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The Middle Bronze Age in the Little Zab Basin in the Light of the Excavations at Barde Zard Tepe, Northwest Iran

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Abstract

In the wake of the Kura-Araxes horizon, a major cultural shift brake out with painted ware replacing the glossy black burnished pottery. Painted ware, also termed Urmia Ware, became widespread in Northwest Iran in the Middle Bronze Age. The same scenario is reflected at the archaeological mound of Barde Zard in the Little Zab Basin. Situated in Piranshahr city of West Azerbaijan Province, this settlement represents one of the several formed across the basin in prehistoric times. The fieldwork at the site was aimed at specifying the occupation sequence, the cultural interactions of its residents with neighboring regions, and the characteristics of the Middle Bronze Age there. The excavations at the mound brought to light a mid-Bronze structure associated with a burial. Also identified were cultural ties with the Urmia Lake Basin and inspirations from the Khabur tradition of Mesopotamia.

Keywords: Northwest Iran, Urmia, Middle Bronze Age, Little Zab River, Barde Zard.

ArticleType: Research Article

Introduction

The end of the Early Bronze Age (EBA) and the beginning of the Middle Bronze Age (MBA) is marked by the disappearance of the Kura-Araxes culture and its related rural communities, which were replaced by new ethnic elements characterized by a pastoralist subsistence and a nomadic lifestyle, thus a change in the regional settlement pattern (Badalyan *et al.* 2003: 144).

Broad population movements and displacements in the early third millennium BCE triggered huge changes over large expanses of the Caucasus (Kushnareva 1997: 265), eastern Anatolia (Işıklı 2015: 51) and Iran (Burney 1961; Kiguradze and Sagona 2003; Kroll 1994; Piller 2012). The period marked the beginning of a wide cultural change, with the emergence of pottery decorative techniques typical to the Central Gray Ware (Piller 2004: 146). Starting in the region about 3000 BCE (Palumbi 2017: 113), the Kura-Araxes culture would be superseded in 2100–1900 BCE by other traditions, among them being the painted and buff wares (Danti 2013: 332, Table 17.1). The nature of the settlement and the material culture of the Hasanlu Period VI at Dinkha Tepe and the presence of the Khabur pottery in the southern Lake Urmia Basin strongly suggest the arrival in the Ušnu-Solduz valley of peoples with Mesopotamian origin (Danti *et al*. 2004: 584). The first archaeological investigations of the region were carried out by Dyson (Voigt 1983; Dyson 1969).

During the Hasanlu Period VI or the MBA, spanning 2100–1700 BCE (Danti 2013: 332, Table 17.1), polychrome and painted wares were widespread over large parts of Azerbaijan (Dyson 1969: 32). Hasanlu VI ceramics bear decorations in crossed, checkered, and triangle forms (Dyson 1965: 193). The simple painted pottery, a characteristic of the mid-2nd millennium BCE, is identical to the contemporaneous Khabur ware of North Mesopotamia and Southwest Turkey (Dyson 1969:

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43–44). In Northwest Iran, two pottery traditions, viz. Urmia Ware and Khabur Ware, prevailed, both of which are attested in the excavated assemblages from Barde Zard.

Khabur ware occurs over a vast geograpic expanse extending from west and northwest Iran to northern Mesopotamia, Syria and southern Anatolia. It has been dated between 1900–1600 BCE in northern Mesopotamia and spans 2106 ± 68 to 1684 ± 58 BCE in northwest Iran in light of the thermoluminescence dates from Dinkha Tepe (Velayati *et al.* 2017: 25).

Currently flooded and submerged by the Kani Sib Dam, the archaeological site of Barde Zard dates to the MBA.

Excavation at the site provided new insights into the MBA. The existence of the permanent river of the Little Zab resulted in a sort of settlement concentration in the region since prehistoric times.

The current paper focuses on Barde Zard Tepe as there are rather limited knowledge on the MBA of the Little Zab Basin.

History of Archaeological Work

Northwest Iran has a particular archaeological importance since it contains deposits from various prehistoric periods. A further reason for its prominence comes from its obvious location at the crossroads used in population movements and trade. Historically, the basin is among the regions that appealed to domestic and foreign scholars at the dawn of professional archaeology in Iran (Motarjem and Sharifi 2014: 50).

The long-lasting Hasanlu Project, launched by the University Museum of the University of Pennsylvania in 1956 under the general direction of Robert H. Dyson, has carried out the most significant work in this basin (Dyson 1968; 1969). On the other hand, the work at Yanik Tepe, in the northeastern Urmia Lake Basin, began in 1960 by Charles Burney, furnishing important details, with the most notable being the identification of the Trans-Caucasian culture's infiltration into Northwestern Iran (Burney 1961; 1962; 1964). Indeed, earlier excavations by Burton-Brown at Geoy Tepe, also in this basin, had revealed some evidence of the Trans-Caucasian culture at Level K (Burton-Brown 1951). Later excavations by Burney at Haftavan shed further light on the Bronze and Iron cultures. This region witnessed the MBA culture, also known as the Urmia Ware horizon, with the introduction of monochrome and polychrome wares. The MBA is divided into three periods (Danti 2013: 332). Urmia Ware is also known from Haftavan VIB, where it was first recognized by Edwards (1983).

The recent years have seen a surge of archaeological investigation in the Zab Basin, especially the reservoirs of the Kani Sib and Sardasht dams (Geravand 2017). Notable among the related works are the survey of the Zab Basin and excavations at Tepe Lavin (Hojabri and Binandeh, 2012), surveys in the reservoir of the Salveh Dam (Geravand 2017), Tepe Barve in the reservoir of the Sardasht Dam (Sharifi 2020), Haft Sheikhan (Kharrazi 2017), Balan in the reservoir of the Kani Sib Dam (Salami and Heidari 2020), and Tepe Rabat 4 in Sardasht (Abedi *et al.* 2019).

Geographic Location

The Little Zab basin hosts the cities of Piranshahr and a small part of Sardasht. The river rises from the northwest highlands of Piranshahr and, once receiving many branches, crosses the highlands of Alan in Iran to enter Iraq (Naval Intelligence Division 1944: 64).

Rising at an elevation of c. 3000 meters (Iraqi Ministries of Environment 2006a), the upper course of the river is determined by the alignment of the major mountain chains that make up the Zagros. Thus, the river flows through valleys that are predominantly aligned along a northwest–southeast axis, parallel to the major course of the Zagros, only to change its direction abruptly where it cuts through these chains in narrow gorges (Naval Intelligence Division 1944: 100).

