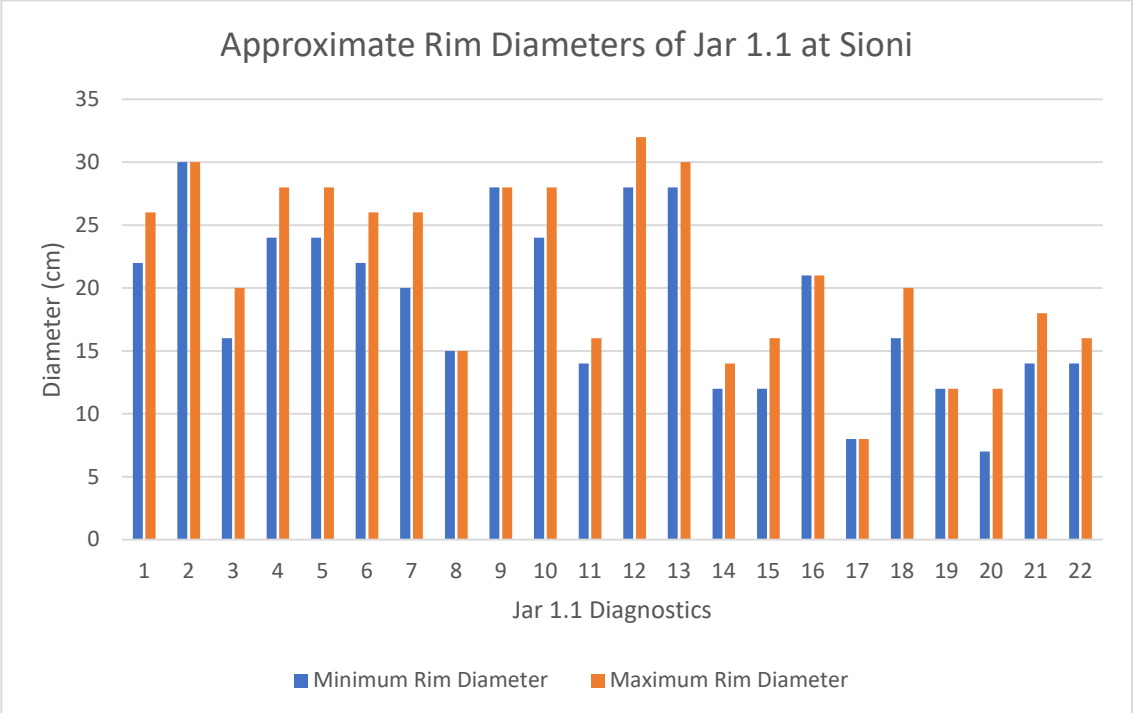


Table 25: Rim diameters of each of the Jar 1.1 diagnostics at Sioni.

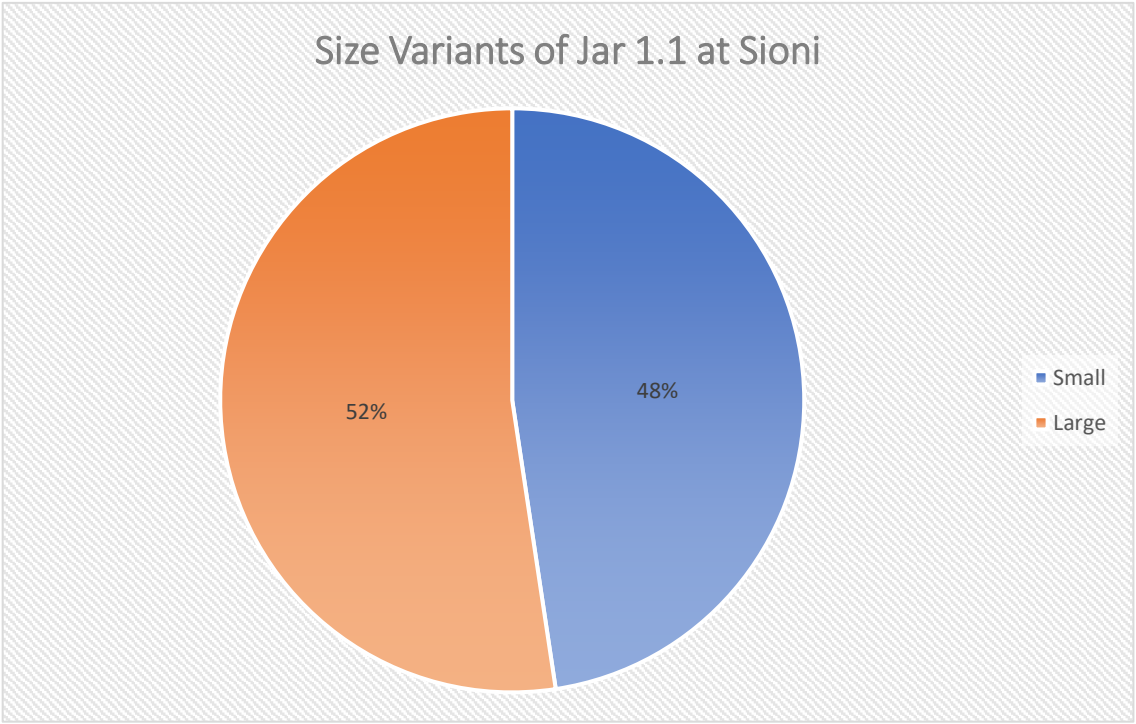


Table 26: Small and large size variants across Jar 1.1 diagnostics at Sioni.

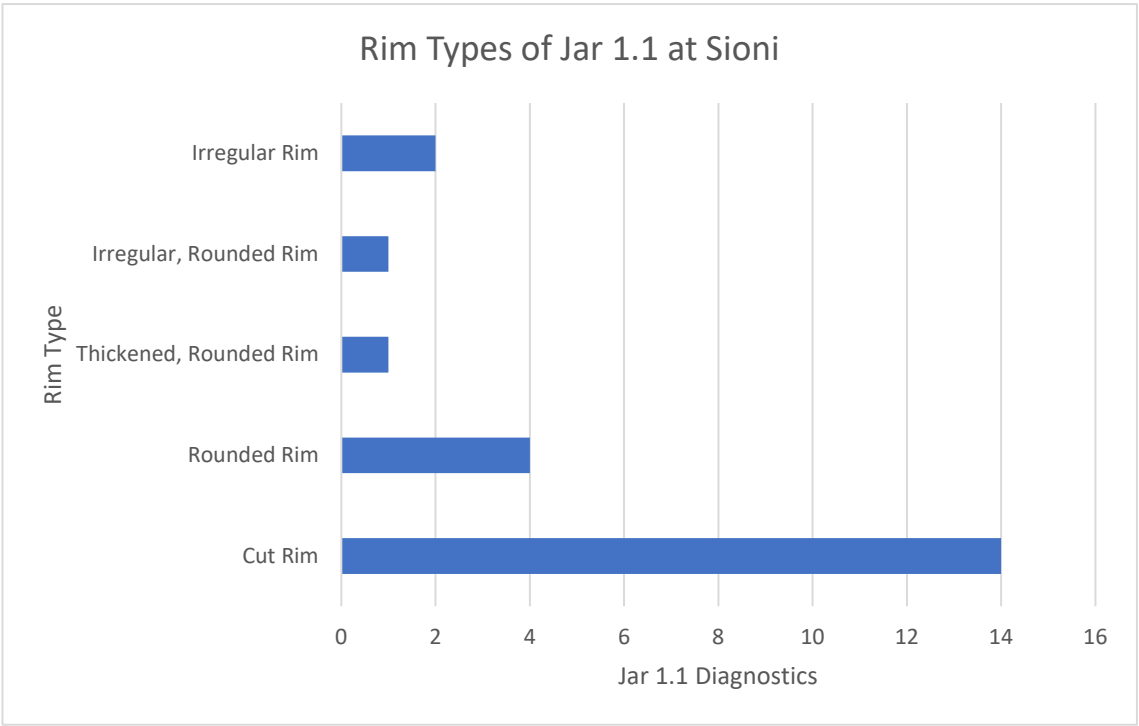


Table 27: Rim types identified among Jar 1.1 diagnostics at Sioni.

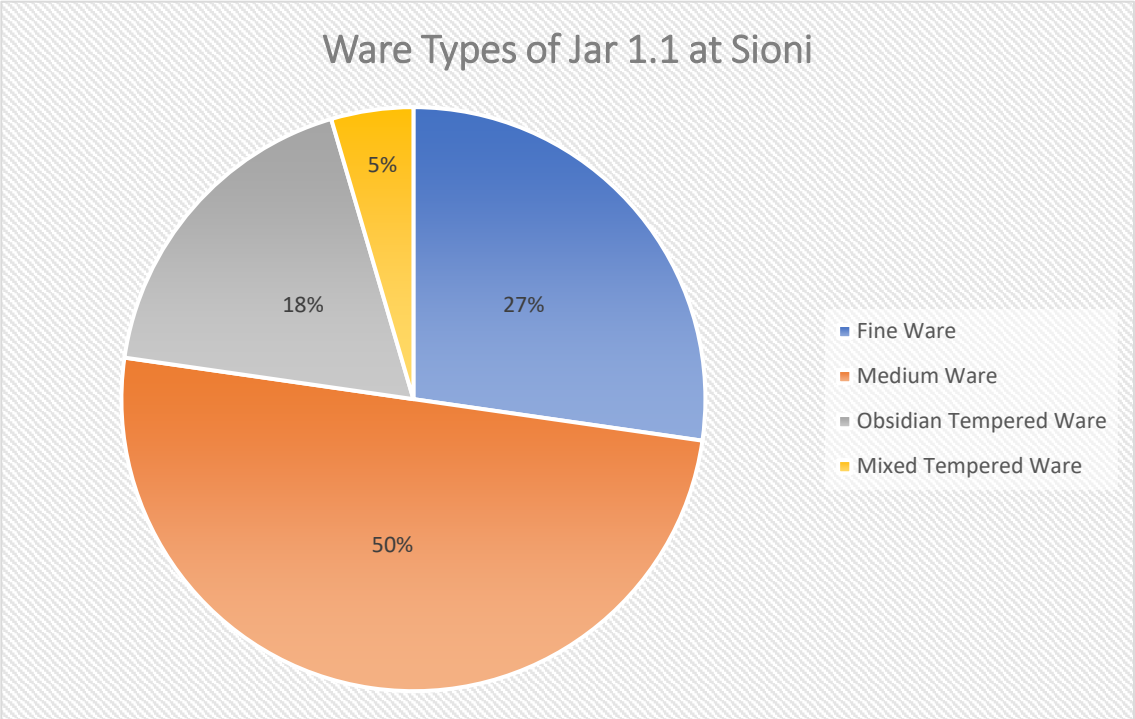


Table 28: Ware types identified among Jar 1.1 diagnostics at Sioni.

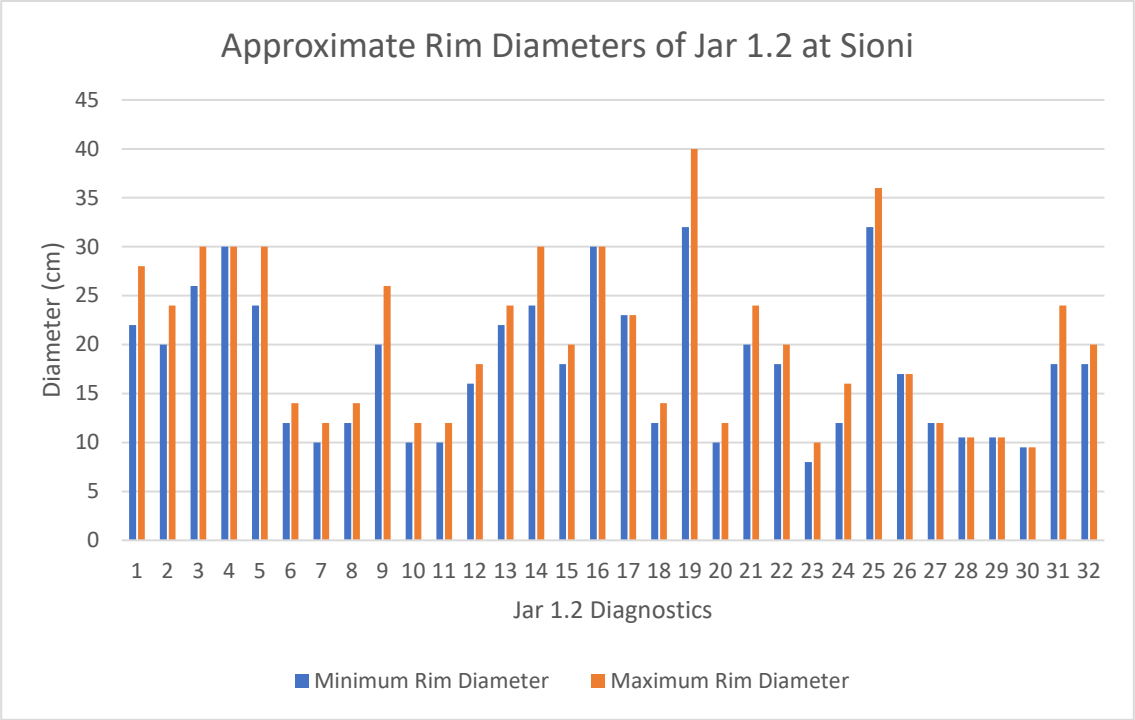


Table 29: Rim diameters of each of the Jar 1.2 diagnostics at Sioni.

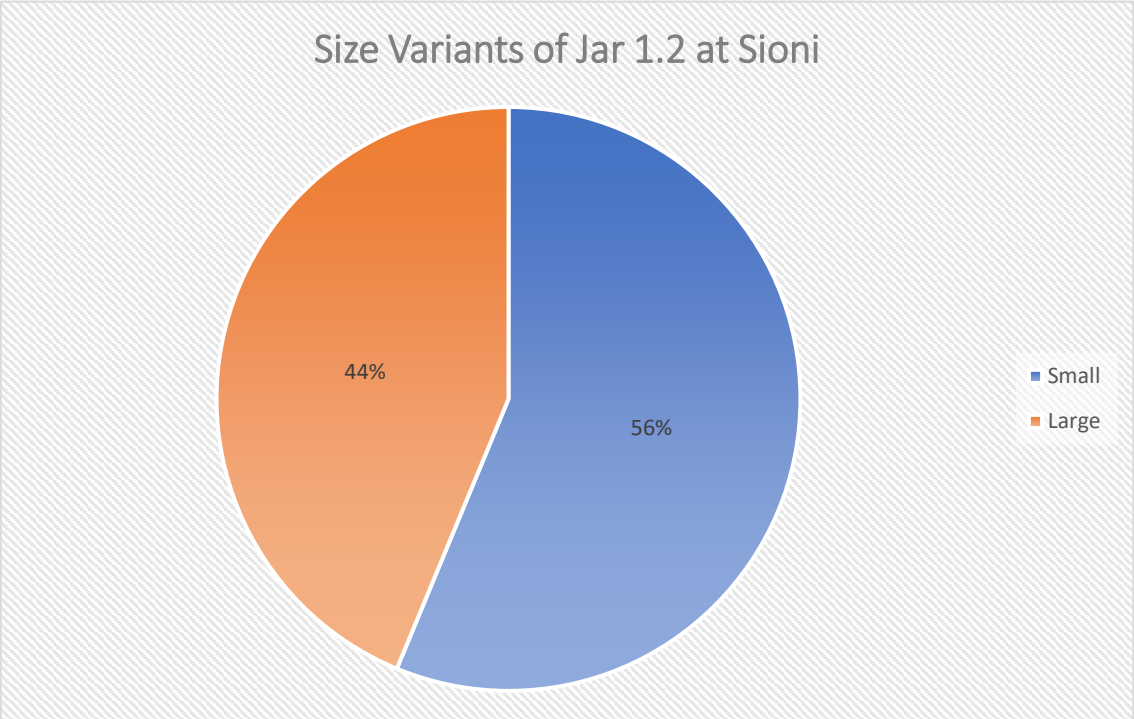


Table 30: Small and large size variants across Jar 1.2 diagnostics at Sioni.

