



Relative Chronology Based on the Classification and Typology of the Chalcolithic Pottery of Tepe Morad Abad VIII, Orzuiyeh Plain (Kerman Province)

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Article Info	Abstract
<p>Pp: 95-119</p> <p>Article Type: Research Article</p> <p>Article History:</p> <p>Received: 13 April 2024</p> <p>Revised form: 03 May 2024</p> <p>Accepted: 30 June 2024</p> <p>Published online: December 2024</p> <p>Keywords: Yahya Culture, Middle Chalcolithic, Chalcolithic Pottery, Orzuiyeh Plain, Morad Abad VIII.</p>	<p>The Orzuiyeh Plain stands as a crucial region for understanding prehistoric, particularly Chalcolithic, settlements in southwestern Kerman Province. While sites like Gaz Tavileh, Morad Abad XII, and Vakil Abad have seen limited archaeological exploration, they have yielded insufficient data on the sequence of Chalcolithic occupation. To address this gap, a stratigraphic investigation of Tepe Morad Abad VIII, a prominent Chalcolithic mound in the area, was undertaken to establish a relative chronology and delve deeper into Chalcolithic life and pottery traditions. The mound's substantial depth and scattered pottery fragments suggested a lengthy occupation spanning multiple cultural periods, likely associated with the Yahya Pottery Culture. Through meticulous field and library research, a detailed analysis of pottery artifacts revealed a clear sequence of Chalcolithic occupation across 60 distinct layers. Of the 2413 recovered sherds, 918 underwent in-depth study, including drawing and classification. The findings indicate continuous habitation at Tepe Morad Abad VIII throughout Yahya Periods VI, VC, VB, and VA, spanning from the early to late Chalcolithic era, with an estimated timeframe of 5600 to 4200 BCE.</p>

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1. Introduction

The Neolithic period marked a pivotal shift in human societies as increased interaction with the environment fostered the emergence of agriculture and animal husbandry. These foundational developments shaped the subsequent Chalcolithic period, where societies were increasingly reliant on farming and herding (Matthews and Fazeli Nashli, 2022: 111). Chalcolithic culture flourished across the Iranian Plateau as the Neolithic waned, its growth intimately connected to the surrounding environment (Talai, 2013: 49). Early investigations at Iblis, Yahya, and the Dolat Abad Orzuiyeh plain provided invaluable insights into southeastern Iran and Kerman's prehistoric past (Fig. 1). However, the absolute dating of these sites remained uncertain until more recent excavations at Gav Koshi Esfandagheh (Alidadi Soleimani and Fazeli Nashli, 2018), Dehno-ye-Shahdad (Eskandari, 2018), and the Vakil Abad mound in the Orzuiyeh plain (Shafiee *et al.*, 2019) which refined the chronology. Despite extensive exploration of the Orzuiyeh plain's Chalcolithic mounds, evidence of a continuous pottery tradition has remained elusive. This is due to the single-period occupation of some sites (such as Vakil Abad and Gaz Tavileh) and the lack of complete stratigraphic excavations (down to virgin soil) in others, like at Morad Abad XII. Prickett, in her study of the Morad Abad River area (east of the Orzuiyeh plain), suggested a shift in settlements from Yahya Period VI (Early Chalcolithic) to the northern part of this river (Prickett, 1986b: 234). Additionally, the extensive nature of the latest Middle Chalcolithic settlements and the abundance of their cultural materials compared to the previous period, have led to the generalization of the dating of these period mounds in the area to Yahya Period VA. This has created ambiguities regarding the earliest settlements in this region.

Consequently, stratigraphic excavations at Tepe Morad Abad VIII were deemed essential to establish a relative chronology and to gain a more complete understanding of Chalcolithic settlements and the continuity of pottery traditions in the Orzuiyeh plain. Due to its significant size, height (making it one of the tallest Chalcolithic mounds in the Morad Abad River basin), and strategic location at the confluence of several water channels, Tepe Morad Abad VIII was selected for stratigraphic excavation. Therefore, the ceramic evidence from this research has answered several important questions about the cultural layers of this ancient mound. For example, considering the height of the deposits, how many Yahya cultural periods does it encompass, and which specific Yahya periods does it represent? Moreover, if the deposits of Morad Abad VIII span multiple periods, did the ceramic traditions there evolve in parallel with the broader Yahya pottery culture? In addition, according to the stratigraphic analysis, were the cultural deposits formed continuously or with interruptions?

This research, employing a descriptive-analytical approach and data from both fieldwork and literature reviews, will classify and categorize the ceramics recovered from the excavation in order to answer the research questions. Tepe Morad Abad VIII, previously identified as "R6" in earlier archaeological studies (Prickett, 1986b:229), is also known locally as "Tepe Najf Ali" due to its proximity to the fields of a man named Najf Ali. The designation "Morad Abad VIII" is based on the naming convention for Chalcolithic mounds around the Morad Abad River, which in recent archaeological surveys of the Orzuiyeh plain have been numbered from I to X (Alidadi Soleimani, 2009) (Fig. 2).



Fig. 1. Excavated Chalcolithic sites in the Kerman region

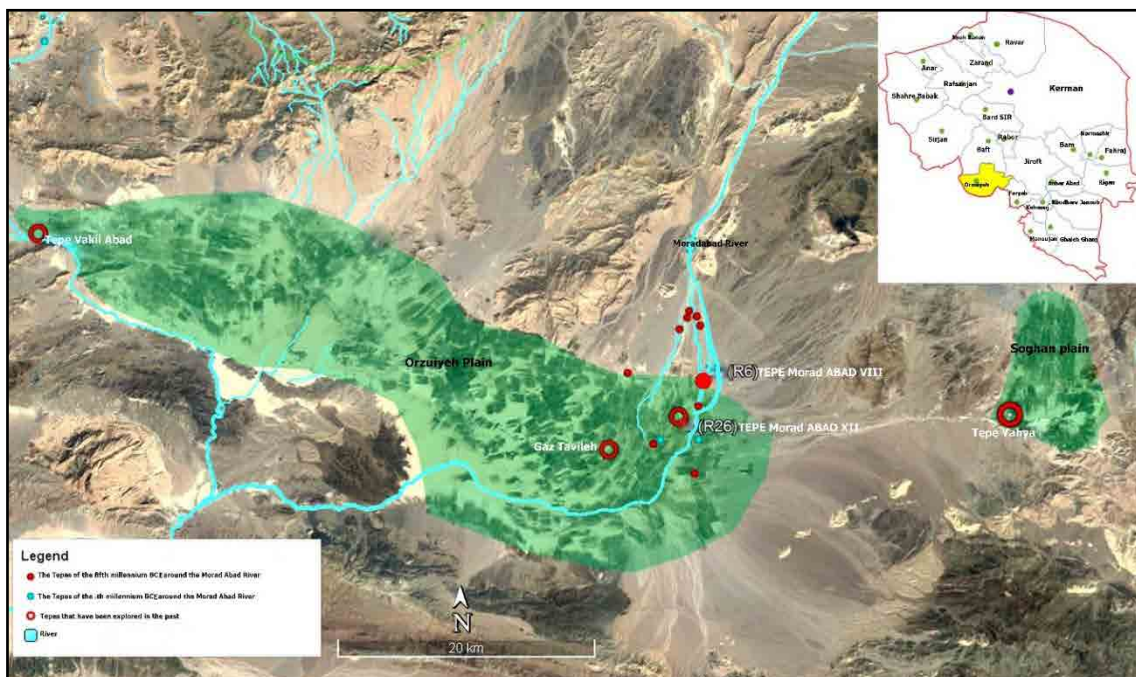


Fig. 2. Orzuyeh and Soghan plains with identified fifth-millennium BCE settlements around the Morad Abad River

2. Geographical and Archaeological Context of Tepe Morad Abad VIII Southeastern Iran

Tepe Morad Abad VIII is situated at the geographical coordinates $31^{\circ}36'631''\text{N}$ and $46^{\circ}32'55''\text{E}$, 27 kilometers east of Shah Maran (the center of Orzuiyeh County) on the northeastern flank of the Orzuiyeh Plain. Located in the northern basin of the Morad Abad River, this mound is 24 kilometers from the ancient site of Yahya (in the Soughan Plain) and 53 kilometers from Tepe Vakil Abad (dating to the Middle Chalcolithic period, west of the Orzuiyeh Plain). Several other Chalcolithic mounds are situated along the northern basin of the Morad Abad River (the Goushk River basin). Tepe Morad Abad VIII, the largest and most extensive of these mounds, occupies a position where the slope of the northern mountain foothills is at its gentlest, meeting the plain. At this point, the Morad Abad River, joined by several flood channels, reaches its greatest width (Fig. 3).