As one of the target sites of the salvage excavations prompted by the construction of the Kani Sib Dam, Barde Zard was 10 km south of Piranshahr city (Figure. 1) on the east bank of the Little Zab, separated by 1.5 km from it (Figure. 2). Situated at UTM 38S 0520855, 4050901, at an elevation of 1343 m, the site lay some 1.2 km as the crow flies to the north of the construction site of the dam's crest. Barde Zard was located at the western end of a namesake mountain, which serves as a catchment for the Zab.

pottery and stone architectural remains, were used as a basis for locating the deep trench and defining the focus of the excavation operations. Data recording was based on locus sheets and the cultural/natural sequence of the deposits.

Building and Central Corridor

The dimensions of the originally 2×2 m Trench T.T.BZ.A, opened in the southern half of the mound, would be extended to 7×7 m once the architectural

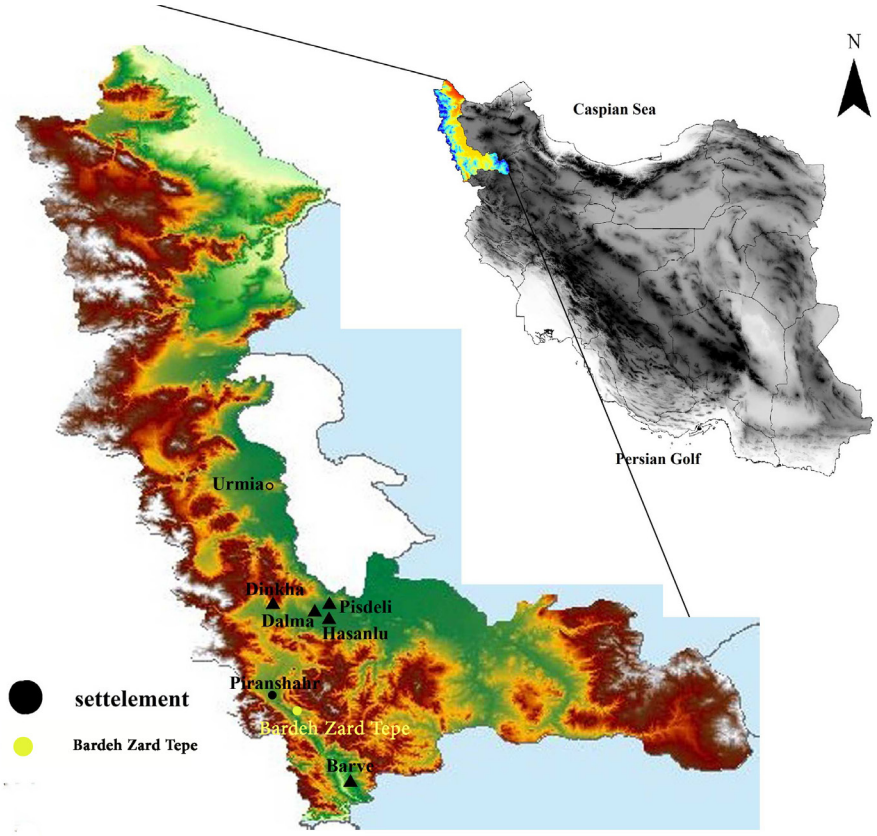


Figure. 1: *Map showing the location of Barde Zard*

Method of Excavation

As part of salvage excavations within the impending reservoir of the Kani Sip Dam, two trenches were opened at Barde Zard, viz Trench T.T.BZ.A measuring 7 x 7 m and Trench T.T.BZ.B measuring 2 x 2 m (Figures. 3, 4 & 5). The main purpose was to identify and examine the existing cultural deposits, adopting a locus and feature excavation approach.Surface scatters, especially

remains were witnessed. The operation provided the following remains.

In the upper levels lay architectural remains with stone materials. A north-south oriented rectangular structure was recovered running a length and width of 3.40 m and 2.55 m, respectively. Features 3, 5 and 9 in Figure. 8 indicate western, southern and eastern walls of the structure. The western wall, 4.35 long and 1.10 m thick, started at the depth of 1.15 m and continued for 0.40 m down the depth of



Figure. 2: *Location of Barde Zard in satellite image (After: Google Earth, depicted on 20/05/2018)*