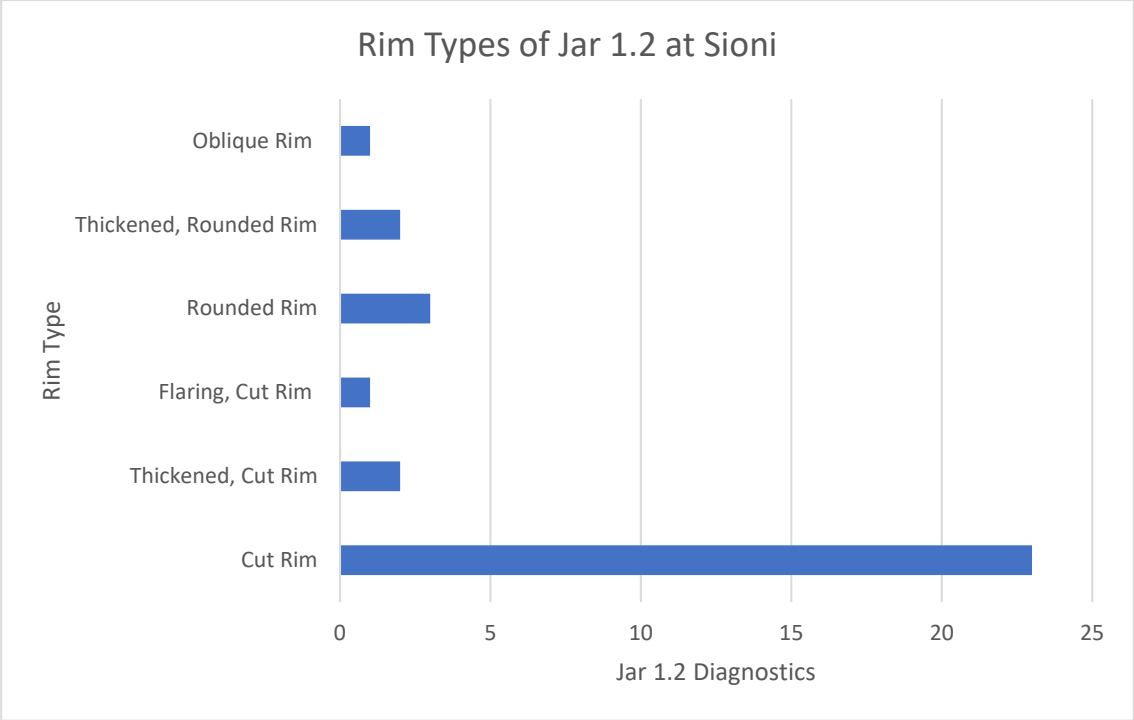


Table 31: Rim types identified among Jar 1.2 diagnostics at Sioni.

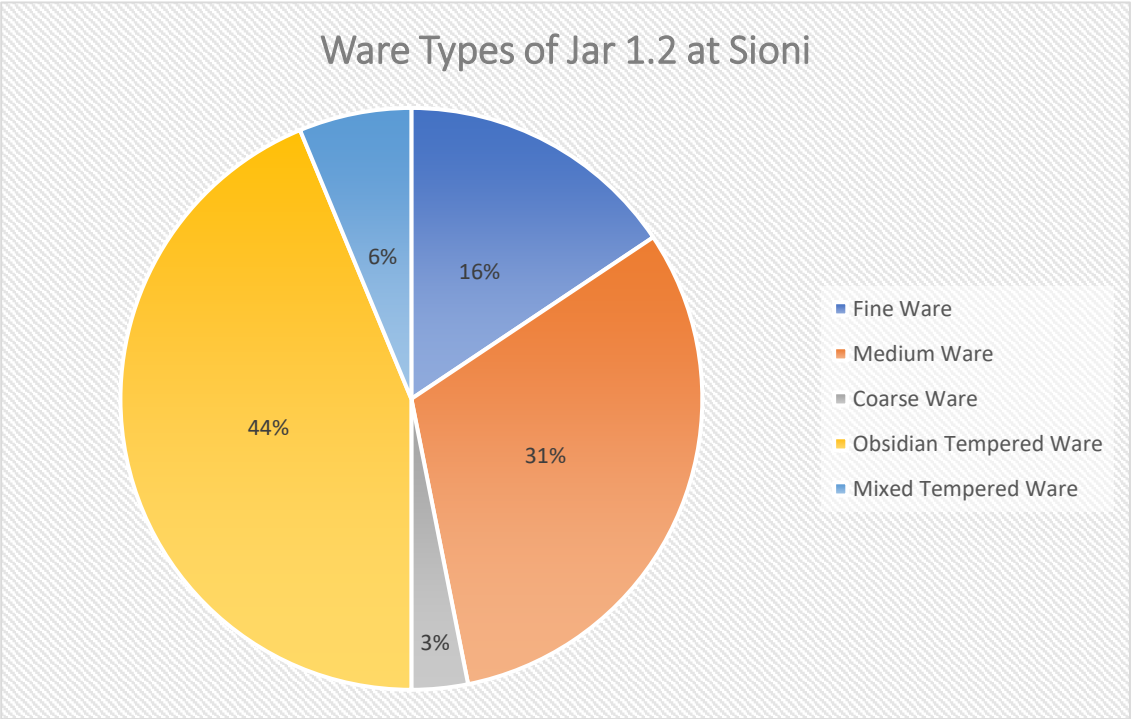


Table 32: Ware types identified among Jar 1.2 diagnostics at Sioni.

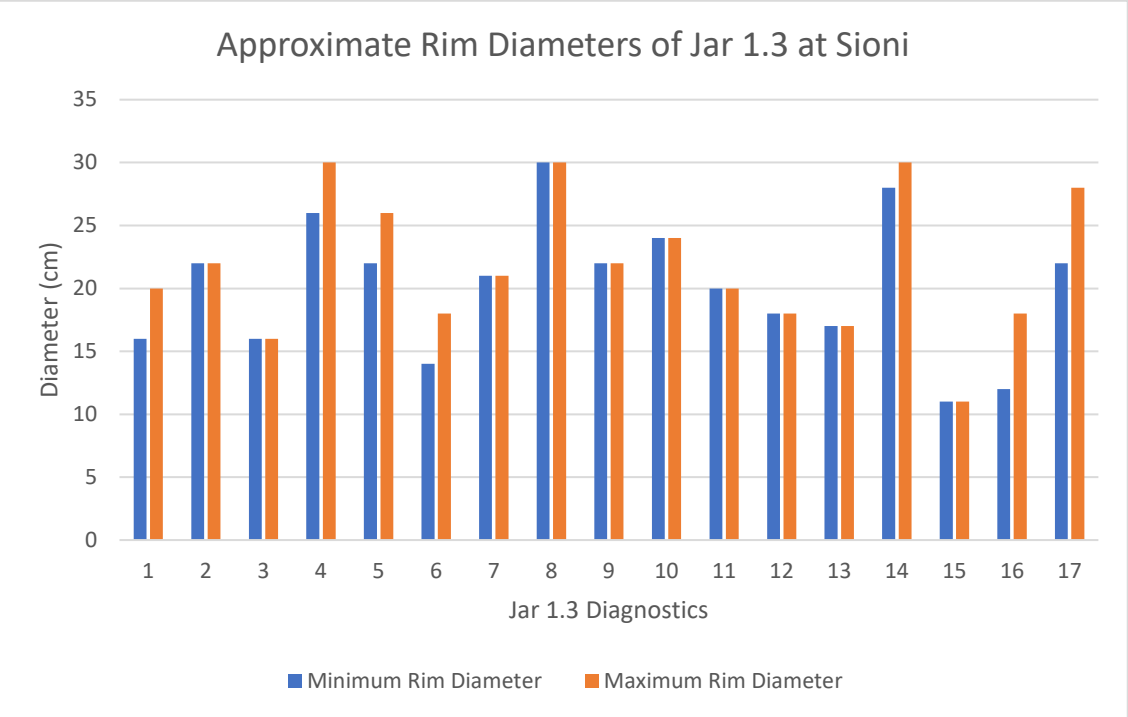


Table 33: Rim diameters of each of the Jar 1.3 diagnostics at Sioni.

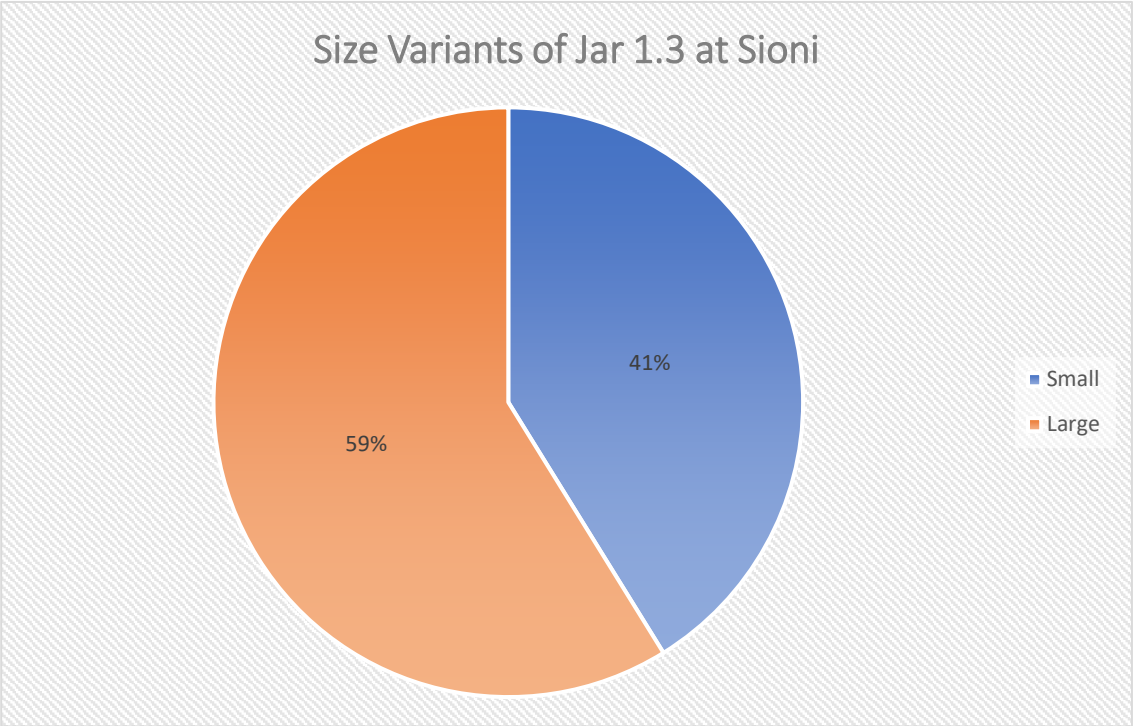


Table 34: Small and large size variants across Jar 1.3 diagnostics at Sioni.

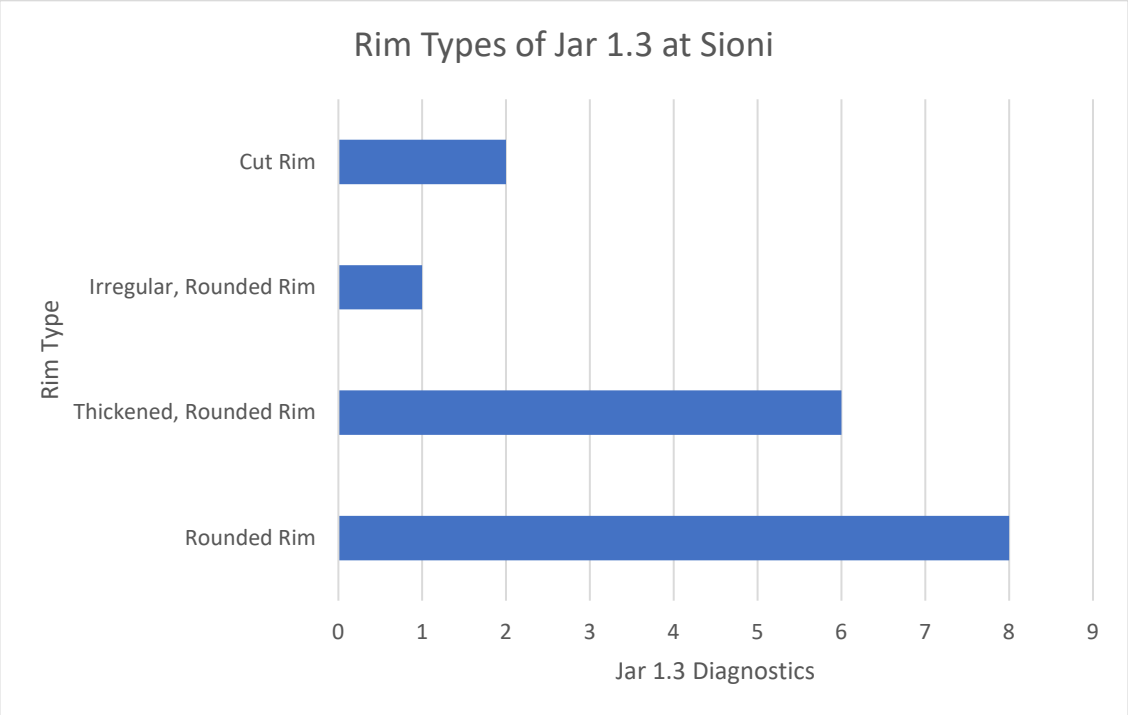


Table 35: Rim types identified among Jar 1.3 diagnostics at Sioni.

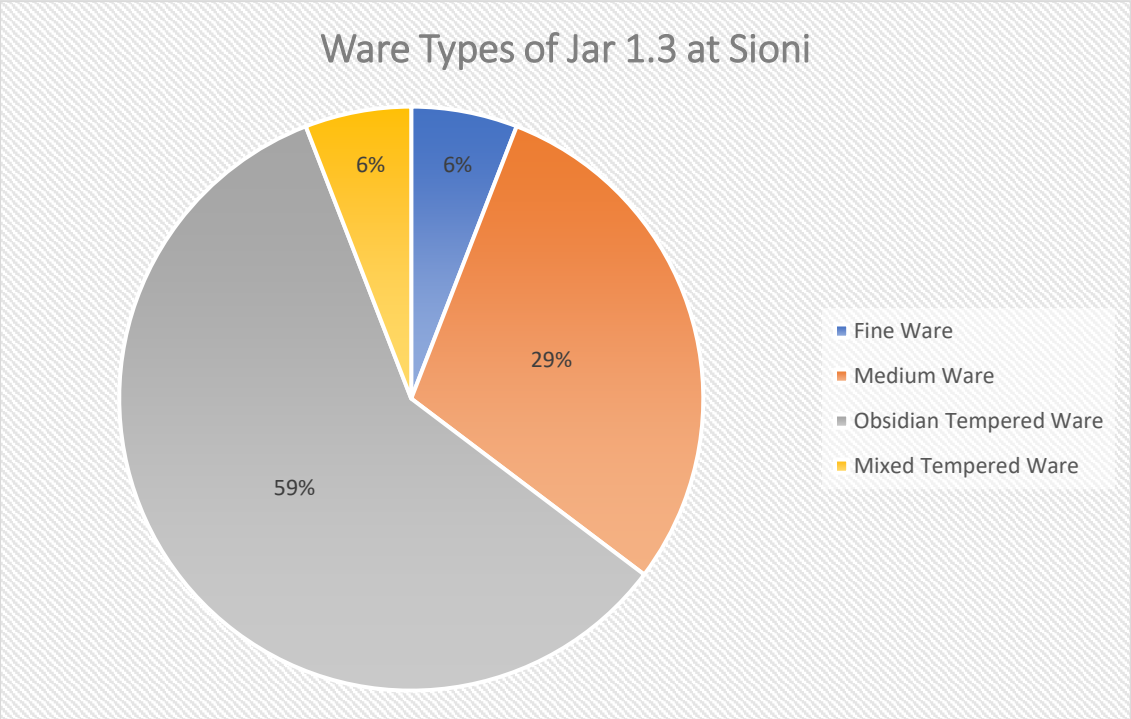


Table 36: Ware types identified among Jar 1.3 diagnostics at Sioni.

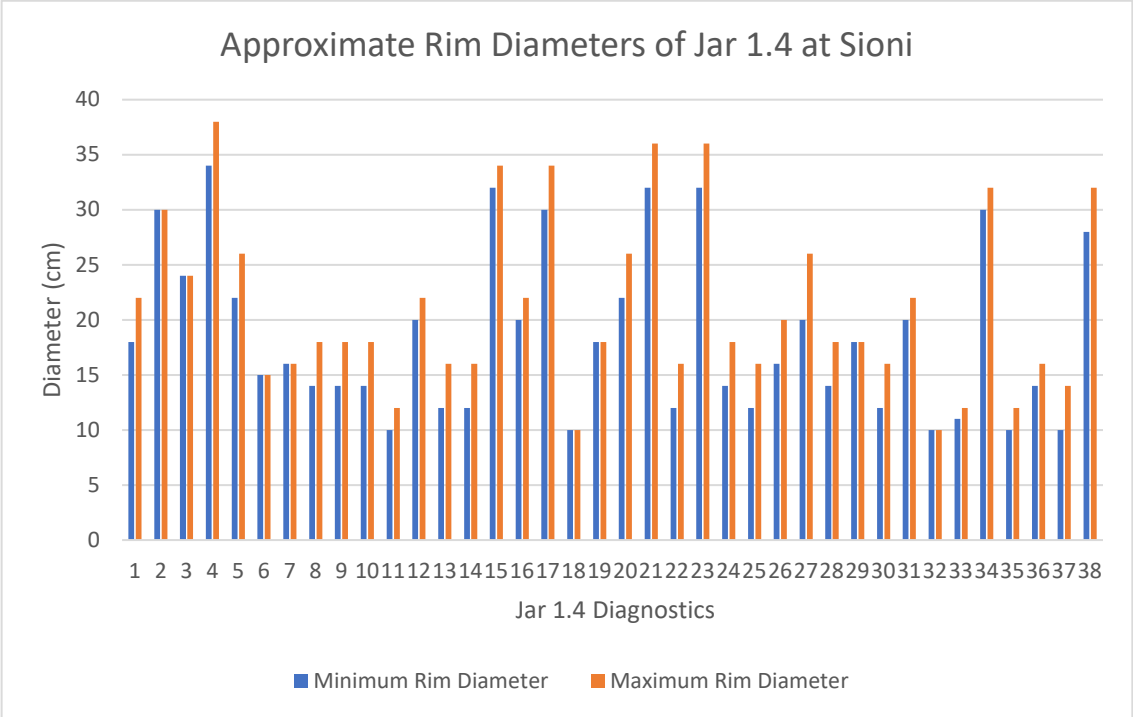


Table 37: Rim diameters of each of the Jar 1.4 diagnostics at Sioni.

