



Bu-Ali Sin
University



Iranian Scientific
Archaeological
Association

پژوهش‌های باستان‌شناسی ایران

Archaeological Research of Iran

P. ISSN: 2345-5225 & E. ISSN: 2345-5500

Homepage: <https://nbsh.basu.ac.ir/>

Vol. 15, No. 45, 2025

Dalma or Non-Dalma: Evaluation of the Ceramic Assemblages Attributed to the Dalma Culture

Hanan Bahranipour¹

<https://doi.org/10.22084/nb.2025.30954.2775>

Received: 2025/05/12; Revised: 2025/06/23; Accepted: 2025/06/28

Type of Article: **Research**

Pp: 51-89

Abstract

During the past two decades, a dozen excavations have been conducted in the primary geographical region of the Dalma Culture and its surrounding areas of the Zagros. Some archaeologists have assigned the ceramic assemblages recovered from these investigations to the Dalma Period based on ceramic types comparable to the classic Dalma ceramic tradition, such as Dalma Impressed, Dalma Monochrome, and Red-Slipped Ware. Several of these assemblages exhibit a combination of cultural materials originating from two or three neighboring regions. In distinguishing between genuine Dalma ceramics and those containing elements merely resembling the classic Dalma ceramic tradition, it is essential to employ the defining characteristics of the Dalma ceramic tradition as a baseline for establishing the relative chronology of these assemblages. Numerous ceramic assemblages from sites both within and along the periphery of the Dalma territory have been attributed to this period, including Kalnan, Soha Chai, Talvar II, Tazeh Kand, Qela Gap, Kul Tappeh, and Idir. The assemblages from these sites can be examined in detail to identify localized traits. It is likewise possible to distinguish ceramics “attributed to the Dalma tradition” from the “classic Dalma tradition,” thereby clarifying some of the characteristics and boundaries of this ceramic tradition. In this article, we examine the ceramic assemblages, and, in certain cases, other aspects of the sites attributed to the Dalma Culture, and compare them with key reference sites such as Dalma Tappeh, Godin, Seh Gabi B, and Nadali Beig. The results indicate that some sites attributed to the Dalma Culture actually belong to later periods, such as Gabrestan I and Godin VII, whose ceramic assemblages contain attributes only distantly related to those of a genuine Dalma assemblage.

Keywords: Dalma Ceramic Tradition, Dalma Monochrome, Dalma Impressed, Godin VII Period, Absolute Chronology.

1. Expert, Iranian Center for Archaeological Research (ICAR), Research Institute of Cultural Heritage and Tourism (RICHT), Tehran, Iran.

Email: h.bahranipour@richt.ir

Citations: Bahranipour, H., (2025). “Dalma or Non-Dalma: Evaluation of the Ceramic Assemblages Attributed to the Dalma Culture”. *Archaeological Research of Iran*, 15(45): 51-89. <https://doi.org/10.22084/nb.2025.30954.2775>

Journal of Department of Archaeology, Faculty of Art and Architecture, Bu-Ali Sina University, Hamadan, Iran.

© Copyright © 2025 The Authors. Published by Bu-Ali Sina University.

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license (<https://creativecommons.org/licenses/by-nc/4.0/>). Non-commercial uses of the work are permitted, provided the original work is properly cited.

© The Author(s)



Introduction

Prehistoric cultures in archaeology are primarily defined through their ceramic assemblages. The extent of prehistoric cultures can be determined by the geographical distribution of these assemblages. In addition, ceramic assemblages usually provide evidence of cultural interactions between different regions. In studying prehistoric cultures through their ceramic assemblages, one should consider the possibility that cultural materials in the buffer zones of cultural boundaries may contain ceramics from two or even three neighboring regions. We aim to discuss one of Iran's most widespread prehistoric cultures, the Dalma Culture, and critically evaluate ceramic assemblages from several sites attributed to this culture. To this end, our discussion is based on ceramic analyses and, in some cases, on absolute chronology.

The Dalma Culture and Its Place in the Prehistoric Sequence of the Central and Northern Zagros

According to some researchers, the Dalma Culture was primarily an unconventional ceramic phenomenon or "ceramic tradition" that developed in the rugged landscapes of the high Zagros during the first half of the 5th millennium BCE ([Henrickson & Vitali, 1987: 37](#)). It is important to note that this perspective is based on the fact that the culture is best known for its distinctive ceramic assemblages. Excavations at Dalma Tappeh, located south of Lake Urmia, led to the identification and definition of the Dalma ceramic tradition in the 1960s ([Young, 1963; Hamlin, 1975](#)). Subsequent excavations at Godin Tappeh and Seh Gabi B, along with re-evaluations of ceramic collections from Siahbid and Chogha Maran in the Central Zagros, revealed similar assemblages, which highlighted this newly identified culture in terms of its ceramic tradition ([Young & Levine, 1974; Henrickson, 1985; Levine & McDonald, 1977](#)). Extending over 400 km, from the southern shores of Lake Urmia to the southern parts of the Central Zagros, the Dalma Culture represents one of Iran's most extensive prehistoric cultural entities. The most distinctive aspect of this culture is its ceramic assemblages, which demonstrate a remarkable uniformity across its territory. Some researchers have attempted to explain this cultural uniformity on anthropological grounds ([Henrickson & Vitali, 1987: 37; Hole, 1987: 48; Henrickson, 1983; 1989: 380](#)).

C. Hamlin, who published an article on Burney's and Young's excavations at the type site Tappeh Dalma, has categorized the ceramic assemblage into

four main ceramic types: Dalma Monochrome, Dalma Impressed (surface-manipulated), Red-slipped, and Plain Ware. The chronological placement of the Dalma period in the prehistoric sequence of the southern Lake Urmia region is identified as the Early Chalcolithic, or “Hasanlu IX.” It succeeded the Late Neolithic or Hajji Firuz phase (“Hasanlu X”) and preceded the Late Chalcolithic or Pisdeli phase (“Hasanlu VIII”) (Voigt & Dyson, 1992). Although it has been claimed that Lavin Tappeh provides evidence of continuity between these periods (Hejabri Nobari *et al.*, 2012), in the absence of convincing evidence, such as the pottery sequence at Lavin, it is challenging to accept this viewpoint. Therefore, based on ceramic typologies, there is as yet no clear cultural continuity between the Late Neolithic (“Hasanlu X”), Early Chalcolithic (“Hasanlu IX”), and Late Chalcolithic (“Hasanlu VIII”).

Following the identification and initial characterization of the Dalma ceramic tradition at the type site, Tepe Dalma, several ceramic assemblages were uncovered through excavations in the Central Zagros region. Despite minor differences, these assemblages displayed significant similarities to those from the southern Lake Urmia Basin. Owing to their remarkable ceramic similarities, these assemblages were also attributed to the Dalma Culture or Ceramic Dalma Tradition in both the Kangavar and Mahidasht sequences (Young & Levine, 1974). In the Kangavar sequence, Dalma ceramics were recovered from excavations at Godin (Trench XYZ) and Seh Gabi Mound B. In the Mahidasht sequence, Dalma ceramics have been identified at Siahbid and Chogha Maran (Henrickson, 1983; Levine & McDonald, 1977; Young & Levine, 1974).

There are differences in the ceramic assemblages of the Dalma Culture in the Kangavar sequence of the Central Zagros compared to those from the southern Lake Urmia Basin. While, as mentioned before, Dalma ceramics consist of four main types in the Lake Urmia Basin, this ceramic tradition in the Kangavar sequence includes eight ceramic types. In addition to those defined at the type site, these are: 1. Dalma Bichrome, 2. Dalma Streaky, 3. Black-on-Buff (BOB), and 4. Dalma Ubaid/Untempered (DUP) (Henrickson, 1983; 1985; Levine & Young, 1987).

Following the Early Chalcolithic, also known as the Shahn Abad Phase, this phase was succeeded by Middle Chalcolithic II, also known as the Seh Gabi Phase. In the Kangavar sequence, a critical issue remains unresolved regarding the stratigraphic and chronological relationship between the Early Chalcolithic (Shahn Abad) and Middle Chalcolithic I (Dalma) (Young & Levine, 1975). To date, no site has been excavated that reveals the nature

of the transition between these two periods in ceramic development. These two phases were associated with two separate mounds at Seh Gabi, Mound C (Shahn Abad) and Mound B (Dalma), and no cultural continuity is evident in their ceramic assemblages. However, the relationship between Middle Chalcolithic I (Dalma Phase) and Middle Chalcolithic II (Seh Gabi Phase) in the Kangavar sequence is much more straightforward. Deposits of the Seh Gabi Phase immediately overlay the Dalma deposits in Trench XYZ (layers 43–48) and the upper layers of Seh Gabi Mound B (layers 1–4) without cultural interruption (Henrickson, 1983; Henrickson, 1985). In their ceramic assemblages, Red-Slipped Ware—a variant of Impressed Ware—and Black-on-Buff (BOB) demonstrate continuity between the Dalma and Seh Gabi phases (Young & Levine, 1974; Henrickson, 1983; Henrickson, 1985). Notably, materials associated with the Seh Gabi Phase and those associated with the Dalma Phase remain unpublished at Godin. Our understanding of these two phases is therefore based primarily on the materials from Seh Gabi Mound B.

In the Mahidasht sequence of the Kermanshah region, the Dalma Phase has been defined by four ceramic types: 1. Black-on-Buff (BOB), 2. Dalma Ubaid/Untempered (DUP), 3. Red-Slipped Ware, and 4. Impressed Ware. Dalma Streaky, Dalma Bichrome, and, most importantly, Dalma Monochrome have not been reported from Mahidasht sites (Henrickson, 1983; Henrickson, 1985; Renette *et al.*, 2023).

The limited occurrence of Dalma Bichrome ware in two sub-areas of the Central Zagros—Kangavar and Sonqor—at sites such as Tappeh Seh Gabi B, Tappeh Nad Ali Beig, and Tappeh Khodaei underscores notable intra-regional variations in the Dalma ceramic assemblages (Bahranipoor, 2018; Khatib Shahid *et al.*, 2012; Henrickson, 1983: 200; Levine & Young, 1987: 21). The presence of distinctive ceramic types such as Black-on-Buff (BOB) and Dalma Ubaid/Untempered (DUP) within Dalma contexts at sites such as Godin, Seh Gabi B (Young & Levine, 1974; Henrickson 1983; 1985: 69), Nad Ali Beig (Bahranipoor, 2023), Chogha Maran, and Siahibid (McDonald, 1979; Renette *et al.*, 2023) in the Kangavar and Mahidasht sequences, as well as possibly in the intermediate valleys between these two regions, provides strong evidence of this ceramic tradition's diffusion from the Ubaid culture of the Mesopotamian lowlands into the Central Zagros (Bahranipoor 2023). Most researchers attribute the widespread distribution of these ceramic types, especially in Mahidasht, Kangavar, and the Seymareh Valley, to the influence of the Great Khorasan Road, a major

cultural and trade route through the Central Zagros region (Hole, 1987: 48; Henrickson, 1983: 739; Henrickson & Vitali, 1987: 44; Abdi, 2002).

In addition to the notable intra-regional differences in the Dalma ceramic tradition, recent studies indicate that this tradition is neither uniform nor homogeneous on a sub-regional scale. This heterogeneity may stem from stylistic variations and influences from local ceramic traditions. For instance, while Nad Ali Beig's ceramic assemblage displays close similarities with those of Godin and Seh Gabi B in the Central Zagros region, it also exhibits local distinctions, comparable to the way Lavin Tappeh's ceramic assemblage differs from that of Tappeh Dalma in the southern Lake Urmia region (Bahranipoor, 2021).

Chronology of the Dalma Period

The chronology of the Dalma period has been a matter of debate for several decades. Before the excavation of Tappeh Nad Ali Beig, our knowledge of the Dalma period's chronology was based primarily on absolute dating derived from excavations conducted in the 1960s and 1970s. These absolute dates were based on a single sample from Tappeh Dalma (Hamlin, 1975, Table 2), one sample from Seh Gabi Mound B in the Kangavar Valley (Henrickson, 1983: Table 71), and two samples from Dalma deposits at Siahsid in the Mahidasht Plain (Henrickson, 1985; Henrickson, 1983: Table 71). These dates are unreliable due to their wide range (approximately 400–500 years) and the use of outdated dating techniques (Marshall, 2012: 246-247). The absolute date for Seh Gabi B (Layer 6) indicates a range of 4410–4565 BCE (1σ) (Voigt & Dyson, 1992: Table 2). Researchers have proposed various timeframes for the Dalma period based on these ambiguous dates. Henrickson, for example, initially proposed a range of 4100–3700 BCE, then revised it to 4000–5100 BCE, and ultimately proposed 4800–5000 BCE (Henrickson, 1985: 50; Henrickson, 1989: 369; Henrickson, 1992: 287).

Recently, the Dalma deposits at Tappeh Qeshlagh near Bijar have been dated to 5000 ± 250 BCE and 5000 ± 350 BCE using the thermoluminescence method (Sharifi & Motarjem, 2018: Fig. 4). However, because of the broad time range (between 500 and 600 years), these data are also considered unreliable. Furthermore, absolute dates have been reported for deposits attributed to Dalma at Soha Chai (Rahimi Sorkhani & Eslami, 2018), Kalnan (Saed Moucheshii *et al.*, 2011), and Layer VIII of Kul Tappeh (Abedi, 2016: Table 2). However, these dates are problematic

due to the weak and uncertain attribution of their pottery assemblages to the Dalma ceramic tradition (see below for further details). In contrast, the chronology of the Dalma period has recently been partially clarified based on 15 radiocarbon dates from the Nad Ali Beig sequence in the Central Zagros, which constitute the first reliable dates for a part of the Dalma cultural sequence in the region ([Bahranipoor, 2023](#)). Although the settlement at Nad Ali Beig does not cover the beginning and end of the Dalma period, the start of the Dalma pottery tradition can be estimated at around 5200/5100 BCE, with its end around 4600 BCE (e.g. [Renette, 2022: 40](#); [Bahranipoor, 2023: 613](#); [Hole, 1987, Table 2](#)).