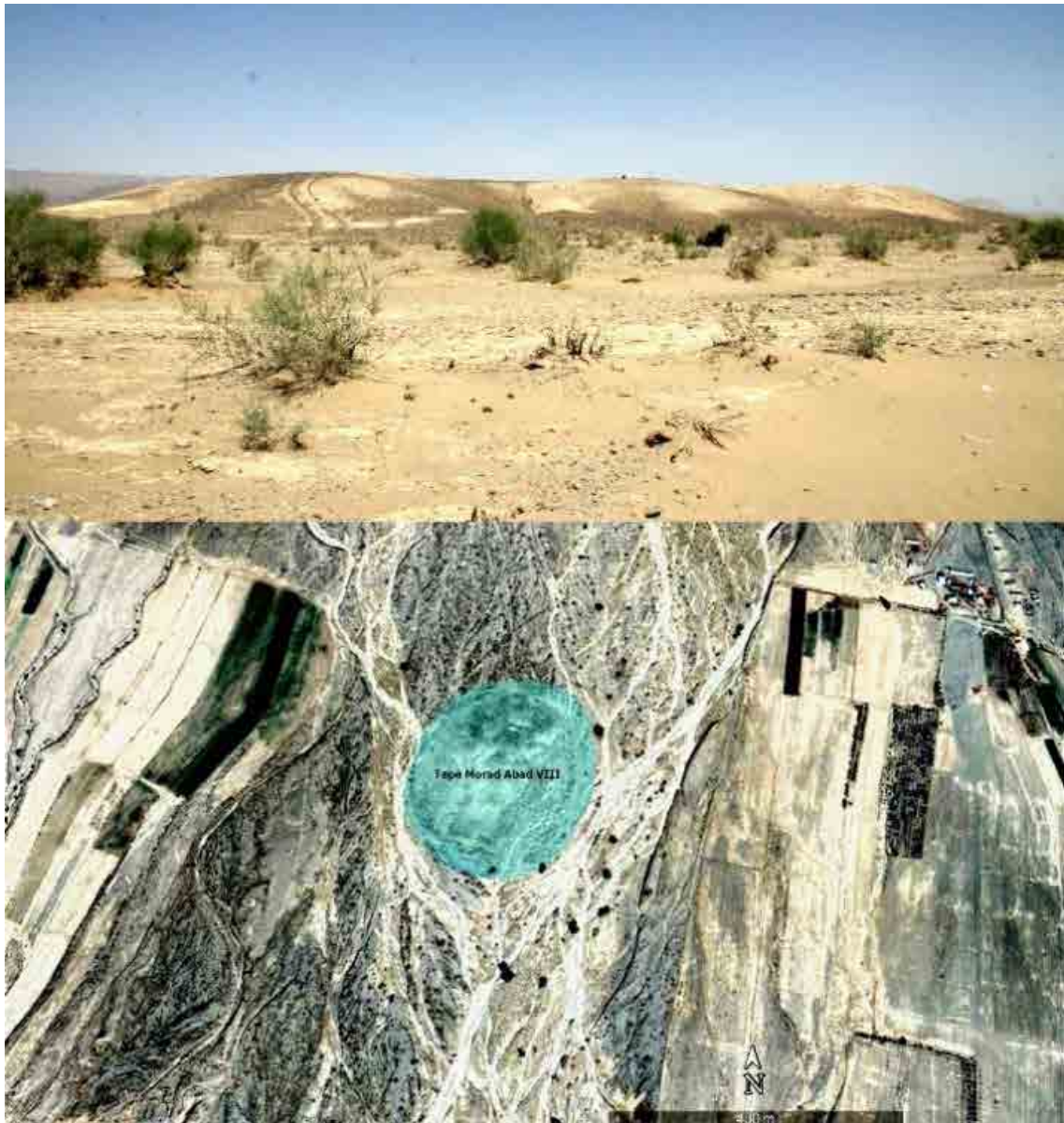


Fig. 3. Northern facade of Tepe Morad Abad VIII and its aerial position relative to the Moradabad River

3. A History of Archaeological Research and Chronologies for the Early and Middle Chalcolithic Periods of Kerman

Understanding the prehistoric sites in the Orzuiyeh Plain began with scattered surveys conducted by a Peabody Museum Harvard University archaeological team led by C.C. Lamberg-Karlovsky in 1967, followed by excavations at the ancient site of Tepe Yahya in the Soughan Plain in 1968 (Karlovsky et al, 1986). These surveys included test pits at Gaz Tavileh and Morad Abad R26 in the Dolat Abad Plain (the eastern extension of the Orzuiyeh Plain) and along the Ghader Abad (Morad Abad River) and Goushk rivers (the northern basin of the Morad Abad River) by Martha Prickett, a member of the Tepe Yahya excavation team (Prickett, 1986a: 831-928, 938). Excavations at Tepe Yahya began in 1968, and Thomas Wight Beale suggested that the site had been continuously occupied for over 5000 years with only two interruptions: one during the late 4th millennium BCE between periods VA and IVC (Late Chalcolithic) and another during the 2nd millennium BCE between periods IVA and III (Wight Beale, 1986a: 11). Based on radiocarbon dating, he proposed a date of 4900-3900 BCE for the earliest layers of Yahya (Period VII), which he attributed to the Neolithic period (Wight Beale, 1986a: 11). This chronology has been revised several times by excavators at Tepe Yahya. Wight Beale suggested that Period VII at Yahya was the only period belonging to the 5th millennium BCE, and Periods V and VI belonged to the 4th millennium BCE (Wight Beale, 1986a: 11). However, subsequent excavations and chronologies have refuted this view (Eskandari, 2018: 25).

Based on radiocarbon dating from excavations at Tepe Gav koshi in southern Espandagheh-Jiroft Plain, Alidadi Soleimani suggests that Neolithic settlements in southeastern Iran date back to 7175-6650 BCE (late 8th to mid-7th millennia BCE) and continued into the late 7th millennium BCE (6200-6000 BCE) (Alidadi Soleimani & Fazeli Nashli, 2018: 26). This necessitates a reevaluation of the chronology for Tepe Yahya. As mentioned earlier, Prickett conducted limited excavations at Chalcolithic mounds in the region during her surveys in the Morad Abad Plain, including a stratigraphic excavation at Tepe Gaz Tavileh in the southern part of the Dolatabad Plain (Morad Abad River basin) (Prickett, 1986a: 831 – 928, 938). Prickett suggested that radiocarbon and stratigraphic data from both Tepe Yahya and Tepe Gaz Tavileh (R37) indicate that settlement at Tepe Yahya began somewhat later than in the Morad Abad River basin (Dolatabad Plain) (Prickett, 1986b: 228). At Tepe Gaz Tavileh, located in the Morad Abad River basin, Prickett collected 15 radiocarbon samples and obtained dates of 4690, 4700, 4720, 4890, 4900, 4920, 5260, and 5940-5215 BCE for various architectural phases (Prickett, 1986a: 831-928, 938).

Among the dates reported for Gaz Tavileh, one particularly noteworthy range is 5940-5215 BCE. Prickett seems to have hesitated to propose this date, perhaps due to caution or to maintain a distance from Karlovsky's proposed chronology. The most recent absolute dating in the Orzuiyeh Plain comes from the stratigraphic excavation of Tepe Vakil Abad in the Khabr River basin (western Orzuiyeh Plain or Vakil Abad Plain) in 2016, co-directed by Hekmat Allah Molla-Salehi and Mojgan Shafiee. This excavation revealed approximately 4 meters of cultural deposits from the Middle Chalcolithic period (Yahya VA). Radiocarbon dating of charcoal samples from Tepe Vakil Abad indicates that the Yahya VA cultural phase began in the early 5th millennium BCE (4800 BCE) and continued for about 500 years. These findings contradict earlier chronologies for Tepe Yahya and Tepe Morad Abad (Shafiee et al, 2019: 92). Alidadi Soleimani, in a

recent archaeological survey of Orzuiyeh County, identified additional Chalcolithic settlements in the western part of the Orzuiyeh Plain, building upon Prickett's surveys of the Dolatabad Plain. These findings suggest a migration of human communities from east to west across the plain (toward the Khabr River basin) in the early 4th millennium BCE. The most recent research on the Chalcolithic period in the Orzuiyeh Plain is the stratigraphic excavation of Tepe Morad Abad VIII (Naseri Taherani, 2022), aimed at establishing a relative chronology for the site.

Outside the Orzuiyeh Plain, Tal-i Iblis in the Bardsir Plain of Kerman is another crucial site for understanding the prehistory of southeastern Iran. Stein first visited Iblis in 1932 (Malek Shahmirzadi, 2012: 406), and Caldwell conducted excavations there in 1966 (Caldwell, 1967). According to Caldwell's absolute dating, the early periods of Iblis (0, I, II), comparable to the known periods at Morad Abad VIII, fall within the mid to late 5th millennium BCE. Iblis Period 0, characterized by coarse, porous pottery with abundant plant temper known as Lalehzar coarse ware, is dated to the mid-5th millennium BCE (4500 BCE). Iblis Period I (4400-4200 BCE), continuing the Lalehzar coarse ware tradition, is also associated with a buff ware painted pottery known as Bardsir ware. Iblis Period II (4200-4000 BCE) is characterized by the continuation of some Bardsir Andehnod Lalehzar coarse ware; along with a red painted pottery called Iblis ware (Malek Shahmirzadi, 2012: 408). Later excavations by Eskandari at Tepe East Dehno in the Shahdad Plain, where the pottery was comparable to Iblis I, necessitated a reevaluation of the Iblis chronology. Absolute dating of pottery comparable to Iblis I at Tepe East Dehno yielded dates of 4750-4500 BCE, placing it in the first half of the 5th millennium BCE. This date is 500 years earlier than the date Caldwell proposed for the Bardsir culture (Eskandari, 2018: 33), (Table 1).

Table 1. Chronologies for the Early and Middle Chalcolithic in Kerman

Area	Period	Date
Orzuiyeh and Soghan plains	Yahya VII	5700-5500BCE
Orzuiyeh and Soghan plains	Yahya VI	5500-5300 BCE
Orzuiyeh and Soghan plains	Yahya VC,VB	5300-4800 BCE
Orzuiyeh and Soghan plains	Yahya VA	4800-4200 BCE
Iblis plain	Iblis 0	5500-5300 BCE
Iblis plain	Iblis I	5300-4800 BCE
Iblis plain	Iblis II	4800-4200 BCE

4. Stratigraphic Excavation of Tepe Morad Abad VIII

A stratigraphic excavation trench was established at the southernmost part of Tepe Morad Abad VIII, the highest point of the mound due to the north-to-south slope of the plain. This location (geographic coordinates: 3136631-463255, elevation 1112 meters above sea level) was Chosen because the northern part is more susceptible to erosion from seasonal floods. The trench, measuring 3 meters east-west and 2 meters north-south, was excavated vertically until virgin soil was reached (Fig. 4).

Excavations revealed 60 cultural layers extending to a depth of 780 centimeters below the datum. Each layer, characterized by its specific soil profile, was assigned a

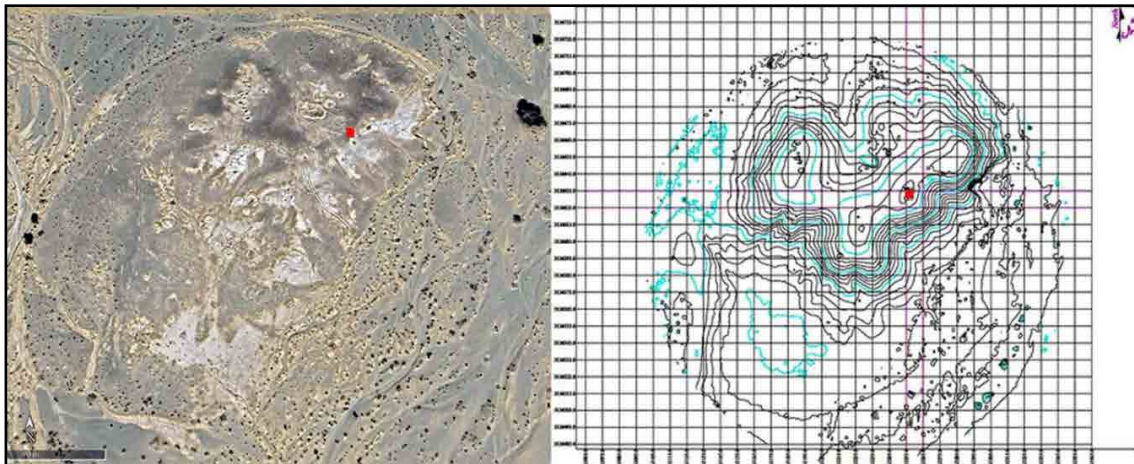


Fig. 4. Topographic map of Tepe Morad Abad VIII indicating the location of the excavation trench.

context number beginning with 1001. The upper portion of the excavation, down to 660 centimeters, showed relatively little evidence of flooding. However, the lower 120 centimeters indicated repeated flooding events, with 13 contexts representing settlements that had been submerged (Fig. 5).