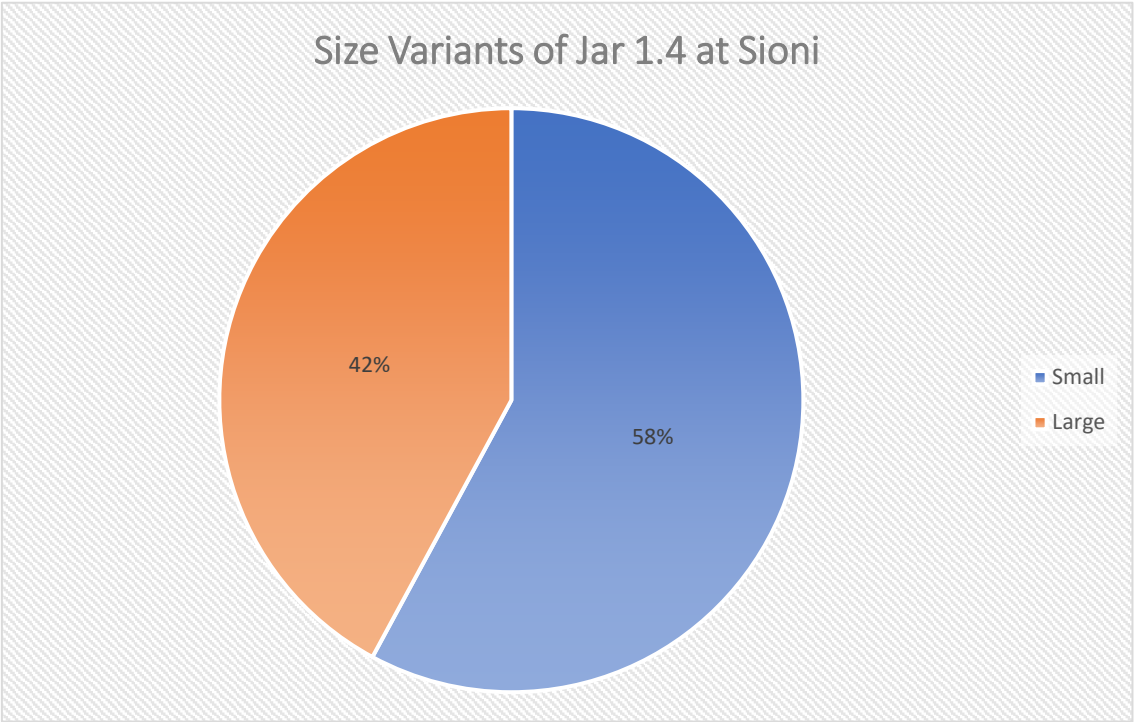


Table 38: Small and large size variants across Jar 1.4 diagnostics at Sioni.

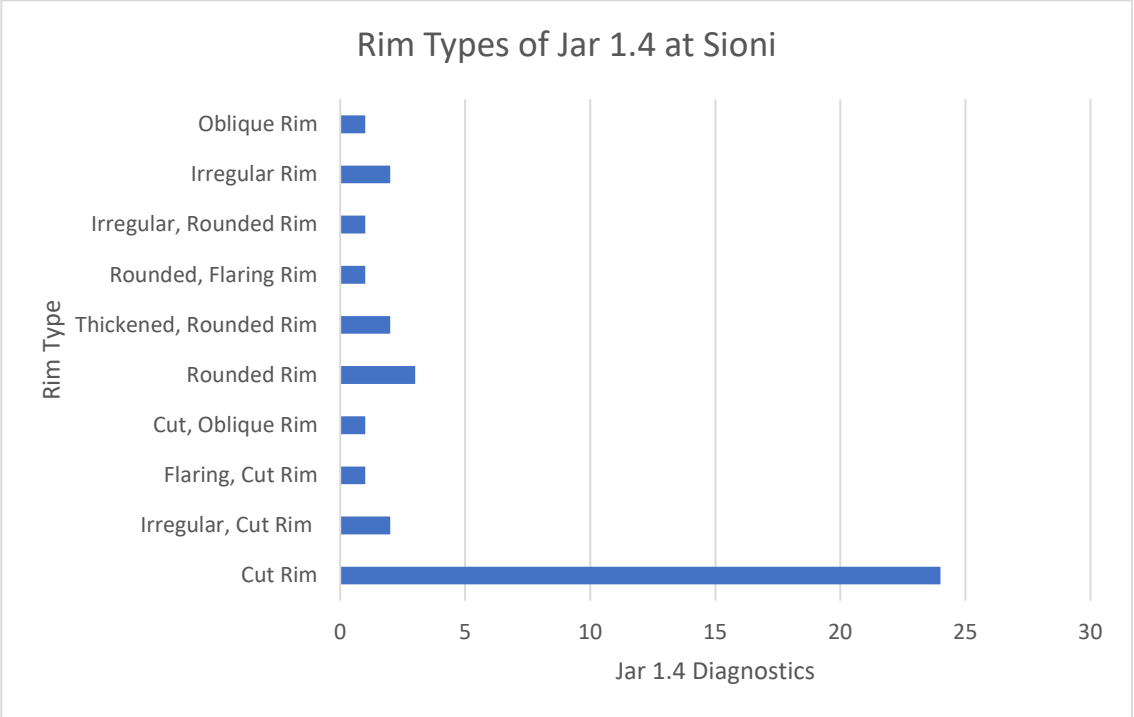


Table 39: Rim types identified among Jar 1.4 diagnostics at Sioni.

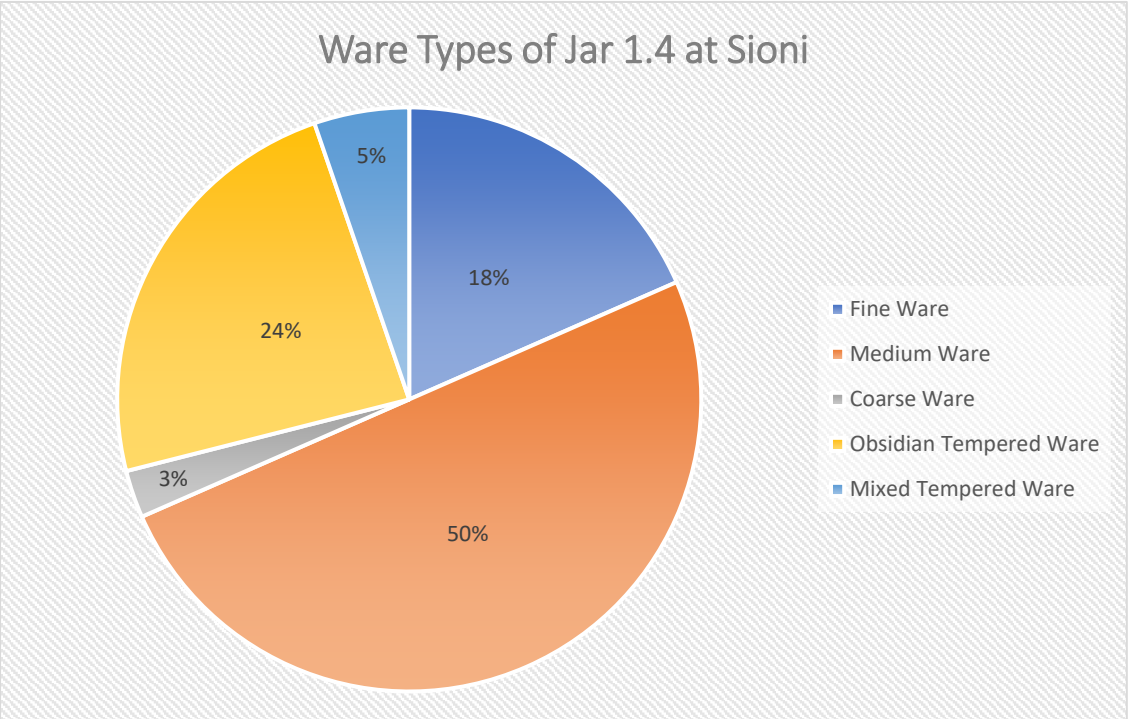


Table 40: Ware types identified among Jar 1.4 diagnostics at Sioni.

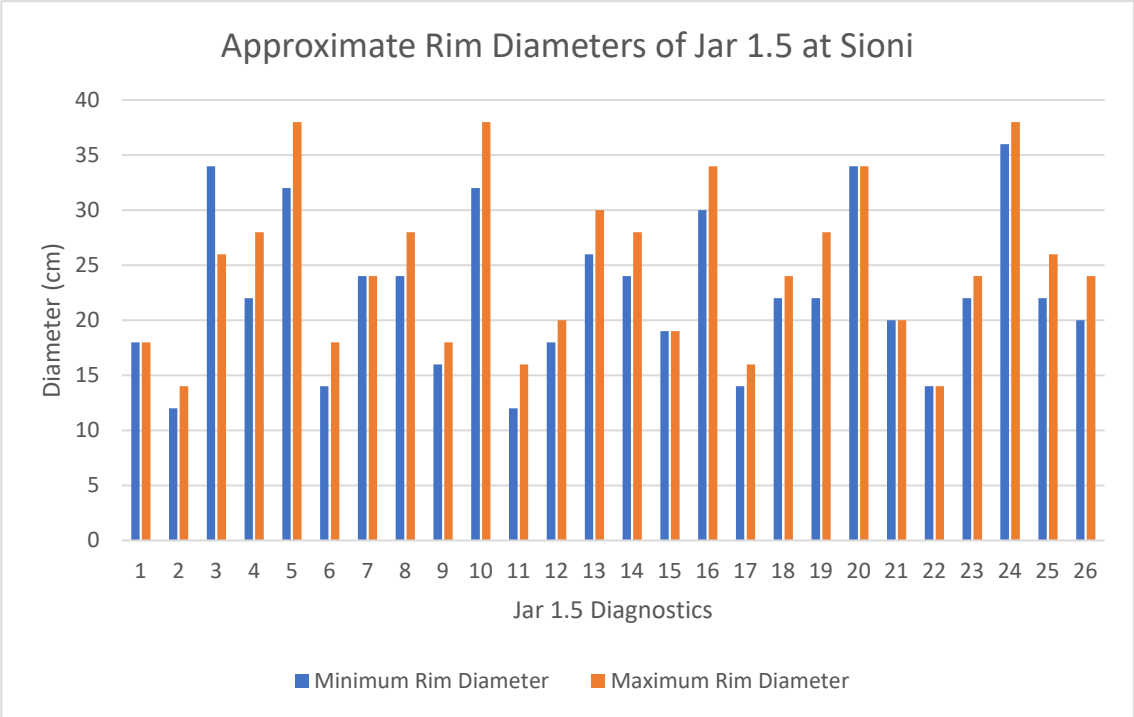


Table 41: Rim diameters of each of the Jar 1.5 diagnostics at Sioni.

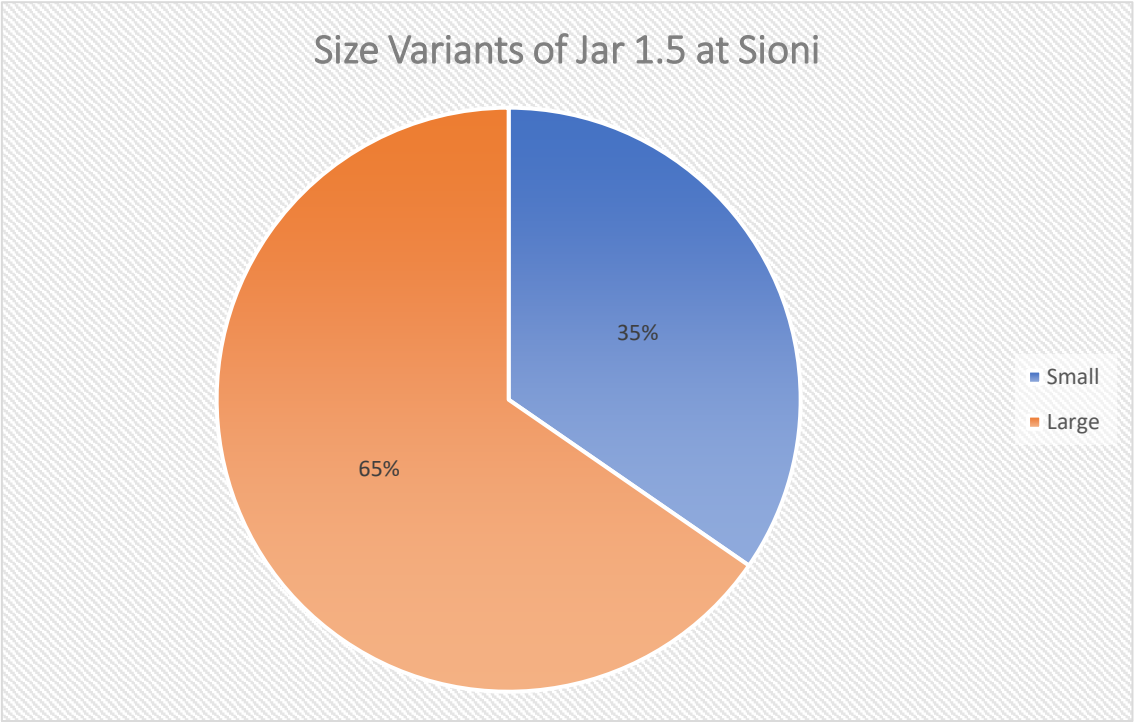


Table 42: Small and large size variants across Jar 1.5 diagnostics at Sioni.

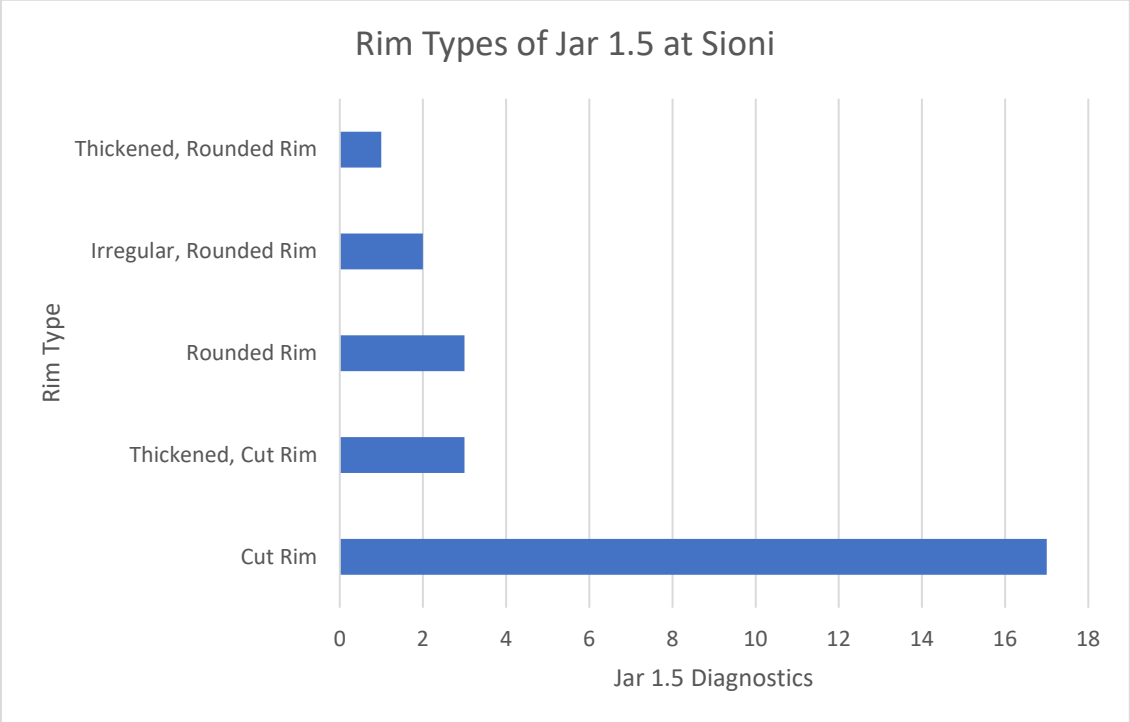


Table 43: Rim types identified among Jar 1.5 diagnostics at Sioni.