The Problem: Dalma or Non-Dalma

When the Dalma Culture or Dalma Ceramic Tradition was first identified at the type site Tappeh Dalma and then recognized in the Kangavar area, most researchers were astonished by the apparent uniformity among the ceramic assemblages of this culture. Nevertheless, it was also apparent that the Central Zagros assemblages differed from those of the Urmia Lake Basin in having four additional ceramic types, i.e., BOB, DUP, Streaky, and Bichrome variants (e.g., [Henrickson, 1983](#); [Levine & Young, 1987](#)). Recently, more detailed ceramic analyses from newly excavated sites in western Iran have suggested that despite the apparent uniformity among the different ceramic assemblages of this culture, there are distinct local traits as well, allowing the subdivision of the Dalma Culture territory into several sub-regions ([Bahranipoor, 2021](#)). In the following, we provide some considerations essential for identifying whether a given ceramic assemblage belongs to the Dalma Culture. We will discuss different ceramic types of the Dalma Culture from different perspectives to establish a baseline for evaluating ceramic assemblages attributed to this tradition. First, we begin with the most diagnostic variant of the Dalma ceramic assemblage: Dalma Monochrome.

Dalma Monochrome is the most critical component of Dalma assemblages because of its distinctive painted designs. The painted designs of Dalma Monochrome differ markedly from those of the preceding and succeeding phases in both the Central and Northern Zagros. Detailed ceramic analyses have shown that this variant can be divided into two versions based on the complexity of painted designs ([Henrickson, 1983](#); [Bahranipoor, 2022](#)). The earlier version is painted with simple linear motifs, while the later version bears more elaborate geometric designs. Contrary

to some ceramic types of Dalma assemblages, such as Dalma Impressed and Red-Slipped Ware, which have a much longer temporal existence in ceramic assemblages of different periods (see below), Dalma Monochrome is restricted in time to the Dalma period, i.e., ca. 5200/5100–4600 BCE. Also, unlike some other types of Dalma ceramic assemblages, such as Black-on-Buff and Bichrome, which are confined spatially to parts of the Central Zagros, Dalma Monochrome is the typical variant of the Dalma Culture, occurring at sites throughout its territory in both the Central and Northern Zagros.

Dalma Impressed is a ubiquitous variant of the Dalma ceramic tradition, which often occurs together with Dalma Monochrome in typical Dalma sites, such as layers 57–60 of Trench XYZ at Godin, layers 5–7 of Mound B at Seh Gabi, Phase II of Nad Ali Beig, Tappeh Dalma, Tappeh Lavin, Tappeh Baghi, Layer V of Qeshlagh, and Layer V of Namshir (Fallahian & Nozhati, 2016; Bahranipoor, 2023; Henrickson, 1983; Nobari Hejebri *et al.*, 2012; Sharifi & Motarjem, 2018; Zamani Dadaneh *et al.*, 2021). However, there are two points to consider about this variant: first, it appears late in the Dalma cultural sequence, and second, it persists—although in a modified form—into subsequent post-Dalma contexts in Central and Northern Zagros, such as the “Godin IX” and “Hasanlu VIII” phases (Young & Levine, 1974; Levine & Young, 1987; Henrickson, 1983; Renette & Mohammadi Ghasrian, 2020).

In the Dalma Tappeh sequence, Hamlin already observed that Impressed Ware occurs in low frequencies in the earliest levels of the site, suggesting its initial appearance (Hamlin, 1975: 111). In the Kangavar sequence, Henrickson also noted that Dalma Impressed appears later than Dalma Monochrome and Dalma Red-Slipped wares (Henrickson, 1983: 203). Recent findings from Nadali Beig have provided more concrete evidence of the late appearance of Dalma Impressed in the site’s sequence. In this case, the early Phase 1 ceramics are represented exclusively by Dalma Monochrome, Dalma Red-Slipped, Dalma Streaky, Dalma Plain, and BOB/DUP variants, while the later Phase 2 marks the first occurrence of Dalma Impressed and Dalma Bichrome alongside the Phase 1 variants (Bahranipoor, 2023). Thus, the latter two variants represent later developments in the ceramic assemblage of Dalma culture, as evidenced at Nadali Beig. Based on the Nadali Beig absolute dates, Dalma Impressed appears around 4900 BCE, while the Phase 1 variants appear as early as c. 5000 BCE (Bahranipoor, 2023).

The second problem with Impressed Ware as a relatively unreliable marker for identifying a given ceramic assemblage as Dalma is its long duration. This ceramic type continues into the post-Dalma contexts of the “Godin IX” and “Hasanlu VIII” phases in the Kangavar region and the Urmia Lake Basin, respectively (Young & Levine, 1974: 7; Levine & Young, 1987: 21; Henrickson, 1983; 1985: 70; Renette & Mohammadi Ghasrian, 2020: 114). It should be noted that because of its persistence in post-Dalma contexts, Impressed Ware has a more extensive distribution than the genuine Dalma Impressed variant. For instance, occasional sherds with impressed patterns have been reported from archaeological contexts at sites such as Farukhabad in the Deh Loran Plain (Wright, 1981), Arisman in the Central Plateau (Helwing *et al.*, 2011), Cham Ghoulleh (Moghaddam *et al.*, 2016), and Cheshmeh Rajab in the Seymareh Valley (Mohajernezhad & Soraghi, 2016), as well as some sites in the south of the Malayer Plain (Sarikhani *et al.*, 2017) and the north of Hamedan (Bakhtiari & Saremi, 2013). These ceramics exhibit technical differences from the classic Dalma Impressed type. A critical point regarding Dalma Impressed is the technical and decorative distinction between this type in genuine Dalma assemblages and the impressed ceramics of later phases in the Central and Northern Zagros. Dalma Impressed is a buff-ware variant with a medium to fine straw-tempered texture. The ceramic is finer and better-fired than the Seh Gabi Impressed type, and it is often coated with a thick slip in brown, dark red, or buff tones. The impressed motifs on typical Dalma Impressed are deeply incised, densely arranged, and applied exclusively to the exterior surface using various decorative techniques (see: Bahranipoor, 2018; Hamlin, 1975; Young & Levine, 1974; Levine & Young, 1987; Henrickson, 1983). The most common form of genuine Dalma Impressed is a short-necked or neckless jar (Bahranipoor, 2018; Henrickson, 1983: 197; Levine & Young, 1987: 21; Henrickson & Vitali, 1987: 38; Bahranipoor, 2023). In contrast, the Impressed ceramics of the later Seh Gabi and Pisdeli periods are coarse, unslipped wares. They are often decorated with shallow, scattered finger impressions, and sometimes with fingertip impressions and herringbone motifs, on the vessel surface—particularly on the bases of large vessels such as basins, trays, and storage jars (Young & Levine, 1974; Levine & Young, 1987: 21; Henrickson, 1983: 38; Renette & Mohammadi Ghasrian, 2020; Online: <http://www.penn.museum/collection/.php>).

As a component of the Dalma ceramic assemblage, the Red-Slipped

Ware has a complicated status because of its notable longevity. It first appeared at sites such as Guran in the seventh millennium BCE ([Mortensen, 2014](#)) and persisted as a major element in ceramic assemblages of subsequent periods up to the 4th millennium BCE ([Henrickson, 1983: 185](#); see also: [Bahranipoor, 2023: 149](#)). This ceramic type is found in the pre-Dalma levels of the XYZ Trench at Godin (prior to Godin XI), as well as in the Dalma, Seh Gabi, Pisdeli, Godin VIII or Taherabad, and Godin VII/VI layers, where it occurs alongside other ceramic types and remains one of the dominant variants in ceramic assemblages throughout these periods ([Rouštaei & Azadi, 2017](#); [Mortensen, 2014](#); [McDonald, 1979](#); [Voigt & Dyson, 1992](#); [Henrickson, 1983](#); [Young & Levine, 1974](#); [Renette & Mohammadi Ghasrian, 2020](#)). Hence, this ceramic type does not serve as a reliable marker for distinguishing Dalma assemblages or establishing their relative chronology, since it was present from at least the late 7th millennium BCE to the early 4th millennium BCE.

While Dalma Streaky and Dalma Bichrome seem to be local developments that occur only in specific Central Zagros contexts, both BOB and DUP can be considered consequences of increasing westward interaction with lowland Mesopotamia through the Mahidasht. “As [Henrickson and Vitali \(1987: 39\)](#) pointed out, stylistically and technically, both BOB and DUP are not part of the classic highland Dalma assemblage; instead, they bear a clear resemblance to the lowland Mesopotamian Ubaid ceramic tradition”. They are relatively thin, highly fired, unslipped ceramics with fine mineral and chaff temper. The Mesopotamian origin of these wares is supported by their much higher frequencies in ceramic assemblages of the western part of the Central Zagros (Mahidasht), which is in fact the gateway to the Iranian Plateau from lowland Mesopotamia along a natural communication corridor known as the High Road or the Great Khorasan Road (e.g., [Henrickson, 1983](#); [Gopnik & Rothman, 2011](#); [Renette et al. 2021a](#)). The diffusion of Ubaid-related buff wares along the High Road into the Central Zagros can be seen as part of a northward expansion of the black-on-buff ceramic tradition from southern Mesopotamia into the Zagros highlands. This type of ware was introduced into the Deh Luran Plain in southwest Iran in the second half of the 6th millennium BCE, where it is represented by the Chogha Mami Transitional phase, related to the Samarra culture ([Hole, 1977](#)), in the Central Zagros in the late 6th millennium BCE ([Bahranipoor, 2023](#)), and in the Northwest Region from the mid-5th millennium onwards ([Voigt & Dyson, 1992: 175](#)). These lowland-related buff ceramics should

not be regarded as an integrated component of the classic Dalma ceramic assemblages because they appear only at a few Dalma sites, mostly along the High Road in the Central Zagros, such as Godin, Seh Gabi, and Nad Ali Beig.

Regarding the above discussion, we can now establish clear criteria for assessing ceramic assemblages ascribed to the Dalma Culture. Accordingly, the Impressed ceramic alone in a ceramic assemblage does not necessarily indicate its attribution to the Dalma Period, as it represents only part of the genuine Dalma sequence. We argue that a given ceramic assemblage can only be classified as Dalma if both Impressed and Dalma Monochrome wares coexist. The BOB/DUP variant occurs only at sites along the Great Khorasan Road in the Central Zagros and may be considered an “alien” element of Mesopotamian origin. For instance, it does not occur in the classic assemblage of Tappeh Dalma in the northern Zagros. Dalma Streaky and Dalma Bichrome, which have the lowest frequencies in classic Dalma assemblages, are also local variants occurring at Central Zagros sites. Therefore, like BOB/DUP, they cannot be considered essential elements of a classic Dalma assemblage. One important point is worth noting: a given classic ceramic assemblage can be ascribed to the Dalma tradition only when the Red-Slipped and Plain variants constitute the majority of that assemblage (Bahranipoor, 2023). Recently, Renette emphasized that a Dalma archaeological assemblage should consist of at least 90% classic Dalma ceramics and associated aspects of Dalma material culture (Renette 2022: 144).¹

Research Question and Hypothesis: Field studies conducted at several sites in the Central and Northern Zagros and their adjacent areas over the past two decades have led to the discovery of ceramic assemblages that, due to the presence of components resembling those of the Dalma ceramic tradition, have been attributed to this tradition. These assemblages usually reflect a combination of cultural materials from two or three neighbouring regions. Geographically, these “Dalma-attributed sites,” including Kalnan (Saed Moucheshii *et al.*, 2011), Soha Chai (Aali, 2006), Talvar 11 (Valipour *et al.*, 2010), Tazeh Kand (Balmaki, 2017), Qela Gap (Abdollahi *et al.*, 2013), Kul Tappeh (Abedi, 2016), and Idir (Hessari & Akbari, 2005), are located in the Zanjan-Qazvin corridor, the Bijar-Qorveh corridor, the eastern and southern margins of the Central Zagros, and the northern Urmia Lake Basin (Fig. 1). By conducting detailed analyses of the ceramic assemblages from these sites, we aim to identify local components and highlight differences

between these assemblages and the classic Dalma ceramic tradition.

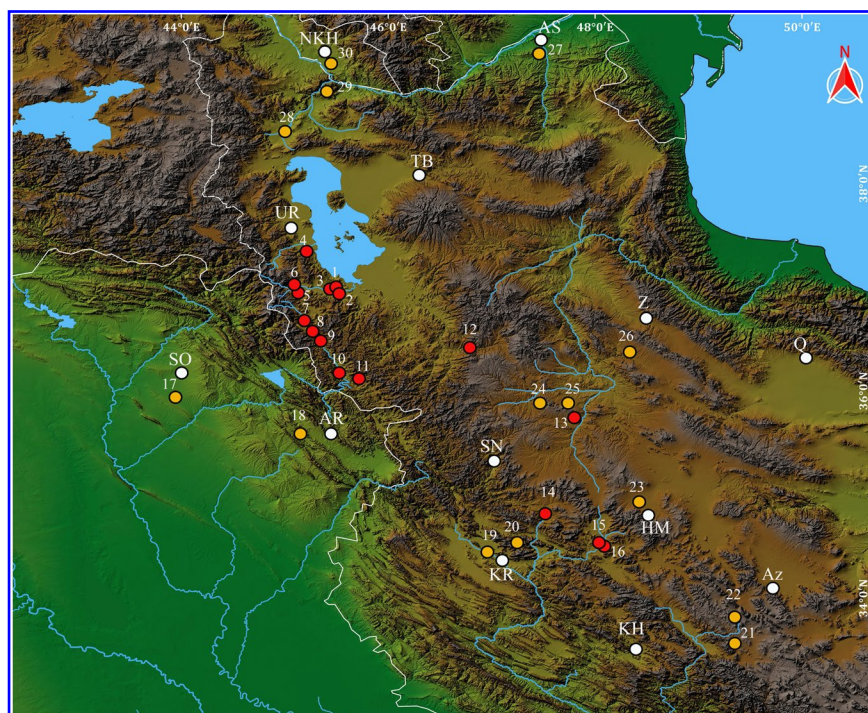
The most significant aspects of the Dalma ceramic tradition in these assemblages are Impressed ceramics, painted ceramics, and Red-Slipped ceramics. As mentioned earlier, Red-Slipped and Impressed ceramics have a long chronological span in the Dalma ceramic tradition, appearing both before and after the Dalma period (Henrickson, 1983: 191; Young & Levine, 1974: 7; Levine & Young, 1987: 21). Recent studies indicate that ceramics with impressed decoration persist until the Godin VII period, where they have been combined with features from other cultures to create a distinctive ceramic tradition (Saed Moucheshii *et al.*, 2011; Aali, 2006; Valipour *et al.*, 2010). This study aims to clarify the chronological status of these assemblages based on comparative ceramic analyses and newly available radiocarbon dates for the Dalma period.