The relative chronology of the cultural periods at Tepe Morad Abad VIII is based on absolute dating methods used in previous excavations in the Orzuiyeh Plain (Tepe Yahya, Gaz Tavileh, Morad Abad X, Tepe Vakil Abad) and neighboring areas (Tel Iblis and Tepe Dehno) in the Kerman region (Table 2). A comparative study of pottery from Tepe Morad Abad VIII with other regions, especially Tepe Yahya (a key site in the prehistory of southeastern Iran), was conducted to classify and categorize the pottery, and to gain a comprehensive understanding of the cultural layers and relative chronology of the site. To this end, all pottery from the excavation trench was collected and categorized based on material, type, decoration, and firing. Then, decorated pottery and fragments that could be reconstructed were selected as representative pottery for study.

Table 2. Proposed Relative Chronology of Tepe Morad Abad VIII (Colored sections indicate the Morad Abad VIII period)

Suggested dating	The formation of Gav Koshi	Gav Koshi	Yahya VII	Yahya VI (Iblis0)	Yahya VC-VB (Iblis I)	Yahya VA (Iblis II)
Gav Koshi (Alidadi Soleimani & Fazeli Nashli 2018: 94 and unpublished reports)	7176-6650 BCE	6200-6000 BCE	5700-5500 BCE	5500-5300 BCE	5300-4700 BCE	
Tepe Yhya (Wight Beale, 1986b: 39)			4900-3900 BCE	3900-3800 BCE	3800-3600 BCE	3600-3300 BCE
Gaz Tavileh (PRICKET, 1986: 831 – 928, 938)			5200-4700 BCE			
Tel Iblis (Caldwell, 1967: 13)					4400-4200 BCE	4200-4000 BCE
Tepe Dehno (Eskandari, 2018: 34)					5300-4700 BCE	4700-4100 BCE
Tepe Vakil Abad (Shaficee et al., 2019: 92)					5300-4800 BCE	4800-4200 BCE
Tepe Morad Abad VIII				5600-5300 BCE	5300-4800 BCE	4800-4200 BCE

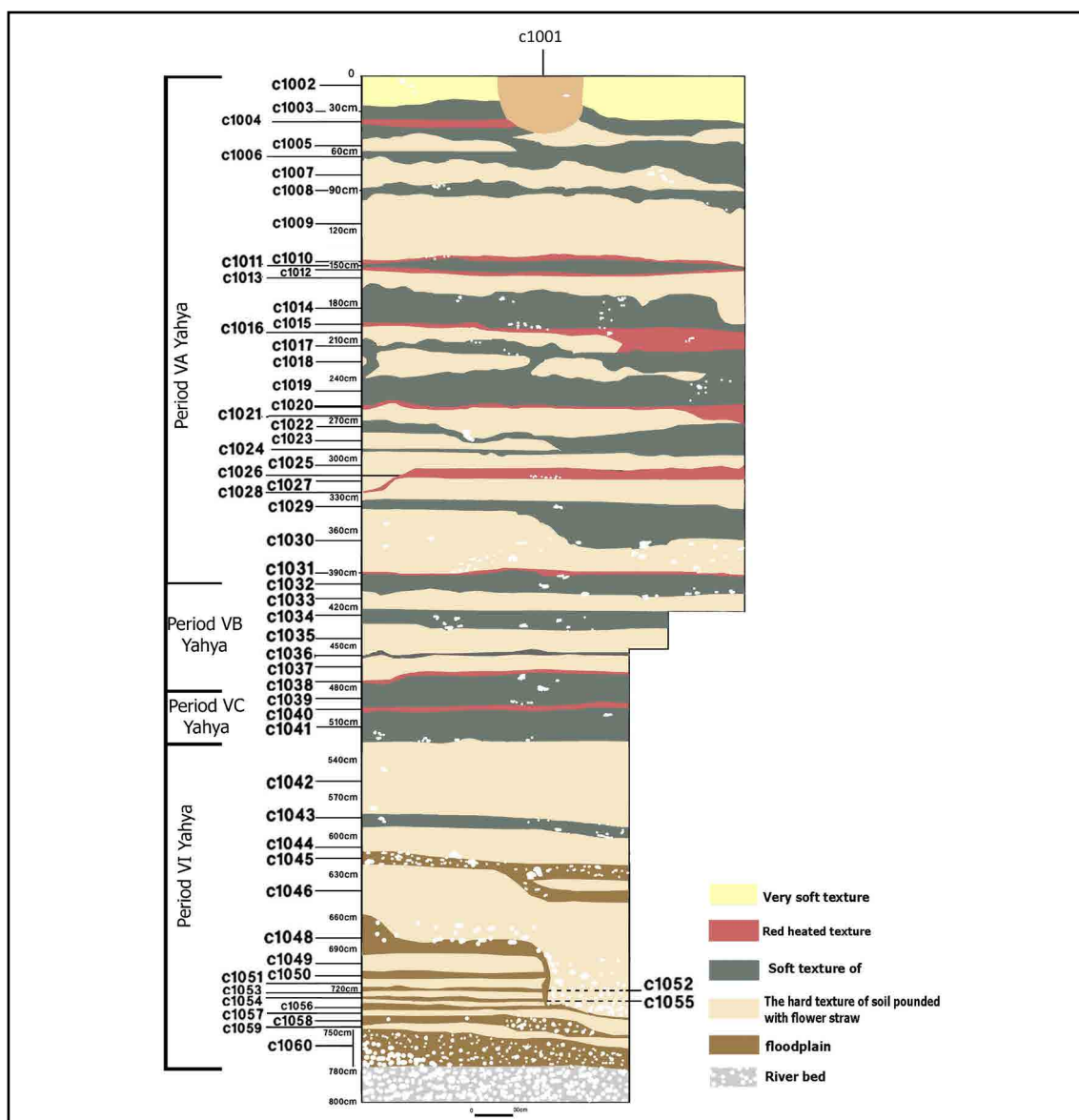


Fig. 5. Stratification plan of the southern workshop area at Tepe Morad Abad VIII.

5. The Pottery of Tepe Morad Abad VIII

The stratigraphic excavation at Tepe Morad Abad VIII yielded 2413 handmade pottery sherds. These sherds were categorized based on their material, type, decoration, and firing technique. Of these, 918 sherds were selected for detailed study, including drawing and classification. The recovered pottery was divided into four main groups, indicating continuous changes in the pottery's paste, decoration, surface color, and shape over time. The first pottery group, comprising 49 sherds, was recovered from a depth of 0-45 centimeters below the datum point (the uppermost settlement layer). The paste of these vessels ranges from fine to medium-grained and exhibits a color range from reddish-brown to buff. They are typically coated with a thin buff slip and contain a temper of wind-blown sand with very fine plant inclusions. Some examples also exhibit a coarser paste with a temper of small plant particles and well-worked sand. Vessel forms in this group include small open bowls, closed cup-shaped vessels, vessels with a simple flat base, and examples with a footed base. The predominant decoration consists of black geometric

designs on a buff and reddish-brown background. This pottery group is correlated with the late Yahya VA period (Chalcolithic) (Fig. 6).

The second group comprises 1,316 pottery sherds recovered from a depth of 45-400 centimeters below the datum point. This group is dominated by fine to medium-grained pottery with red paste and slip. In the upper layers of this group (Yahya VA1), the red paste and slip are darker, while in the lower layers (Yahya VA2), they are lighter. Also found in this group are limited quantities of pottery with red paste and buff slip, pottery with buff paste and slip, and a small number of coarse, simple wares tempered with straw,

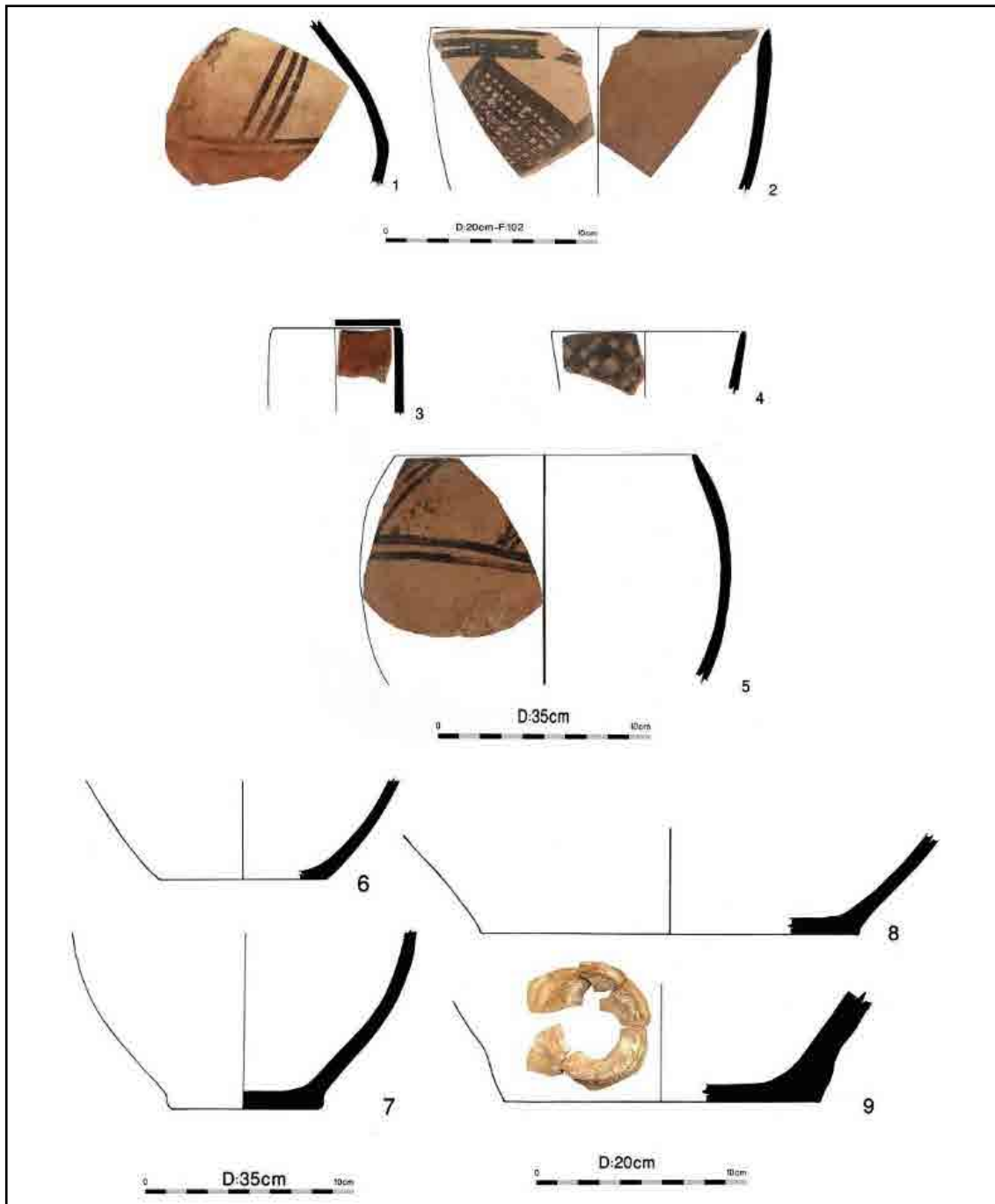


Fig. 6. Pottery samples, first group, from the late VA period of Yahya, recovered from Tepe Morad Abad VIII.