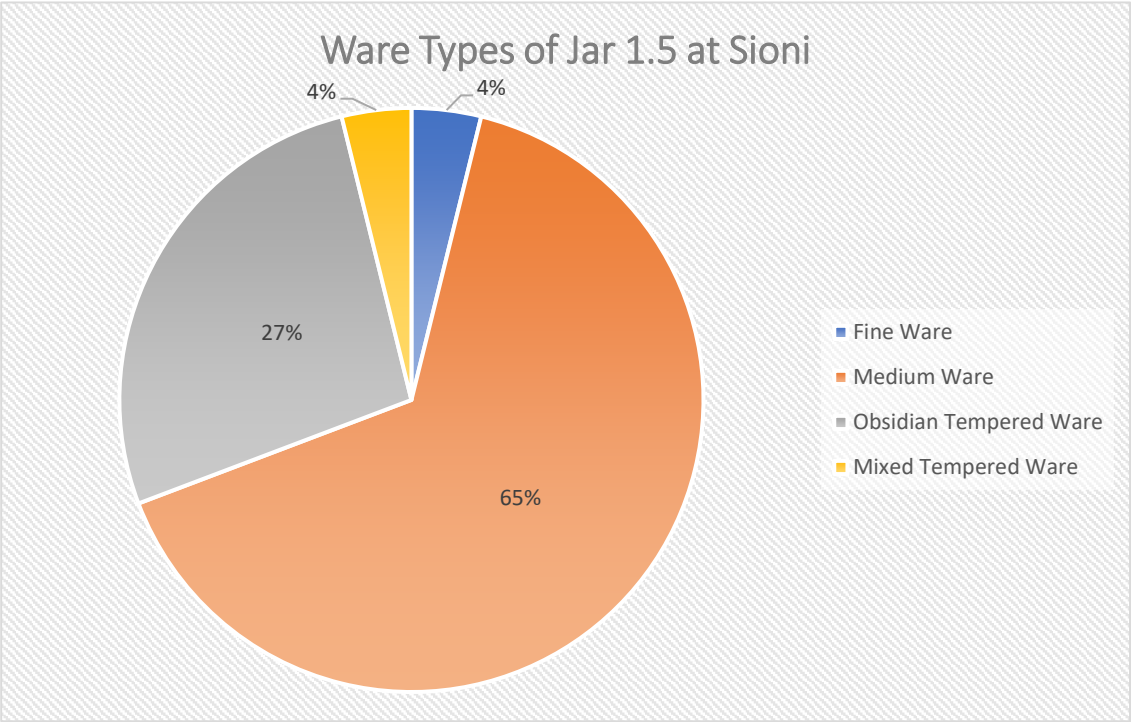


Table 44: Ware types identified among Jar 1.5 diagnostics at Sioni.

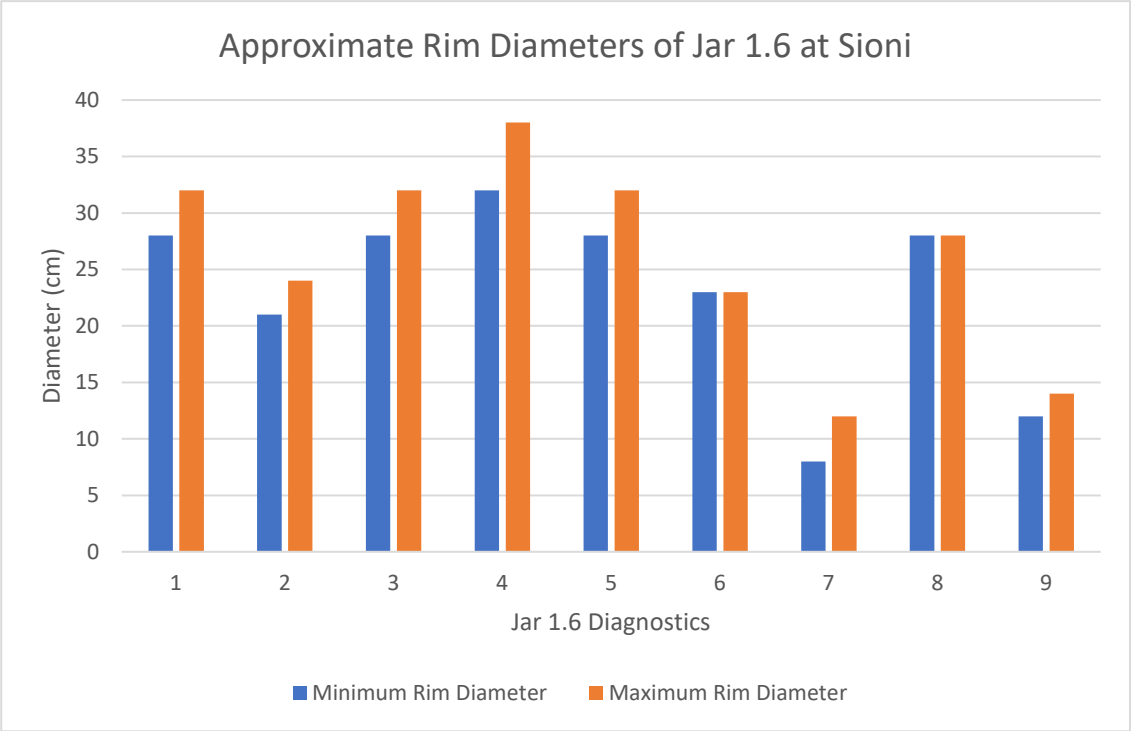


Table 45: Rim diameters of each of the Jar 1.6 diagnostics at Sioni.

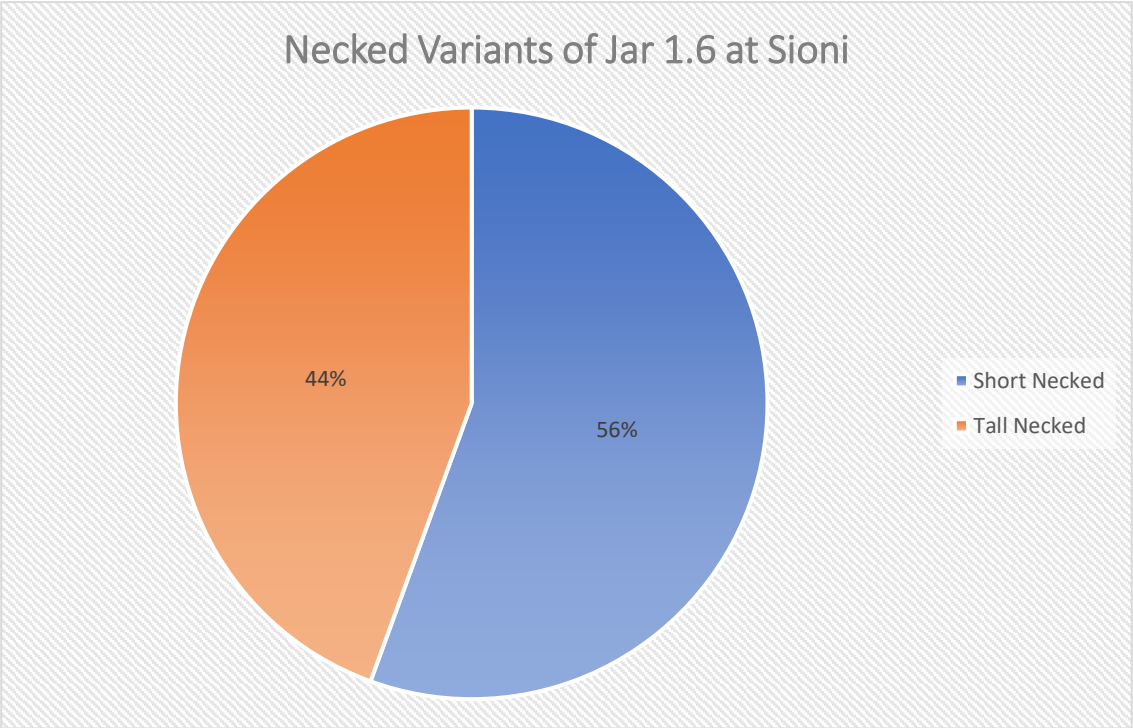


Table 46: Short and tall necked variants across Jar 1.6 diagnostics at Sioni.

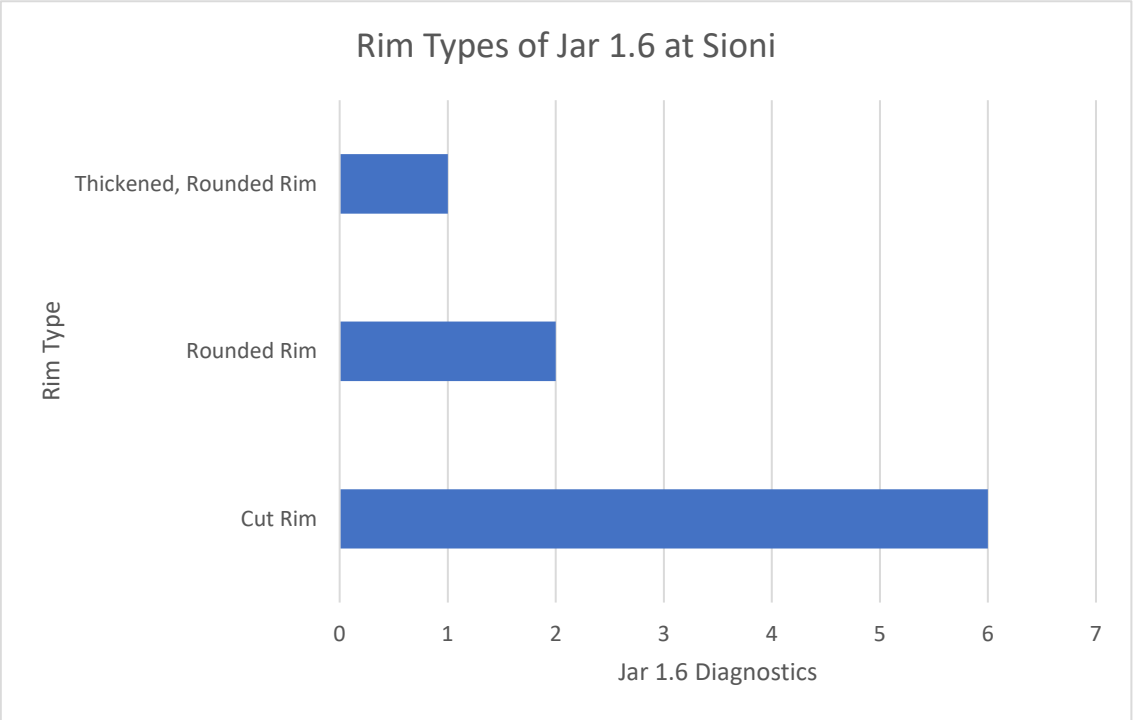


Table 47: Rim types identified among Jar 1.6 diagnostics at Sioni.

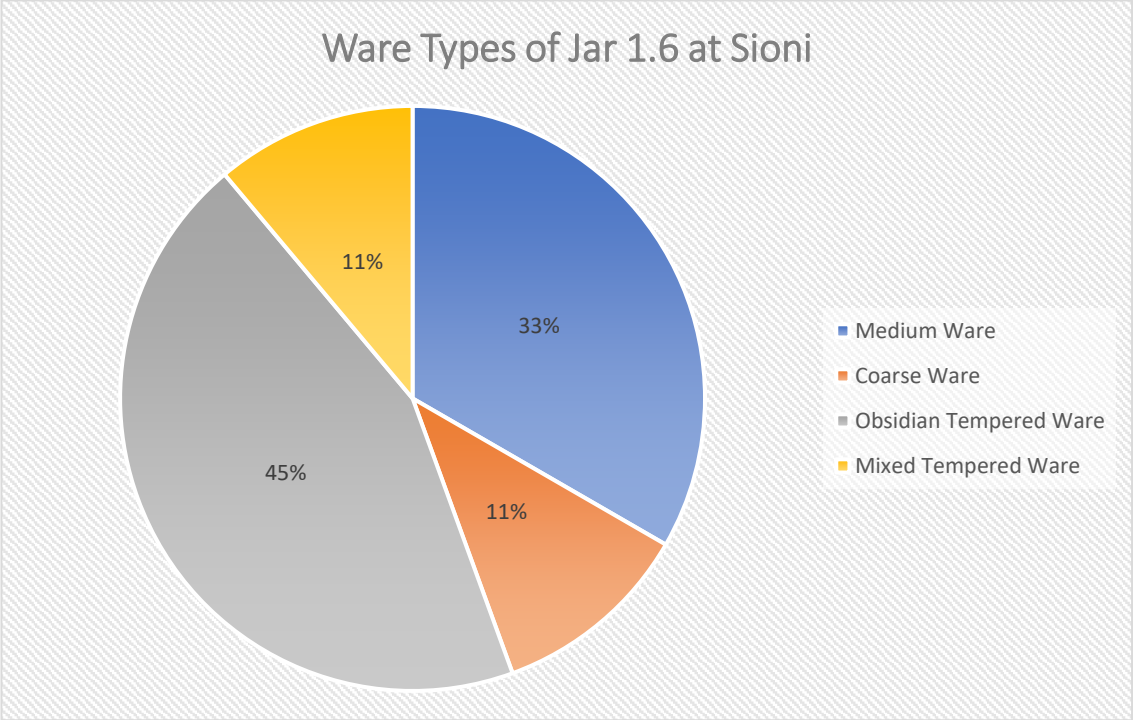


Table 48: Ware types identified among Jar 1.6 diagnostics at Sioni.

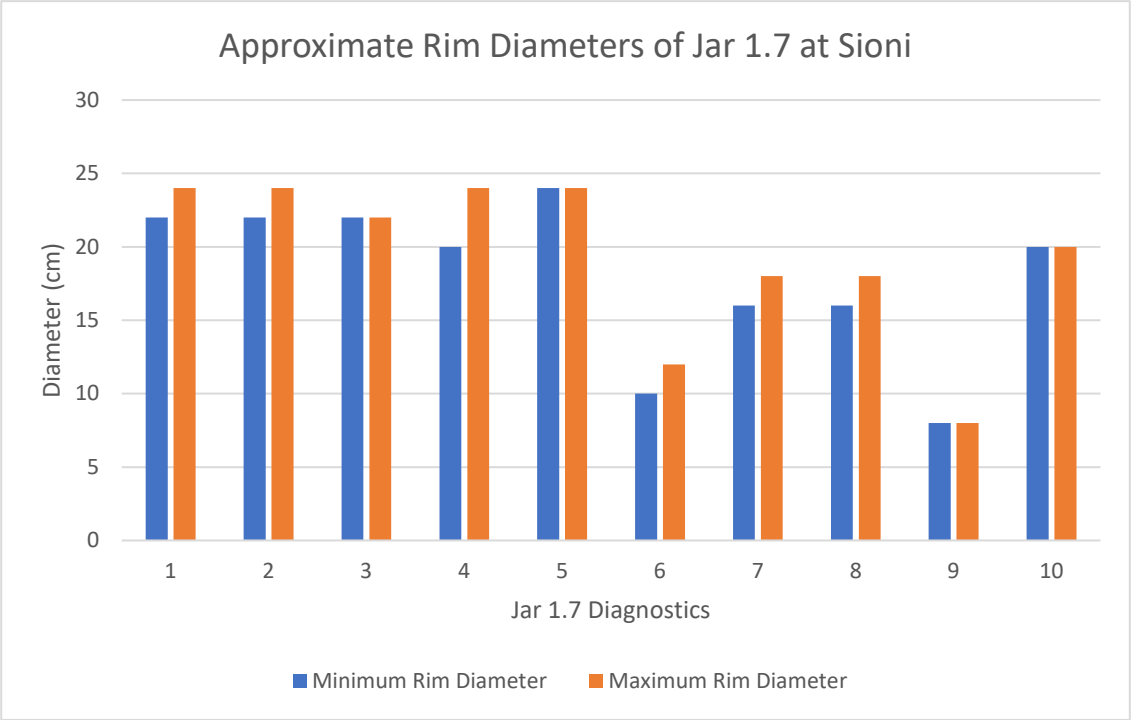


Table 49: Rim diameters of each of the Jar 1.7 diagnostics at Sioni.

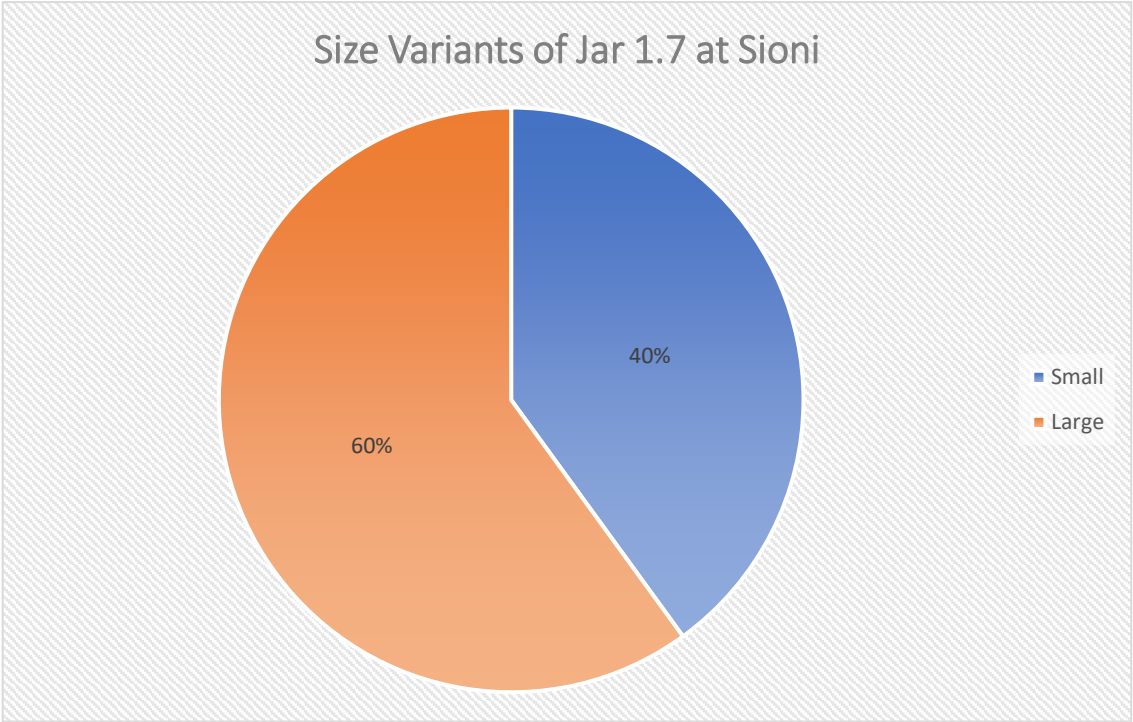


Table 50: Small and large size variants across Jar 1.7 diagnostics at Sioni.