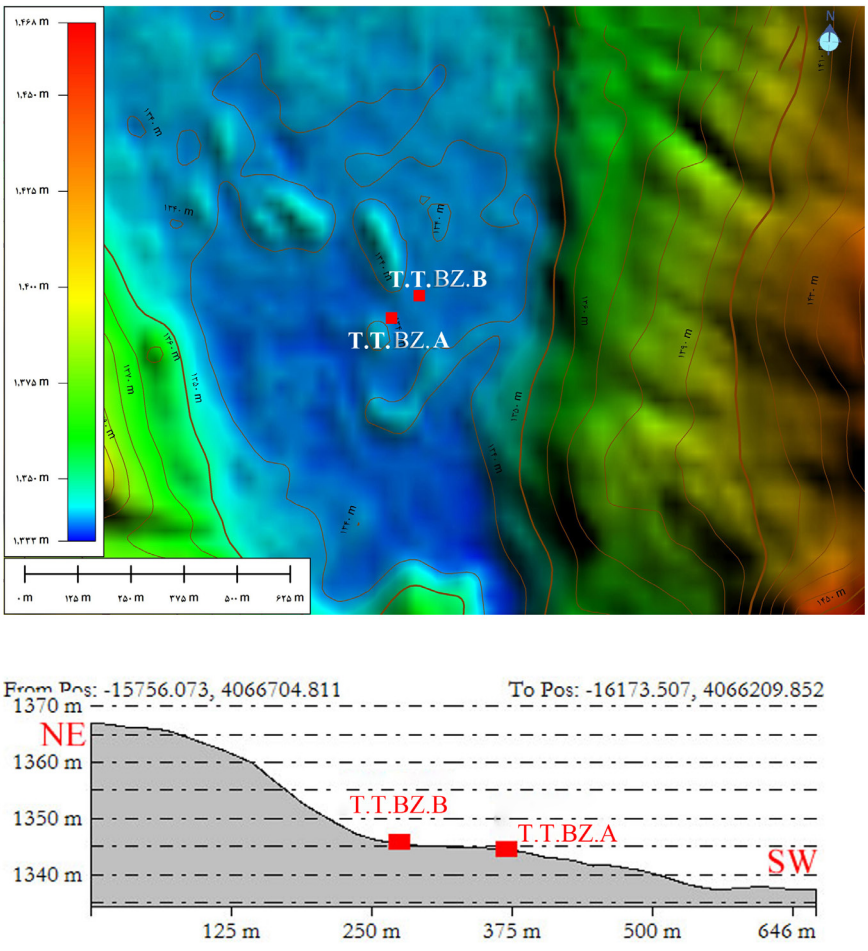


Figure. 3: *Profile of Barde Zard*

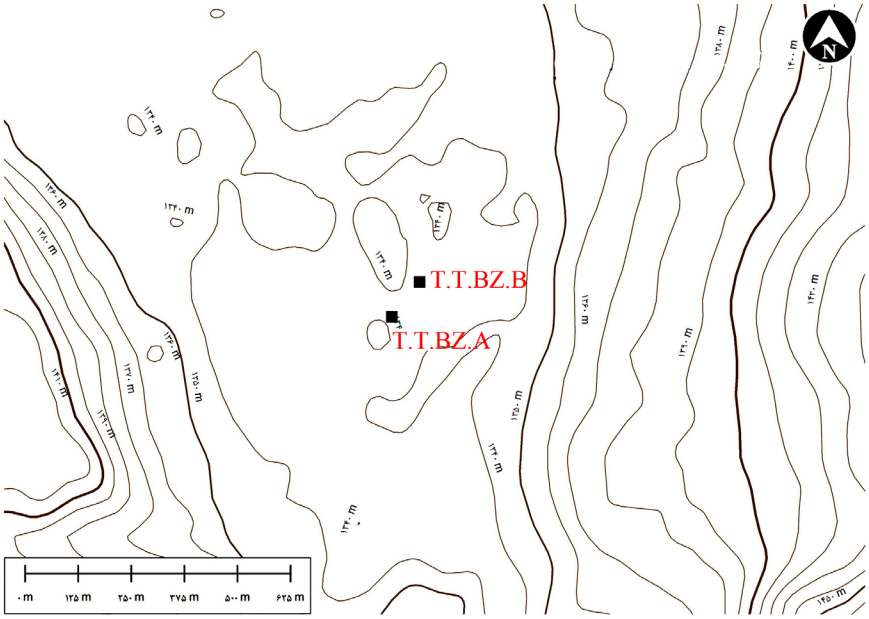


Figure. 4: *Topographic map with the location of the trenches*



Figure. 5: *General view of Barde Zard*

1.65 m. The southern wall consisted of somewhat regular courses of stones 3.25 m in length and 0.65 m in thickness. The eastern wall, made of cobbles, extended along the northern and eastern half of the trench, joining Wall 5 in the southern side. Oriented north-south, this latter wall, measuring 2.60 m long and 0.65 m thick, started at the depth of 1.35 m and ended at 1.50 m. The floor of the internal space consisted of a layer in creamy color. A burned layer was recorded in the southeastern corner of Room 1 at the depth of 1.40 m. The feature was apparently an oven as there were evidence of ash and indications of an upper burned surface.

In the southern part of the structure lay a corridor orienting east-west (Figure. 6 & 7). This corridor, possibly leading off the surrounding rooms, was 8 m long and 1.20 m wide, again with the same creamy layer as it floor.

Burial: A notable discovery made in Room 1 concerned a burial in the southeastern corner, at the depth of 1.50 m (Figure. 8). It was made on a 1.25×1 m stone bed, surrounded by rubbles. This fetal burial represented a female. Facing west, the skeleton measured 1 m long and 0.6 m wide. The pressure exercised by the upper rubbles had damaged the skeleton, especially the skull. The body oriented north-south and lay on the right shoulder, and the rocks were placed below the pelvis, head, and legs.

Trench T.T.BZ.B: This 2×2 m operation was opened to explore the cultural material in the northern extremity of Barde Zard, some 120 m to the north of Trench T.T.BZ.A. Four layers were identified, all containing large amounts of clay, sand, and gravel. The cultural deposits in this trench extended from the depth of 0.0±0.5 m down to -1.40 m. The recorded artifactual assemblage includes sherds and scattered animal bones from the MBA. The stratum at -1.40 m lacked cultural material but consisted of a layer including a combination of aluminum and lime (Figure. 9).

Ceramics

Other than architectural remains, the most notable finds from the excavation at Barde Zard were pottery sherds. The two trenches TT.BZ.A and T.T.BZ.B. each produced 365 and 46 sherds, respectively. Several formal types are discernible. Open-mouth dishes are rare. The pottery is wheel-made and adequately fired.

As regards decoration, they fall in several types: plain, painted, and often with an annular painted band beneath the rim as well as on the body. The