Research Methods: This research selected the ceramic assemblages from key sites of the Dalma Culture—Dalma Tappeh, Godin (the XYZ Trench), Seh Gabi Mound B, and Nad Ali Beig—as the basis for ceramic comparisons. Using the presence of two ceramic variants, Dalma Monochrome and Dalma Impressed, in assemblages as the most reliable criterion for attributing a given ceramic assemblage to the Dalma culture, the present study evaluates the assemblages of sites ascribed to this prehistoric culture. Through this comparative analysis, the study seeks to establish a relative chronological framework for ceramic assemblages attributed to Dalma and to define the cultural boundaries of the Dalma ceramic tradition.

The Sites Attributed to the Dalma Culture in Northern and Central Zagros

Over the last two decades, several excavated sites in the Central Zagros and northwest region have been attributed to the Dalma period because they produced ceramic assemblages with variants supposedly resembling the classic Dalma ceramic. However, based on new insights into the classic Dalma ceramic (Bahranipoor, 2021) and the chronology of this period (Bahranipoor, 2023), we argue that the following sites do not represent Dalma culture; rather, they contain some ceramic elements only remotely similar to the genuine Dalma ceramic.

Tappeh Kalnan: The multi-period site of Tappeh Kalnan, located 16 km south of Bijar, was excavated in 2010 using two-step trenches (Fig. 1) (Trenches 1 and 2) (Saed Moucheshi *et al.*, 2011: 33). Only Trench 1,



◀ Fig. 1: Location of the Dalma and non-Dalma excavated sites in the Central and the North Zagros: 1. Hasanlu; 2. Pisdeli; 3. Dalma; 4. Seavan; 5. Chapar Abad; 6. Kohneh Sufiyan; 7. Lavin; 8. Ubaid; 9. Gerdi Sheytan; 10. Baghi; 11. Namshir; 12. Kani Mikaeil Cave; 13. Qeshlagh; 14. Nad Ali Beig; 15. Seh Gabi B; 16. Godin; 17. Surezha; 18. Kani Shaie; 19. Chogha Maran; 20. Siahbid; 21. Qela Gap; 22. Sarsakhti; 23. Taze Kand; 24. Kalnan; 25. Talvare 11; 26. Soha Chai; 27. Idir; 28. Dava Göz; 29. Kul Tappeh; 30. Nakhchivan Tappeh (base map: M. Alirezazadeh, 2025).

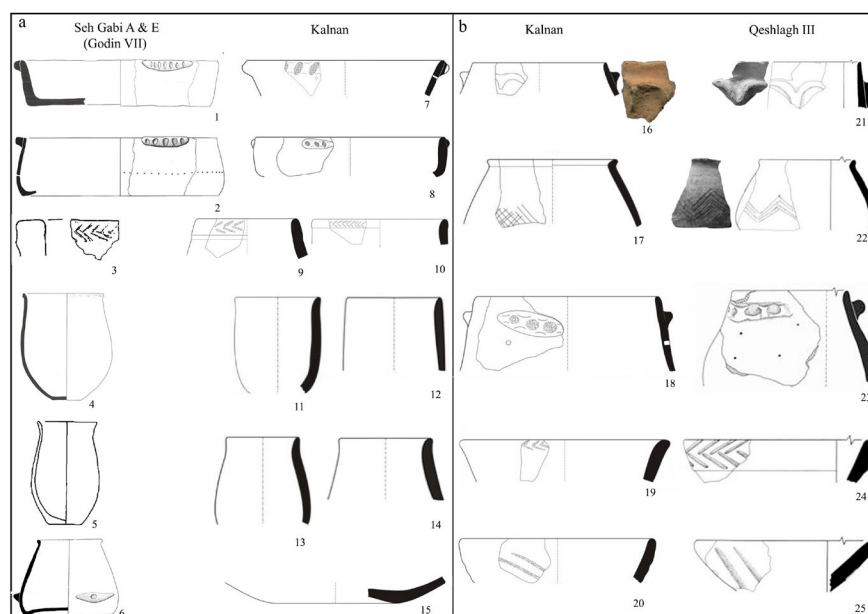
at a depth of 384 cm, revealed virgin soil. In this trench, the excavated sequence was divided into 11 layers from top to bottom, with Layer 1 attributed to the Seh Gabi period and Layers 2 through 11 to the Dalma period (Saed Moucheshi *et al.*, 2011). The Dalma-attributed ceramics of Kalnan are dominated by Plain Ware of various colours, including red, brown, cream, and orange. The most abundant type is Red-Slipped Ware, representing 18–73% of the assemblage. In addition to Red-Slipped Ware, the only other ceramic type attributed to the Dalma period is finger-impressed ceramics, recovered in limited quantities from the first three layers (Levels 12–10) (Ibid: 38–40). Therefore, the attribution of the Kalnan assemblage to the Dalma ceramic tradition is primarily based on these two types: Red-Slipped and finger-impressed wares. Other hallmark Dalma ceramic types, particularly Dalma Monochrome, are absent from the site. Ceramics decorated with incised linear and herringbone patterns are the most common variants in the layers attributed to Dalma at Kalnan. Some of these decorations are combined with appliqué decorations, such as ram's heads (Saed Moucheshi *et al.*, 2011, Figs. 18–19) (Fig. 2). These decorations differ significantly from the typical Dalma ceramic assemblages known from the type site Tappeh Dalma and the Central Zagros sites of Godin, Seh Gabi, and Nad Ali Beig.

The analysis of Impressed ceramics from Kalnan reveals that, in

addition to their very low frequency in the assemblage, they do not match the classic Dalma Impressed Ware observed at Tappeh Dalma, Seh Gabi B (Layers 7–5), Godin (XYZ Trench), and Nad Ali Beig (Phase II). The key distinctions between Kalnan's impressed ceramics and classic Dalma Impressed are as follows: absence of a thick slip coating, lower density of the ceramic paste, shallower finger impressions, and a more scattered distribution of decorative motifs in Kalnan (cf., [Young & Levine, 1974: 7](#); [Henrickson, 1983: 196](#); [Bahranipoor, 2018](#)). Dalma Impressed is a variety of buff ware with medium-to-fine straw temper, well made and better fired than the Impressed Ware of Seh Gabi and Pisdeli. These ceramics are typically coated with a thick slip in brown, dark red, or buff colours ([Bahranipoor, 2018](#); [Henrickson, 1983: 197](#); [Levine & Young, 1987: 21](#); [Henrickson & Vitali, 1987: 38](#); Online: <http://www.penn.museum/collection/.php>).

According to our interpretation, the Kalnan ceramic assemblage is more comparable to, and therefore contemporaneous with, the Godin VII phase. The reasons for this attribution are as follows: 1. the predominance of plain ceramics, particularly those with Red Slip; 2. the similarity in vessel forms, including open-mouth bowls, basins commonly referred to as S-shaped vessels, jars with impressed finger decorations, cord decorations, and appliqué herringbone motifs; 3. the presence of moulded zigzag, herringbone, or wavy motifs on some vessel rims; and 4. the occurrence of concave bases ([Levine & Young, 1987](#); [Young & Levine, 1974](#); [Gopnik & Rothman, 2011](#); [Bahranipoor, 2023](#); [Renette & Mohammadi Ghasrian, 2020](#); [Zamani Dadaneh *et al.*, 2021: 22](#)) (Fig. 1a). It is noteworthy that local elements and, to some extent, influences from the Zanzan–Qazvin Corridor cultures are also evident in this assemblage. These include cream, brown, and gray ceramics, incised decorations, and stylized goat appliqué motifs ([Alibeigi *et al.*, 2014](#); [Saed Moucheshi *et al.*, 2010, Figs. 8, 18–20](#); [Rahimi Sorkhani & Eslami, 2018](#); [Majidzadeh, 2008](#); [Fazeli Nashli, 2007, Figs. 67, 76–77, 84](#)), (Figs. 1b & 4b).

In addition to the significant differences between the ceramic assemblages of Kalnan and those of the key sites of the Dalma period, another critical issue is the absolute chronology of the site. Three radiocarbon dates are available from the Dalma-attributed deposits at this site (Layers 2, 6, and 8), ([Saed Moucheshi *et al.*, 2010, Table 1](#)). These dates suggest a period spanning 4042–3660 BCE, which falls outside the newly established time range for the Dalma period, i.e., ca. 5200/5100–4600 BCE (see above). It



◀ Fig. 2: a. The resemblance between Kalnan and Godin VII ceramic assemblages from Seh Gabi (Mounds A & E) (Levine & Young, 1987: Fig.16; Young & Levine 1974: Fig. 13; Saed Moucheshi *et al.*, 2011: Figs. 9, 12; Saed Moucheshi, 2011: Figs. 45-4, 29-4); b. The resemblance between Kalnan and Godin VII ceramic assemblages from Qeshlagh III (Saed Moucheshi, 2011: Figs. 29-4, 30-4, 40-4, 31-4, 37-4; Sharifi, 2020: Figs. 34-5, 43-5, 106-5, 107-5).

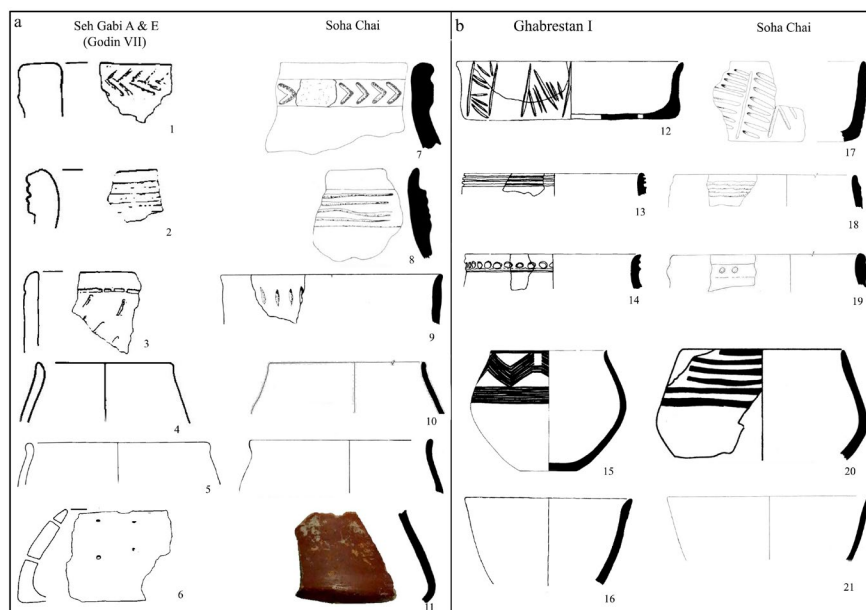
can thus be confidently stated that the chronological position of Kalnan, based on its ceramic assemblage and absolute dates, aligns more closely with the Godin VII phase or the Late Chalcolithic period than with the Dalma period.

Soha Chai: Soha Chai is a single-period site in the Sajjasrud Valley, southwest of Zanjan City, in the Ijrud region (Fig. 1) (Rahimi Sorkhani & Eslami, 2018). Six trenches were excavated during two seasons of salvage excavation, revealing two architectural phases. Based on the ceramic assemblages recovered from these phases, both are attributed to the Dalma period (Aali, 2006). The ceramic assemblage of the site has been divided into three main categories: Dalma, non-Dalma, and local (Rahimi Sorkhani & Eslami, 2018: 22–23). According to Rahimi Sorkhani and Eslami (2018: 222), there are four types of Dalma ceramics: Dalma Monochrome, Dalma Red-Slipped, Plain Ware, and Dalma Surface-Manipulated. With 53% of the total assemblage (360 out of 680 sherds), Red-Slipped Ware is the most frequent ceramic type. The second most prevalent type is Surface-Manipulated ceramics, with 219 sherds (32%). These include a variety of decorative techniques, such as incised, applied, relief, and impressed patterns, with incised patterns being the most common (Zifar *et al.*, 2017, Fig. 3). What has been considered Dalma Monochrome represents 69 sherds (10%), all recovered exclusively from inside the mudbricks (Rahimi Sorkhani *et al.*, 2016: 57). Other minor ceramic types identified in the assemblage include Black-on-Buff, Black-on-Red, and Red-on-Buff, each

with less than 2% frequency (1–5 sherds) (Rahimi Sorkhani *et al.*, 2016: 58; Rahimi Sorkhani & Eslami, 2018: 222).