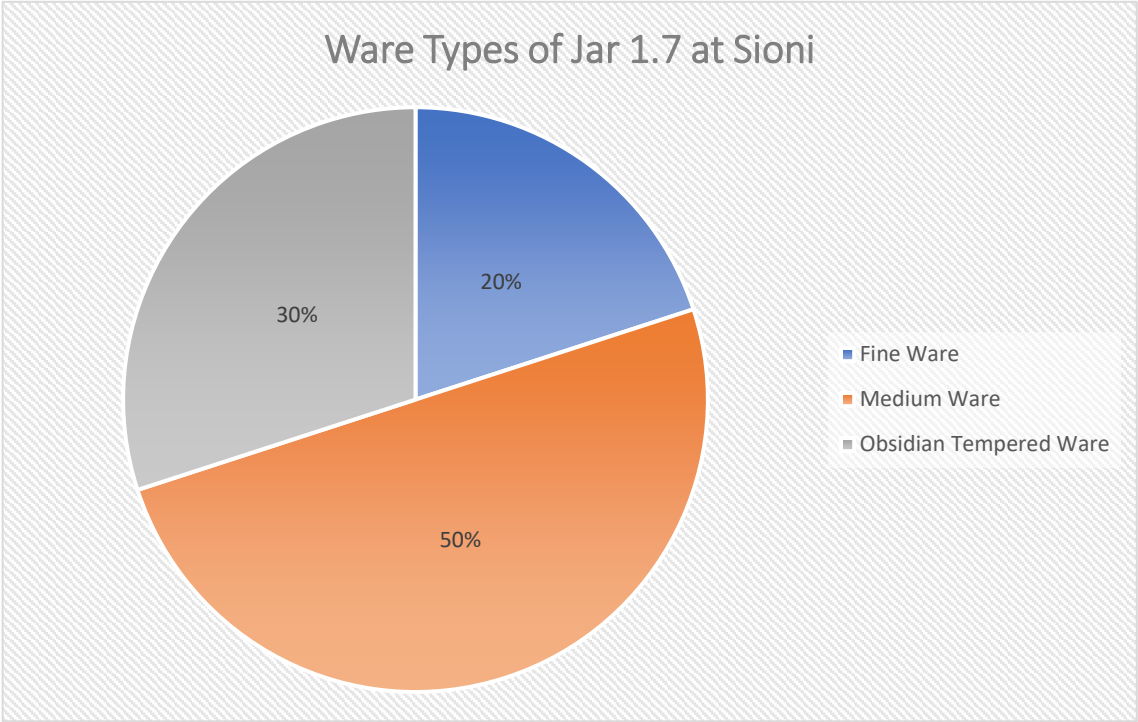


Table 51: Ware types identified among Jar 1.7 diagnostics at Sioni.

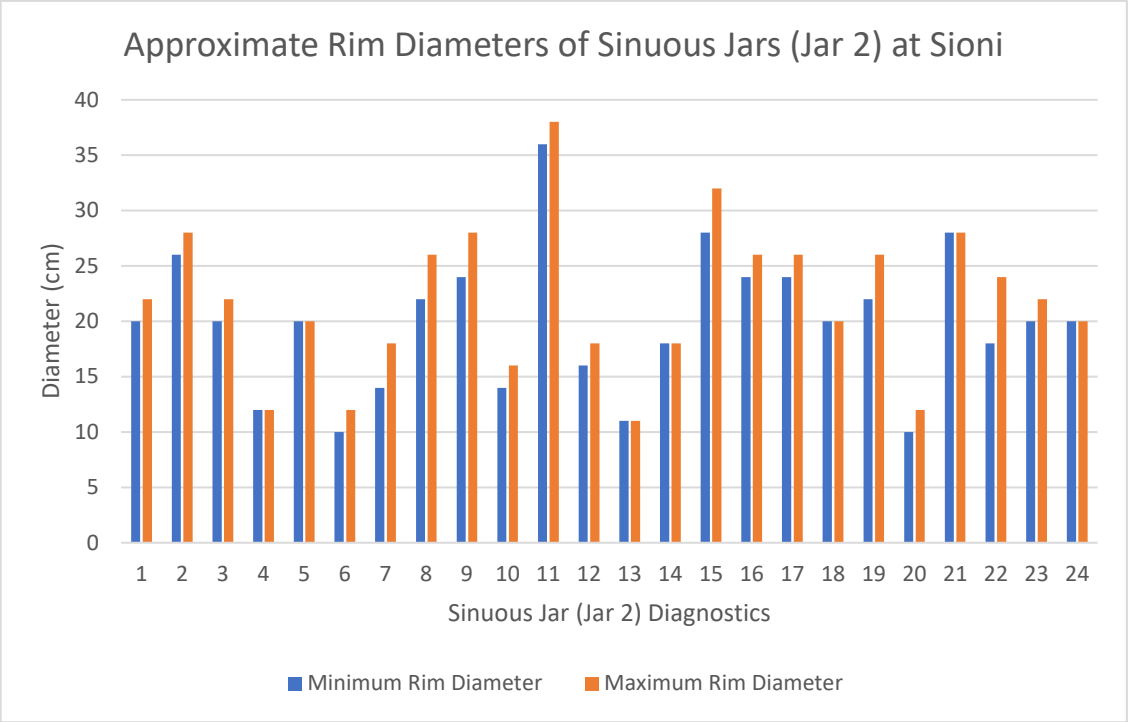


Table 52: Rim diameters of each of the sinuous jar (Jar 2) diagnostics at Sioni.

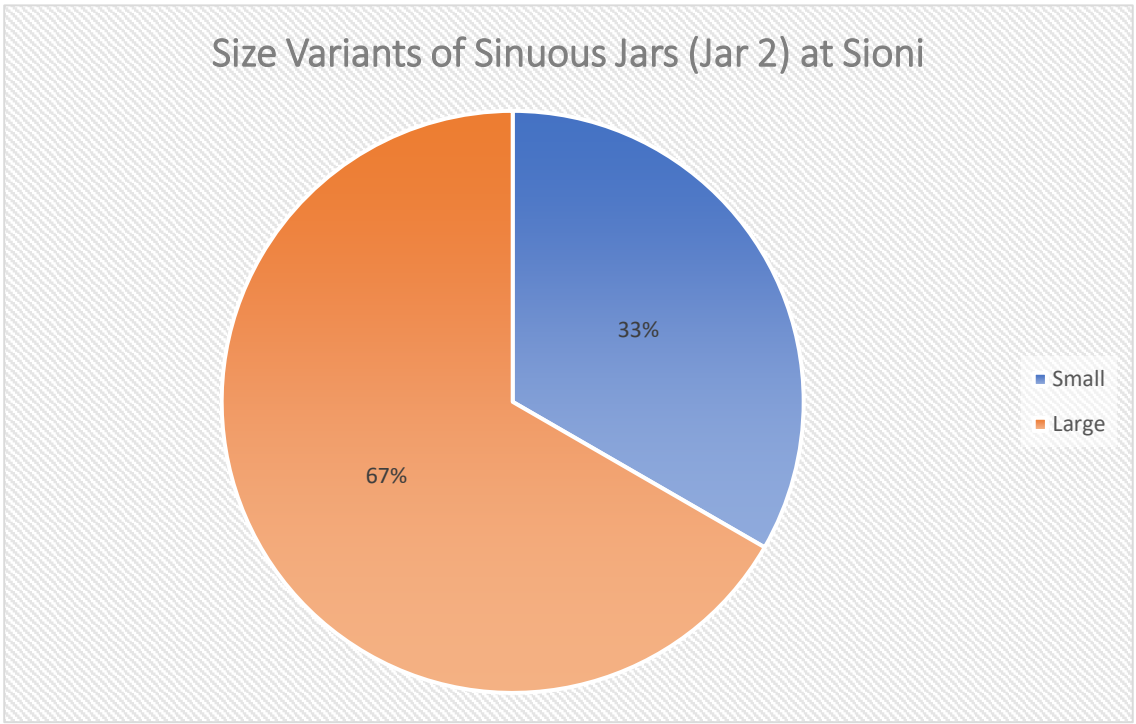


Table 53: Small and large size variants across the sinuous jar (Jar 2) diagnostics at Sioni.

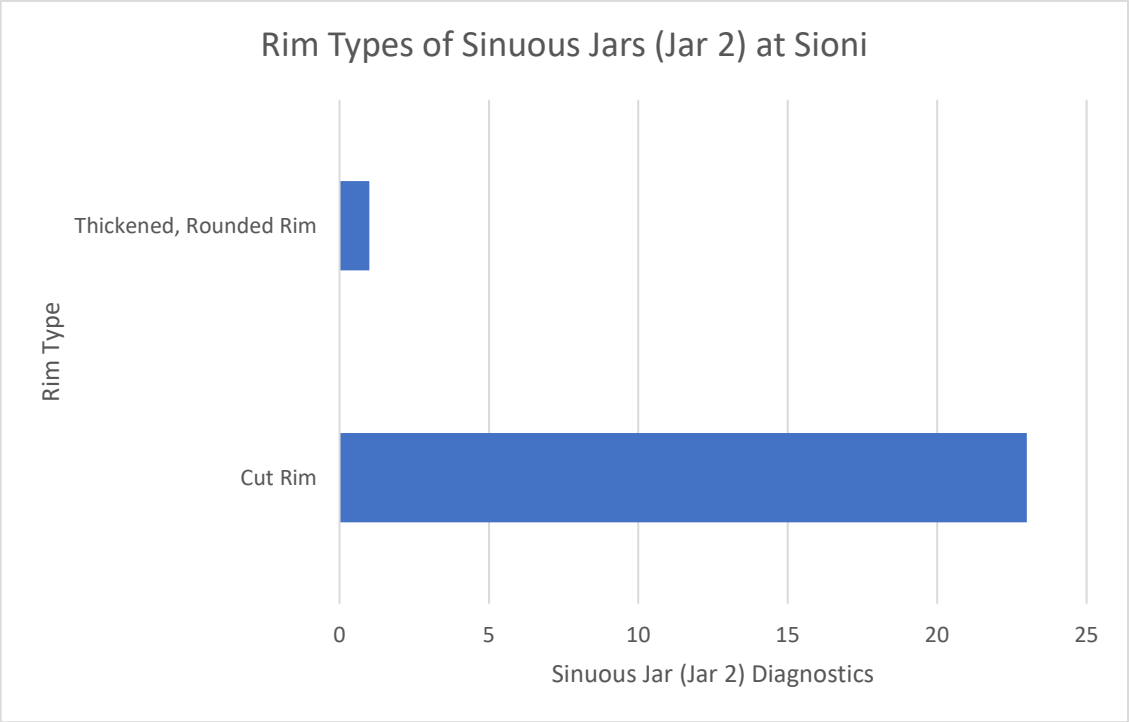


Table 54: Rim types identified among sinuous jar (Jar 2) diagnostics at Sioni.

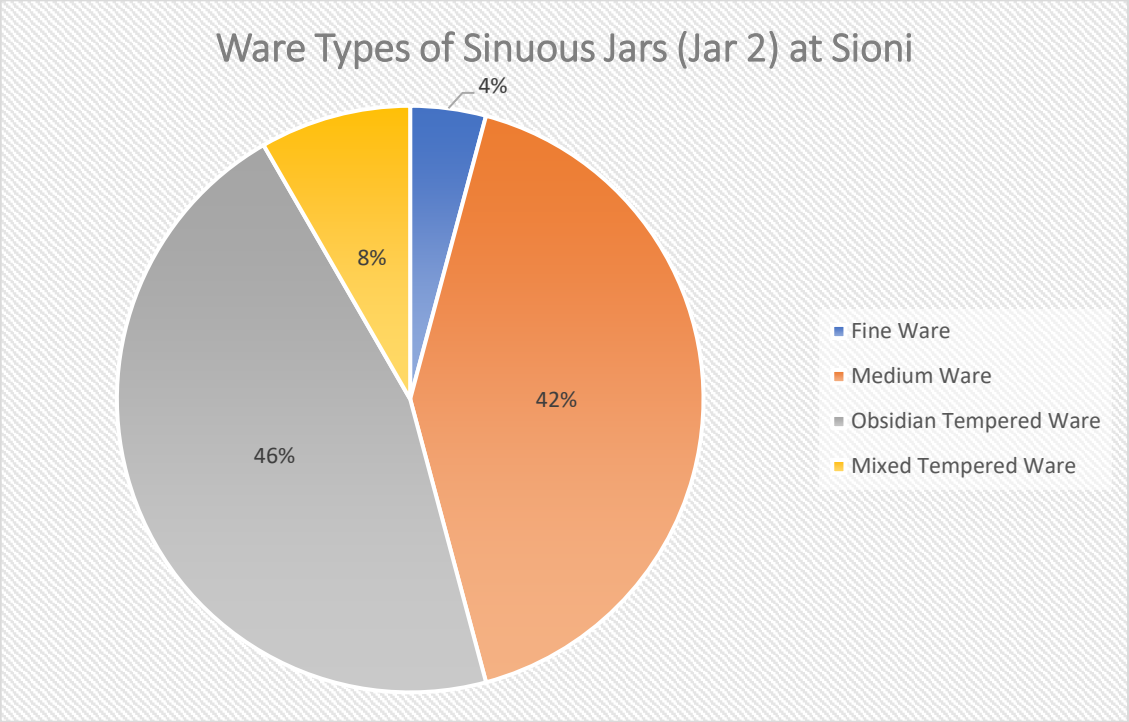


Table 55: Ware types identified among the sinuous jar (Jar 2) diagnostics at Sioni.

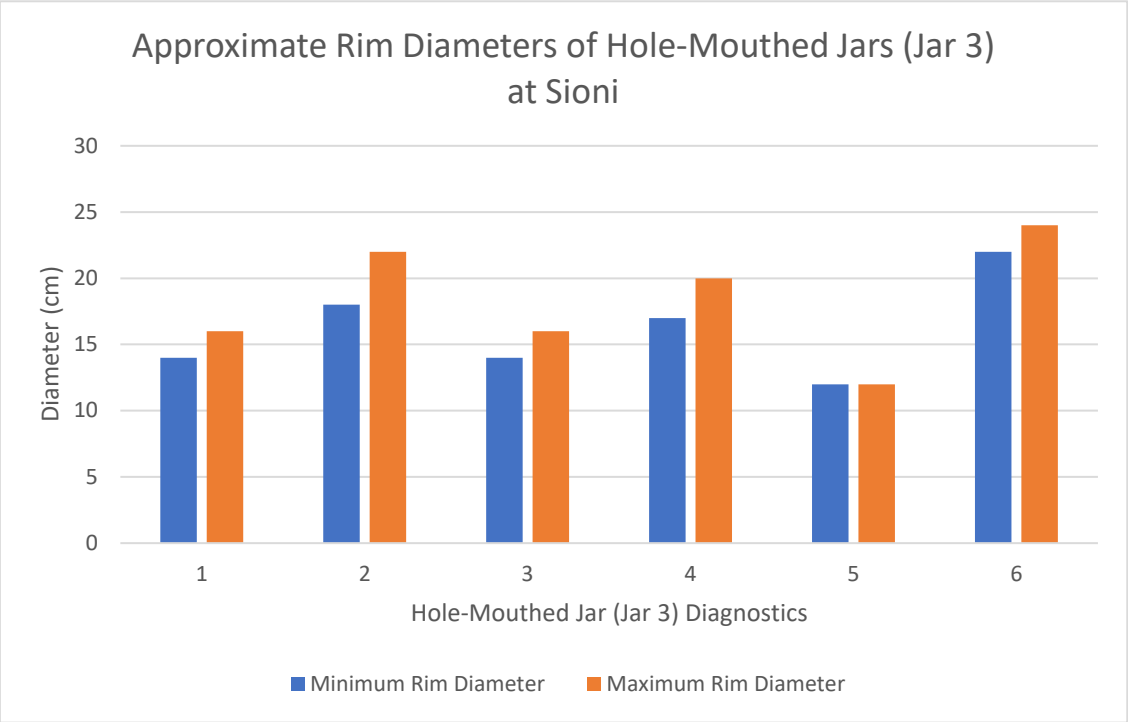


Table 56: Rim diameters of each of the hole-mouthed jar (jar 3) diagnostics at Sioni.