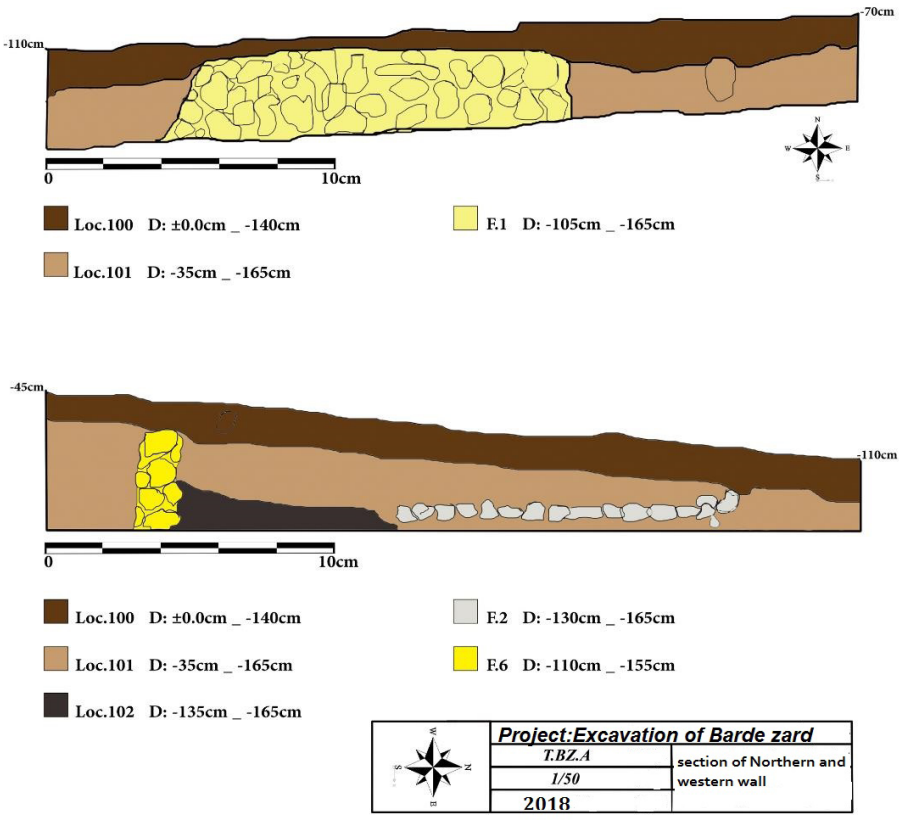


Figure. 6: *Barde Zard: sections of northern and western walls*

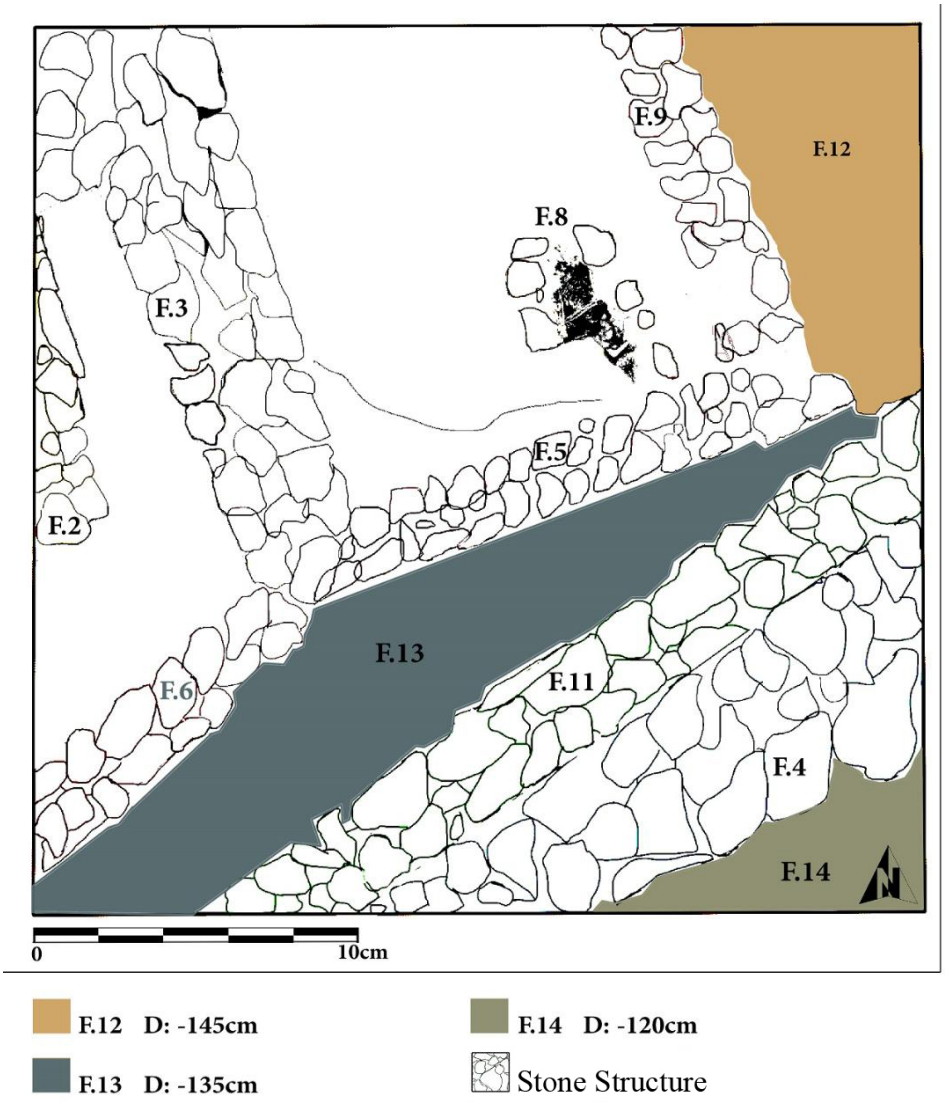


Figure. 7: *Barde Zard: overall plan of exposed structure*

attested patterns are invariably geometric, with the other types totally lacking.

The sherds tend to be orange and brown, and contain a mineral temper. Attested is a single specimen with black patterns on a buff-orange round, as is an Orange-on-Buff example. Some 80% of the pieces bear a thick slip, while in the remaining 20% the applied slip is thin. The fabric is buff, brown or gray, often adequately fired.

Chronologically, the pottery displays close affinities with the material from Geoy Tepe (Brown 1951) and Haftavan VIB (Burney 1973) and to a lesser extent to Mesopotamian centers (OGuchi 1997; Bieniada 2009; Baccelli, Manuellia 2006). The closed forms from Barde Zard (Pl. 12: 10, 15) find parallels in northwest Iran at Kul Tepe (Abedi *et al.* 2014, 152, Figure. 51, no. 1).

Special Finds

Associated with the female burial described above were found a bronze ax (Figure. 10), a shell piece, a clay bead, and two bronze needles (Figure. 11; see Table 1).