As mentioned above, Soha Chai's predominant decorated ceramic variant is Surface-Manipulated Ware, with incised patterns comprising 19.9% of the total assemblage (Aali, 2006; Rahimi Sorkhani, 2008). The primary motifs include short oblique, vertical, and horizontal incised patterns, with less frequent crescent motifs and individual or multiple incised herringbone motifs below the rim (Aali, 2006) (Figs. 3a & 3b). These decorative elements, particularly the short oblique and vertical incised patterns, are reminiscent of those on ceramics from Ghabristan I (Majidzadeh, 2008: Fig. 8: 6) (Fig. 3b). At neighboring sites, such as Talvar 11 (Zifar, 2012; Valipour *et al.*, 2010), Kalnan (Saed Moucheshi *et al.*, 2010), Qeshlagh III (Sharifi, 2020; Sharifi & Motarjim, 2018), and Ghabristan, individual or multiple incised herringbone motifs have also been documented (Figs. 3a, 3b & 4b). Additionally, several specimens in this category are decorated with impressed motifs, which is why this assemblage is attributed to the Dalma culture. Notably, this variant, which is technically Impressed Ware, constitutes only 1.8% of the Surface-Manipulated variant at Soha Chai. These decorations include finger, needle, and punch impressions executed very shallowly. Several technical and decorative differences distinguish Soha Chai's Impressed Ware from classic Dalma Impressed Ware, including the low frequency of this type, the absence of thick slips, scattered motifs on the surface, and the shallow depth of the impressed designs in the Soha Chai specimens.

The second type of ceramic attributed to the Dalma tradition at Soha Chai is painted ceramic, which is both technically and decoratively distinct from Dalma Monochrome. The painted ceramics of Soha Chai are characterized by red to brown surfaces with linear geometric motifs in red or brown (Aali, 2006; Rahimi Sorkhani *et al.*, 2016: 57–58). Analysis of the motifs indicates that the primary design structure consists of simple linear patterns applied sparingly to the rims of vessels, without emphasis on detail. These motifs include thin parallel lines arranged vertically, diagonally, or horizontally (Figs. 3 & 4b). In contrast, in the classic Dalma ceramic tradition, potters utilized negative or solid motifs across the ceramic surface. The combination and repetition of solid geometric designs in Dalma ceramics, along with the use of background patterns, produced a much more intricate and diverse set of motifs than those observed at Soha Chai (Bahranipour, 2021; Hamlin, 1975; Young, 1963; Henrickson, 1983).



◀ Fig. 3: a. The resemblance between Godin VII and Soha Chai ceramics (Young, 1969: Fig. 6; Young & Levine 1974: Fig. 13; Levine & Young, 1987: Fig. 16; Aali, 2007: Figs. TFL2.N142, TFL10N, TFL2.135, TFL2.N96, TFL10.14; Rahimi Sorkhani & Eslami, 2018: Fig. 4); b. The resemblance between the Soha Chai and Qabrestan I ceramic decorations (Aali, 2006: Figs. TE.L8.N20, TFL6.N11, TFL2.N88, TFL2.N218, TFL2.N31; Majidzadeh, 2008: Figs. 8, 9).

Moreover, the ceramic assemblage attributed to the Dalma tradition at Soha Chai differs from classic Dalma ceramics in its simultaneous use of both painted and incised decoration on a single vessel, a practice uncommon in genuine Dalma ceramics. Typically, the classic Dalma Monochrome ceramic featured dark brown, red, or purple motifs applied on untreated surfaces or on cream, dark red, and occasionally purple slips (Bahranipoor, 2021; Young, 1963; Young & Levine, 1974: 4; Levine & Young, 1987: 21; Henrickson, 1992: 287). In contrast, at Soha Chai, the exterior slip and motifs range exclusively across a spectrum from red to brown on burnished surfaces (Aali, 2006). One characteristic feature of the classic Dalma Monochrome was the use of contrasting colors, both in the slip and in the motifs, producing a striking visual contrast (Young, 1963; Bahranipoor, 2021). Additionally, the paste of the painted ceramics from Soha Chai varies in color from reddish-brown to buff-brown, whereas the paste of the classic Dalma Monochrome is typically buff or light red (Bahranipoor, 2018; Aali, 2006; Young, 1963; Bahranipoor, 2023; Renette & Mohammadi Ghasrian, 2020: 125; Zamani Dadaneh *et al.*, 2021: 22) (Figs. 3b & 4b3).

The Soha Chai ceramic assemblage also shows notable differences in vessel forms compared to classic Dalma ceramics. These distinctions are observed in carinated globular pots, open-mouth deep bowls, basins with outward-flaring sides, closed-mouth pots, and concave bases in the Soha Chai assemblage (Aali, 2006: 573 TE.L8.N20, TE.L2.N5, TFL6.

N11, TF.L2.135 & TF.L2.N235; TFL2.N235). These forms more closely resemble the ceramic assemblages of Ghabristān I in the Central Plateau (Majidzadeh, 2008: Figs. 8:6, 9: 3–4) and Godin VII in the Central Zagros (Young & Levine, 1974: Fig. 13: 15) than the classic Dalma ceramic repertoire.

Thus, the technical and decorative differences in Soha Chai ceramics indicate that the site's assemblage does not conform to the classic Dalma tradition (cf. Zamani Dadaneh *et al.*, 2021: 22; Renette & Mohammadi Ghasrian, 2020: 125; Bahranipoor, 2023). The absence of the two signature ceramic types of the Dalma tradition—Dalma Monochrome and Dalma Impressed—combined with the prevalence of moulded cord decoration, band appliqué along the rims, incised herringbone, and grooved patterns below the rim, as well as distinct vessel forms, suggests that the chronological context of the Soha Chai assemblage is closer to that of “Godin VII” and “Ghabristān I.” It is also noteworthy that, due to Soha Chai's location between the cultural zones of the Central Zagros and the Central Plateau (Figs. 3a, 3b & 4b), its ceramic assemblage reflects influences from both regions alongside local styles. Analysis of the Soha Chai ceramics reveals cultural interactions with the Central Zagros (Godin VII phase) and the Central Plateau (Ghabristān I phase). For instance, the presence of painted ceramics, gray or black burnished wares, incised patterns, carinated globular pots, and concave bases parallels the ceramic tradition of Ghabristān I (Majidzadeh, 2008, Fig. 9: 3; Fazeli Nashli, 2007: Figs. 62, 64–65, 67, 76–77, 84; Rahimi Sorkhani & Eslami, 2018, Fig. 5: BW) (Figs. 3a & 3b). This evidence underscores the significance of Soha Chai as an intermediate site connecting the Central Plateau to the east, the Northern Zagros to the north, and the Central Zagros to the south, highlighting the site's distinctive material culture, which reflects influences from surrounding cultural zones.

In addition to its ceramic assemblage, Soha Chai's key issue is its absolute chronology. The Dalma-attributed deposits at this site have yielded eight radiocarbon dates (Rahimi Sorkhani & Eslami, 2018: 219). These dates indicate a range of 4269–3968 BCE. As previously discussed regarding Kalnan, based on multiple dates from Nad Ali Beig and the conclusions of other researchers, the Dalma period likely falls in the late 6th millennium BCE to, at most, the mid-5th millennium BCE (Bahranipoor, 2021: Table 1; Bahranipoor, 2023; Renette, 2022; Henrickson, 1992: 287; Hole, 1987; Voigt & Dyson, 1992: Fig. 2). It is clear that Soha Chai's dates fall outside

this range. The dates from Soha Chai strongly suggest that its assemblage is more closely associated with Ghabristan I and Godin VII. Furthermore, Soha Chai's absolute dates align closely with those of Ghabristan I (Pollard *et al.*, 2012: Table 17; Renette & Mohammadi Ghasrian, 2020: Table 1; Bahranipoor, 2023).

Talvar 11: The site of Talvar 11, located 11 km south of the Talvar Dam near Bijar, was the subject of a rescue excavation during a single field season (Valipour *et al.*, 2010: 49) (Fig. 1). Three trenches (I, II, and III) and six sondages were excavated. The trenches reached virgin soil at depths ranging from 35 to 280 cm. Trench I yielded the oldest cultural deposits, 30 cm thick, attributed to the Dalma period (Valipour *et al.*, 2010: 40). The Trench I sequence was divided into three layers from top to bottom, with Layer 3 attributed to the Dalma tradition. According to the excavator, the Dalma ceramic assemblage from Talvar 11 comprises Plain Buff Ware, Gray Ware, Red-Slipped Ware, ceramics with incised patterns, ceramics with appliqué decorations, and a small number of painted wares (Valipour *et al.*, 2010: 53; Zifar *et al.*, 2017).

The examination of the ceramic assemblage from Layer 3 of Trench I at Talvar 11 reveals that the most abundant ceramic type is Red-Slipped Ware, while painted ware is the least common, comprising less than 1.1% of the assemblage (Valipour *et al.*, 2010: 53; Zifar, 2012). A significant difference between the Talvar 11 assemblage and classic Dalma ceramics is the complete absence of Impressed ceramics, a diagnostic variant of the Dalma tradition. Instead, the defining features of the ceramic tradition at this site—namely linear and herringbone incised decoration—closely resemble other assemblages within the Zanzan–Takestan Corridor, such as Kalnan, Qeshlagh III (Sharifi, 2020), and Soha Chai (Aali, 2006), where similar features and stylized ram's head appliqué decorations are also found (Figs. 4a & 4b).

The painted ceramics of Talvar 11 are characterized by dark red to brown slips with geometric motifs in cream (Zifar, 2012). The decorative patterns follow the same style observed at Soha Chai, featuring simple linear designs with minimal elaboration. These include narrow vertical and horizontal bands, scattered double zigzags, and a single representation of a goat with elongated, curved horns. From a technical and decorative perspective, particularly regarding the hanging double zigzag motifs, the Talvar 11 ceramics closely resemble those of Qeshlagh III (Sharifi, 2020: Fig. 5-28) and are somewhat comparable to those of Soha Chai (Rahimi

Sorkhani *et al.*, 2016: Fig. 3) and Kalnan (Saed Moucheshi, 2011) (Fig. 4b: 22–25). Considering the similarities in ceramic decoration among these sites, it appears that this type of ceramic represents a local intra-regional variant. We suggest, with caution, that the antecedent of this ceramic type may be traced to the Dalma ceramic tradition at Qeshlagh, specifically to sub-phase C of “Level V,” with continuity observable up to Level III at the site, because the predominance of red and brown slips combined with cream-colored motifs renders these ceramics partially similar to the Dalma Monochrome ceramics of Qeshlagh (Sharifi, 2020: Figs. 184–202; Motarjem & Sharifi, 2018: 90).

It is important to note that the depiction of the goat motif on the ceramics of Talvar 11, emphasizing the elongated and curved horns, is executed with exceptional skill. This motif differs from the exclusively geometric designs typical of the classic Dalma tradition.

The most common vessel forms in the Talvar 11 assemblage are basins, spherical open-mouth bowls, and closed-mouth jars (Zifar, 2012). These forms contrast sharply with the dominant forms of the classic Dalma tradition, such as short-necked pots and globular bowls. Notably, the rims of some Talvar 11 vessels feature multiple incised herringbone motifs, horizontal grooves, and stylized ram’s head appliqué decorations used as handles (Valipour *et al.*, 2010: 69; Zifar, 2012). These features closely resemble the ceramic assemblages of Qeshlagh III (Sharifi, 2020: Fig. 5-34), Kalnan (Saed Moucheshi *et al.*, 2011: Figs. 18–19), and Soha Chai (Aali, 2006) (Figs. 4a & 4b).

Consequently, due to the absence of two primary elements of the classic Dalma tradition—Dalma Monochrome and Dalma Impressed—the Talvar 11 ceramic assemblage cannot be attributed to Dalma culture. Instead, based on archaeological evidence, including the abundance of Red-Slipped Ware, Gray Ware, similarities in vessel forms, the presence of incised zigzag and herringbone decorations on the rims of some vessels, and concave bases, the Talvar 11 ceramics are more comparable to the ceramic traditions of Godin VII and, to some extent, Ghabristan I (Levine & Young, 1987, Fig.16; Young & Levine, 1974, Fig.13; Majidzadeh, 2008, Fig. 8; Fazeli Nashli, 2007, Figs. 76–77, 84, 67; Gopnik & Rothman, 2011). Thus, the Talvar 11 ceramic assemblage appears to reflect the intersection of two cultural zones: the Central Zagros and the Central Plateau, particularly the Qazvin Plain, alongside local intra-regional traditions. The influence of the Central Plateau is



◀ Fig. 4: a. The resemblance between Talvaar 11 and Godin VII ceramic assemblages from Seh Gabi (Mounds A and E) (Young, 1969: Fig. 6; Young & Levine 1974: Fig. 13; Levine & Young, 1987: Fig.16; Zifar, 2010: Figs. 8-5, 9-5, 14-5, 16-5); b. The resemblance of local style decorations between Talvar 11 (Nos. 14, 18, 22) (Zifar, 2012: Figs. 10-5, 17-5; Valipour *et al.*, 2010: Fig. 1), Kalnan (Nos. 16, 20, 24) (Saed Moucheshi, 2011: Figs 45-4, 30-4, 36-4), Qeshlagh III (Nos. 15, 19, 23) (Sharifi, 2020: Figs. 108-5, 34-5, 28-5), and Soha Chai (Nos. 17, 21, 25) (Rahimi Sorkhani *et al.*, 2016: Fig. 4; Aali, 2006: Figs. TFL6.N8, TFL10.N3).

evident in the presence of Gray Ware and ceramics with incised patterns within this assemblage.

Based on the close similarities between Talvar 11, Soha Chai, and Kalnan ceramic assemblages, and the radiocarbon dates from the latter two sites, it can be concluded that the ceramics at Talvar 11 chronologically fall between the late fifth millennium BCE and the first half of the fourth millennium BCE, contemporaneous with Godin VII rather than Godin X (Dalma) (Bahranipoor, 2023).

Tappeh Tazeh Kand: The site is located near Bahar in Hamadan Province and geographically lies between the Central Zagros and the Central Plateau (Fig. 1). Five trenches were excavated at the site, but only Trench 1 reached virgin soil. The oldest cultural deposits in these trenches have been attributed to the Dalma period (Balmaki, 2017: 76). The Tazeh Kand ceramic assemblage includes Red-Slipped Ware, Black-on-Buff Ware, and Impressed Ware.

