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Collaborative Research on the Doghlauri Cemetery, Georgia

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Abstract

The paper presents the results of recent archaeological, anthropological and palynological research carried out on the Late Bronze and Iron Age graves of the cemetery of Doghlauri, in the Shida Kartli region of Georgia, and a synthesis of the still in progress study of the pottery sequence of the settlement of Dedoplis Gora, directly connected to the cemetery.

Introduction

In the Late Bronze/Early Iron Age (LB/EIA, second half of the 2nd, first quarter of the 1st millennia BCE) the Caucasus and adjoining territories are characterised by the diversity of archaeological cultures which is reflected in archaeological artifacts, burial constructions and burial rites. Doghlauri Cemetery, located in Kareli Municipality (Fig. 1) in the central part of Georgia, is generally regarded as one of the major funerary sites of that period not only in terms of the sheer quantity of excavated burials, but also in size.

Information about the Doghlauri burial ground appeared in the scientific literature in the 1970s (Ghambashidze 1974: 150-168). In 1979-1982, the archaeological expedition (led by Iulon Gagoshidze) of the S. Janashia State Museum of Georgia excavated a kurgan and 56 burials (Gagoshidze *et al.* 1986: 56). Subsequently the cemetery was significantly damaged as a result of construction of the highway. Salvage excavations in 2012, 2013, and 2015 revealed 443 tombs (Fig. 2).

In 2013-2015, the Georgian-Italian archaeological expedition (directed by I. Gagoshidze and E. Rova) excavated stratigraphic trenches on the eastern and western slopes of Dedoplis Gora (= Aradetis Orgora Main Mound) (Fig. 3) few hundred metres south of Doghlauri cemetery. Excavations revealed that the construction of large terracing walls on the hill began in the LBA (Gagoshidze 2018: 534). Based on its proximity to the site and on the burial inventory, mainly pottery, it can be inferred that Doghlauri burial ground is directly connected to Dedoplis Gora, as well as to some other minor settlement hills belonging to the Aradetis

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Orgora complex. Indeed, archaeological surveys carried out on these smaller mounds in the 1970s and 80s revealed dense occupation in the LB/EIA.

Materials from the LB/EIA graves have been recently published by the Georgian team (Gagoshidze *et al.* 2023) while the Italian component of the expedition is presently working on the publication of the EBA graves and of the settlement excavations. Palynological analyses, as well as the anthropological and palaeopathological analysis of human osteological materials, has been carried out by the same experts (E. Kvavavdze and resp. F. Bertoldi, L. Bitadze and P.A. Rasia) for both data sets, in order to guarantee maximal comparability of the results. This paper presents a summary of the results of the work carried out until now⁹, thereby highlighting the rare opportunity offered by the Aradeti Orgora complex for a more systematic comparison between settlement and cemetery contexts, to be carried out in the future.

Doghlauri Cemetery: Absolute Chronology of the LBA/EIA Graves

Human bone samples from the burials were selected for radiocarbon dating. A very limited number of bones preserved in the Georgian National Museum and in the History and Ethnology Institute of Ivane Javakhishvili Tbilisi State University allowed us to reach important conclusions in the process of developing an accurate segmented chronology of the burial ground. Nine samples from different burials of the LB/EIA were selected for ¹⁴C analysis. Radiocarbon dates were obtained from different institutes: the Poznan Radiocarbon Laboratory (Poland) in the framework of the project financed by Shota Rustaveli National Science Foundation of Georgia (Fig. 4a) and the Curt-Engelhorn-Centre of Archaeometry (Germany) in the framework of the Kur(a)gan project of the German Institute of Archaeology (project PIs: S. Hansen, G. Palumbi) (Fig. 4b).

Based on radiocarbon dating and comparative-chronological methods, only kurgan N1 and two burials from Doghlauri can be attributed to the transitional stage from the Middle to the Late Bronze Age. The most numerous group, with more than three hundred complexes, can be dated to the early phase of the LBA (Late Bronze Age I, turn of 15-14th – mid 13th cal BCE). Fourteen burials are attributed to the II phase (Late Bronze Age II, second half of 13th – I half of 12th cal BCE). The next stage, with 15 complexes, falls between the turn of 12th – 11th – 10th cal BCE (Early Iron Age I), while the second phase of the EIA (Early Iron Age II) between the 9-8th cal BCE (six burials). Confronting the results from Doghlauri with the picture that emerges from Dedoplist Gora, it is possible to see a coherent pattern with the distinction of three phases for the LBA, preceded and followed by transitional phases with the Middle Bronze and the Iron Age. The main differences, both chronological and typological, are probably the results of the different contexts from which the studied materials came from.