continuing the traditions of the earlier layers. Vessel forms in this group include open-mouthed jar or vase-shaped vessels, conical bowls, closed-necked globular jars, small bowls and cups, cylindrical cups, flat-based and dish with base (lower layers), and two-part vessels with grooved rims (lower layers).

This group is characterized by a prevalence of black geometric designs on a red background, a feature absent in earlier layers. A notable trend in the upper layers is the use of zigzag or chevron patterns, often confined to a narrow band near the rim (VA1). In contrast, the lower layers (VA2) exhibit wider bands of these patterns that extend to the mid-section of the vessels, indicating a significant change in decorative motifs. Additionally, the upper layers show the emergence of potters' marks on the bottom of the vessels. While pottery with black designs on a buff background continues the traditions of earlier layers, the overall characteristics of the second group align with those of the Yahya VA1 and VA2 periods (Figs. 7 & 8).

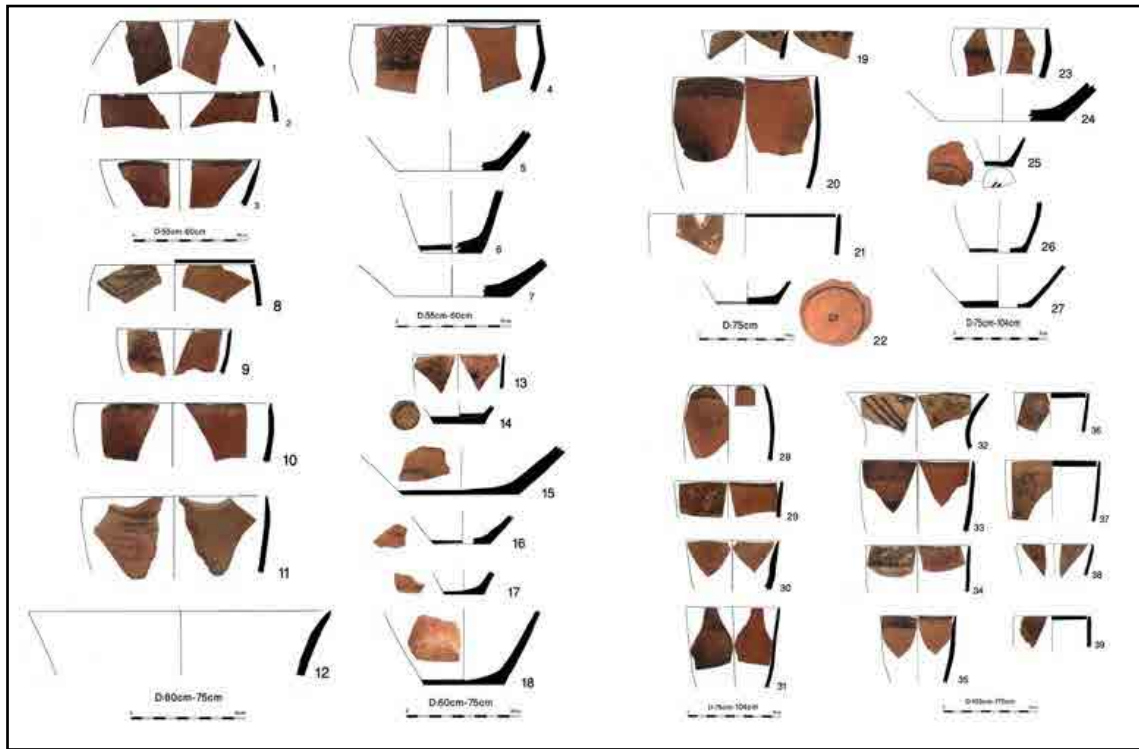


Fig. 7. Pottery samples, second group, from the VA1 period of Yahya, recovered from Tepe Morad Abad VIII.

The third group consists of 342 pottery sherds recovered from a depth of 400-535 centimeters below the datum point. This group features a mix of fine to medium-grained pottery and a prevalence of coarse ware tempered with large pieces of straw. Vessel forms include cylindrical cups, goblet-shaped vessels, conical cups and bowls, globular jars, vase-shaped vessels, a limited number of vessels with ring bases, and the emergence of vessels with a coarse, smoky-fired paste and inwardly curved bases.

A notable characteristic of this group is the absence of black designs on a red slip and the prevalence of black designs on a buff slip. Zigzag or chevron patterns on a buff background, extending to the mid-section of the vessels, are also common. Other distinctive features found in the lower layers include open-mouthed, dish with base with

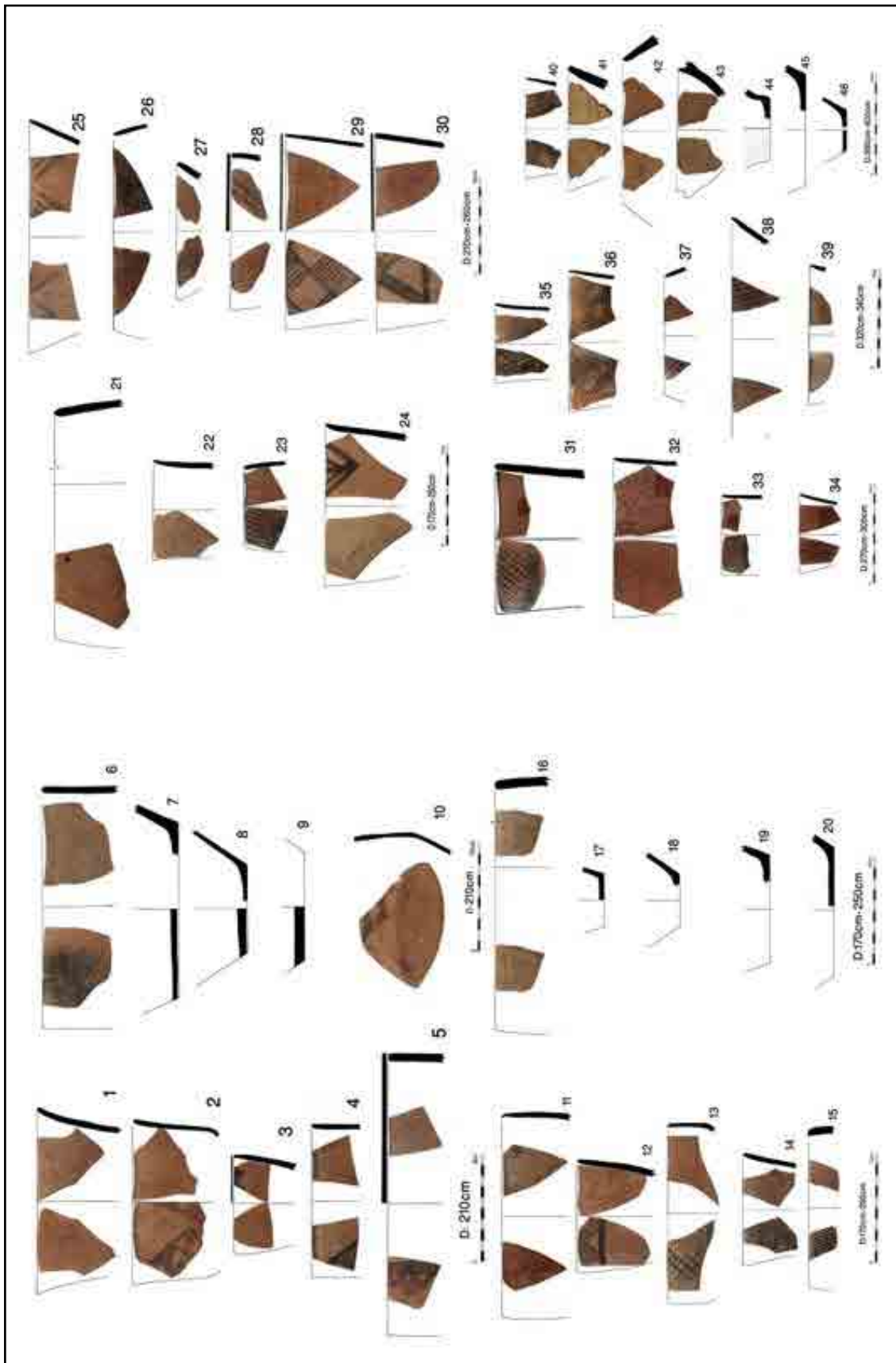


Fig. 8. Pottery samples, second group, from the VA2 period of Yahya, recovered from Tepe Morad Abad VIII.

buff paste and internal decoration, “Lapui ware” (with burnished slip), coarsely-made vessels with applied relief decoration, and painted coarse ware. The pottery of the third group aligns with the pottery of the Yahya VC and VB periods (Middle Chalcolithic) (Figs. 9 & 10).