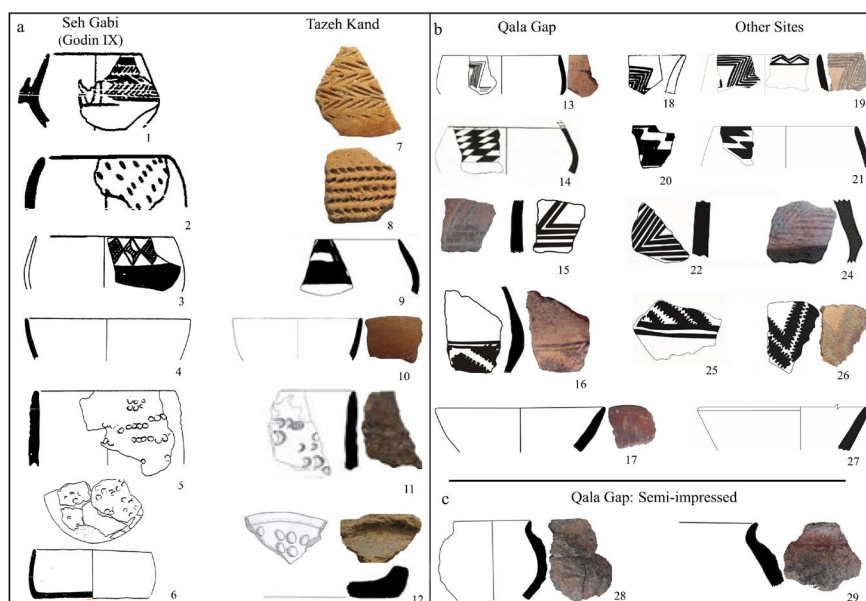
The most frequent ceramic type at Tazeh Kand is Red-Slipped Ware, followed by Impressed Ware. The latter's presence appears to have led the excavator to ascribe the site to the Dalma period. These ceramics are decorated with finger impressions, horizontal rows of multi-stranded incised herringbone motifs, and needle impressions, with finger impressions being the most common decorative technique (Balmaki, 2013: Fig. 5; Balmaki, 2017) (Fig. 5a: 70-8, 11-12). Despite this, significant differences exist between the Impressed ceramics of Tazeh Kand and the classic Dalma Impressed Ware. These distinctions are evident in the shallowness and

scattered distribution of the impressed motifs on the vessel surfaces, the absence of various impressed decoration techniques, and differences in vessel forms. The finger impression patterns in the Tazeh Kand assemblage are found on shallow trays with short walls, open-mouth straight-sided bowls, and pots (Fig. 5a: 11-12). In contrast, the distinctive features of this decorative technique in classic Dalma Impressed Ware include the use of multiple methods, densely packed motifs, deep impressions, high-quality ceramics, refined craftsmanship, a variety of slip colors (red, brown, and buff), and a range of specific vessel forms. These are typically found in short-necked, closed-mouth globular pots or out-flaring open-mouth bowls (Bahrani-poor, 2018; Henrickson, 1983: 197; Levine & Young, 1987: 21). Some researchers, particularly Henrickson, emphasize that the main characteristics of Dalma Impressed Ware are fine fabric, multiple slip colors, and the use of various impressed decorative techniques (Henrickson & Vitali, 1987: 38; Henrickson, 1983: 197; Levine & Young, 1987: 21).

The absence of Dalma Monochrome ceramics further distinguishes the Tazeh Kand assemblage from classic Dalma assemblages. The only painted ceramic in this assemblage is fine Black-on-Buff (BOB) Ware (Balmaki, 2017), in contrast to Seh Gabi Mound B and Nad Ali Beig, which yielded Dalma Monochrome, DUP, and Dalma Bichrome as well (Fig. 5a: 9). Another significant difference is the presence of incised and needle patterns, which are absent in classic Dalma assemblages but are more characteristic of the Seh Gabi Ware or “Godin IX” ceramic tradition. Such motifs—particularly rows of fine herringbone and needle patterns, and trays with shallow finger impressions—were frequent in the Seh Gabi or Godin IX phase (Henrickson, 1983: Fig. 54: 1-3; Young & Levine, 1974: 7) (Fig. 5a: 1-2 & 7-8).

Qela Gap: The site is a high, multi-period mound (25 m) located 12 km northwest of Azna, which underwent stratigraphic excavations in 2009 (Abdollahi & Sardari, 2013: 119) (Fig. 1). Three trenches (A, B, and C) were excavated down to virgin soil, and the stratigraphy was divided into seven periods, Qela Gap 1–7, from top to bottom. Excavators attributed layers 19–21 from Trench C to the Dalma culture, referring to this phase as “Qela Gap 5” (Abdollahi & Sardari, 2012: 79; Abdollahi *et al.*, 2013, Table 1).

The ceramic assemblage attributed to Dalma at Qela Gap includes Plain Buff Ware, Red-Slipped Ware, Black Ware, Painted Ware, and Impressed Ware (Abdollahi & Sardari, 2011: 79). The Qela Gap painted ceramics



◀ Fig. 5: a. The resemblance between the Godin IX (Seh Gabi) phase ceramics and the Tazeh Kand assemblage (Henrickson, 1983, Figs. 53, 54, 93, 70; Balmaki, 2017, Figs. 6, 7, 9); b. The resemblance between the vessel forms and decorations of Qala Gap ceramics (Nos. 13-17) (Abdollahi & Sardari Zarchi, 2012: Fig. 7 & Fig. 9), Khargoar Robat, Seymareh Valley (Nos. 18, 20, 24) (Goff, 1971, Fig. 2; Bahrami & Fazeli Nashli, 2016, Fig. 7), Qal'ye Sarsakhti (Nos. 19, 22, 25, 26, 27) (Shirzad & Kaka, 2017: Figs. 203, 218, 245), and a site in Qara Chai River Valley (No. 21) (Kaka et al., 2015, Fig. 6); c. Examples of Qala Gap Semi-Pressed Ware (Abdollahi & Sardari Zarchi, 2012: Fig. 7).

are characterized by a sand-tempered fabric with a red background and exclusively geometric designs in brown to black (Abdollahi & Sardari, 2013: 79). Due to the use of sand as temper, these ceramics are very fine and fall into the category of hard wares as defined by Henrickson (Henrickson & Vitali, 1987: 37). This contrasts with the Dalma ceramic tradition, in which Henrickson categorized Dalma Monochrome as soft ware due to its high vegetal temper content (Henrickson, 1983: 200; Henrickson & Vitali, 1987: 37). Geometric motifs of the Painted Ware include vertical bands with cross-hatching, solid bands of denticulate triangles, and nested crenellations (Fig. 5b: 13–16). These patterns bear a significant resemblance to earlier Chalcolithic traditions and the fifth-millennium BCE cultures along the Central Zagros–Central Plateau corridor, particularly at sites such as Qal'eh-ye-Sarsakhti (Shirzad & Kaka, 2012; Abedi et al., 2014a: Fig. 4), Koureh 1 in Silakhor Plain (Parviz, 2007), the northern Seymareh Valley sites (Koohdasht, Chia Siah, and Cheshmeh Rajab) (Mohajerinejad & Soraqi, 2015: Fig. 6; Goff, 1971: Fig. 2:11–17; 56), and the Khorramabad Valley sites (Sohail-Beigi & Bagh-e Now) (Bahrami & Fazeli Nashli, 2016: Fig. 4:9; Abdollahi & Sardari, 2013: 1:4 & 1; Abdollahi & Sardari, 2011: Fig. 7:N:610; Abdollahi et al., 2013) (Fig. 5b: 18–26).

The intricate motifs characteristic of classic Dalma Monochrome—such as zigzag, lozenge, and triangle patterns, and positive and negative painting techniques—are absent from this assemblage. Additionally, Qala Gap's painted ceramic vessels include carinated open-mouth bowls, shouldered jars with long necks, and trays (Abdollahi & Sardari, 2012: 1:4

& 1), forms not observed in the Dalma ceramic tradition. Carinated open-mouth bowls also occur at Qal'eh-ye-Sarsakhti (Shirzad & Kaka, 2012), Baba Mohammad, and Sinjabi in the northern Seymareh Valley (Goff, 1971: Fig. 2:23–31).

Another feature cited by the excavators for attributing the Qela Gap assemblage to the Dalma ceramic tradition is the presence of necked jars with semi-impressed patterns, likely of the finger-impression type. However, the impressed ceramics of Qela Gap bear no technical or decorative resemblance to those of the Central Zagros Dalma tradition. These differences include the relatively low frequency of impressed ceramics, the absence of a clay slip, the shallowness of finger impressions, the unclear nature of the patterns, and the specific vessel forms, particularly the necked jars (Abdollahi & Sardari, 2011: 138; Abdollahi & Sardari, 2013, Fig. 1:2) (Fig. 5c: 28–29).

Therefore, based on the above reasoning, the ceramic assemblage from layers 19–21 at Qela Gap does not technically or decoratively conform to the Dalma ceramic tradition. Among the significant distinctions are the absence of the two defining features of classic Dalma—Dalma Monochrome and true Dalma Impressed variants—the use of sand temper, the presence of black ceramics, carinated bowls, crenellation motifs, and decorative bands featuring solid and denticulated motifs.

The similarity in technical and decorative characteristics observed in ceramic assemblages from Qela Gap, Qal'eh-ye-Sarsakhti, Koureh 1 (Silakhor Plain), the Khorramabad Valley sites, and possibly the northern Seymareh Valley sites suggests that a localized ceramic tradition developed within these regions during the fifth millennium BCE.

Kul Tappeh: As the northernmost site attributed to the Dalma culture, Kul Tappeh is located near Hadishahr in West Azerbaijan province, close to the Iran–Azerbaijan border (Fig. 1). This 24-m-high, multi-period site was excavated during two seasons for stratigraphic purposes in 2010 and 2011 (Abedi *et al.*, 2014b: 33). Only two trenches (III and IV) reached virgin soil among the four trenches opened on the mound (Abedi, 2016a: 93). The earliest cultural deposits in both trenches, designated as Layer VIII, with a thickness of approximately 3 meters, have been attributed to the Dalma period (Ibid., Table 2). The allegedly Dalma ceramic assemblage from Kul Tappeh includes Red-Slipped Ware, ceramics with incised decorations (groove and comb patterns), Plain Ware, and Painted Ware (Abedi *et al.*, 2014b: 38), with the first two being the most frequent.

It appears that the presence of Painted Ware was the main criterion for attributing the Kul Tappeh assemblage to the Dalma culture. This variant occurs in various colors, including brown, pink, and reddish-yellow, but the most common is a red ground with black or brown paintings. In this assemblage, geometric motifs are dominant and commonly found on the outer rim of vessels, although stylized animal motifs have also been reported ([Abedi et al., 2014b: 38](#)).

The most common motifs on Painted Ware from Kul Tappeh include parallel diagonal, horizontal, and vertical lines, typically drawn below the rim ([Abedi et al., 2014b: Fig. 9–10](#)). Occasionally, these motifs are accompanied by banded or individual hatched lozenges and triangles, thin zigzag bands, as well as checkered and grid patterns ([Abedi et al., 2015: Fig. 5](#); [Abedi et al., 2014b: Fig. 8–9](#)) (Fig. 6a: 7–12).

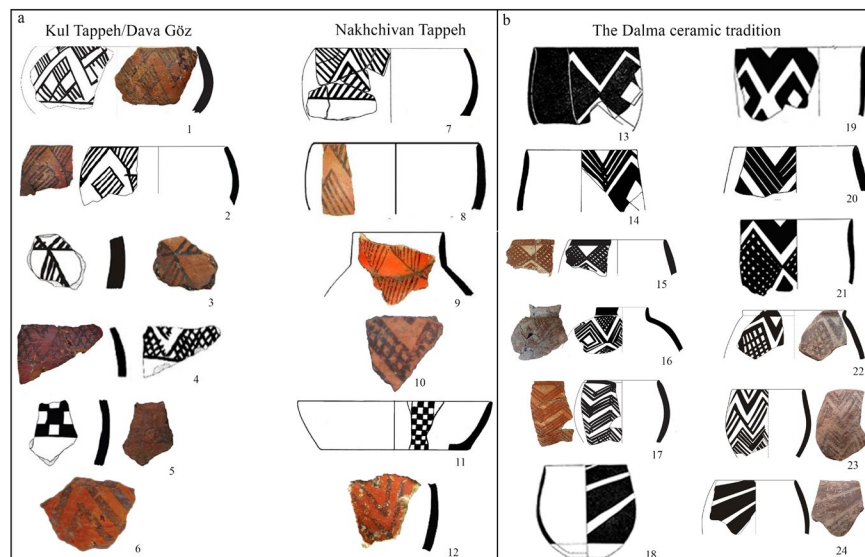
Although certain decorative elements, such as lozenges and zigzags, in the ceramic assemblage of Layer VIII at Kul Tappeh are shared with specimens from the southern Lake Urmia cultural zone, the overall decoration of Dalma ceramics from that region exhibits significant differences in motif combinations, application techniques, and attention to detail compared with the Kul Tappeh assemblage. Dalma ceramics from southern Lake Urmia are distinguished by the use of wide, solid band motifs, often covering most or even the entire vessel surface ([Falahian & Nozheti, 2016](#); [Hejebri Nobari et al., 2012](#); [Hamlin, 1975](#); [Young, 1963](#)), a characteristic absent in Painted Ware from Layer VIII at Kul Tappeh (Fig. 6a & 6b).

Dalma ceramics are characterized by hanging inverted triangles below the rim, nested herringbones, and combinations with other motifs, such as triangles, lozenges, and zigzags ([Binandeh, 2011: Fig. 6](#); [Hamlin, 1975, Fig. 4: D–F](#)), none of which are observed in the Kul Tappeh assemblage. One defining feature of Dalma Monochrome is a decoration technique that emphasizes the relationship between the design and the light-colored vessel background, producing a negative design effect. Based on the relationship between the main motifs and the ceramic background, this method produces two distinct decorative patterns, a technique not found in Kul Tappeh's Painted Ware ([Bahranipoor, 2018](#); [Young, 1963](#); [Hamlin, 1975](#); [Henrickson, 1983](#); [Levine & Young, 1987](#)) (Fig. 6b).