9 The paragraphs concerning the LB/EIA cemetery were redacted by members of the Georgian team, the paragraph about the settlement periodisation by F. Bianchi from the Italian team, the remaining paragraphs by experts of the different disciplines, under the general supervision of I. Gagoshidze and, respectively, of E. Rova.

Doghlauri Cemetery: Periodisation of the LBA/IA Graves

Transitional stage from the Middle to the Late Bronze Age

In 1979-81 a kurgan (I) and two pit-graves of the transitional period from the Middle to the LBA were excavated. The burial inventory of two pit-graves (3-1979 and 42-1980) contained only ceramic vessels, mainly medium-sized pots. Unlike in the previous eras, the potter's wheel was used to produce these vessels.

The kurgan had a low oval barrow oriented from east to west (length - 12m, width - 10m, height - 0.5m). The burial chamber was supposedly covered with a wooden roof and had an elongated shape, narrowing at the western part and thus reminding one the shape of a handcart. The burial inventory was represented by 8 black-burnished pottery vessels, two bronze wheel-shaped bits, five bronze items intended for harnessing a horse and a bronze barrel-shaped bead (Gagoshidze *et al.* 1986: 65) (Fig. 5). Similar horse bits are known from the other sites of the Southern Caucasus (Sultanishvili 2008: figs. 3, 8). The archaeological material from kurgan, including pottery, is different from the material of the early stage of the LBA. The bit and other details of the horse harness were not recorded in the numerous LB/EIA tombs of Doghlauri.

Late Bronze Age I

The majority of the LBA burials were severely damaged and robbed. They are mostly rectangular, elongated pits. So-called cenotaphs are characterised by pits of various sizes – rectangular, oval and circular. The remains of stone debris and the cobblestones unearthed above the grave pits or inside the graves suggest the presence of a medium or large stone cover. Burials do not cross each other, except for two cases – the burials of the LBA were damaged by the EIA burials (Fig. 6a).

To judge from the intact tombs, some regularities can be observed in terms of the posture and orientation of the deceased. The dead were placed in a crouched position, males on the right side, and females on the left. The deceased were placed with the head mostly to the north, in some cases with a slight deviation to the east or west. Most of the graves were individual; only five graves with two skeletons inside were recorded.

No traces of mats were observed on the bottom of the graves, suggesting that the deceased were placed directly on the soil. Tomb 18-2015 is an exception: the deceased was buried on the left side, in a crouched position on a threshing-board. The tradition of burying individuals on threshing-boards is quite rare in the Caucasus region of the LBA.

Animal bones were found in 52 burials. In the southern part of grave 101-2012, a whole cattle skeleton was found near the lower limbs of the deceased (Fig. 6b).

Among the graves of the Late Bronze Age I, there are 30 'cenotaphs' – structures in which the bones of the deceased have not been recorded. Such features have been rarely discovered on archaeological sites of the South Caucasus, and Doghlauri cemetery stands out for their abundance. They usually contained only pottery. Cenotaph 46-2012 (Fig. 7a) had a rectangular pit in which 29 vessels of different types were placed. Cenotaph 164-2013 (Fig. 7b), with 30 pottery vessels arranged in rows, is especially interesting.

Pottery is the main archaeological material found in the graves of the LBA I. We have distinguished the main types of vessels - characteristic for the Late Bronze Age I: Pitchers, different sized and shaped Pots, Drinking vessels, Churns, Vessels with Zoomorphic han-

dles, bowls, etc. They are produced on a potter's wheel and have a black or greyish polished surface.

Especially interesting are vessels with two handles arranged parallel to each other. Most of them are adorned with zoomorphic motifs that symbolize animal ears. This element of decoration is characteristic of the pottery of the early stages of the Late Bronze Age (Fig. 8c). This type of pottery finds parallels with the vessels from grave 4 excavated at the Ghrmaghele burial ground in Tbilisi (Koridze 1955: 93), at Natsargora in Tskhinvali district (Gobejishvili 1951), Natakhtari (Sadradze *et al.* 2018: 58) and Plevi (Ramishvili 1999: 56).