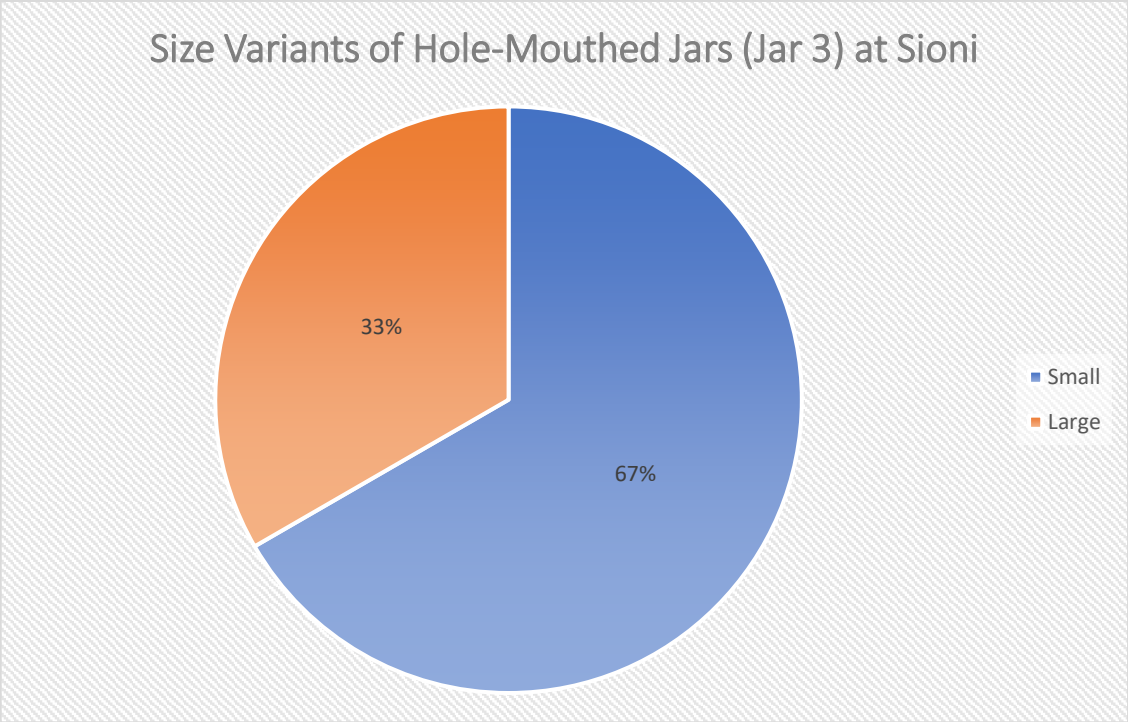


Table 57: Small and large size variants across the hole-mouthed jar (Jar 3) diagnostics at Sioni.

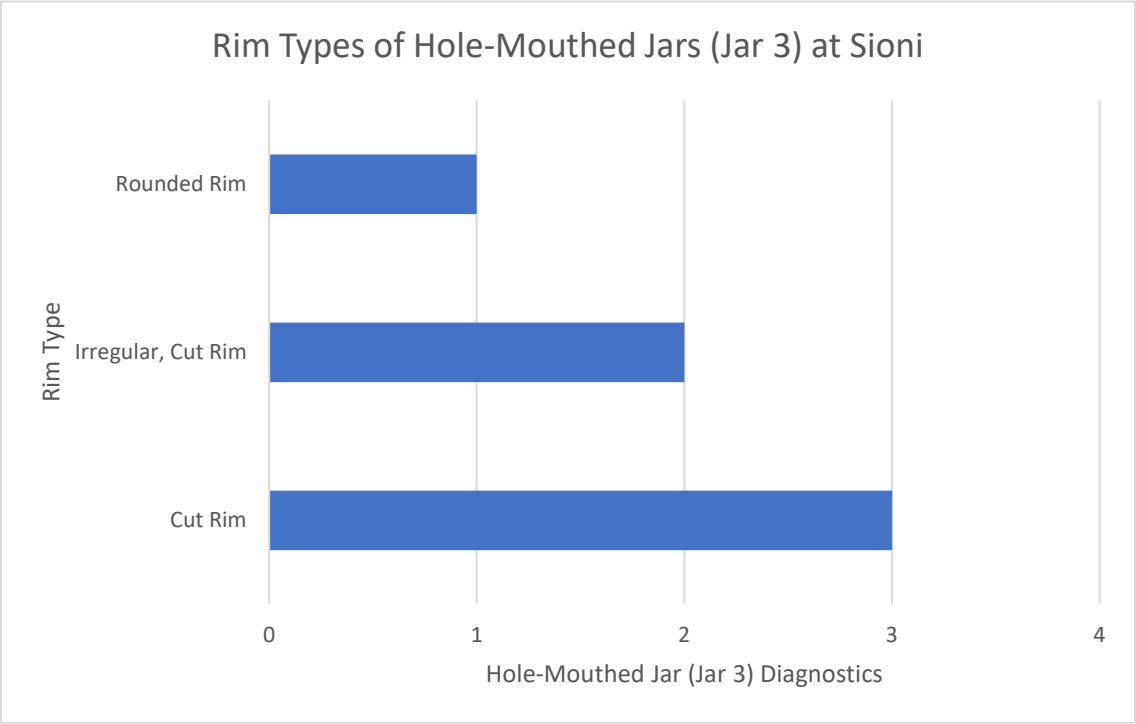


Table 58: Rim types identified among hole-mouthed jar (Jar 3) diagnostics at Sioni.

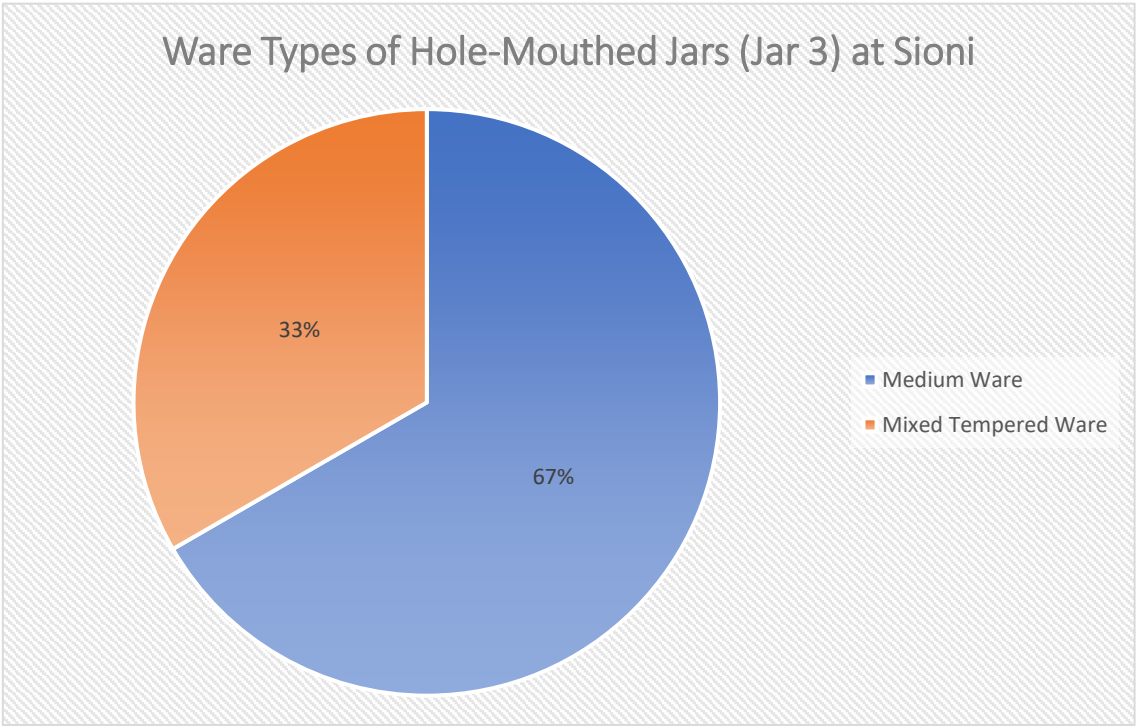


Table 59: Ware types identified among the hole-mouthed jar (jar 3) diagnostics at Sioni.

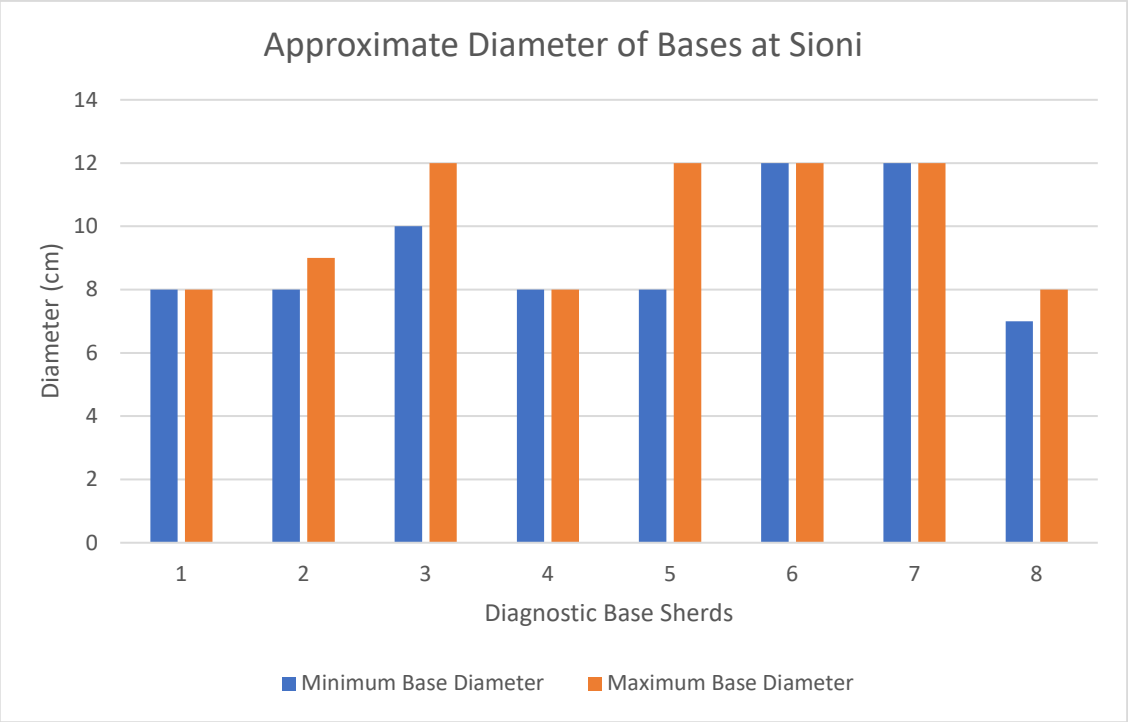


Table 60: Diameter of base fragments at Sioni.

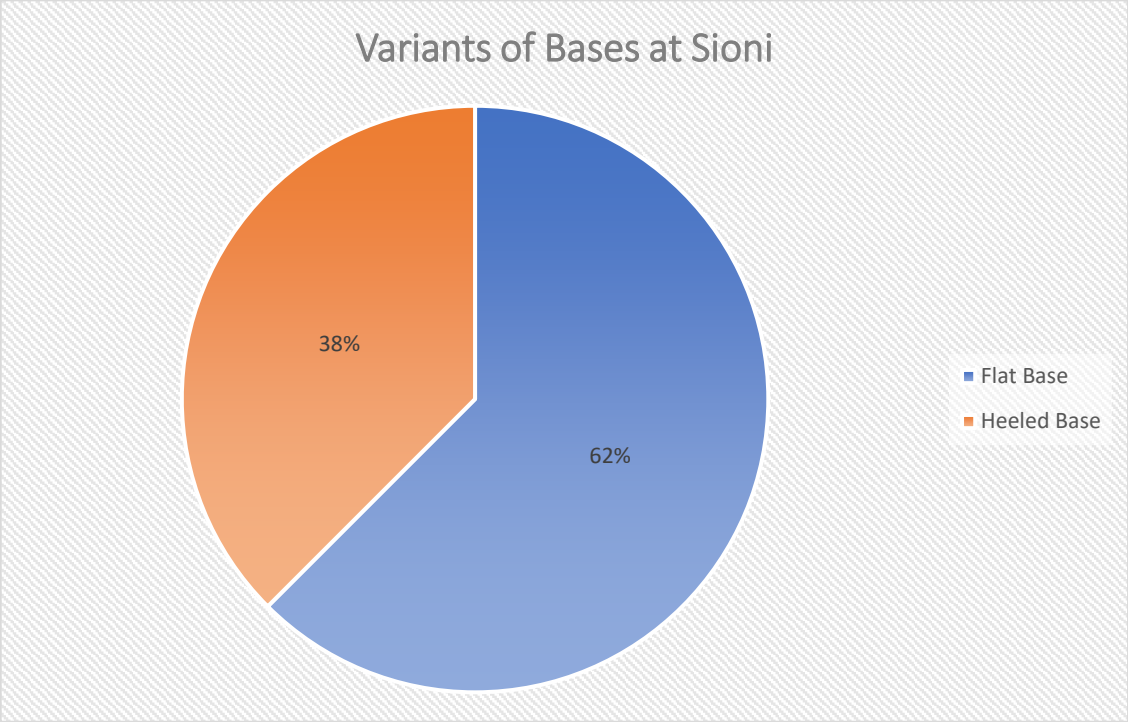


Table 61: Variants of base sherds at Sioni.

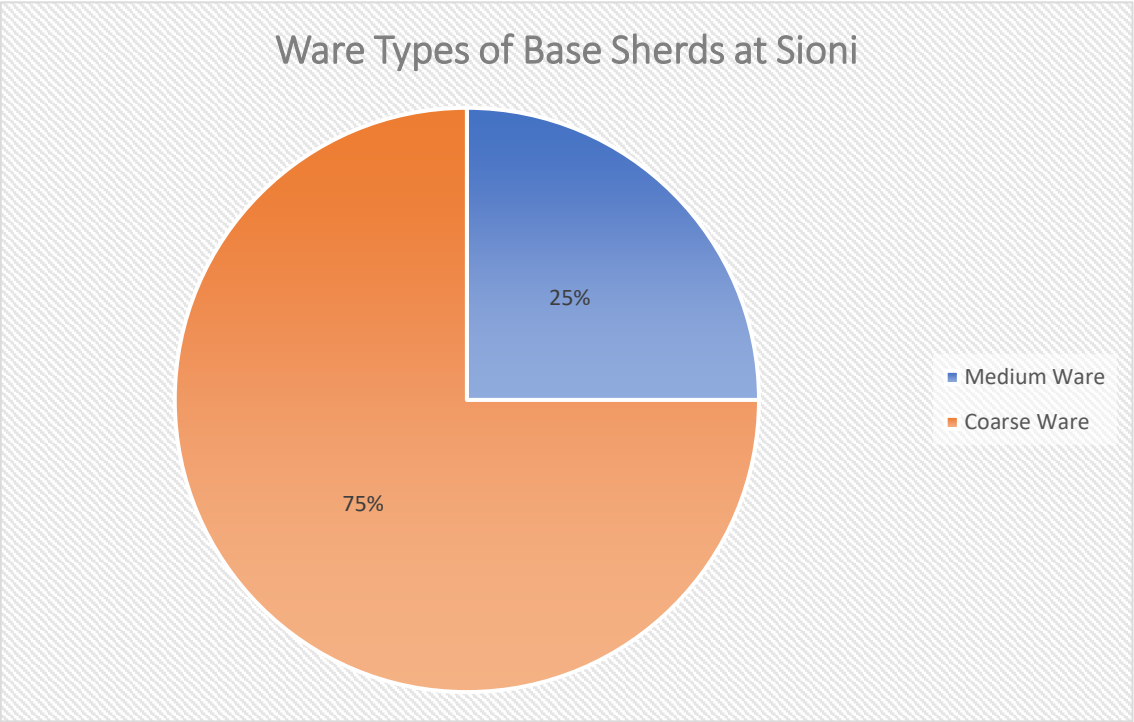


Table 62: Ware types identified among the base fragments at Sioni.