Furthermore, in the southern Lake Urmia cultural zone, the outer slip of Dalma Monochrome is typically matte cream, white, or red and decorated with matte red, purple, brown, or black motifs ([Hamlin, 1975](#); [Hejebri](#)

Nobari *et al.*, 2012). In contrast, the Kul Tappeh ceramics feature brown or black motifs on a burnished red background (Abedi *et al.*, 2014b). The Painted Ware from Kul Tappeh closely resembles the ceramics from Phase I of the Dava Göz site, or the so-called “Transitional Chalcolithic Phase” (Abedi, 2016b; Abedi *et al.*, 2015). The ceramic assemblage from Dava Göz, located approximately 60 km southwest of Kul Tappeh, is consistent with that from Layer VIII at Kul Tappeh. The most common ceramic types in Dava Göz Phase I include Red-Slipped and Incised (grooved or combed) Wares, while Painted Ware is less frequent. The Painted Ware of Dava Göz Phase I has a brown or red clay slip and is decorated with simple linear geometric designs in black or brown. These motifs include parallel diagonal, horizontal, and vertical lines, lozenges, hatched triangles, and checkered patterns. Additionally, stylized animal motifs reported in the

Fig. 6: a. The resemblance of painted motif between Dava Göz (Nos. 1, 6) (Abedi, 2017, Fig. 7), Kul Tappeh (Nos. 2-5) (Abedi *et al.*, 2015, Fig. 5), and Nakhchivan (Nos. 7-12) (Bakhshaliyev, 2023, Figs. 9,11,12); b. A selection of classic Dalma ceramics from Dalma Tappeh (Nos. 13, 14, 18) (Hamlin, 1975, Figs. 5-7), Nadali Beig (Nos. 15-17) (Bahranipoor, 2023, Fig. 7), Lavin (Nos. 19-21) (Nobari Hojebri *et al.*, 2012, Figs. 8-9), and Namshir (Nos. 22-24) (Saed Moucheshi *et al.*, 2017, Fig. 13). ►



Dava Göz assemblage resemble those found at Kul Tappeh (Ibid: 73) (Fig. 5a: 1 & 6).

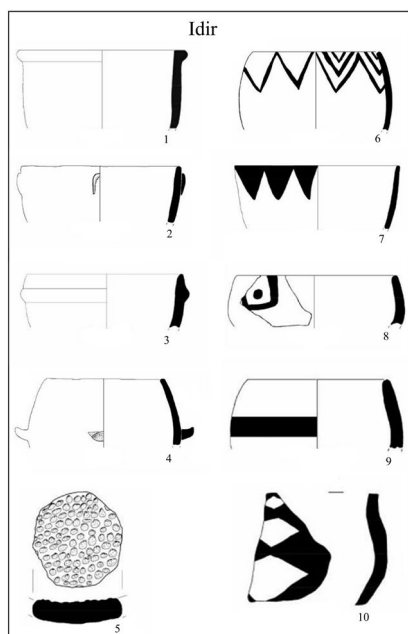
The most significant distinction between the ceramic assemblages of Kul Tappeh and Dava Göz and the classic Dalma ceramic tradition lies in the absence of the Dalma Impressed variant (Abedi, 2016b; Abedi, 2016a; Abedi *et al.*, 2015: 38). Instead, both assemblages are dominated by ceramics featuring comb- or groove-incised patterns, which constitute the most frequent type of decorated ceramics within these assemblages (Abedi *et al.*, 2014b: 38; Abedi, 2017: 73). In contrast, such incised decoration is notably absent across the broader Dalma cultural horizon, with the exception of Qeshlagh, which appears to reflect influences from cultural

interactions within the Zanjan–Takestan corridor (Bahranipoor, 2021: 120). Moreover, the painted ceramics of Kul Tappeh and Dava Göz exhibit marked similarities with those from the Nakhchivan region, particularly the site of Nakhchivan Tappeh (Bakhshaliyev, 2023) (Fig. 5a: 7–12).

Tappeh Idir: This site is located 16 km south of Aslan Duz, near the Iran-Azerbaijan border, and is another site attributed to the Dalma culture (Fig. 1). A stratigraphic trench was excavated down to virgin soil, revealing a sequence of 14 layers, from top to bottom, spanning five cultural periods (Hessari & Akbari, 2006). The excavator attributed layers 7 through 10 to the Dalma culture (Hessari, 2019: 28). The ceramic assemblage attributed to the Dalma culture at Idir includes Plain Ware, ceramics with applied and appliqué decorations, Painted Ware, and Impressed Ware (Ibid: 30). The predominant ceramic coatings are buff and light-brown clay slips. Idir's painted ceramics feature exclusively geometric motifs in red and black (Hessari, 2019: 30). The decorative elements of the painted ceramics from Idir include solid-colored triangles or nested zigzags below the rim, bands of positive and negative lozenges, wide horizontal bands, dotted patterns, and quadrilateral shapes (Hessari, 2019: Fig. 2).

Although the primary decorative elements in Idir ceramics, such as lozenges and zigzags, are shared with the Dalma Monochrome variant from the southern Lake Urmia basin, significant differences exist in the composition and repetition of these motifs between the two assemblages (Fig. 7: 6–7, 10). The overall decorative style of the Painted Ware from Idir is similar to that of the Dalma Tappeh assemblage, which utilizes zigzag patterns to create hanging triangles below the rim. However, in Idir, these designs are executed as narrow bands confined to the area below the rim (Hessari, 2019: Fig. 2) (Fig. 7: 6–7). The classic Dalma Monochrome, in contrast, is distinguished by its elaborate designs, covering the entire ceramic surface and often characterized by wide, solid band motifs (Fallahian & Nozhati, 2016; Hamlin, 1975; Hejebri Nobari *et al.*, 2012). The integration of vertical or horizontal band motifs with negative execution, characteristic of the Dalma ceramic tradition, is absent in the Idir assemblage, except for a single specimen (Fig. 7). Quadrilateral and dotted motifs also differentiate Idir's decorative style from the classic Dalma tradition (Fig. 7: 8).

Furthermore, the painted ceramics of the southern Lake Urmia Dalma tradition feature colors ranging from matte red to purple, brown, and black. In contrast, the painted motifs of Idir ceramics are restricted to black and



▲ Fig. 7: The Dalma-attributed ceramics of Idir (Hessari, 2019: Fig. 2).

brown tones. Another distinction between the Idir assemblage and the Dalma tradition is the prevalence of burnished surface treatment in the former. The surface of Idir ceramics is often highly burnished, creating a polished appearance. This surface treatment, particularly in the earlier phase at Idir (i.e., the Early Chalcolithic), may represent a localized regional characteristic.

Ceramics with appliqué and relief decorations are the most common type of decorated ceramics in the Idir assemblage, with button-shaped appliqué decorations being predominant (Hessari, 2019: 30). Based on the continuity of this decoration from the preceding period, it appears that this technique is linked to the local ceramic traditions of the region. Furthermore, such decorations are absent from the classic Dalma ceramics.

The Dalma-attributed deposits of Idir also produced a collection of ceramics with finger-impressed decorations, which are described only briefly (Hessari, 2019: Fig. 2: p) (Fig. 7: 5). Apart from the closed-mouth pots, the Idir ceramic assemblage exhibits notable differences in vessel forms compared to the classic Dalma ceramics (Fig. 7: 1–4). The most common forms in the Idir assemblage include spherical bowls and deep, open-mouth bowls with straight or outflaring walls. These vessels often feature a raised band below the rim or a protruding handle-like appendage, features also observed in the Early Chalcolithic ceramics of Idir. Such characteristics may indicate the continuity of a local tradition (Fig. 7).

Thus, based on the reasons outlined above, the ceramic assemblage from layers 10–7 of Idir, despite its minimal similarities to the Dalma ceramic tradition (such as closed-mouth pots, impressed decorations, and filled or negative lozenge motifs), is entirely distinct from the defining characteristics of Dalma ceramics. It is possible that the Idir ceramic assemblage belonged to contemporaneous ceramic traditions that were prevalent in the Mughan Plain and the southern Republic of Azerbaijan during the first half of the 5th millennium BCE. Even though very few elements of the Dalma ceramic tradition are present in this assemblage, it represents a distinct cultural tradition.

Conclusion

As discussed above, ceramic assemblages recovered from some excavated sites, mainly in the periphery of the Dalma culture's core area, have been attributed to the Dalma ceramic tradition based on the presence of components that are somewhat similar to those of the Dalma

ceramic tradition. Painted and impressed ceramics constitute the most prominent elements associated with Dalma-attributed assemblages. As mentioned above, ceramics with impressed decoration, due to their continued presence in the archaeological stratigraphic sequence during the post-Dalma periods, such as Seh Gabi and Pisdeli throughout the 5th millennium BCE, cannot be used alone as a reliable indicator for assigning a ceramic assemblage to Dalma culture without the presence of the signature Dalma Monochrome variant. The painted ceramics of the peripheral regions of the Dalma culture, characterized by black-on-red ceramics with geometric motifs, are only slightly similar to the classic Dalma Monochrome ceramics. In terms of motif type, execution method, vessel forms, and technical attributes, these ceramics cannot be considered equivalent to Dalma Monochrome. Due to this slight resemblance, this type of ceramic has sometimes been attributed to Dalma culture. It also co-occurs with other types, such as Red-Slipped or semi-impressed ceramics, within assemblages from the peripheral regions of Dalma culture. In light of these findings and the strongly localized distinctions reflected in the ceramic assemblages of the peripheral regions, it is possible to identify and differentiate components of the Dalma ceramic tradition from other local ceramic elements.

In light of this approach, the ceramic assemblages from Kalnan, Talvar 11, and Soha Chai cannot be confidently attributed to the Dalma ceramic tradition because they lack the two primary markers of that tradition: Dalma Monochrome and Dalma Impressed variants. However, given the clear intra-regional similarities among the ceramic assemblages from Kalnan, Qeshlagh III, Talvar 11, and Soha Chai, and the presence of components characteristic of Godin VII and Ghabristan I, their chronological position should be considered contemporaneous with “Godin VII” and “Ghabristan I.” These ceramic assemblages reflect interactions between the Central Zagros, Bijar-Qorveh, and Zanjan-Takestan corridors. Furthermore, the absolute dates of Soha Chai and Kalnan fall within the temporal range of Ghabristan I and Godin VII. Considering the limited presence of impressed techniques (primarily shallow fingertip impressions) in the ceramic assemblages from Kalnan, Soha Chai, and Talvar 11, it can be inferred that this decorative method persisted in an altered and often degenerated form into the Godin VII period. The shared ceramic features between these sites and Godin VII include the abundance of plain ceramics, particularly Red-Slipped Ware, similarities in vessel forms (cups, basins, and “S-shaped”

vessels), the use of incised zigzag, herringbone, or molded wavy patterns on the rims of some vessels, and concave bases. The distinctly localized intra-regional characteristics of these assemblages include the presence of red- and brown-slipped ceramics with black and cream motifs, cream and gray ceramics, carinated globular pots, shallow punch decorations, abundant short incised lines arranged in groups or herringbone patterns, and appliqué motifs of ram's heads or "U-shaped" designs. These traits reflect significant interaction with the Bijar and Qazvin regions, particularly during Qeshlagh III and Ghabriştan I.

The most frequent ceramic decorative technique in the Bijar-Qorveh and Zanjan-Takeştan corridors is incised decoration, which has been reported at Talvar 11 (Valipour *et al.*, 2010, Fig. 1), Qeshlagh III (Sharifi, 2020), Soha Chai (Aali, 2006), Shizar (Valipour, 2006), Karvansara (Ali-Beigi *et al.*, 2014), and Ghabriştan I (Majidzadeh, 2008: Fig. 8; Fazeli Nashli, 2007: Figs. 76–77, 84). Notably, this decorative technique has been documented west of Kalnan only at Namshir III (Saed Moucheshi *et al.*, 2017: Fig. 19). Consequently, we propose that this decorative technique was specific to the Zanjan-Takeştan corridor, from which it subsequently spread to the Bijar-Qorveh region. The ceramic assemblage from Tazeh Kand, located at the easternmost end of the Central Zagros, does not conform to the Dalma ceramic tradition due to the absence of its primary markers—Dalma Monochrome and Dalma Impressed wares. Instead, the Tazeh Kand assemblage, characterized by fine buff-painted ware (BOB), an abundance of Red-Slipped ware, and decorative features such as scattered shallow finger impressions (particularly on the bases of basins), multiple rows of fine incised herringbone and needle-pattern motifs, and comparable vessel forms, more closely resembles the Seh Gabi ceramic tradition (Godin IX) rather than Dalma (Godin X). Regarding the ceramics with semi-impressed decorations from Qela Gap (Layers 19–21), located in the eastern Central Zagros, we suggest that the technical and decorative similarities between the ceramic assemblages of Qela Gap, Qal'eh-ye-Sarsakhti, and potentially the northern Seymareh Valley and Khorramabad Valley sites indicate the existence of a localized ceramic tradition incorporating elements borrowed from neighboring cultures—the Central Zagros and the Central Plateau—during the 5th millennium BCE. The limited presence of semi-impressed decorations in the Dalma-attributed layers of Qela Gap points to influence from the northern Seymareh Valley rather than the Central Zagros Dalma ceramic tradition.