Zoomorphic vessels are in fact distinguishable from mass-spread types of ceramic products of the early stages of the LBA pottery at Doghlauri. In our opinion, the earliest examples of this pottery may be attributed to the period between the 14th and the 13th century BCE. One major difference between the cemetery and the settlement is that in the settlement zoomorphic handles appear only towards the end of the LBA and continue well into the IA.

Pottery of the LBA I shows several decorative techniques: chevrons (Fig. 8d), swastikas (Fig. 8b,d) and meanders drawn with dots using a comb-shaped tool; triangles composed with wedge-shaped imprints; one or more rows of horizontal lines in relief. In addition, polished lines are also common, creating a wavy or net-shaped pattern. The tradition of ornamenting the vessels with swastikas can be traced back to the Middle Bronze Age kurgans of Trialeti, mostly on large storage vessels (Gogadze 1972). Parallels of Doghlauri style swastikas from the earliest stages of the LBA are found neither in the studied region, nor in the neighbouring area, although the ornamentation technique and the shapes of the vessels are otherwise quite common.

Jewellery is represented in a rather wide range in burials of the LBA I. It is diverse and includes almost all types attested in this period - diadem, collars, earrings, pendants, bracelets (Fig. 8e), rings (Fig. 8f,g), beads, buttons and pins. Weaponry on other hand is quite rare, but some spearheads with a sharply defined ridge could be found in the burials of the early stage of the LBA (152-2013, 203-2013, 233-2013) (Fig. 8h,i).

Late Bronze Age II

Only 14 burials have been attributed to the LBA II. Most of them are damaged and robbed. Burial rites and the construction of the tombs are the same as in the LBA I. Various archaeological materials - ceramics, weaponry, jewellery and items of social status - are represented (Fig. 8j,k,l).

LBA II pottery shows different manufacturing features from that of the LBA I and is characterised both by rough and fine-grained fabric with a black polished surface. The technique of ornamentation is particularly important, namely, vertically arranged stamped circles, swastikas and rhomboids, as well as conic-shaped ornaments and grooved surface. The Central Southern Caucasus is the main geographical area of distribution of this distinctive decoration. The stamped swastikas on the vessels from tombs 17-2012 (Fig. 8j) and 50-2013 (Fig. 8l) are unknown from other archaeological sites. The origins of the pottery of this group and their cultural attribution are rather difficult to establish.

Early Iron Age I

A small number of the EIA I burials have been identified at Doghlauri. They cover the period from the turn of the 12th - 11th till the 10th c. BCE. Most of the tombs are disturbed as in the previous periods. The burial rite is similar to that of the LBA, but the shapes and ornamentation techniques of pottery, alongside with the features of the metal objects, differ from the preceding archaeological material (Fig. 9).

In contrast to the early stages of the LBA, weaponry is widely represented in burials belonging to male individuals, which indicates radical changes at the beginning of the EIA. These significant differences between the chronological groups may be related to waves of migration, the establishment of new cultural traditions, or to political and economic changes in the region.

Early Iron Age II

Six burials of the EIA II (9th – 8th cal BCE) were excavated at Doghlauri Cemetery. Pottery of the EIA II bears similar features to that of the EIA I. The novelty of this period is iron weaponry - mainly spearheads with open socket. The inventory of burial 57-1981 includes iron daggers and bronze fibulae, defining the upper chronological boundary of the part of Doghlauri Cemetery (Fig. 10).

A Summary of the LBA/IA Pottery Sequence from the Dedoplis Gora Settlement

The 2013-2016 excavations on the Dedoplis Gora mound uncovered a long sequence of occupational layers, spanning from the EBA to the IA (Gagoshidze *et al.* 2015, 2016). Thanks to 14C analysis carried out at the Weizmann Institute of Rehovot, Israel, it was possible to date the LBA/IA levels between the 15th and the beginning of the 8th century BCE. The settlement ceramic periodisation is still a work in progress; in spite of its general comparability with the sequence developed for the cemetery material, it highlights some specificities and problematic issues, which deserve being addressed in future research. Figure 11 offers a synthesis of the ceramic elements which we consider typical of the different stages of the period.