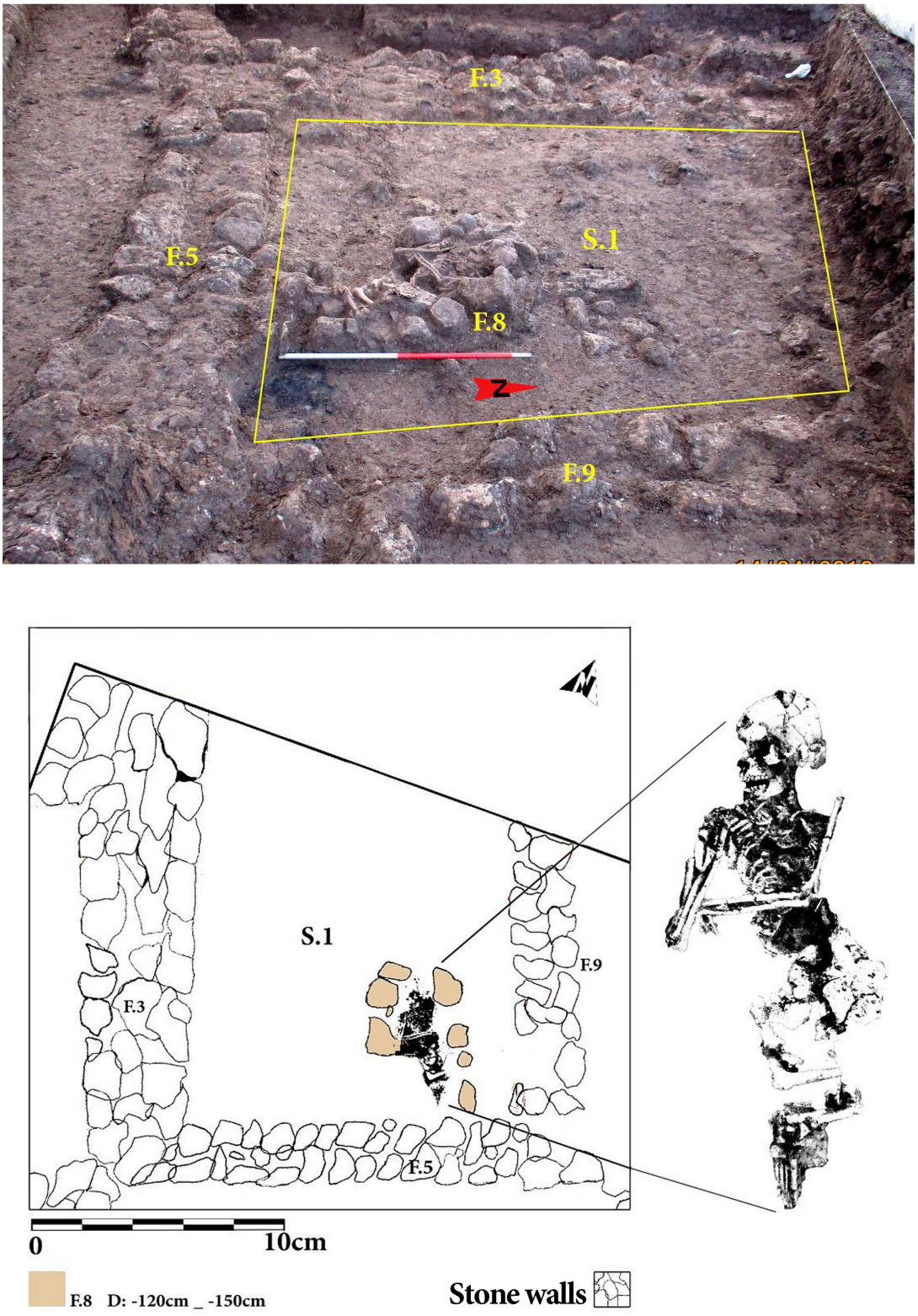


Figure. 8: *Barde Zard: plan of architectural structure and the location of the burial within it*