A distinctive pattern is observed in the ceramic assemblages attributed to the Dalma tradition from the northern Lake Urmia region, specifically Kul Tappeh Layer VIII, Dava Göz Phase I, and Idir Layers 7–10. Given the similarities among the assemblages of these sites and their comparable absolute dates, it appears that they belong to a single ceramic tradition active in northern Lake Urmia during the fifth millennium BCE. What distinguishes Kul Tappeh VIII and Dava Göz I from the classic Dalma ceramic tradition is the absence of two critical markers of Dalma culture: Dalma Monochrome and Dalma Impressed, together with the prominent presence of comb- or groove-incised pattern ceramics—a feature not observed in classic Dalma assemblages. It appears that the attribution of these two assemblages to the Dalma tradition was primarily based on the presence of painted ceramics, which show significant technical and decorative differences from Dalma Monochrome ware. As discussed above, the resemblance between the ceramic assemblage of Nakhchivan Tappeh and the sites identified in the northern part of Lake Urmia to those of Dava Göz and Kul Tappeh supports the hypothesis that a distinct ceramic tradition existed in northern Lake Urmia, contemporaneous with the Dalma ceramic tradition in the southern Lake Urmia region.

Despite having very few similarities with the Dalma ceramic tradition (such as short-necked pots, ceramics with impressed patterns, and lozenge-shaped negative or solid motifs), the ceramic assemblages from Layers 7–10 of Idir are clearly distinct from the defining characteristics of the Dalma tradition. These differences are evident in the prevalence of appliqué decoration, including banded or button-like designs under the rim, the high burnishing of the ceramics, vessel forms, the simplicity of geometric motifs, and the techniques employed in their execution. Therefore, the ceramic assemblage from Layers 7–10 of Idir appears to represent a culture that incorporates features from the preceding Early Chalcolithic period, while including very few elements of the Dalma ceramic tradition, and most likely reflects a distinct local culture that existed in the Mughan Plain and southern Republic of Azerbaijan during the first half of the fifth millennium BCE. Finally, it should be noted that if the relative chronological position of the ceramic assemblages from Kalnan and Soha Chai is placed within the same timeframe as Godin VII and Ghabristan I, then, based on the absolute dates available for these two sites and Ghabristan I, it becomes possible to reconstruct at least part of the chronological sequence for Godin VII. Therefore, considering the absolute dates from Kalnan and Soha Chai,

along with the similarities between their ceramic assemblages and those of Godin VII and Ghabristan I, the Godin VII phase can be placed between 4200 and 3600 BCE. Accordingly, the ceramic assemblages of Kalnan and Soha Chai, based on these ceramic observations and absolute dates, can serve as a reference framework for dating the ceramic assemblages of Godin VII and Ghabristan I.

Acknowledgments

I would like to express my gratitude to A. Aali, A. Sardari, M. Abdollahi, G. Shirzad, and A. Mohajeri Nezhad for granting access to their unpublished field reports from the excavations at Soha Chai, Qela Gap, Qal'eh-ye-Sarsakhti, and Cheshmeh Rajab. I am also indebted to A. Saed Moucheshi and H. Zifar for kindly providing copies of their PhD dissertations. My sincere thanks are extended to M. Alirezazadeh for producing the base map presented in Figure 1.

Endnote

1. According to this reasoning, the sites of Siahbid and Chogha Maran in Mahidasht ([Renette et al., 2021a](#)), Kani Shaei near Sulaymaniyah ([Renette et al., 2021b](#); [Renette et al., 2022](#)), Surezha in the Erbil Plain ([Stein, 2018: 43](#); [Stein & Fisher, 2020: 142](#)) in Iraqi Kurdistan, and the Hamrin region sites of southeastern Iraq ([Jasim, 1985](#)) cannot be considered representative of Dalma Culture. For instance, the most diagnostic variety of the Dalma assemblage—Dalma Monochrome Ware—does not occur in the ceramic assemblages of Siahbid, Chogha Maran, or the Hamrin region sites. In the case of Surezha and Kani Shaei, Dalma ceramic types, such as Dalma Monochrome and Dalma Impressed, comprise, as the excavators noted, only a “small proportion” of the total ceramic assemblages recovered from the levels ascribed to Dalma Culture ([Alden et al., 2021](#); [Stein & Fisher, 2020: 141, Table 5](#); [Renette et al., 2022: 8](#); [Renette et al., 2021b: 129](#)).

References

- Aali A., (2006). “Excavation at Tappeh Soha Chai”, [Unpublished field report]. Archive of the Iranian Center for Archaeological Research. (In Persian).
- Abdi, K., (2002). “Strategies of Herding: Pastoralism in the Middle Chalcolithic Period of the West Central Zagros Mountains, Iran”. PhD Dissertation, University of Michigan, Anne Arbor.
- Abdollahi, M., Niknami, K., Hessari, M. & Sardari, A., (2013). “The village period and cultural developments of the eastern Central Zagros societies: Archaeological excavations at Qela Gap”. *Archaeological Studies*, 6 /1:67–86. (In Persian).
- Abdollahi, M. & Sardari Zarchi, A., (2013). “Eastern Central Zagros the Neolithic Period: Based on the excavation at Qela Gap”. *Archaeological*

Research of Iran (Pazhohesh-He-Ye Bastanshenasi), 3/4: 117-138. (In Persian). https://nbsb.basu.ac.ir/article_567.html

- Abdolahi, M. & Sardari Zarchi, A., (2012). "Preliminary report of the first season of survey Azna". *Archaeological Reports*, 8: 27-68. (In Persian).

- Abdolahi, M. & Sardari Zarchi, A., (2011). "Preliminary report of excavation at Qela Gap Azna", [Unpublished field report]. Archive of the Iranian Center for Archaeological Research. (In Persian).

- Abedi, A., (2017). "Iranian Azerbaijan pathway from the Zagros to the Caucasus, Anatolia and northern Mesopotamia: Dava Göz, a new neolithic and chalcolithic site in NW Iran". *Mediterranean Archaeology and Archaeometry*, 17/1, 69-87.

- Abedi, A., (2016a). "Preliminary report of the second season of excavation at Kul Tepe, north-western Iran". *Journal of Archaeological Studies*, 8/1:91-111. (In Persian). <https://doi.org/10.22059/JARCS.2016.59497>

- Abedi, A., (2016b). "Absolute (14C AMA) and relative chronology of Dava Goz KHoy, new evidence of transitional Chalcolithic, Dalam and Pisdeli cultures in NW Iran". *Journal of Research on Archaeometry*, 2/1: 39-54. (In Persian). <https://doi.org/10.29252/jra.2.1.39>

- Abedi, A., Omrani, B. & Karimifar, A. (2015). "Fifth and fourth millennium BC in north-western Iran: Dalma and Pisdeli revisited". *Documenta Prehistorica*, XLII: 321-338.

- Abedi, A., Eskandari, N., Khatib Shahidi, H., Sharahi, I. & Shirzad, G., (2014a). "New evidence from Dalma and Kura Araxes cultures at Tappeh Qal'e-ye Sarsakhti". *Iran and the Caucasus*. 18: 101-114. <https://doi.org/10.1163/1573384X-20140202>

- Abedi, A., Khatib Shahidi, H., Chataigner, C., Niknami, K., Eskandari, N., Kazempour, M. Pirmohammadi, A., Hosseinzaeh, J. & Ebrahimi, G., (2014b). "Excavations at Kul Tepe (Hadishahr), North-Western Iran, 2010: First Preliminary Report". *Ancient Near Eastern Studies*, 51: 33-165. (In Persian).

- Alibaigi, S., Khosravi, SH., Nikzad, M., Haidari Dashtani, M., Saghfaphi Yazdai, N., Akbari, M. & Jafarzadeh, Z., (2014). "The stratigraphy report of Tepe Kolyery (Karvansara) in the eastern elevation of Zanzan Province". *13th Annual Archaeological Report*, Tehran: 235-239. (In Persian).

- Bahranipoor, H., (2023). "New Radiocarbon Dates for the Middle Chalcolithic Period of the Central Zagros, Iran". *Radiocarbon*, 65 (3):

591–616. <https://doi.org/10.1017/RDC.2023.41>

- Bahranipoor, H., (2021). “Intra-Regional Diversity of Dalma Ceramic Tradition based on Analysis of the painted Monochrome Ware”. *Journal of Research on Archaeometry*, 7/1: 103–123. <https://doi.org/10.52547/jra.7.1.103> (In Persian)

- Bahranipoor, H., (2018). “Reappraisal of cultural interactions between the inhabitants of the Central Zagros with the neighboring regions during the 5th millennium BC based on the archaeological data from the site of Nad Ali Beig” [Unpublished PhD diss]. University of Tehran, Tehran. (In Persian)

- Bahrami, M. & Fazeli Nashli, H., (2016). “The Archaeology of Khorram Abad Valley during Neolithic and Chalcolithic period”. *Archaeological Research of Iran (Pazhohesh-He-Ye Bastanshenasi)*, 6 (10): 27-46. <https://doi.org/10.22084/nbsh.2016.1545> (In Persian).

- Bakhtiyari, Z. & Sarami, A., (2013). “Introduction Marianj II: a habitat from the Chalcolithic to Bronze Age”. in: Hozhabri, A. (ed.), *Archeology & History of Hamedan*. Tehran: 33-44. (In Persian).

- Balmaki, B., (2017). “Dalma culture in the Hamedan Plain: Stratigraphic excavation at Tappeh Taze Kand in Hamedan Plain”. *Iranian Archaeological Research*, 12: 63–82. (In Persian)

- Balmaki, M., (2013). “Chronology of Hamedan Plain (Northern Fringe of Elvand) from the 5th millennium to the Middle of the 3rd millennium BC”, in: Hozhabri, A. (ed.), *Archeology & History of Hamedan*. Tehran: 17-31. (In Persian).

- Bakhshaliyev, I., (2023). *Origin of Dalma Tepe culture*. Nakhchivan: “Ecemi” In Azarbaijan.

- Binandeh, A., (2011). “Revision of the Chalcolithic Period in northwestern Iran, case study: Lavin Tappeh”. [Unpublished PhD diss]. University of Tarbiat Modars, Tehran. (In Persian).

- Falahian, Y. & Nozhati, K., (2016). “Rescue Excavation at Tappeh Baghi, Sardasht”, in: Chubak, H. (ed.), *Proceedings of the 15th annual congress on Iranian archaeology*. Tehran: 492–498. (In Persian).

- Fazeli Nashli, H., (2007). *The Socio-economic complexities of the Qazvin Plain during the Fifth Millennium BC: Excavations at Tappeh Qabrestan*. Tehran: Iranian center for Archaeological Research. (In Persian).

- Goff, C. L., (1971). “Lūristān before the Iron Age”. *Iran*, 9:131–152. <https://doi.org/10.2307/4300443>

- Gopnik, H. & Rothman, M. S., (2011). *On the High Road: the history of Godin Tepe, Iran*. Costa Mesa: Madza Publisher, Inc.
- Hamlin, C., (1975). "Dalma Tepe". *Iran*, XIII: 111-128. <https://doi.org/10.2307/4300529>
- Helwing, B., Chegini, N. N. & Thomalsky, J., (2011). "Archaeological survey in the hinterland of Arismān and Kāšān". in: Vatandoust, A., Parzinger, H. & Helwing, B. (eds.) *Early Mining and Metallurgy on the Western Central Iranian Plateau*. Archäologie Mittellungen in Iran und Turan 9. Mainz: Philipp von Zabern, 421-482.
- Henrickson, E. F., (1983). "Ceramic Styles and Cultural Interaction in the Early and Middle Chalcolithic of the Central Zagros, Iran". PhD Dissertation. Department of Anthropology. University of Toronto.
- Henrickson, E. F., (1985). "An Updated Chronology of the Early and Middle Chalcolithic of the Central Zagros Highlands, Western Iran". *Iran*, XXIII: 63-108. <https://doi.org/10.2307/4299754>
- Henrickson, E. F., (1986). "Ceramic Evidence for Cultural Interaction Between Chalcolithic Mesopotamia and Western Iran". in: Kingery and Esther Lense (eds.), *Technology and Style, ceramics and Civilization*, Vol. 2, W.D., pp. 87-132. Columbus, OH: American Ceramic Society.
- Henrickson, E. F. & Vitali, V., (1987). "The Dalma Tradition: Prehistoric Interregional Cultural Integration in Highland of Western Iran", *Paléorient*, 13/2: 37-46. <https://doi.org/10.3406/paleo.1987.4427>
- Henrickson, E. F., (1989). "Ceramic evidence for cultural interaction between the Ubaid tradition and the Central Zagros highlands, western Iran". in: Henrickson E.F., & Thuesen I. (eds.), *Upon this Foundation: The Ubaid Reconsidered*. Pp. 369-404, Copenhagen: Carsten Niebuhr Institute.
- Henrickson, E. F., (1992). "CERAMICS: The Chalcolithic Period in the Zagros Highlands". in: E. Yarshater (ed.). *Encyclopedia Iranica*, V. 5, facs. 3: 278-282.
- Hessari, M., (2019). "A study, Analyses and variation of the Chalcolithic pottery tradition in Idier Tappeh, Ardabil Province", *Archaeological Research of Iran (Pazhohesh-Ha-Ye Bastanshenasi)*, 9 (21): 23-40. (In Persian). <https://doi.org/10.22084/nbsh.2019.16391.1748>
- Hessari, M. & Akbari, H., (2006). "Report of the Excavation at Idier Tappeh, Aslanduz". *Archaeological reports*, 4. Tehran: 13-30. (In Persian).
- Hole, F. (1987). "Archaeology of the Village Period". In: Hole, F. (ed.) *The Archaeology of Western Iran: Settlement and Society from Prehistory to*

the Islamic Conquest. Pp. 29–78. Washington, DC: Smithsonian Institution Press.

- Jasim, S., (1985). *The Ubaid period in Iraq*. recent excavations in the Hamrin region.

- Kaka, GH., Shirzad, GH. & Mohamadi, M., (2015). “Preliminary report on archaeological survey of Chalcolithic period settlements on the margin of Qarachai River (Shazand, Khandab & Komijan Cities)”. in: Chubak, H. (ed.), *13th Annual Archaeological Report*, Tehran: 254–258. (In Persian).

- Khatib Shahidi, H., Heidarian, M. & Basafa, H., (2012). “The prehistoric cultures of the Songhor Plain”. *Archaeological Reports*, 8: 31–46. (In Persian).