The LBA I, dated between the second half of the 15th century and the 14th century BCE, is characterised by the presence, in terms of both shapes and decorations, of the typical LBA pottery that is widespread throughout the region. Some pottery types, as well as some of the decorative motives, are derived from the late MBA or the MBA/LBA transitional phase, but the most significant element that divides the pottery of the LBA I from that of the previous phases is the fact that the former is made with a fast wheel, while the latter was made with a slow wheel¹⁰.

The LBA II, dated to the 13th century BCE, is dominated by the characteristic dark grey burnished pottery with impressed and incised geometric decorations, as well as by geometric burnished decorations that can be found throughout the region. The LBA III, dated to the 12th century BCE, witnesses the emergence of new shapes and types of decorations in the pottery assemblages: the so-called Meli Ghele vessels, open carinated shapes and

10 A similar observation concerning the transition between the MBA and the LBA was made by A. Ramishvili in his study of the Tsagvli cemetery (Ramishvili 2004), as well as by M. Kibaroglu, M. Satir and G. Kastl in their study of the pottery from Udabno and Didi Gora in Kakheti (Kibaroglu *et al.* 2009: 2465). K. Pitshelauri (Pitshelauri 1997: 9) also noted that LBA I pottery was made with a fast wheel.

zoomorphic handles. Meli Ghele vessels seem to be characteristic of this phase only, while carinated open shapes and zoomorphic handles are also found in the following levels, which belong to the transition between the LBA and the Iron Age, and to the early stages of the IA.

The transitional phase between the LBA and the IA I at Dedoplist Gora can be dated in the 11th century BCE, while the IA I and II phases, in the 10th and respectively the 9th – 8th centuries BCE. They are characterised by a pottery assemblage in which those shapes and decorations that started to appear at the end of the LBA III, such as shallow carinated bowls with wavy impressed lines between the rim and the carination and zoomorphic handles increase in number, in accordance to what can be seen at the site of Khovle, which dates from the 10th century onwards (Muskhelishvili 1978; Heinsch *et al.* 2014), that displays an assemblage similar to the one found in the contemporary levels of Dedoplist Gora¹¹.

The picture that emerges from the settlement is thus slightly different, both in terms of absolute chronology and relative periodisation, from the one described for the cemetery, in spite of the overall similarity between the two ceramic repertoires.

Palynological Analysis

Palynological data presented here provides interesting results for the research of natural landscapes and climate of the LB/EIA Doghlauri and possibly of the whole Shida Kartli region (Fig. 12).

Walnuts and hazelnuts collected in the forest were found in the pots from graves 14-2013 and 7-2013. Numerous forest elements are found in the palynological spectra of these two vessels. These are alder, hornbeam, oak, elm, beech. In the spectrum are also pollen grains of those weeds that grow in wheat fields, in the yards of human dwellings, and on the sides of paths and roads. After being placed in the tomb, the pots may have been covered with canvas, because the spectrum contains a large amount of flax and cotton fabric fibres.

According to the palynological study, wheat flour was placed in a wide-mouthed vessel from burial 50-2013. This is indicated by the large amount of wheat starch and the pollen of weeds which grow in wheat fields. The remains of insects, which appear in the flour, have been traced in abundance in the spectrum of this vessel. The mug found in the same tomb was used to collect flour and water. The freshwater algae found in its contents probably indicate that drinking water was poured into the cup during burial.

The palynological spectrum of the contents of the small pot with lid from burial 146-2012 is also distinctive and unusual. In its contents there are a lot of decomposed flax stalks and epidermis. It is also rich in starch and phytoliths. There is no dyed flax fibre to indicate linen fabric. All fibres are colourless and almost all of them are decomposed. The flax stalk had to be under the press, or it would be sawed off. Such flax fibre is characteristic of linseed oil because the seeds are followed by the remains of microscopic flax stalks and leaves (Chichinadze and Kvavadze 2013).

As it seems, forests where beech, oak, hornbeam, brushwood, elm, lime, walnut, hazel, alder and other trees grew were well developed around the burial ground. On the high ridges, pine trees were spread, with a mixture of fir-tree and spruce.