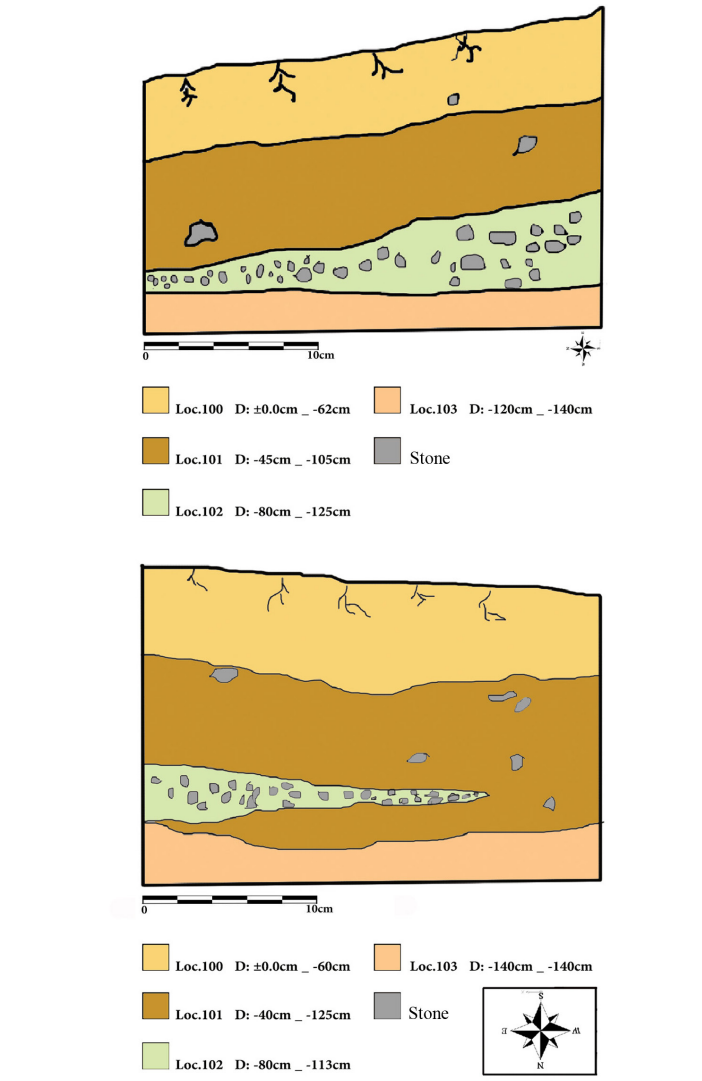


Figure. 9: *Sections of Trench T.T.BZ.B.*

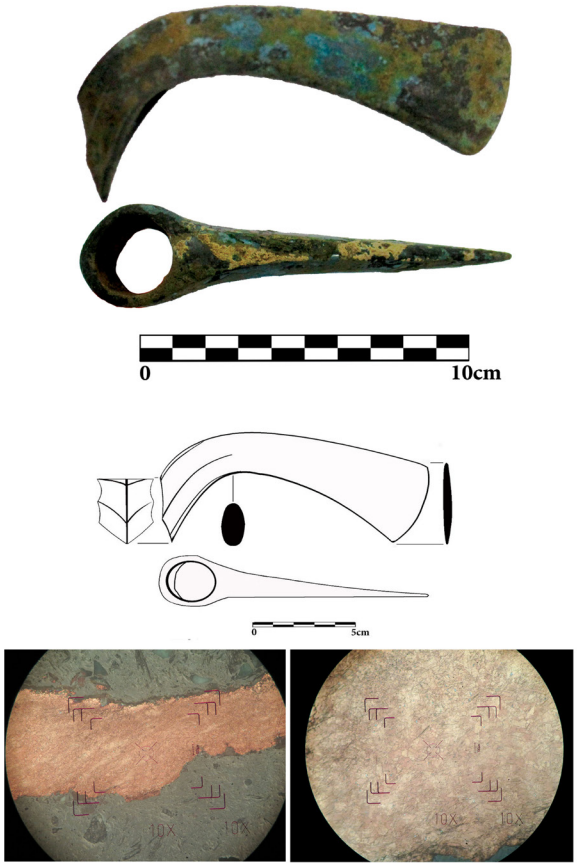


Figure. 10: *Bronze ax and related thin-sections*



Figure. 11: *The metal rods, bead, shell piece, and lithic tools*

Table 1: *Characteristics of small finds from Barde Zard*

Object	Trench	Depth	length	Width/Thickness	Observations
Bronze Ax	T.T.BZ.A	60- cm	11cm	3/5 cm	Incised decorationsat the attachment point to the haft
Shell piece	T.T.BZ.B	-75 cm	16 cm	8 cm	The object wascut transversely intotwo halvesand looks like a “ gutter spout”
Clay bead	T.T.BZ.A	45- cm	23 mm	3 mm (th.)	Intact, in buff color
Bronze needle	T.T.BZ.A	65- cm	10 cm	4 mm (th.)	

Exhibiting a particular elegance, the ax was subjected to metallographic testing. Once etched by an alcoholic ferric chloride solution, the metal sheet was found to contain metal grains with twin thermal strips with dimensions of ≤ 8 on ASTM scale. Slight coring was observed in the sample. Alongside the thermal twin strips, many grains exhibited work-induced stress lines. The intensity of the work has triggered a total change in the shape of the grains as well as the twin strips on both sides of the sample. Drawing on these observations as well as the existence of coring, the related artifact appear to have been casted and (cold-hot) worked before taking its final form by cold working, judging by the presence of stress lines and the intensity of grain deformation. The small grain size is most likely due to the low temperature at it which the work was performed, failing to furnish the necessary potential for grain growth. The surface of the artifact shows a small blue-gray impurity. The grain size, especially at the edges of the sample, has changed drastically as a result of the working.

It closely resembles the examples from Sé Girdan in Northwest Iran (Muscarella 1971: 14) and Lorestan (Haerinck, Overlaet, 1998a.pl.51) and outside Iran from Garra in Mesopotamia (Plate XLVIII. Speiser 1935). The ax type from Barde Zard has also been reported from Dinkhah (Danti 2013, figure. 17.5).

T.T.BZ.A yielded 4 lithic tools, divided between 3 flakes and a single blade. Their color and texture suggest their manufacture from river cobles. Also coming from the trench are 2 bronze rods about 4 mm thick.

At depth of -0.75 m in Trench T.T.BZ.B occurred a small object made of shell. The latter is among the most durable materials, as it decays hardly and can be easily traded (de Schauensee 2008: 68). The shell piece from Barde Zard apparently was a utilitarian object.

Discussion

The excavation exposed a stone-built rectangular architecture, possibly representing a residential structure. Such rectangular architecture is known from Chagar Bazar (Mallowan 1936: 68, figure. 4).

The earliest known architectural remains from Azerbaijan come from Tepe Hajji Firuz dating to the sixth millennium BCE (Dyson, 1967; Voigt 1983). At this early settlement, remains from at least eighteen independent houses were excavated, most of which show a rectilinear plan, either rectangular or square (Voigt, 1983: 25–26). The regional architectural tradition of the Village period continued in the ensuing Early Chalcolithic at Dalma Hill (Hamlin 1975), and would persist at such centers as Pizdeli dating to the eighth millennium BCE (Dyson 1968), and at Yanik Tepe, all attesting to the persistence of the same plan and composition scheme typical to the Dalma period. In the Bronze Age, monumental architecture emerged, as is most notably evidenced at Hasanlu (Danti 2017:86).

Regarding the pottery from Barde Zard, the traditional forms have similarities with the contemporaneous centers of Northwest Iran and Mesopotamia, albeit with some idiosyncrasies. In other words, the material from Barde Zard closely parallel those of Hasanlu VI, Dinkha IV and Haftavan VIB (Table 2). On the basis of relative chronology, we date Barde Zard to the MBA. Accordingly, the ceramics from the mound find parallels among the assemblages from Hasanlu VI and Dinkha IV (which in turn resemble the so-called Khabur Ware of northern Mesopotamia).In General, the Khabur Ware is dated to the first half of the second millennium BCE, the MBA (with several sub-phases) (Baccelli & Manuelli 2006). Hasanlu Period VI and Dinkha Period IV likewise belong to the MBA (Danti 2013: 332. Table 17.1).

The Painted Orange Ware of Hasanlu VIIA and VIIC are of local types. A continuity of settlements seems to have existed between periods VII and VI (Figures. 12 & 13).

Hamlin states that Hasanlu VI and Dinkha pottery are closely related to the Khabur ware suggesting their trade relations (Voigt and Dyson, 1992; Hamlin 1974: 125; Danti *et al.* 2004: 586). The Wheel-made Khabur pottery is red, brown or black with geometric monochrome motifs. Archaeological evidence shows that the pottery is not limited to Khabur but belong to a common culture that spanned around 1500 to 1800 BCE, extending to Northern Iraq, Syria, Iran and Turkey, and that there were common cultural traditions in this period (Palmisano 2012: 2). The Hasanlu Period VI coincided with the Late Bronze Age (LBA) of Barde Zard, which had cultural ties with Northern Mesopotamian lowlands since the second millennium BCE (Baccelli and Manuellia 2006; Tsuneki 1998; Bieniada 2009; Oguchi 1997; Kroll 1994; Oguchi 1998: 2000). In fact, relations, contacts and interactions between the inhabitants of the Mesopotamian plains and the mountains to their east were already under way in the Bronze Age (Balatti 2017).