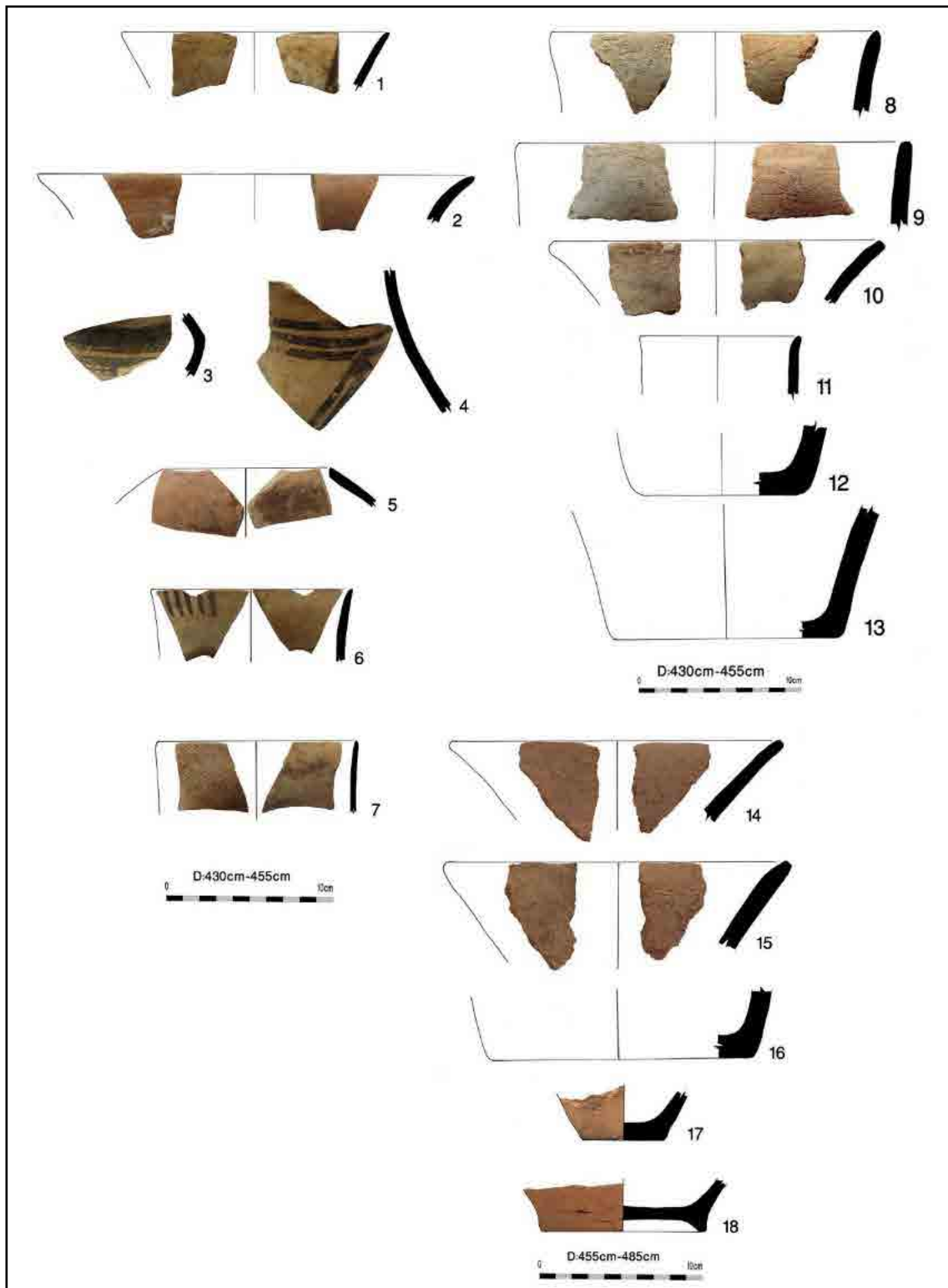


Fig. 9. Pottery samples, third group, from the VB period of Yahya, recovered from Tepe Morad Abad VIII.

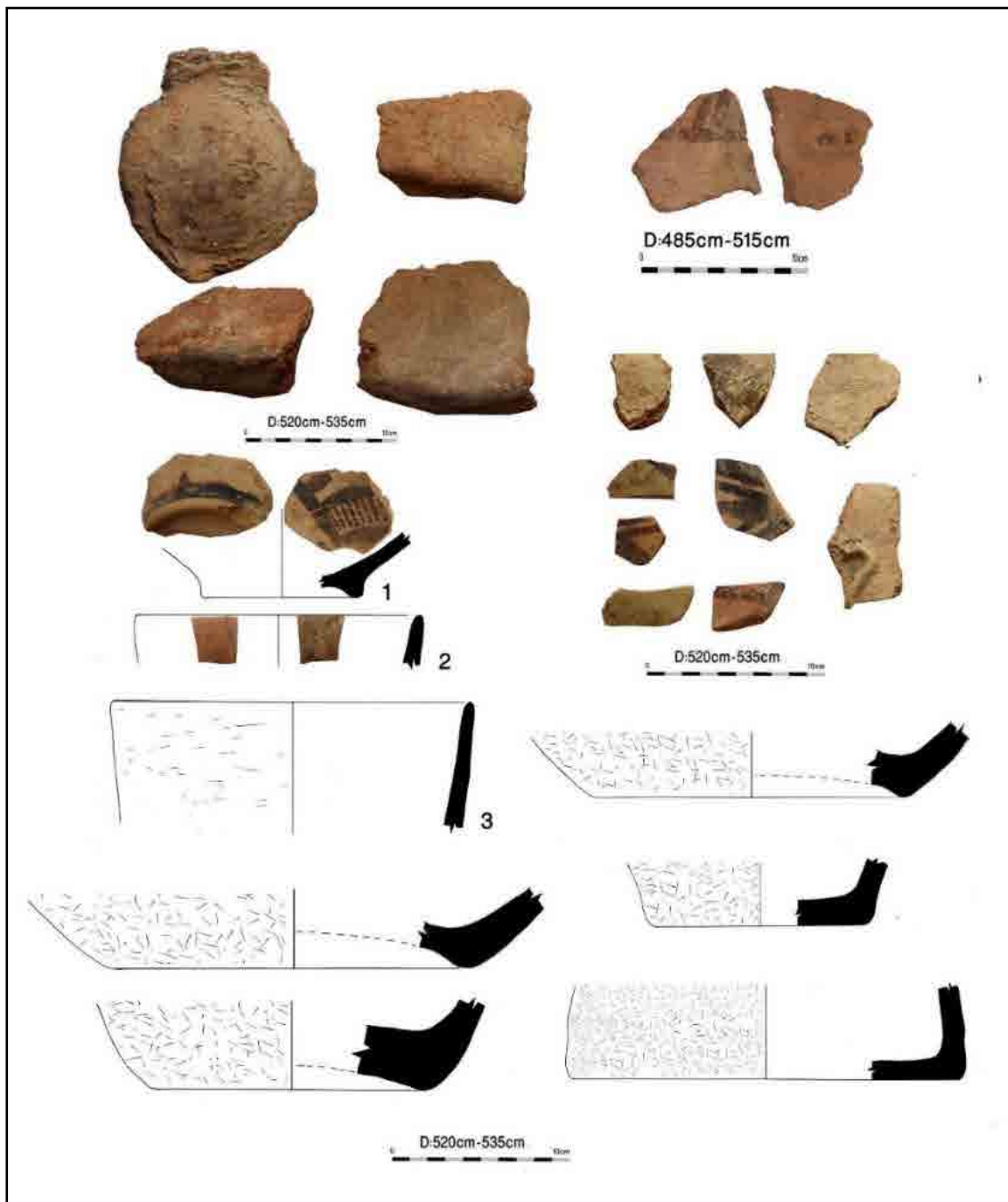


Fig. 10. Pottery samples, third group, from the VC period of Yahya, recovered from Tepe Morad Abad VIII.

The fourth group comprises 706 pottery sherds recovered from a depth of 535-780 centimeters below the fixed datum point. This group is dominated by coarse ware with large straw temper and little to no finishing, with a scarcity of fine to medium-grained pottery. Vessel forms include small and large, coarsely made bowls with simple rims and globular, conical, or cylindrical bodies, stemmed glasses with the rim turned inside, vase-shaped vessels, and necked jars. The lower layers introduce two-part vessels and waisted jars or jugs. Decorated pottery is absent in this group. The pottery in this group aligns with the pottery of the Yahya VI period (Early Chalcolithic) (Fig. 11).

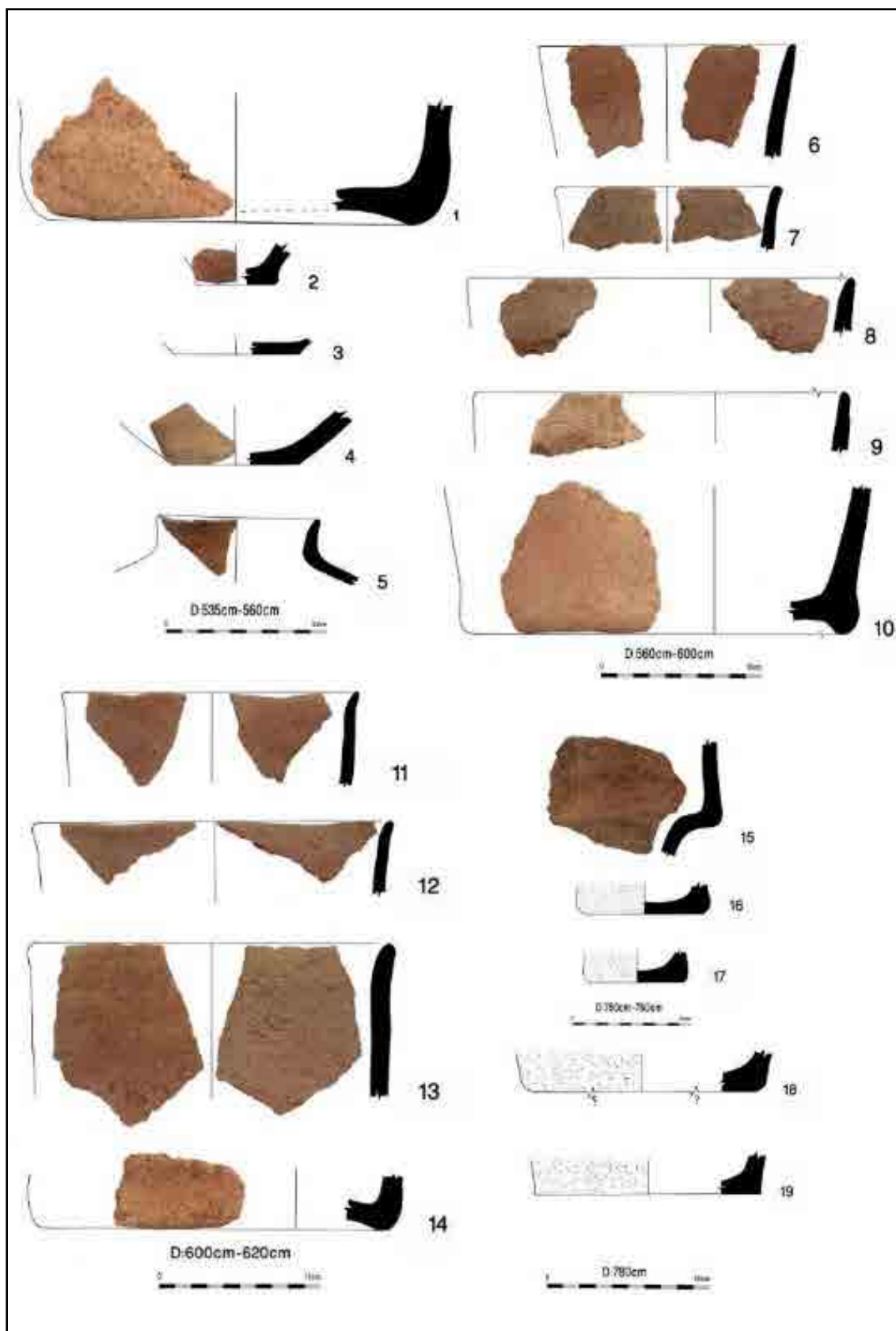


Fig. 11. Pottery samples, fourth group, from the VI period of Yahya, recovered from Tepe Morad Abad VIII.