Climatic conditions were warmer and more humid than today. Similar data were obtained during the palynological research of the cultural layers of Dedoplist Gora mound

11 Another site displaying a similar assemblage to the one observed at the IA levels of Dedoplist Gora is Udbano, in the Kakheti region of Georgia (Brodbeck-Jucker 2019).

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(Kvavadze *et al.* 2019). But if we compare the palaeoecological conditions of the LB/EIA of the Shida Kartli region with those of the EBA, considering Doghlauri tombs and the occupational layers of Dedoplis Gora, it becomes clear that the climate of the LB/EIA was not as warm as during the EBA. Heat-loving taxa, such as chestnut, phloem and zelkova, which are well represented in the material of the EBA settlements in the Shida Kartli region, are almost absent in the examined material of LB/EIA age vessels (Kvavadze *et al.* 2020). The results of palynological analysis suggest that farming and cattle breeding were dominant among the economic activities of that society.

Anthropological Analysis

We present here a table summarizing sex and age of the individuals buried in the LBA/EIA tombs excavated in 2012 and 2015¹². For a more complete study regarding the change in burial customs from the EBA to the LBA, that is the shift from collective graves to single, in very few cases double inhumations, as for the demographic profiles in the two periods, we refer to Rasia *et al.* 2021 (Fig. 13).

Conclusions

Archaeological materials from the transitional period from the Middle to the Late Bronze and the LB/EIA of Doghlauri cemetery reflect extensive cultural and economic contacts across the Caucasus region. The mound of Dedoplis Gora and its cemetery – Doghlauri – represent one of the most important centres of the Southern Caucasus in the Late Bronze and Early Iron Ages. Due to the strategic location, this archaeological complex played an important role in the political and cultural life of the Southern Caucasus in different historical periods.

Pottery of the Late Bronze-Early Iron Age from Doghlauri cemetery is directly related to the samples found in Dedoplis Gora, which indicates the practical purpose of these vessels and their use in everyday life. The results of palynological research on the contents of pottery vessels revealed that the local population of the LB/EIA was engaged in agro-pastoral activities, especially cattle breeding and farming.

Along with pottery, weaponry and various types of jewellery find parallels mostly in the central part of the Southern Caucasus. However, several artifacts indicate contacts between the inhabitants of Dedoplis Gora and the tribes belonging to the Colchian culture of the western Southern Caucasus and to the Koban culture of the North Caucasus.

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- 12 Sex was determined through the observation of the morphological features of the skull and the pelvis (Acsádi and Nemeskéri 1970; Ferembach *et al.* 1979), metrical assessments were also employed for highly fragmented remains (Bass 1995). Age at death for adults was estimated observing mainly dental wear (Molnar 1971; Brothwell 1989), and maturation of the pubic symphysis on the *os coxae* (Todd, 1920; Brooks and Suchey 1990), evaluating the cranial sutures synostosis as a complementary data (Meindl and Lovejoy 1985). For juveniles, skeletal development (Stloukal and Hanáková 1978; Ubelaker 1987; Scheuer and Black 2000) and dental formation and eruption (AlQahtani *et al.* 2008) have been considered.

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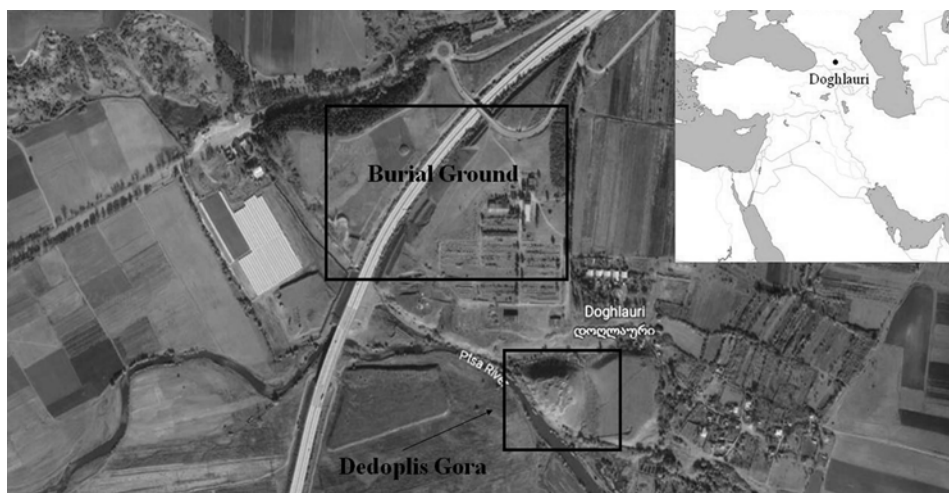


Figure 1. Satellite map of the Doghlauri cemetery and of the mound of Dedoplis Gora.