Of intriguing points about the excavation at Barde Zard are the burial and the Hasanlu VI-type pottery from the site. The reason is the existence of

Table 2: *Characteristics and relative chronology of the sherds from Barde Zard*

No.	Piece	Temper	Manufacture	Firing	Paste color	Slip color	Date	Comparanda
1	dish	mineral	wheel-made	inadequate	gray-brown	brown	*MBA*	Burney 1973: 160, fig. 6: no. 5 (Haftavan VIB) OGuchi 1997: 197, fig. 1: nos. 7–23 Bieniada 2009: 192, fig. 2: nos. 1–2 Stein 1984: 37, nos. 12–16 (Nuzi ware) Baccelli and Manuellia 2006: 201, pl. 4: no. 6 OGuchi 2006: 46, fig. 1: no. 6 Tsuneki 1998: 43, pl. VI: no. B, fig. 21 (Umm Qseir, North Syria)
2	rim	mineral	wheel-made	adequate	brown	orange	*MBA*	Rezaloo 2014: 71, fig. 6: no. 2 Tsuneki 1998: 47, nos. 2–4 (Umm Qseir, North Syria
3	rim	mineral	wheel-made	adequate	buff	red	*MBA*	Burney 1973: 160, nos. 1–2 (Haftavan VIB) Baccelli and Manuellia 2006: 202, pl. 5: nos. 3–5
4	rim	mineral	wheel-made	adequate	orange	orange	*MBA*	Burney 1973: 160, nos. 1–2 (Haftavan VIB)
5	rim	mineral	wheel-made	adequate	buff	buff	*MBA*	
6	painted orange ware	mineral	wheel-made	adequate	brown	brown	*MBA*	OGuchi 2000: 106, fig. 2: no. 9 (Tell Brak)
7	rim	mineral	wheel-made	adequate	brown	brown	*MBA*	-
8	rim	mineral	wheel-made	adequate	orange	painted orange ware	*MBA*	Rezaloo 2014: 71, fig. 6: no. 6
9	rim	mineral	wheel-made	adequate	buff	buff	*MBA*	Burney 1973: 160, fig. 6: no. 1 (Haftavan VIB) Tsuneki 1998: 43, pl. III: no.
10	rim	mineral	wheel-made	adequate	Buff-painted ware	buff	*MBA*	Rezaloo 2014: 71, fig. 6: no. 10 Bieniada 2009: 192, fig. 2: no 3 Abedi *et al*. 2014: 152, fig. 51: no. 1
11	rim	mineral	wheel-made	adequate	buff	buff	*MBA*	Bieniada 2009: 192, fig.2: no. 3 Tsuneki 1998: 43, pl. VI: no. A, fig. 21 (Umm Qseir, North Syria)
12	rim	mineral	wheel-made	adequate	buff	buff	*MBA*	OGuchi 2001: 83, fig. 8: no. 4 (Tell Jigan)
13	rim	mineral	wheel-made	adequate	buff	buff	*MBA*	Danti 2013: 333, no. G
14	rim	mineral	wheel-made	adequate	buff	buff	*MBA*	Bieniada 2009: 192, fig. 2: no. 17 Burney 1973: 160, fig. 6: no. 21 (Haftavan VIB)
15	rim	mineral	wheel-made	adequate	buff	buff	*MBA*	Burney 1973: 160, fig. 6: no. 4 (Haftavan VIB) Bieniada 2009, 192, fig. 2: no. 3
16	rim	mineral	wheel-made	adequate	buff	buff	*MBA*	Danti 2013: 333: nos. B–C (Geoy tepe); no. A (Hasanlu graves)