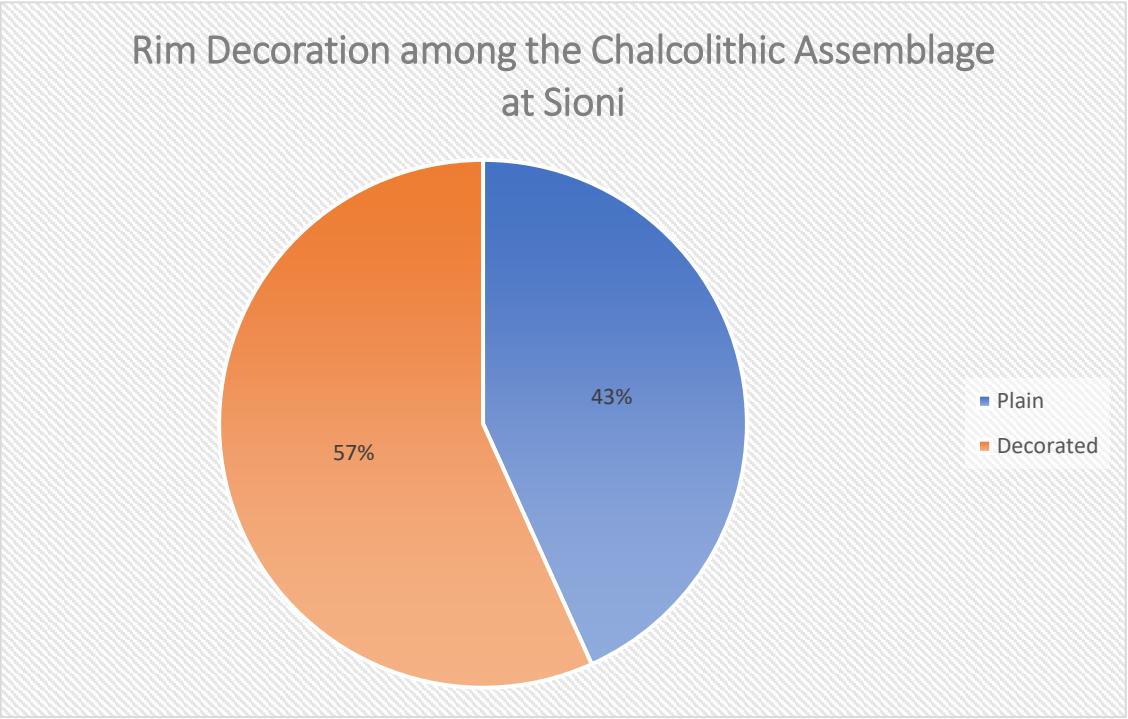


Table 63: The ratio of decorated and plain rims among the Chalcolithic assemblage at Sioni.

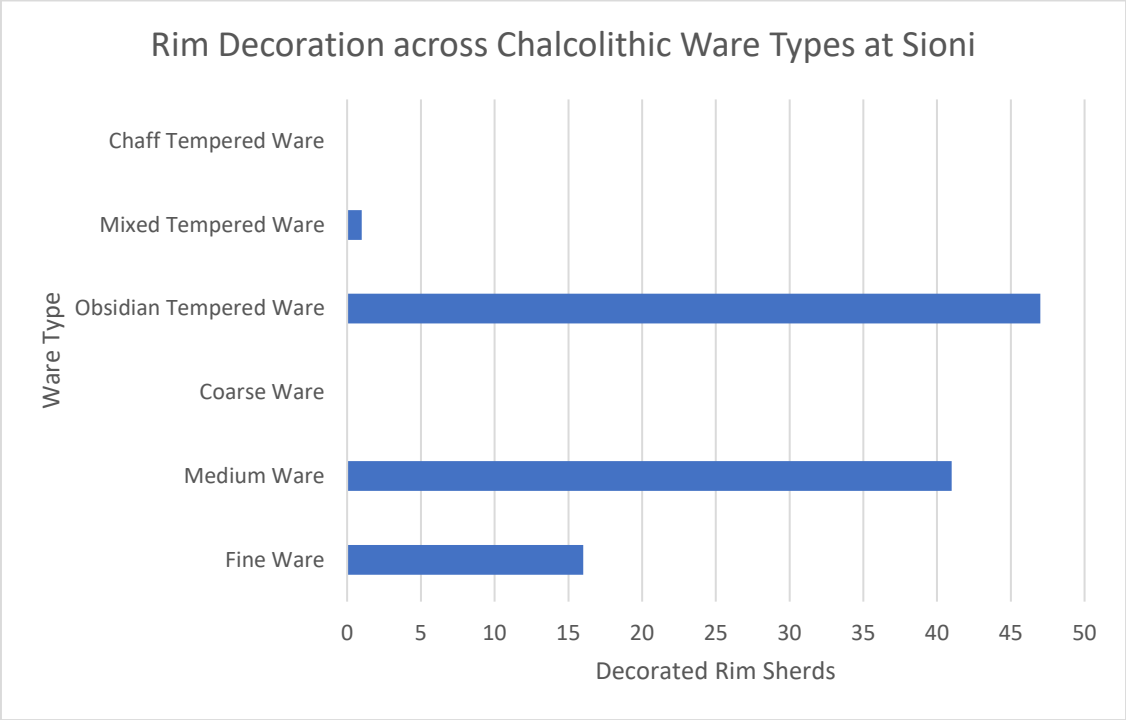


Table 64: The frequency of decorated rims as they occur across Chalcolithic ware types at Sioni.

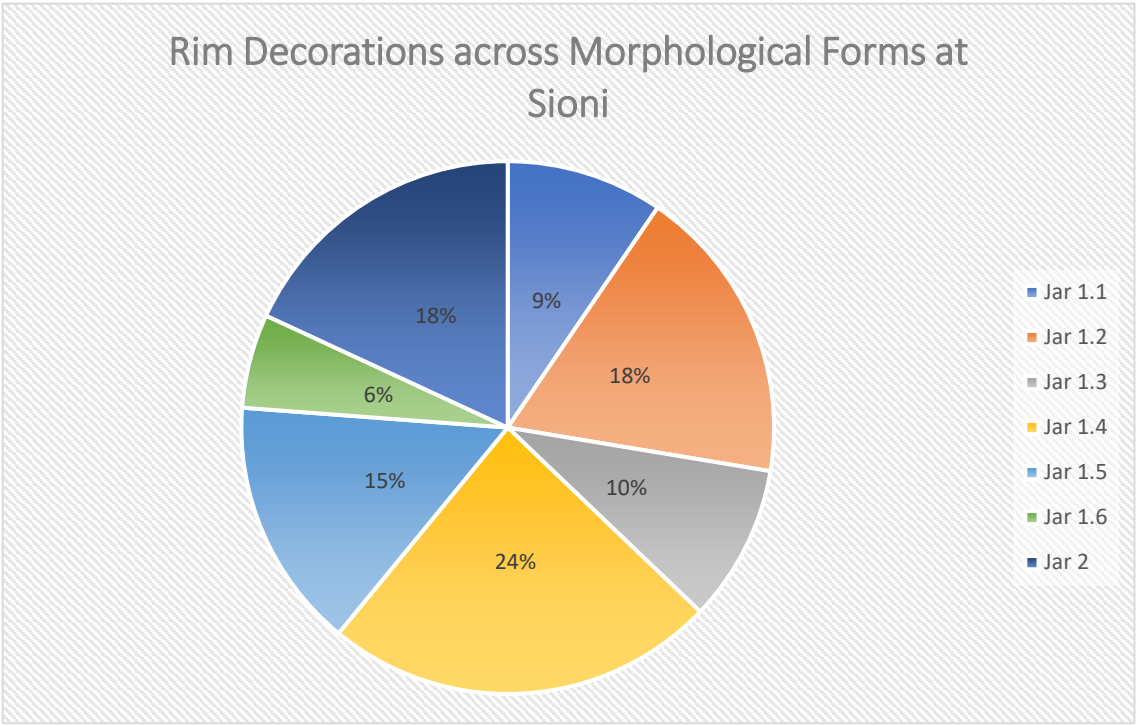


Table 65: Forms with decorative rim treatment at Sioni.

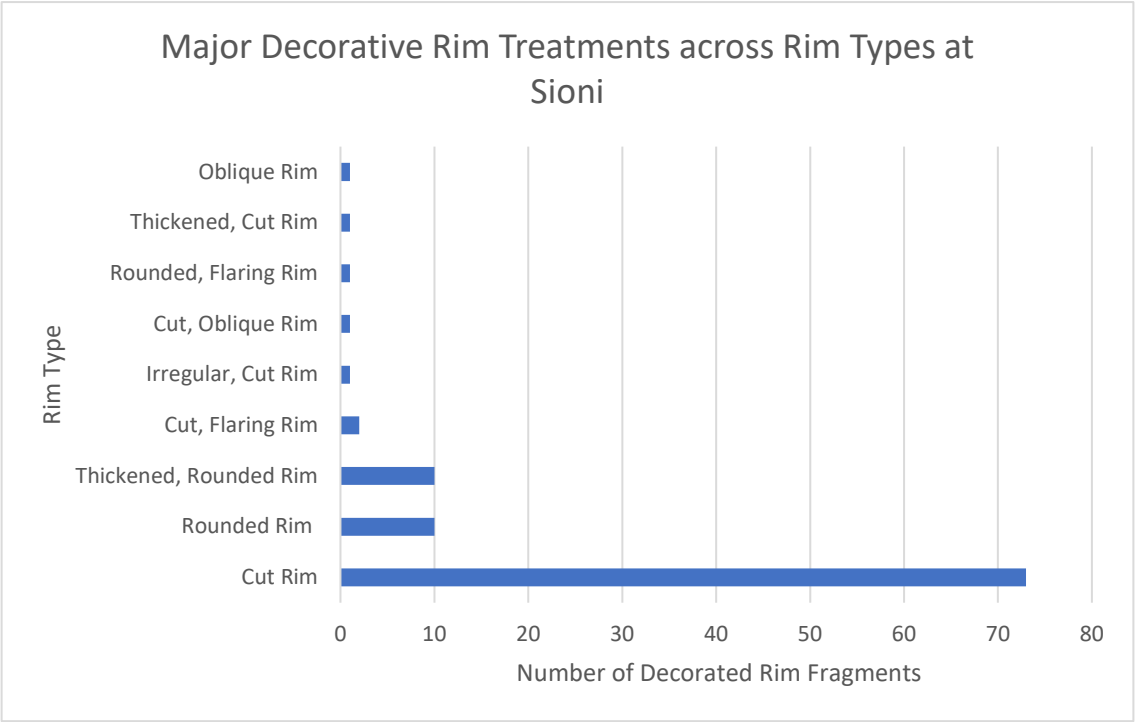


Table 66: Bar graph showing the frequency of decorative treatments across different rim types.

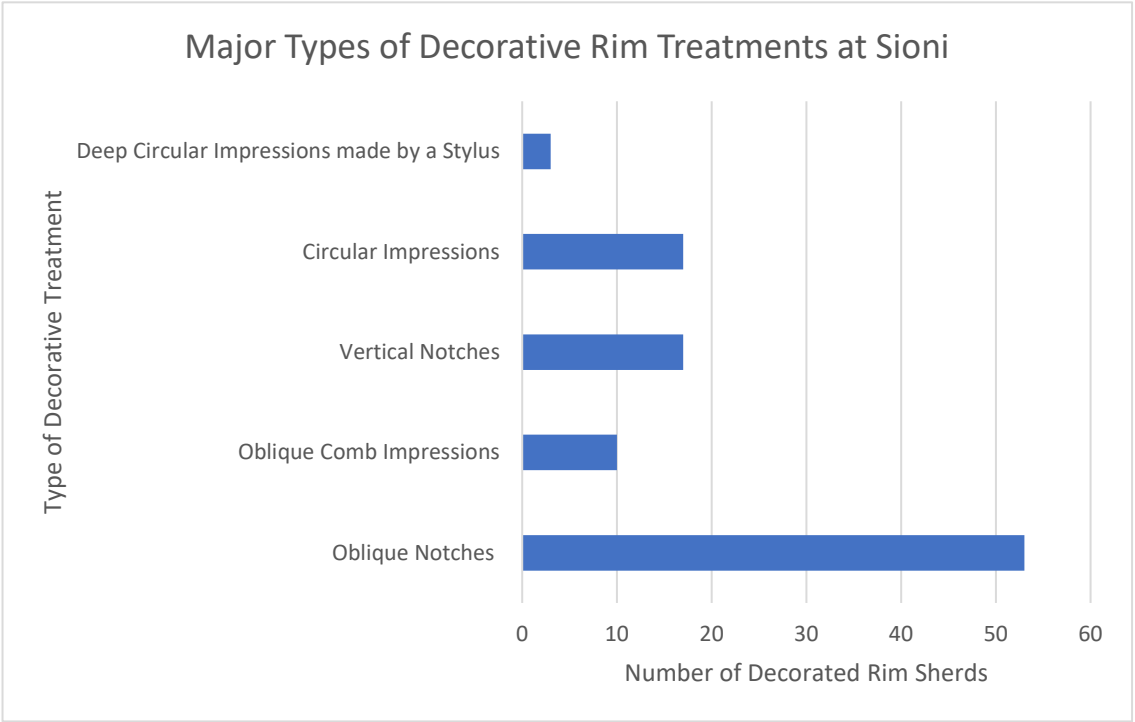


Table 67: Bar graph showing the most common forms of decorative treatment across the Chalcolithic assemblage at Sioni.

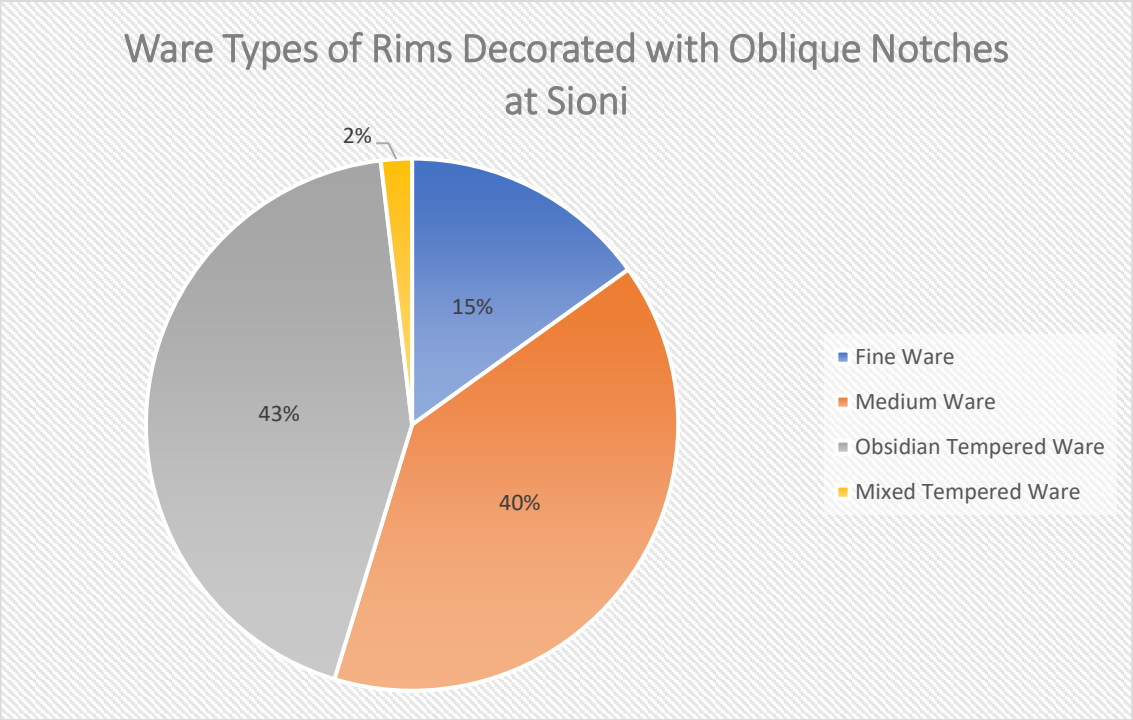


Table 68: Pie chart showing the frequency of decorative oblique notches along rims from different ware types at Sioni.

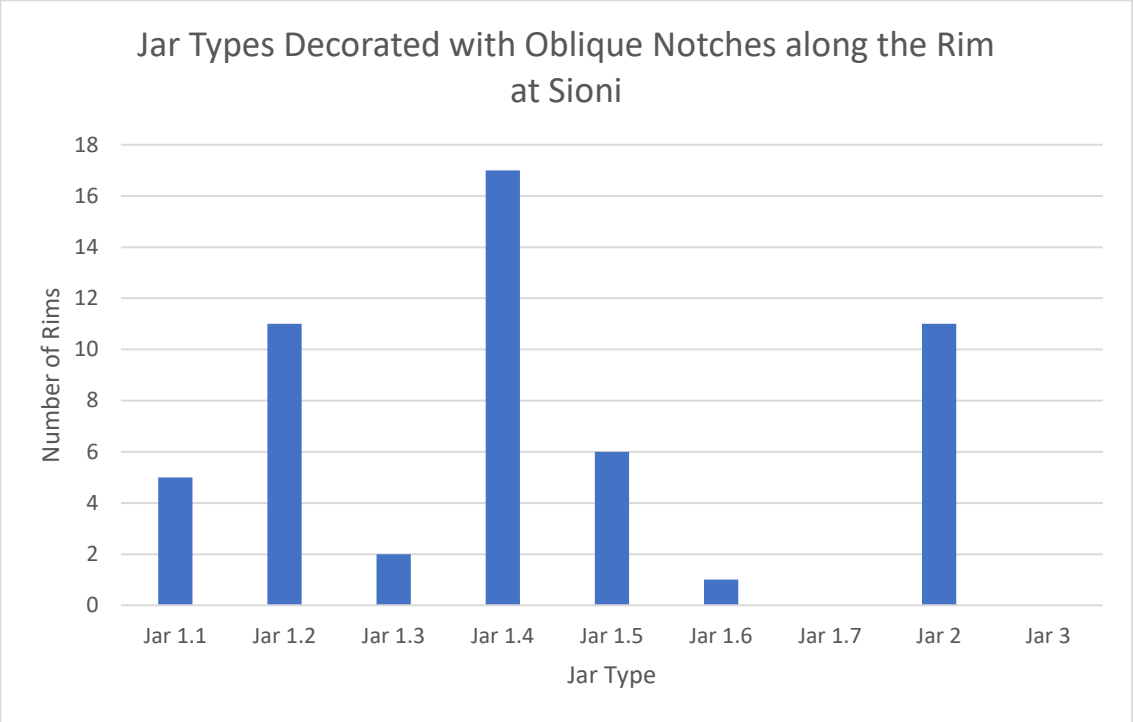


Table 69: Column graph showing the frequency of rims decorated with oblique notches across each jar type at Sioni.