Figure 2. Map of the Doghlauri Cemetery.

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Figure 3. Top view of the mound of Dedoplis Gora from the south-west.

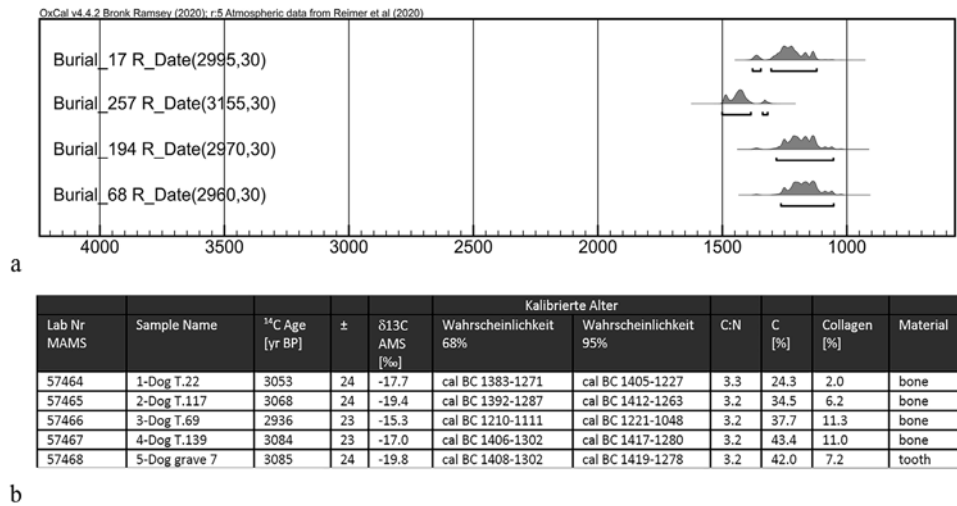


Figure 4. ^{14}C dates from the cemetery of Doghlauri.

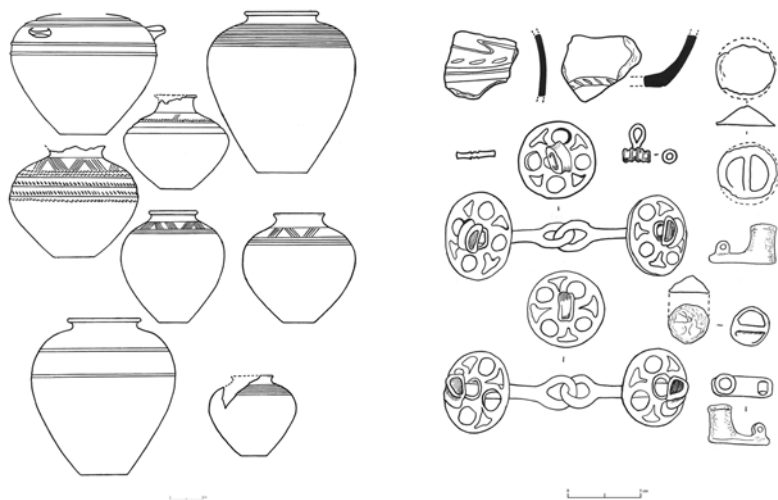


Figure 5. Inventory of Kurgan 1.