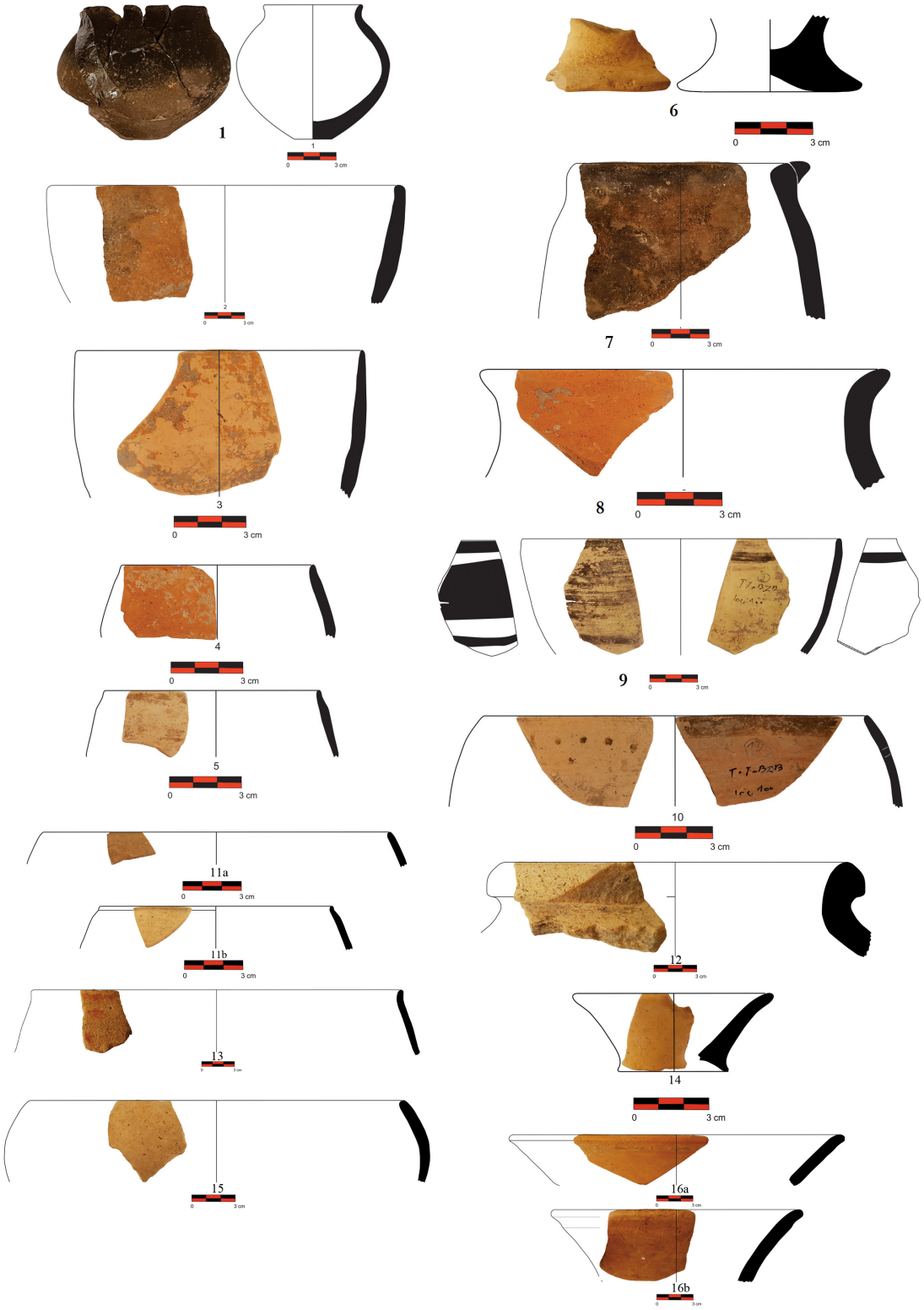


Figure. 12: *Barde Zard: characteristic sherds*

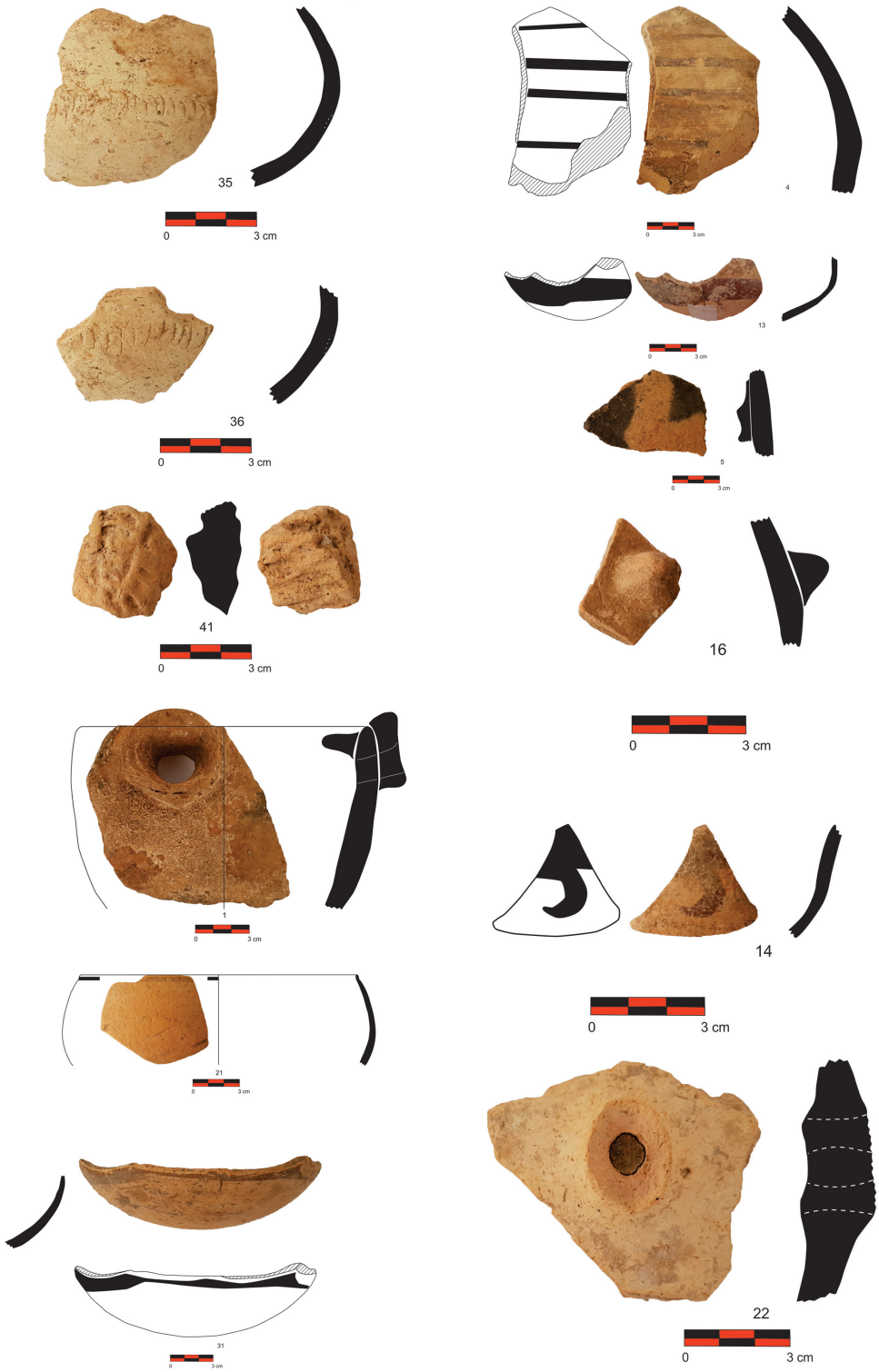


Figure. 13: Barde Zard: characteristic ceramics

very limited information on these types in Northwest Iran, and the dearth of excavations at related sites, with most of available information coming from surface surveys.

Conclusions

Barde Zard Tepe perches on a natural slope near the Little Zab, flanked by modern-day farms. It is notable that the region possessed all natural and geographical requirements for settlement of human societies from prehistoric times. Sherds of orange Urmia-type pottery are seen scattered on the surface of the site. The excavation reported here yielded new information on the MBA. The high density of surface scatters over the region echoes the natural and geopolitical significance of the valley during the prehistory and historical times as remains from the Chalcolithic through the Islamic period are attestable.

As the river furnishes rich vegetation in summer when the water reaches its minimum level, the basin widely appealed to farmers throughout history; farming and livestock raising still remain the main jobs of the local population. This very fact has been corroborated by numerous investigations on deposits dating to the historical and Islamic periods. The results of excavations show that we are dealing with the remains of a stone-built architecture in a rectilinear plan that served a residential function. A burial in fetal position was attested in the corner of the room.

The architecture consists of a rectangular room overlooking a corridor that leads to other rooms. The exposed rooms tend to be rectilinear in plan, and were constructed using locally available materials. In general, this excavation attempted to ascertain the function of the architectural remains and their chronology. The obtained architectural evidence represent remains from regular walls. The applied materials are mainly sedimentary rocks and river cobbles set into a gypsum mortar. It is noteworthy that the landscape surrounding Barde Zard consists of fertile lands.

Generally speaking, the results from the excavation and study of the recorded pottery assemblages point to the presence of interfaces between Barde Zard and the adjacent region. The relative chronology of the pottery collection suggests a date in the Middle Bronze Age.

In nutshell, the results of the survey and excavation at Barde Zard show the spread of the MBA culture to the Zab Basin. The recovered cultural materials are suggestive of its widespread relations with parts of Mesopotamia and the concurrent sites during the Middle Bronze Age.

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