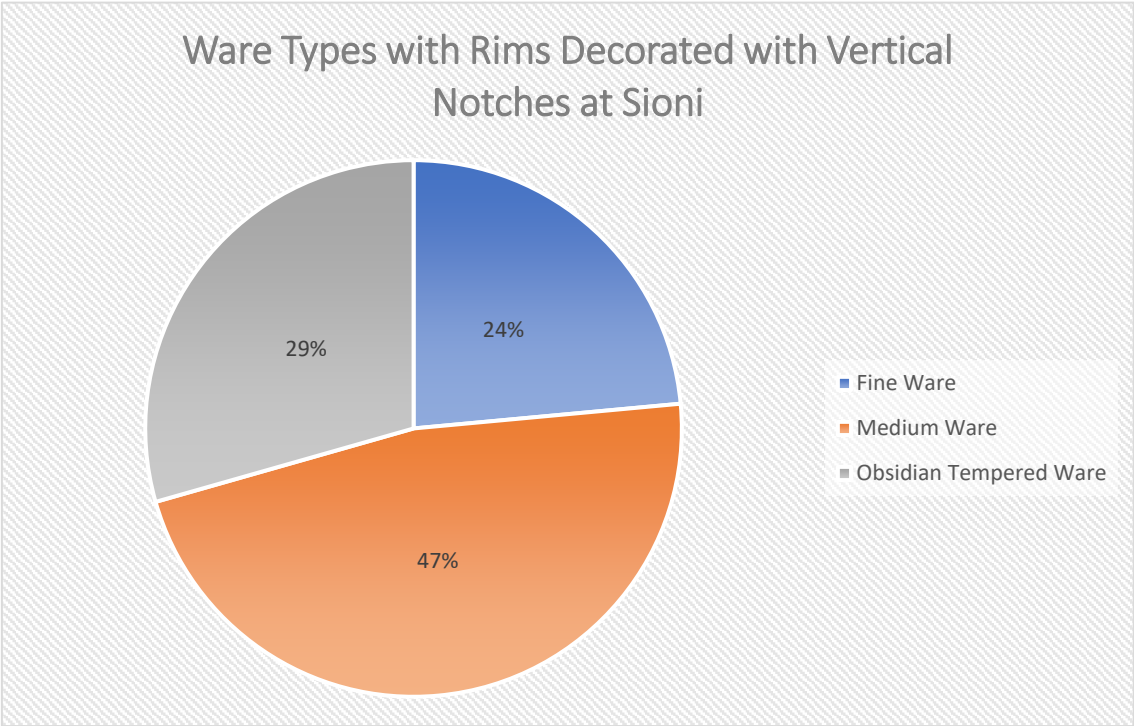


Table 70: Pie chart showing the frequency of decorative vertical notches along rims from different ware types at Sioni.

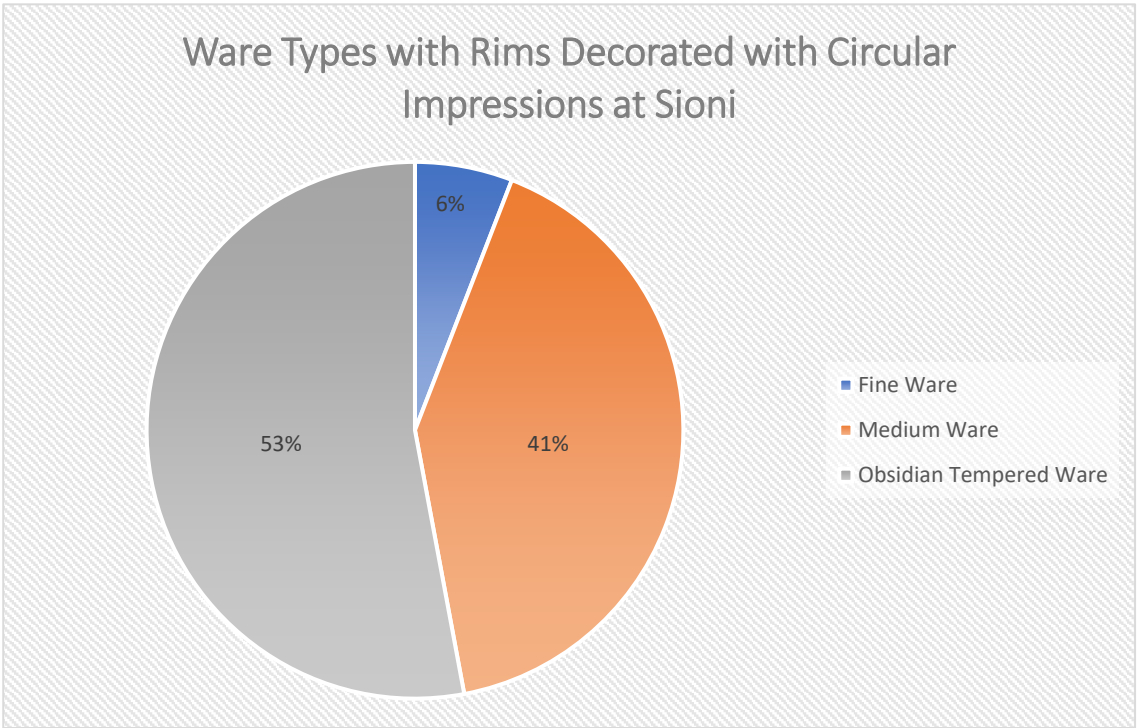


Table 71: Pie chart showing the frequency of decorative circular impressions along rims from different ware types at Sioni.

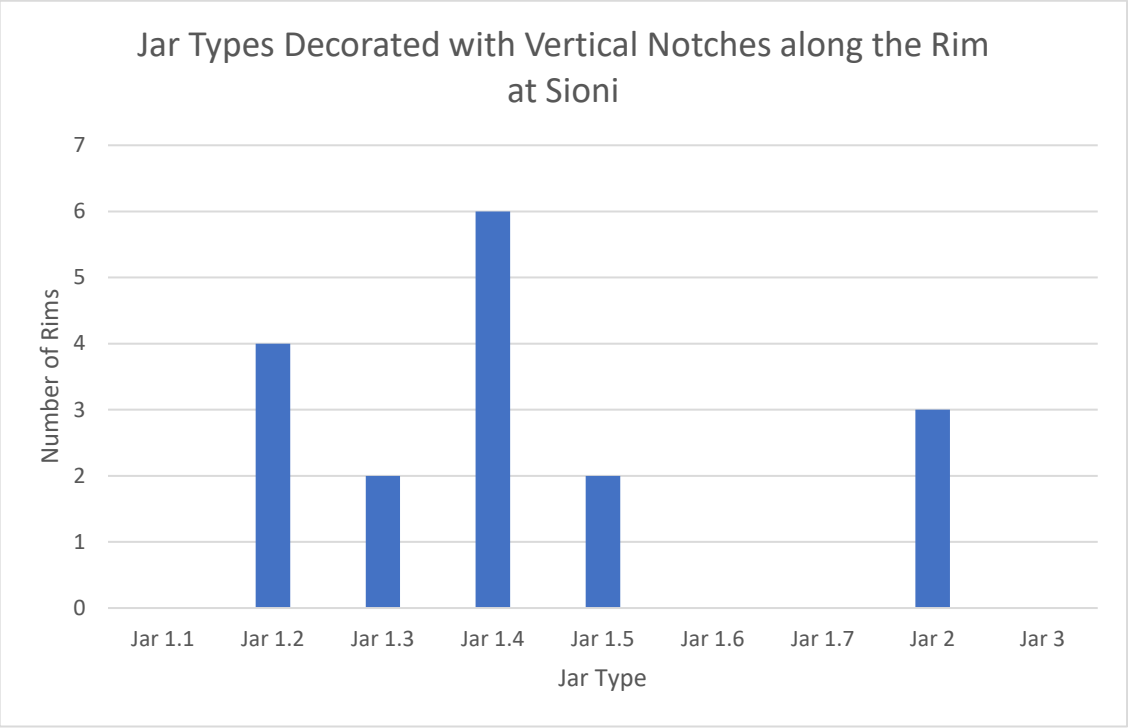


Table 72: Column graph showing the frequency of rims decorated with vertical notches across each jar type at Sioni.

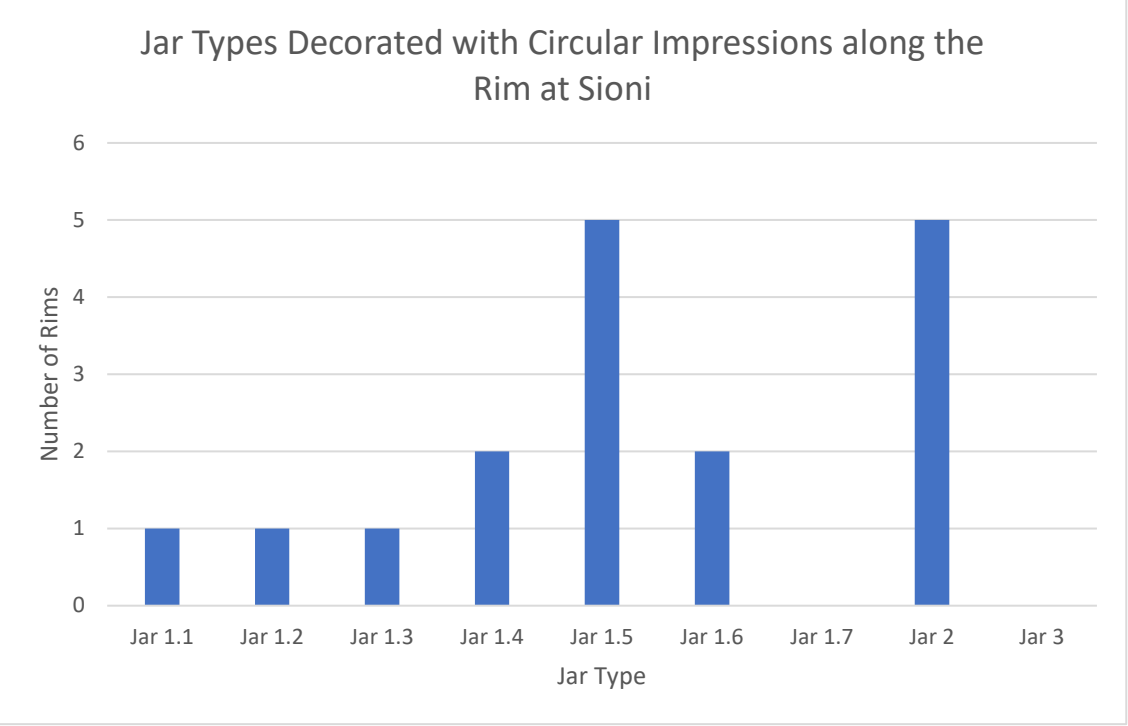


Table 73: Column graph showing the frequency of rims decorated with circular impressions across each jar type at Sioni.

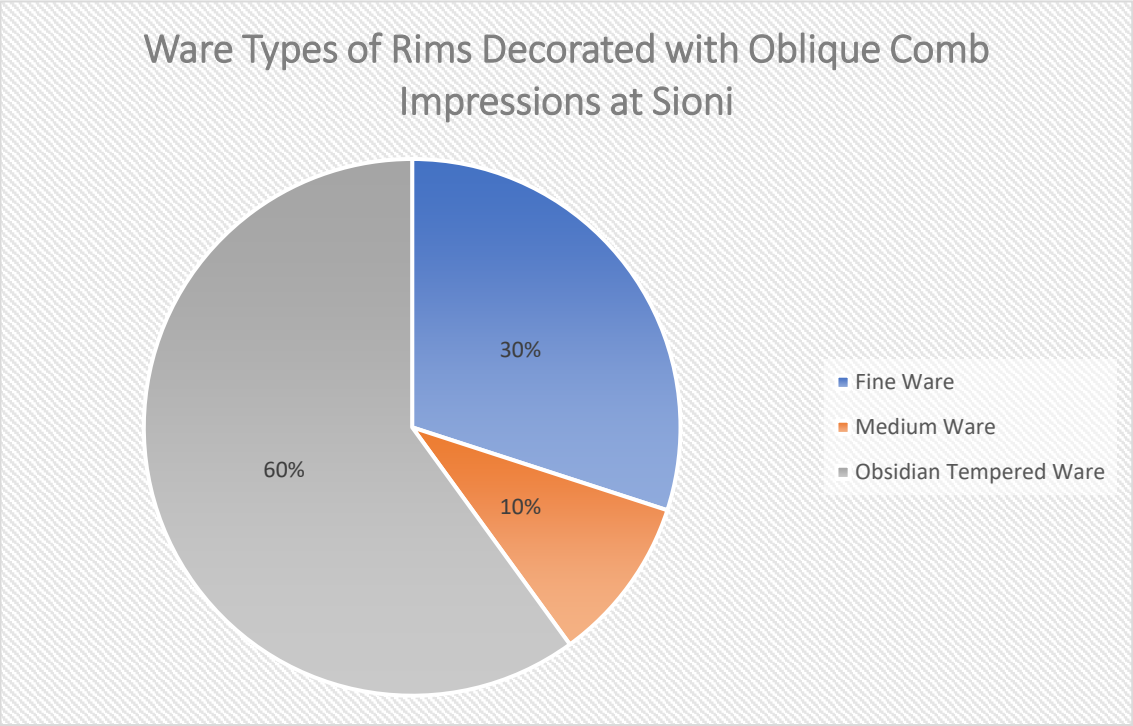


Table 74: Pie chart showing the frequency of decorative oblique comb impressions along rims from different ware types at Sioni.

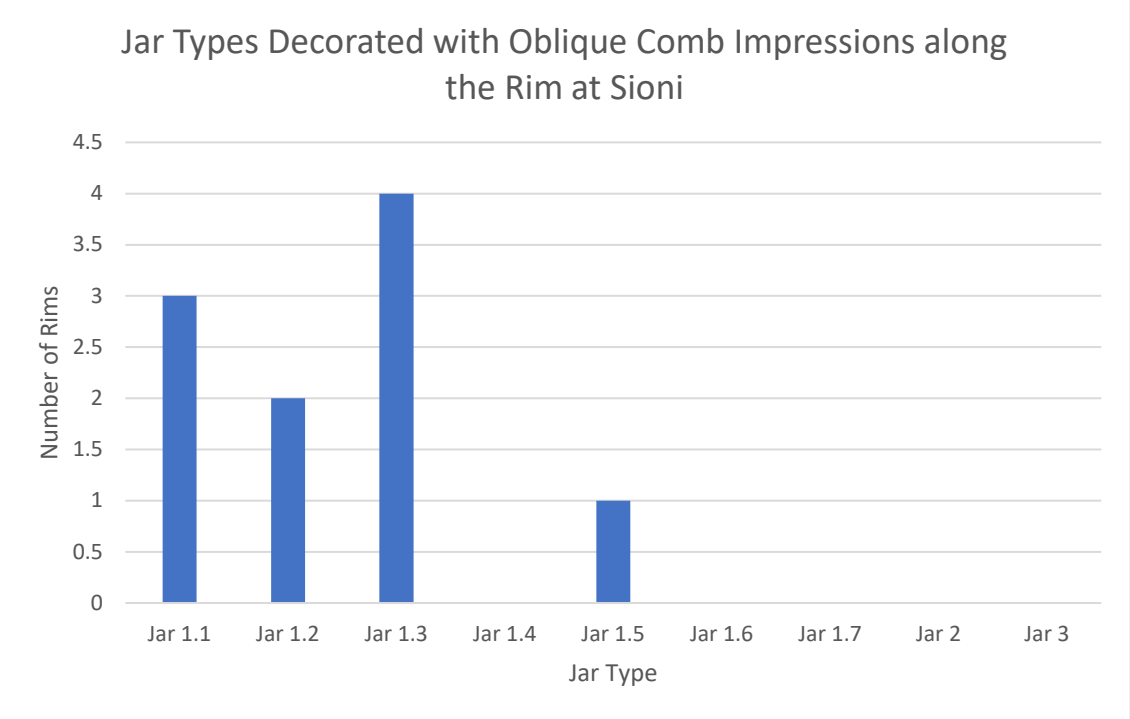


Table 75: Column graph showing the frequency of rims decorated with oblique comb impressions across each jar type at Sioni.