Based on the characteristics of the four pottery groups from Tepe Morad Abad VIII, as discussed above, the changes observed in the paste, slip, and decoration of the pottery within each group indicate alterations in pottery-making traditions over time. This temporal change is evident in the provided diagram (Diagrams 1 and 2).

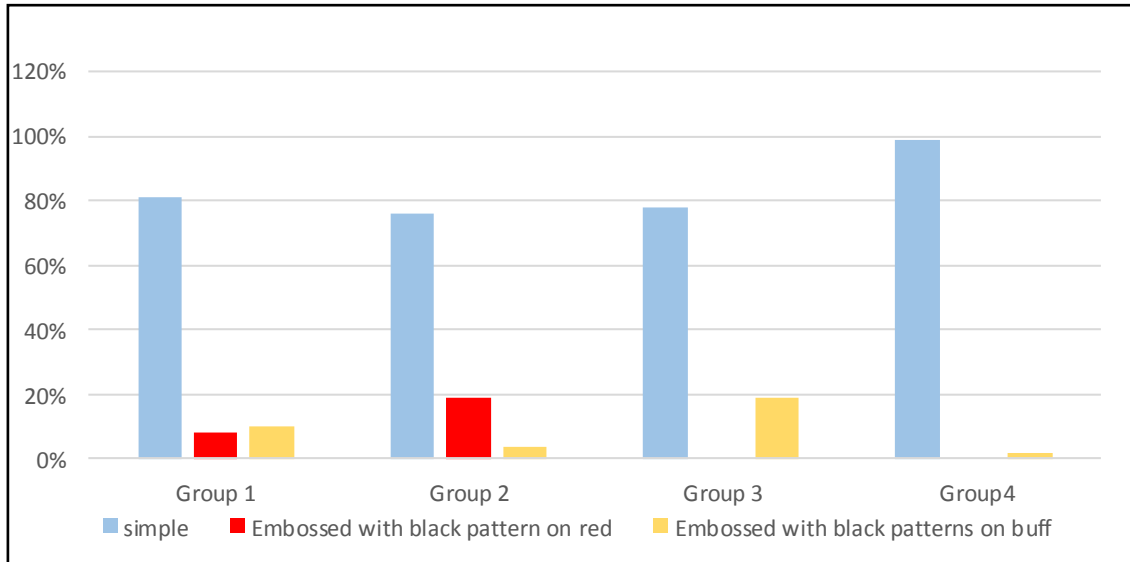


Chart 1. Pottery Decoration Abundance at Tepe Morad Abad VIII

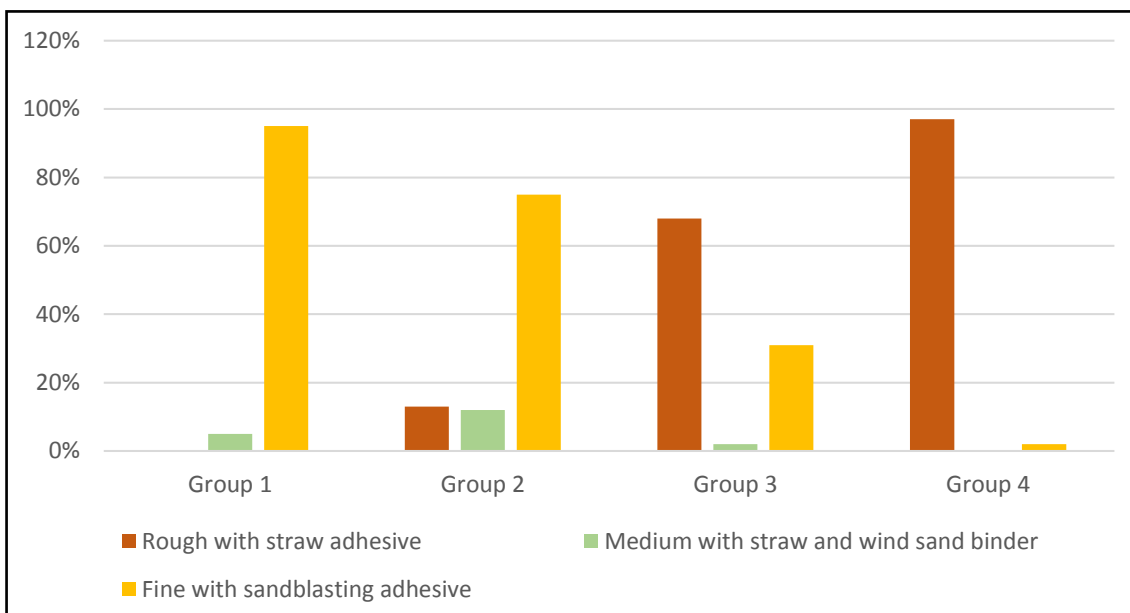


Chart 2. Pottery Temper Abundance at Tepe Morad Abad VIII

6. Relative Chronological Dating of Pottery through Comparative Studies at Tepe Morad Abad VIII

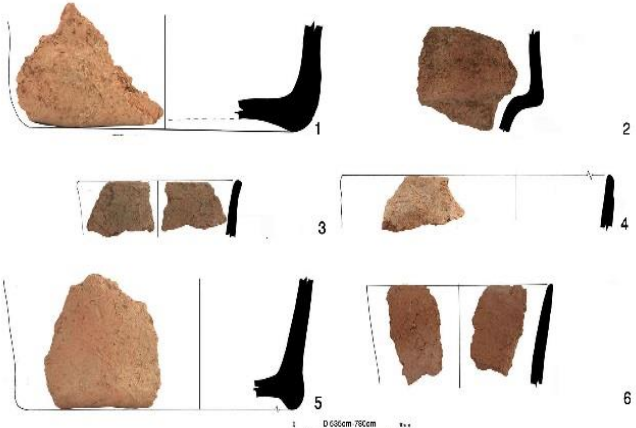
The pottery found at Tepe Marad Abad VIII was divided into four main groups, as explained in previous sections. These four groups were then grouped into two larger time periods: the early Chalcolithic period and the middle Chalcolithic period. These periods and their significance will be explained in more detail in the following sections.

6-1. Early Chalcolithic Period (5600 – 5300 BCE)

The pottery of Group 4 at Tepe Marad Abad VIII exhibits types comparable to those found in Yahya VI (Early Chalcolithic). However, no evidence of earlier types (Yahya VII - the transitional period from the Neolithic to the Chalcolithic, the earliest known period at Yahya) was found in this group (Wight Beale, 1986b:39). Examples of coarse pottery from Yahya VI are comparable to the transitional period (from the Neolithic to the Chalcolithic of Fars) at Shams Abad or Bakun B1 in Fars, known for its undecorated coarse pottery and dated to 5400-5200 BCE (Old Fars) (Alizadeh, 2006: 10). Wight Beale found that people who made pottery during the Yahya VI period (around 5600-5300 BCE) used a lot of big pieces of straw to hold the clay together. This made the vessels weaker and easier to break compared to vessels made earlier in the Yahya VII period (the transitional period from the Neolithic to the Chalcolithic) (Wight Beale, 1986b:39). Prickett, based on ceramic findings from the Goushk Plain survey (north of the Morad Abad River basin), distinguishes Yahya VII pottery from Yahya VI pottery, describing the former as having a dense paste and a polished exterior surface (Prickett, 1986a:1378). Another characteristic of the emergence of Yahya VI is the two-part pedestaled jar form, first observed in Yahya VIB.2. This pottery form, based on the chronological table of Yahya pottery types, is seen from Period VI to Period VB (Early Chalcolithic to the mid-Middle Chalcolithic) (Wight Beale, 1986b: 40-43).

Due to its association with Group 4 pottery at Morad Abad VIII, it was considered to belong to the Yahya VI period. This, along with other supporting evidence, indicates the formation of the earliest settlements on this site during the Early Chalcolithic period (Figs. 1-6 in Table 3). Unlike the sites observed in the western part of the Orzuiyeh plain, which are often situated on a natural hill base, the earliest settlement layers of Morad Abad VIII were established at the same level as the Morad Abad plain and river. Despite being repeatedly affected by floods and river currents, the extremely favorable location, including fertile soil and abundant water, ensured the continuity of settlement

Table 3. Pottery Comparison: Morad Abad VIII vs. Yahya, Iblis, and Neighbors (Early Chalcolithic)

Row	Early Chalcolithic period pottery of Morad Abad VIII	Comparable examples
1		<p>Yahya VI, Iblis 0 (Wight Beale, 1986: Fig. p 44, 48; Caldwell, 1961: Figures p 117, 119, 206).</p> <p>Shams Abad (Bakun B1) (Sardari & Rab, 2018: Figures p 655; Sardari, 2011: Figs. p 82).</p>

and created a relatively safe platform (approximately 1.5 meters high) of residential and flood deposits for subsequent settlements.