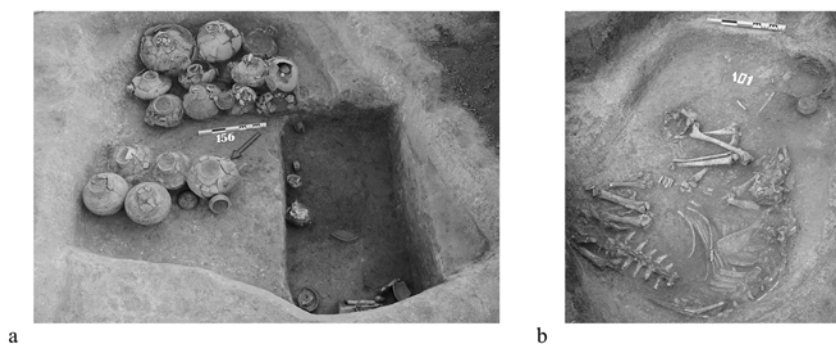


Figure 6. (a) Photo of 156-2013 and 177-2013; (b) Photo of grave 101-2012.

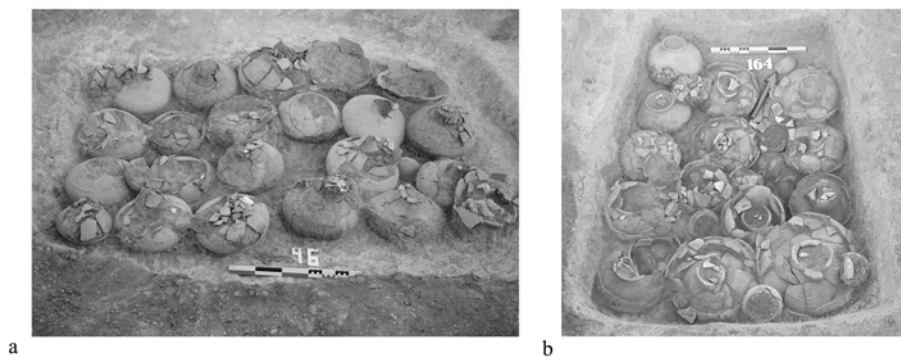


Figure 7. (a) Photo of grave 46-2012; (b) Photo of grave 164-2013.

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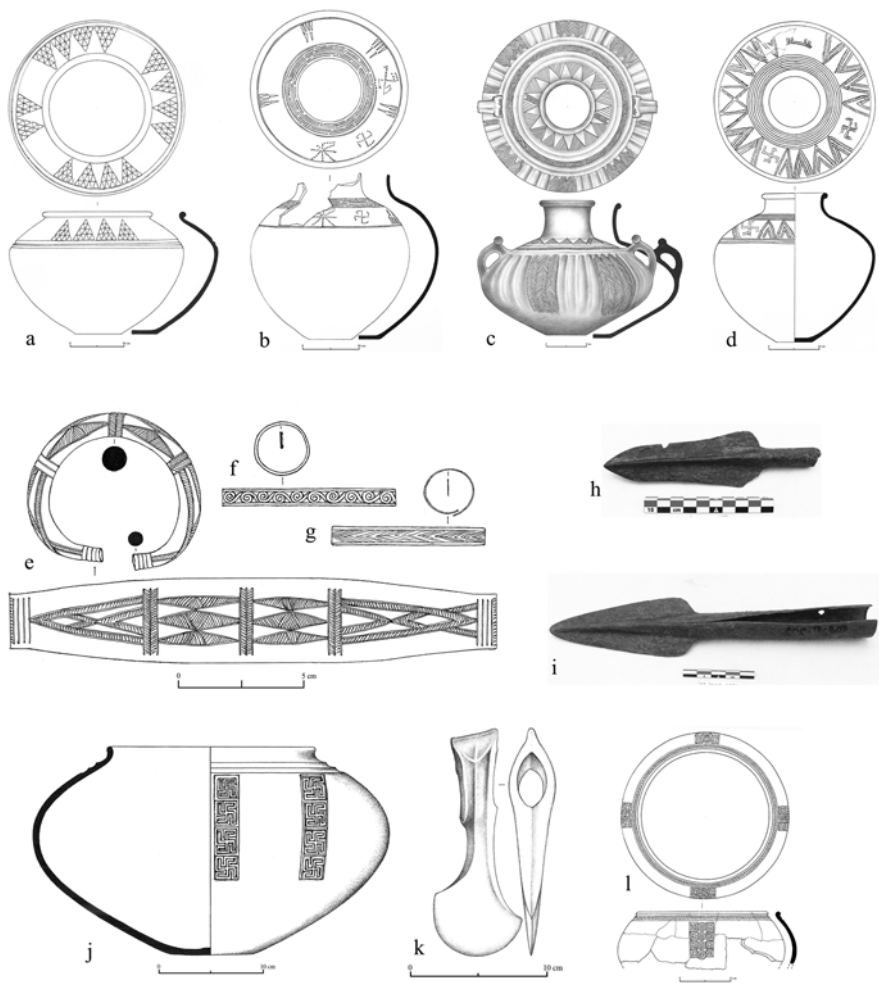


Figure 8. Materials from Doghlauri cemetery.