- Levine, L. D. & Young, T. C. Jr., (1987). “A Summary of the Ceramic Assemblages of the Central Western Zagros from the Middle Neolithic to the Late Third Millennium BC”. in: Hout, J. L. (ed.), *Prehistoire de la Mesopotamie*, Pp. 15-53, Paris: Centre National de la Recherche Scientifique, Colloques Internationaux.

- Majidzadeh, Y., (2008). *Excavation at Tape Ghabrestan*. Rome: Istituto Italiano per l’Africa e l’Oriente (IsIAO).

- Marshall, J. L., (2012). “Missing Links: Demic Diffusion and the Development of Agriculture on the Central Iranian Plateau. Durham theses”. Durham University. Available at Durham E-Theses Online: <http://etheses.dur.ac.uk/3547/>

- McDonald, M. M., (1979). “An Examination of Mid-Holocene Settlement Patterns in the Central Zagros Region of Iran”. PhD thesis, University of Toronto.

- Mohajernejhad, A.R. & Soraghi, N.A., (2016). “Preliminary report of Cheshmeh Rajab excavation”. in: Niyakan, L. (ed.), *Archaeological researches of the Simareh Dam*. Tehran: 64-78. (In Persian).

- Moghadam, A., Javanmardzadeh, A., Salmanzadeh, J., Maleki, A.M., Abdolvand, SH., Vosughbabi, A., Nekoi, P., Hosinzadeh, J., Mashkur, M. & kimyaie, M., (2016). “Rescue excavation in the Chamqole site”. in: Niyakan, L. (ed.), *Archaeological researches of the Simareh Dam*. Tehran: 57-63. (In Persian).

- Motarjem, A. & Sharifi, M., (2018). ‘The cultural transition from the late Neolithic to early Chalcolithic in border land of eastern central Zagros’. *Archaeological Research of Iran (Pazhohesh-He-Ye Bastanshenasi)*, 16: 83-102. (In Persian).

- Mortensen, P., (2014). *Excavations at Tepe Guran: The Neolithic Period*. Leuven: Peeters.
- Nobari Hojebri, A., Binandeh, A., Nestani, J. & Vahdati Nasab, H., (2012). "Excavation at Lavin Tepe Northwest Iran". *Ancient Near Eastern Studies*, 40: 95-117.
- Pollard, A. M., Davoudi, H., Mostafapour, I., Valipour, H. R. & Fazeli Nashli, H., (2012). "A new radiocarbon chronology for the late Neolithic to Iron Age on the Qazvin plain, Iran". *The International Journal of Humanities*, 19/3: 1-41.
- Parviz, A., (2007). "Report of the Silakhor plain Archaeological Survey", [Unpublished field report]. Archive of the Iranian Center for Archaeological Research. (In Persian).
- Rahimi Sorkhani, R. & Eslami, M., (2018). "Specialized pottery production in Dalma tradition; a statistical in pottery analysis from Soha Chay Tepe, Zanjan Iran". *Journal of Archaeological Science: Reports*, 17: 220-234. <https://doi.org/10.1016/j.jasrep.2017.11.007>
- Rahimi Sorkhani, R., Niknami, K. & Eslami, M., (2016). "Non-Dalma Ceramics in Dalma Contexts: archaeological recognition and laboratory explanation. Case study: Soha Chai, Zanjan". *Journal of Archaeological Study*, 8/2: 53-70. (In Persian).
- Rahimi Sorkhni, R., (2008). "Relative and Absolute chronology of the Soha Chai in the Zanjan", [Unpublished diss]. University of Tehran. (In Persian).
- Renette, S., (2022). "Defining Dalma: an incipient mountain identity?". *Paléorient*, 48.1: 131-153. <https://doi.org/10.4000/paleorient.1699>
- Renette, S., Lewis, MP., Wencel, MM., Farahani, A., Tomé, A. (2022). "Establishing an absolute chronological framework for the late Chalcolithic to early Bronze age in Iraqi Kurdistan: Radiocarbon dates from Kani Shaie". *Radiocarbon*, 1-23. <https://doi.org/10.1017/RDC.2022.72>
- Renette, S., Khayani, A. & Levine LD., (2021a). "Chogha Maran: A local center of Chalcolithic and Early Bronze Age in the Central Zagros". *Iranica Antiqua*, LVI: 1-169. <https://doi.org/10.2143/IA.56.0.3290273>
- Renette, S., Abu Jarryab K., Gibbon, E., Lewis, MP., Abdulkarim Qadir, Z., Cabral, R. & Tomé, AG., (2021b). "Late Chalcolithic ceramic development in southern Iraqi Kurdistan: The stratigraphic sounding at Kani Shaie". *Iraq*, 83: 119-166. <https://doi.org/10.1017/irq.2021.1>
- Renette, S. & Mohammadi Ghasrian, S., (2020). "The central and northern Zagros during the late Chalcolithic: an updated ceramic

chronology based on recent fieldwork results in western Iran”. *Paleorient*, 46 (1-2): 109 –132. <https://doi.org/10.4000/paleorient.366>

- Roustaiei. K. & Azadi, A., (2017). “Cultural relation between the Central Zagros and Central Plateau during the fourth millennium BCE: evidence from Shat Ghillah, Malayer”. *Archaeological Research of Iran*, 14: 39–58. (In Persian).

- Saed Moucheshi, A., Zamani Dadaneh, M., Ghasemi, M. & Karimi, Z., (2017). “Stratigraphic excavation at Tappeh Namshir, Baneh: a site in western Iran”. *Archaeological Research of Iran (Pazhohesh-ha-ye Bastanshenasi Iran)*, 7 (12): 43–62. <https://doi.org/10.22084/nbsh.2017.9477.1423> (In Persian).

- Saed Moucheshi, A., Niknami, K., Mashkur, M., Fazeli Nashli, H. & Firuzmandi Shirejini, B., (2011). “Relative and absolute chronology of Kalnan Bijar: A site belonging to the middle Chalcolithic period in western Iran”. *Archaeological Research of Iran (Pazhohesh-ha-ye Bastanshenasi Iran)*, 1: 31-56. https://nbsh.basu.ac.ir/article_318.html (In Persian).

- Saed Moucheshi, A., (2011). “Investigation the settlement patterns of the Chalcolithic period in the east of Kurdistan province (the edge of the Qezal Ozan River)”, [Unpublished PhD diss]. University of Tehran, Tehran. (In Persian).

- Sarikhani, M., Heydarian, M. & Ahamad Tajari, P., (2017). “Settlement pattern study of Chalcolithic and Bronze Age sites from the southeastern margin of Malayer plain”. *Journal of archaeological studies*, 9 (15): 93-112. (In Persian).

- Sharifi, M., (2020). *Archaeological excavations at Tappeh Gheshlagh, Bijar*. Tehran. (In Persian).

- Sharifi, M. & Motarjem, A., (2018). “The process of cultural change in the Chalcolithic period in the highlands of Western Iran at Tepe Gheshlagh”. *Documenta Praehistorica*, XLV: 86-99. <https://doi.org/10.4312/dp.45.7>

- Shirzad, GH. & Kaka, GH., (2012). “Report of Stratigraphy Tappeh Qal’e-ye Sarsakhti”, [Unpublished field report]. Archive of the Iranian Center for Archaeological Research. (In Persian).

- Stein, GJ. & Fisher, MT., (2020). “Surezha Excavations 2019, Erbil Plain, Kurdistan Region, Iraq”. *Oriental Institute Annual Report*, 2019–20:127–145.

- Stein, GJ., (2018). “Excavations at Surezha, Erbil Plain, Kurdistan Region, Iraq”. *Oriental Institute Annual Report*, 2017–18: 29–43.

- Valipour, H.R., Mostafapour, I., Bahdadfar, R. & Kaka, GH., (2010).

“Preliminary report on the first season excavations at site No. 11 of Talvar Dam, Bijar, Kurdistan”. *Payam- e Bastanshenas*, 7/13: 47-72. (In Persian).

- Valipour, H. R., (2006). “Preliminary report on the excavation of Tappeh Shizar”. [Unpublished field report]. Archive of the Iranian Center for Archaeological Research. (In Persian).

- Voigt, MM. & Dyson, RH. Jr., (1992). “The chronology of Iran, ca. 8000-2000 B.C”. in: Ehrich, R.W. (ed.), *Chronologies in Old World Archaeology*: 122-178, Chicago: Chicago University.

- Young, T. C. Jr. (1963). “Dalma Painted Ware”. *Expedition*, 5/2: 38-39.

- Young, T. C. Jr., (1969). “Excavations of the Godin Project: First Progress Report”. Ontario: Royal Ontario Museum, Art and Archaeology Occasional.

- Young, T. C. Jr. & Levine, L. D., (1974). “Excavations of the Godin Project: Second Progress Report”. Ontario: Royal Ontario Museum, Art and Archaeology Occasional Papers No. 26.

- Wright, H. T., (1981). “An Early Town on the Deh Luran Plain: Excavations at Tepe Farukhabad”. *Memoirs of the Museum of Anthropology, University of Michigan* 13. Ann Arbor: Museum of Anthropology, University of Michigan. <https://doi.org/10.3998/mpub.11395169>

- Zifar, H., (2012). “Typology and relative chronology of the Chalcolithic pottery of Talvar 11, Bijar”. [Unpublished MA Thesis], University of Abhar, Zanjan. (In Persian).

- Zamani Dadaneh, M., Renette, S. & Saed Moucheshi, A., (2021). “Connections between the northern Zagros and Mesopotamia during the fifth Millennium BCE: new insights from Tepe Namashir in western Iran”. *Origini*, XLV: 7-34.

- Zifar, H., Imanpoor, M. & Aali, A., (2017). “Research on the cultures of the fifth and fourth millennium BC in Zanjan province”. in: Khanipoor, M. & Naseri, R. (eds.), *Symposium of young archaeologists*, Tehran. (In Persian).



پژوهش‌های باستان‌شناسی ایران

فصلنامه علمی پژوهش‌های باستان‌شناسی ایران
P-ISSN: 2345-5500
E-ISSN: 2345-5225
<https://mbsh.basui.ac.ir>
شماره ۴۵، دوره پانزدهم، ۱۴۰۴

ارزیابی مجموعه سفال‌های منسوب به فرهنگ دالما

حنان بحرانی پور^۱

شناسه دیجیتال (DOI): <https://doi.org/10.22084/nb.2025.30954.2775>
تاریخ دریافت: ۱۴۰۴/۰۲/۲۲، تاریخ بازنگری: ۱۴۰۴/۰۴/۰۲، تاریخ پذیرش: ۱۴۰۴/۰۴/۰۷
نوع مقاله: پژوهشی
صص: ۵۱-۸۹



چکیده

در پژوهش‌های میدانی دو دهه اخیر در گستره جغرافیایی اصلی فرهنگ دالما و مناطق پیرامونی آن، مجموعه سفال‌هایی به دست آمده که به دلیل وجود مؤلفه‌هایی تقریباً مشابه با سنت سفالی دالما، آن‌ها را به دوره دالما نسبت داده‌اند. بارزترین مؤلفه‌های سنت سفالی دالما در این مجموعه‌ها، سفال با نقش فشاری، سفال منقوش تک‌رنگ و سفال با پوشش قرمز است؛ درواقع مجموعه سفال‌های مناطق حاشیه‌ای بیانگر نوعی امتزاج مواد فرهنگی دو یا سه منطقه فرهنگی همجوار است. با مبنا قرار دادن شاخص‌های واقعی سنت سفالی دالما می‌توان به تفاوت‌های سنت سفالی دالما با مجموعه‌های سفالی مناطق بینابینی پی برد و جایگاه گاه‌شناسی نسبی این مجموعه‌ها را تا حدودی روشن کرد؛ ازجمله این مناطق حاشیه‌ای فرهنگ دالما می‌توان به شمال دریاچه ارومیه، کریدور زنجان-قزوین، کریدور بیجار-قروه و حاشیه شرقی و جنوبی زاگرس مرکزی اشاره کرد. مجموعه‌های سفالی این مناطق حاشیه‌ای که به این دوره منسوب شده‌اند عبارت است از: کلنان، سه‌چای، تالوار ۱۱، تازه‌کند، قلاگپ، کول‌تپه و ایدیر. با تحلیل‌های دقیق مجموعه‌های سفالی این مناطق می‌توان مؤلفه‌های بومی و تفاوت‌های مجموعه‌های حاشیه‌ای «منسوب به سنت سفالی دالما» را با «سنت کلاسیک دالما» شناسایی و سمت‌وسوهای فرهنگی و مرزبندی این سنت را تا حدودی مشخص کرد.

کلیدواژگان: سنت سفالی دالما، سفال منقوش تک‌رنگ، سفال با نقش فشاری، دوره گودین VII و تاریخ مطلق.

I. کارشناس پژوهشکده باستان‌شناسی، پژوهشگاه میراث فرهنگی و گردشگری، تهران، ایران.
Email: h.bahranipour@richt.ir

ارجاع به مقاله: بحرانی پور، حنان، (۱۴۰۴). «ارزیابی مجموعه سفال‌های منسوب به فرهنگ دالما. پژوهش‌های باستان‌شناسی ایران، ۱۵(۴۵): ۵۱-۸۹.
<https://doi.org/10.22084/nb.2025.30954.2775>

فصلنامه علمی گروه باستان‌شناسی دانشکده هنر و معماری، دانشگاه بوعلی سینا، همدان، ایران.

© حق انتشار این مستند، متعلق به نویسنده (گان) آن است. ۱۴۰۴ © ناشر این مقاله، دانشگاه بوعلی سینا است. این مقاله تحت گواهی زیر منتشر شده و هر نوع استفاده غیرتجاری از آن مشروط بر استناد صحیح به مقاله و بارعایت شرایط مندرج در آدرس زیر مجاز است.

Creative Commons Attribution-NonCommercial 4.0 International license (<https://creativecommons.org/licenses/by-nc/4.0/>).

© The Author(s)