Therefore, based on the ceramic evidence, the settlement at Morad Abad Tappeh began in the Early Chalcolithic period (Yahya VI) and, after passing through this period, entered the short Yahya VC period, where the beginning of cultural changes in the pottery is evident. According to the chronologies, this cultural period at Yahya lasted about 300 years. Prickett found that people lived in Gaztavile, located in the southern part of the Morad Abad River basin in the Orzuiyeh plain, during the Yahya VII period. Due to decreased floods and water scarcity in the region, as described by, settlement shifted to the northern basin of the Goushk River during the Yahya VI period (Prickett, 1986b: 234). Evidence of this early settlement, including multiple water channels, is found at Tepe Morad Abad VIII.

6-2. Middle Chalcolithic Period (5300– 4200 BCE)

Significant evidence of the emergence of VC pottery (marking the beginning of the Middle Chalcolithic period) has been found in Group 3 pottery at Tepe Marad Abad VIII. This period can also be considered as a transitional phase from the Early Chalcolithic to the Middle Chalcolithic. In addition to the continuation of coarse pottery from the Yahya VI period (Early Chalcolithic), the appearance of new pottery types brought Morad Abad VIII into the short Yahya VC period. One of the indicators of the beginning of the Yahya VC period is the emergence of shiny pottery known as Lapui. This type of pottery was prevalent until the Yahya VA2 period, which is quite different from VC. In the chronology presented in the excavation report of Tepe Yahya, Lapui pottery is very rare in the VIB1 period, rare in the VIA period, common in the VC period, very common in the VB period, common in the VA2 period, and rare in the VA1 period (Wight Beale, 1986b: 55, 39). This type of pottery was also observed in Group 3 pottery at Morad Abad VIII, matching both in terms of vessel form, color, and surface color with the type found in Yahya VC (Figs. 11 and 20 in Table 4).

A further critical indicator of the onset of the Yahya VC period, marking the commencement of the Middle Chalcolithic era, is the emergence of coarse pottery adorned with broad bands of color. This pottery typology spans from the VIB to the VC phases of the Yahya sequence (Wight Beale, 1986b: 42). Examples of this pottery type, identified within Group 3 ceramics at Morad Abad VIII, exhibit a striking congruence with Yahya counterparts in terms of both clay composition and decorative motifs. Consequently, in conjunction with other evidence pertaining to the initiation of the Middle Chalcolithic within Group 3 ceramics, the presence of the Yahya VC phase at Morad Abad VIII is substantiated (Figs. 9 and 17 in Table 4).

Another intriguing ceramic find in Group 3 is the example of relief-decorated pottery. While absent from the Yahya reports, this pottery type is characteristic of the coarse ware of the Lalehzar phase at Iblis in the Bardsir Plain, where the excavator attributed it to the Neolithic period (Caldwell, 1967: 120). Malek Shahmirzadi correlated it with the Tel Bakun B phase in Marvdasht, Fars (Malek Shahmirzadi, 2012: 400). Recent radiocarbon dating from stratified excavations at Dehno and VaKil Abad has significantly revised the chronology of the region's Chalcolithic period, pushing it back by a millennium (Eskandari, 2018:34) (Mojgan shfee, 2019: 92). Considering this new evidence, and upon examining the ceramic characteristics of the Yahya VI to VC periods in Group 4 pottery

at Morad Abad VIII, a reassessment of the pottery with Lalehzar characteristics at Tal-i Iblis is necessary. Specifically, the distinctive examples with added motifs, previously attributed to the Neolithic by Caldwell (1967), should be reassigned to the Early and Middle Chalcolithic periods (Yahya VI to VC). The evidence presented in Figures 15 and 16 of Table 3 supports this reassignment.

The VC ceramic culture provided the foundation for the re-emergence of fine, painted pottery featuring black designs on a buff-colored background. This type of pottery was prevalent from the VC to the VA1 periods at Tepe Yahya. However, the VC examples exhibit distinct characteristics in terms of decoration (confined to the base of vessels), paste, and form compared to subsequent periods (Wight Beale, 1986b: 61-62). Examples of this decorated pottery were discovered in the earliest layers of Group 4 ceramics at Morad Abad VIII (Figs. 7 and 8 in Table 4). During the Yahya VI to VC periods, the southwestern region of Iran witnessed an increasing influence from the Ubaid culture. The emergence of pottery with black designs on a buff-colored background is likely a result of this influence. In the VC period, the first instances and examples of this new type of black-on-buff ware, albeit in limited quantities, became apparent. These vessels are comparable to those found at Jafar Abad, Bakun B2 and Gap. The VC-period black-on-buff ware may indicate a direct western introduction. However, by the VB period, these fine, well-made vessels were widely produced locally (Lamberg-Karlovsky and Wight Beale, 1986: 266).

Upon reaching a depth of 485 centimeters below the fixed point of the excavation grid at Tepe Morad Abad VIII, and having passed through less disturbed settlement layers by floods, a new phase of ceramic development became evident. This phase is characterized by a prevalence of fine, buff-colored ware decorated with black designs, and a noticeable increase in the proportion of fine wares relative to the coarser types of the preceding period. The form, decoration, and surface color of these new ceramics align with the VB period at Yahya (Figs. 18-40 in Table 4). The VB ceramic type in Fars is known as the Bakun (B2) ware (Prickett, 1986b: 237).

To compare the Yahya VB buff-colored ware's overall style with contemporary ceramics, we examined examples from the central plateau and western regions. These included the Bakun ware of Fars, the Middle and Late Susiana ware of Khuzestan, the Middle and Late Chalcolithic ware of Zagros, and the Sialk VII-4III ware of the central plateau (Hezhabri *et al.*, 2012: 84). According to the Yahya excavation reports, one of the most significant characteristics of the short VB period is the prevalence of buff-colored ware with black designs, particularly those with a chevron pattern. Based on Wight Beale's chronology, these vessels were very rare in the VIA period, rare in the VC period, very common in the VB period, common in the VA2 period, and again rare in the VA1 period (Wight Beale, 1986b: 58-70). Between 45 and 400 centimeters below the fixed point of the excavation grid at Morad Abad VIII, alongside the VB ceramic culture, a new type of pottery with black designs on a red background was discovered. This new pottery constitutes the second group of ceramics at Morad Abad VIII. In this group, the VB ceramic style continues with some modifications, but there is a significant decrease in the use of coarse pottery with large straw temper. Pottery with black designs on a red background was common during the VA2 and VA1 (Middle Chalcolithic) periods at Tepe Yahya (Wight Beale, 1986b: 72-76) and can also be divided into VA1 and VA2 types in Morad Abad VIII, similar to the pottery at Yahya (Figs. 41-88 in Table 4).

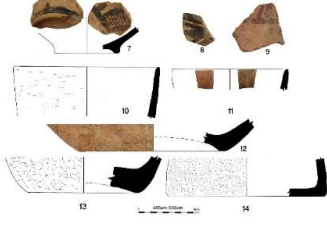

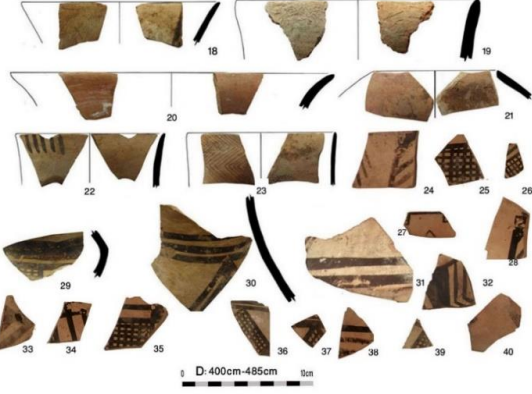
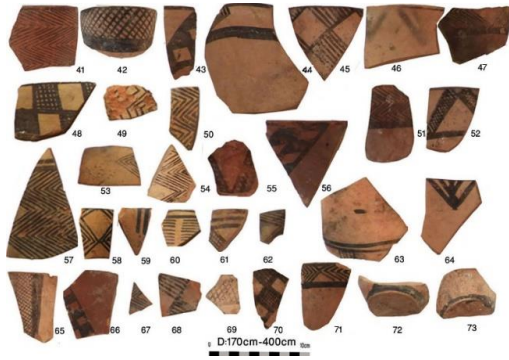

Within the first 20 centimeters of the uppermost and most distinct stratum in the excavation of Morad Abad III, evidence of continued occupation was found. This 45-centimeter-thick stratum has a disturbed and very soft texture, likely due to alluvial fan activity and seasonal flooding, resulting in a weathered, powdery consistency. Although the pottery found in this layer is limited, it continues the tradition of Yahya VA ceramics. The pottery exhibits no similarities to the post-VA Yahya period or the Chalcolithic period as reported by Prickett at this site (in her study of the Goushk River basin) and other mounds in the Morad Abad plain, such as Morad Abad XII (Prickett, 1986b: 244). Therefore, the pottery of this layer, classified as Group 1 in the ceramic typology of Morad Abad VIII, can be attributed to the late Chalcolithic period, albeit with slight differences in paste composition. Consequently, it has been placed in a separate group due to both the distinct nature of the stratum and the unique characteristics of the ceramic paste.

The Iblis IV and V (Chalcolithic) ceramics discovered by Prickett during excavations at Morad Abad XII were found within burials situated in a disturbed, superficial stratum (the uppermost settlement layer) with a very soft texture. This texture is similar to that of the initial layer excavated at Morad Abad VIII. In contrast, VA period (Early Chalcolithic) ceramics were found outside of burials within the same soft stratum (Prickett, 1986a: 943-960). Therefore, the latest settlement layer at Morad Abad XII can be attributed to the VA period, followed by subsequent burials from the Iblis IV and V periods (late Chalcolithic) within the same final settlement layer.

Prickett suggests that during this period in the Morad Abad plain, there is evidence of societal disintegration, with communities living in smaller, transient groups (Prickett, 1986b:236). It is possible that Iblis IV and V represent a period of expansion, migration, or a nomadic lifestyle in the region, the reasons for which are still unclear (Lamberg Karlovsky and Wight Beale, 1986:267-268). Based on the ceramic evidence, the uppermost settlement layer in the stratigraphic excavation at Morad Abad VIII indicates the final stages of occupation of this site during the VA period. Prickett, based on her research in the Morad Abad plain, suggests that the VA period marks the end of significant settlement in the Dolat Abad region (the Morad Abad river basin) (Prickett, 1986b: 237-238). However, recent studies suggest that while post-Chalcolithic settlements may have decreased, they did not entirely cease. For example, Tepe Gaze Bahar in the central part of the Morad Abad plain, which belongs to the Chalcolithic period (Alidadi Solimani, 2009), supports this idea. Prickett posits that it took approximately three thousand years for permanent settlements to re-establish themselves in the region (until the introduction of Qanats), after which new settlements were formed in different parts of the Morad Abad plain (Prickett, 1986b: 37-38). According to absolute chronologies, the Yahya VA period lasted about 600 years, making it longer than other Chalcolithic cultural periods (Table 2). Based on his research in the Morad Abad river basin, Prickett argues that the VA period was actually the period of maximum settlement in the region, with over 53 archaeological sites in the area dating to this time (Prickett, 1986b: 37-38).