Figure 9. Inventory of grave 59-2012.

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Figure 10. Inventory of grave 57-1981.



Figure 11. Pottery from the settlement of Dedoplist Gora: (a) LBA I, (b) LBA II, (c) LBA III, (d) Transitional and IA.

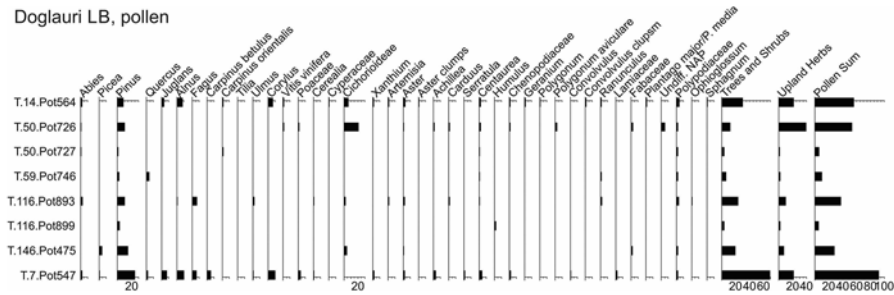
DOI: 10.13173/9783447123761.099

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Doglauri LB, pollen



Doglauri LB, NPP

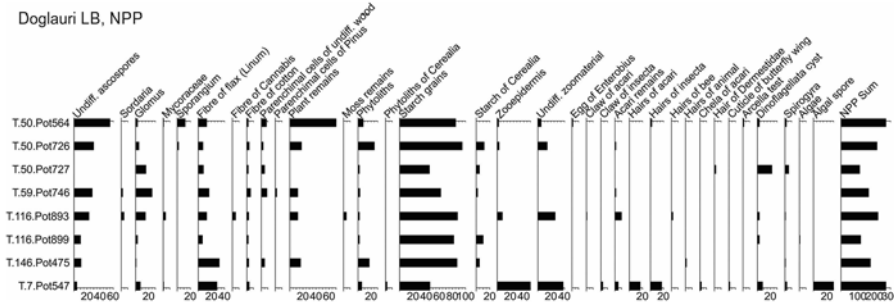


Figure 12. Palynological and non-palynological diagram of the content of vessels from Doghlauri cemetery.

Year 2012

Burial N	SEX	AGE
3	juvenis	8-10
5	F	20-25
6	juvenis	15-20
9	M	35-45
11	undet	adult
14	juvenis	4-6
16	(F)	adult
17	M	20-25
22	undet	adult
31	undet	adult
32	juvenis	15-19
33	undet	45+
34	(M)	adult
35	undet	adult
38	undet	45+
40	M	35-45
43	A undet	adult
47	B juvenis	10-17 undet
47	undet	adult
49	A (F)	25-35
	B (F)	20-25
60	(F)	35-45
61	undet	adult
62	undet	adult
67	undet	adult
68	juvenis	10-15 undet
69	juvenis	10-20 undet
72	juvenis	undet
74	juvenis	15-20
76	A undet	adult
	B undet	adult
78	A juvenis	12-15

Burial N	SEX	AGE
	B	undet
83		(F)
85		undet
86		juvenis
87		M
93	A	F
	B	juvenis
100		(F)
101		F
103		juvenis
106		juvenis
115		F
116		(F)
123		F
125		undet
126		undet
127		M
139		undet
150		undet
152		undet

Year 2015		
Burial N	SEX	AGE
7	F	35-45
10	M	adult
12	M	25-30
13	(F)	45+
15	juvenis (F)	15-16
17	M	35-45
18	F	25-35
23	M	adult
33	juvenis (M)	10-15

Figure 13. Sex and age of individuals from the LB/EIA burials.