Recent studies in the Orzuiyeh plain reveal that, despite the destruction of some settlements due to flooding, most of the remaining, visible prehistoric settlements in the Morad Abad river basin belong to the Yahya VA period (Middle Chalcolithic) (Alidadi Solimani, 2009). However, Prickett also notes the diversity of pottery in the Soughan and Shahmaran-Dolat Abad regions throughout the Yahya VA period (Prickett, 1986b: 217). This is consistent with the pottery from the VA period at Morad Abad VIII, which, like

Table 4. Pottery Comparison: Morad Abad VIII vs. Yahya, Iblis, and Neighbors (Middle Chalcolithic)

Row	Middle Chalcolithic period pottery of Moradabad VIII	Comparable examples
1		<p>Yahya VC (Wight Beale, 1986b: Figure p 42, 48).</p> <p>Middle susiana (Dollfus, 1997: Figures p 31)</p>
2		<p>Iblis 0 (Caldwell, 1967: Figs. p120).</p>
3		<p>Yahya VB (Wight Beale, 1986b: Fig. p 56, 60, 65).</p> <p>Iblis I (Caldwell, 1967: Fig. p. 126, 126, 128, 208).</p> <p>Bakun B2 (Hejbari Nobari, et al., 2012: Figures p. 91, 93, 94; Taheri, 2015: Figures p 122, 127, 131, 140; Alizadeh et al., 2006: Figures p 179; Alizadeh, 2009: Figures p 273).</p> <p>Middle Susiana (bajuorvand et al., 2018: Fig. p 49, 51, 52; Delougaz & Alizadeh, 1996: Figure plat: 56, 57, 59, 60, Alizadeh, 1992: Figures p 83, 85, 91, 99, 109, 147).</p> <p>Sialk III: (Ghirshman, 1939: Fig. p 240-259).</p> <p>Ubaid 3 (Nadali & Polcaro, 2020: Figure p 77, 79; Jasim <i>et al.</i>, 2021: Figures p 360-378).</p>
4		<p>Yahya VA2 (Wight Beale, 1986b: Figure p: 60, 64, 70, 71, 74, 75,).</p> <p>Iblis II (Caldwell, 1967: Figur p 130, 132, 133, 175).</p> <p>Sialk III (Ghirshman, 1939: Figure p 240-259)</p> <p>Bampur (Mutin <i>et al.</i>, 2017: Figure p, 7).</p> <p>Ubaid 3 (Nadali & Polcaro, 2020. Figure p 77, 79; Jasim <i>et al.</i>, 2021: 360-378)</p>
5		<p>Yahya VA1. (Wight Beale, 1986b: Figures p 74, 77, 79)</p> <p>Iblis II (Caldwell, 1967: Figs. p131, 173, 210)</p> <p>Bampur (Mutin <i>et al.</i>, 2017: Fig. p, 7)</p>

the pottery found in Prickett's survey of the Dolatabad plain and the excavated pottery from Tepe Yahya, exhibits a wide variety of motifs and forms. Lamberg-Karlovsky suggests that during the VA period, there existed a favorable economic situation based on a settled agricultural lifestyle. The distribution of pottery from this period extends from Chah Hosseini in eastern Iran to Haji Abad along the Bandar Abbas-Kerman highway in the west, covering a distance of approximately 475 kilometers, and from Shahdad in northern Kerman to southern Minab, spanning over 500 kilometers on the north-south axis (Lamberg-Karlovsky, 1986: 8-9). Furthermore, recent archaeological investigations in the Jiroft region support the number and extent of Yahya VA settlements in the southern part of the Jiroft plain, adjacent to the eastern part of the Orzuiyeh plain, confirming the widespread nature of these settlements (Pfälzner et al, 2019). Overall, based on the map provided by Prickett, settlements with Yahya VA ceramic culture have been identified as far as the Khash region, in the northeastern part of the Bampur Valley (Prickett, 1986a: 765).

7. Discussion of the Archaeological Record at Morad Abad VIII

Martha Prickett's investigations in the Dolatabad plain (Morad Abad River basin) and the stratigraphic excavation at Morad Abad VIII clearly demonstrate that the settlement, which originated in the southern part of the Morad Abad River basin (at Tepe Gaz Tavileh) during the Yahya VII period, continued northward to Morad Abad VIII from the Yahya VI period onward due to the region's abundant water resources. This settlement continued uninterrupted until the end of the Chalcolithic period (Yahya V). The continuity of the Yahya ceramic culture from the Early Chalcolithic to the end of the Middle Chalcolithic period, along with other evidence of subsistence such as agricultural and pastoral products¹ at Morad Abad VIII, indicates the favorable location of this site for the inhabitants of the Morad Abad river basin during the Chalcolithic period. This is attributed to the abundant surface water², fertile agricultural soil, and accessible pastures for grazing livestock up to the northern mountain ranges, ultimately making it a central hub for meeting the subsistence needs of the inhabitants of the Morad Abad river basin, and perhaps even the Orzuiyeh and Soughan plains, for an extended period during the Chalcolithic period.

Yahya V, based on archaeological evidence, is a period of significant growth, prosperity, and an increase in the number of settlements, resulting in the development and flourishing of the southeastern region of Iran. This period is divided into three sub-periods (VC, VB, and VA) in the Yahya Tepe chronology based on changes in ceramic traditions. Through comparative studies, these three periods are clearly observable at Tepe Morad Abad VIII. The importance of studying the ceramics from Morad Abad VIII lies in the presence of highly diagnostic pottery that aids in identifying each phase of settlement at this site, reinforcing relative chronologies. The stratigraphy and relative chronology of Morad Abad VIII (R6) indicate that this site was continuously occupied by Chalcolithic communities for approximately 1400 years, from the mid-6th millennium BCE to the late 5th millennium BCE. Therefore, based on the available radiocarbon data and ceramic analysis, a relative chronology spanning from 5600 BCE (Yahya VI period) to 4200 BCE (late Yahya VA period) is proposed for the settlement at Morad Abad VIII. This encompasses four cultural periods: the Early Chalcolithic (Yahya VI) and the Middle Chalcolithic (VC, VB, and VA periods) (Table 2).

8. Conclusion

Recent archaeological research in southeastern Iran has necessitated a reevaluation of the early chronologies of the prehistoric periods in this region, particularly for the ancient site of Tepe Yahya, which has served as a reference for the study of prehistoric pottery in the area. Previously, there was no knowledge of Neolithic sites in southeastern Iran, and the oldest archaeological layers at Tepe Yahya, which were located on virgin soil, had been attributed to the Neolithic period. Excavations, stratigraphic studies, and dating conducted for the Neolithic and Chalcolithic periods have been a significant step in revising and refining the prehistoric chronology of the region. As a result of these excavations, the attribution of the Neolithic period to Yahya VII has been rejected, and the chronology of the Chalcolithic period in the region has been pushed back by nearly a millennium. Consequently, the relative dating of the cultural layers at Tepe Morad Abad VIII can now be done with greater certainty based on recent absolute dating.

Previous excavations and archaeological investigations in the region have noted the existence of a considerable number of distinctive pottery types of a local production tradition during the Early and Middle Chalcolithic periods. Comparative studies conducted on the pottery from the excavations at Tepe Morad Abad VIII show that the ceramic production culture in the settlement layers of this site, during the 6th and 5th millennia BCE, was connected to and comparable to the pottery culture of neighboring regions, similar to the ones observed at Tepe Yahya. The local tradition of the region continued with fluctuations in subsequent periods, confirming previous findings. In summary, based on cultural findings, especially pottery and evidence of agriculture and animal husbandry, as well as the site's location, the community at Morad Abad VIII was able to develop into a sophisticated pastoral and agricultural society during the Early and, especially, the Middle Chalcolithic periods.

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10. Endnote

1. A significant number of burnt wheat and barley grains, as well as fragments of animal bones from domesticated animals such as goats and sheep, were found during the stratigraphic excavation of Tepe Morad Abad VIII

2. At Tepe Morad Abad VIII, several water channels converge, and the river reaches its widest point in this section.

3. The slope of the land decreases significantly in this area, causing the river to deposit sediment in this section.

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تاریخچه مقاله

چکیده

دشت ارزوئیه یکی از مهم ترین بسترهای جغرافیایی بوده که استقرارهای پیش ازتاریخ (خصوصاً مس وسنگ) در جنوب غرب استان کرمان را دربر گرفته است. در این دشت کاوش های باستان شناسی محدودی در محوطه هایی مانند: گزطوبله، مرادآباد XII و وکیل آباد انجام شده، اما نتایجی از توالی استقرار در چند دوره فرهنگی مس وسنگ به دست نیامده است؛ لذا، لایه نگاری در تپه مرادآباد VIII که از مرتفع ترین تپه های دوران مس وسنگ در این منطقه است، با هدف گاهنگاری نسبی و تکمیل اطلاعات درخصوص استقرارهای دوران مس وسنگ و تداوم فرهنگ سفال این دوره در دشت ارزوئیه ضروری به نظر رسید. با توجه به ضخامت نهشته ها و سفال های پراکنده بر سطح تپه مرادآباد VIII وجود چند دوره فرهنگی متوالی، مطابق با فرهنگ سفال مس وسنگ یحیی انتظار می رفت. در این تحقیق که به روش مطالعات میدانی و کتابخانه ای و رویکرد توصیفی-تحلیلی، انجام شده است، توالی فرهنگ سفال مس وسنگ در استقرار طولانی مدت آشکار شد و ۶۰ لایه فرهنگی شناسایی و ۲۴۱۳ قطعه سفال به دست آمد که ۹۱۸ قطعه قابل مطالعه، طراحی و گونه شناسی شدند. نتایج نشان داد که تپه مرادآباد VIII در دوره های VI، VC، VB و VA یحیی (از مس وسنگ قدیم تا پایان مس وسنگ میانی) بدون وقفه مسکونی بوده و تاریخ نسبی ۵۶۰۰ تا ۴۲۰۰ پ.م. برای آن پیشنهاد شد.

تاریخ انتشار:

۱۴۰۳/۰۹/۳۰

کلیدواژگان:

فرهنگ یحیی،
مس وسنگ میانی،
سفال مس وسنگ، دشت
ارزوئیه، مرادآباد VIII.

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