
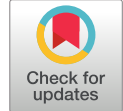




Anadolu Araştırmaları Anatolian Research

Research Article

 Open Access

A Group of Alkaline Glazed Ceramics from the Mardin Museum



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Abstract

This study investigates nine alkaline-glazed ceramics housed in the Mardin Museum, comprising four bottles, one pot, and four vases. The glaze characteristics of the bottles exhibit notable diversity: two feature a variegated greenish-blue glaze, one is double-glazed with a turquoise upper section and a dark blue lower section, complemented by vertical dark blue stripes beneath the turquoise glaze, and one is dark green. In contrast, the pot and vases are uniformly characterized by a turquoise glaze. The alkaline glaze was applied to the outer surfaces of the ceramics and extended to the necks on the inside. However, it was not used for the inner surfaces or certain base sections of some specimens. Based on analogical research, the bottles classified under Type 1 are dated between the 3rd/2nd century BCE and the 3rd century CE (Seleucid/Parthian–Early Sasanian periods). Meanwhile, those under Types 1.2 and 1.3 span from the 3rd/2nd century BCE to the first quarter of the 3rd century CE (Seleucid/Parthian periods). The pot, classified as Type 2, is dated to the 2nd century BCE–2nd century CE. The vases, categorized under Type 3, are attributed to the 1st–2nd century CE.

Keywords

Alkaline Glaze • Seleucid-Parthian-Sasanian • Bottle • Pot • Vase



“ Citation: Tosun, M. (2025). A Group of Alkaline Glazed Ceramics from the Mardin Museum. *Anadolu Araştırmaları–Anatolian Research*, (32), 196–212. <https://doi.org/10.26650/anar.1587423>

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Introduction

Studies on alkaline-glazed ceramics have been extremely limited to date, primarily due to the scarcity of complete or nearly complete examples. These ceramics are associated with the material cultures of the Seleucid, Parthian, and Sasanian periods. However, making a definitive distinction between these cultures based solely on glaze characteristics remains a significant challenge (Köhler, 2016: 41). Such differentiation is only possible when examples possess distinctive decorative features.

For instance, motifs resembling canine teeth are attributed to the Seleucid period (Wilkinson & Tucker, 1996: 216, Fig. 75.15-17; Curtis & Green, 1997: Fig. 63.462-463, 66.508-509, 68.542; Bieliński, 1998: **Figure 2**; Ur, 2010: Fig. B.31.17-22; Gavagnin, Iamoni & Palermo, 2016: Fig. 22.11; Ahmad, 2017: **Figure 3**). Similarly, diamond shapes with dot decorations and sawtooth motifs are linked to the Parthian period (Wilkinson & Tucker, 1996: 217, Fig. 76.1-8; Oates, 2005: Fig. 22.49-50, 54-55; Ur, 2010: Fig. B.33.1-3; Gavagnin et al., 2016: Fig. 23.8-10, 24; Wood & Greenacre, 2021: Fig. 1d; Ergürer & Ergürer, 2021: Fig. 2.7-9).

Animal motifs stamped onto ceramics, cavalry figures, and crosses have been classified as Sasanian in origin (Sarre & Herzfeld, 1920: Abb. 389-390; Adams, 1965: Fig. 14: 12B-C; Wilkinson & Tucker, 1996: 218, Fig. 77.6-9; Ur, 2010: Fig. B.35.6-7; Simpson, 2013: 114-116, Fig. 1-4, 7-13; Saber, Hamza & Altaweel, 2014: Fig. 14.1-2, 18.5; Gavagnin et al., 2016: Fig. 25.5-8; Ahmad, 2017: Fig. 8; Potts et al., 2019: Fig. 41). Other motifs, such as honeycomb patterns and bow designs, created through stamping or incising, are also common in Sasanian ceramics (Adams, 1965: Fig. 14: 12M; Nováček & Melčák, 2016: Fig. 7; Gavagnin et al., 2016: Fig. 25.11; Ahmad, 2017: Fig. 6; Nováček, 2022: Fig. 7b; Ahmad, 2017: Fig. 7).

Among these, glazed ceramics remain the most ambiguous examples, often interpreted as alkaline-glazed ceramics produced over a wide chronological range, from the Seleucid period to the end of the Sasanian period. These ceramics are typically characterized by surface coatings in green, blue, turquoise, or yellow.¹

The use of glaze can be traced back to the 4th-3rd millennia BCE (Haerinck, 1983: 27). However, its application to ceramics emerged for the first time during the 1500s-1400s BCE. Subsequently, the development of alkaline glaze in the 8th-7th centuries BCE, extending into the Achaemenid period (6th-4th centuries BCE), marked a significant expansion in its usage, which continued until the 8th-9th centuries CE (Haerinck, 1983: 28; Schenk, 2007: 60; Hill, Speakman, Glascock & Neff, 2007: 422-423; Wood & Greenacre, 2021: 1; Hill, 2022: 391).

In the Early Islamic period, alkaline glaze was gradually replaced by lead-glazed ceramics in Mesopotamia, marking a notable transformation in glazed ceramic production.² This shift is particularly evident in the differential degradation patterns of these ceramics: alkaline-glazed ceramics exposed to soil moisture exhibit more intense surface deterioration compared to their lead-glazed counterparts (Hill, 2022: 389).

Although alkaline-glazed ceramics began to be used more extensively during the Achaemenid period (Gibson, 1975: 16; Moorey, 1978: 51), their most intensive use occurred during the Seleucid, Parthian, and Sasanian periods. While some evidence suggests that production may have taken place in both Northern and Southern Mesopotamia during the Seleucid and Parthian periods (Hannestad, 1983a: 87-105), it remains challenging to provide definitive information regarding the production centers of alkaline glaze across

¹For the most recent research on this topic, see Hill, 2022.

²This situation is certainly applicable to the geography of Mesopotamia. During the Late Hellenistic-Early Roman Imperial Period, it is known that lead-glazed ceramics were produced, albeit briefly, in Anatolia (especially in light of the Tarsus Gözlü Kule, Perge, Pergamon, Antiocheia '?', Lampsakos '?'), similar to Medieval ceramics. While these ceramics did not find widespread use in the Eastern Mediterranean region, they were particularly prevalent in Europe during the Roman Period. For a detailed study on the use and distribution of lead-glazed ceramics in the Late Hellenistic and Roman Periods, see Atik, 1995, pp. 18-58; Firat, 1999, pp. 19-20; Akyay-Meriçboyu, 2005; Greene, 2007.

Mesopotamia (Wood & Greenacre, 2021: 1–2, 12).³ These ceramics typically feature a yellow, cream, or very pale brown body and are characterized by a heavily sand-infused paste (Schenk, 2007: 59; Hojabri-Nobari, Khosrowzadeh, Kouhpar & Vahdatinasab, 2011: 95, 104, Fig. 5; Gavagnin et al., 2016: 153; Vallet et al., 2020: 168, Fig. 14.12). Notably, green alkaline-glazed ceramics are the most common, while blue, turquoise, yellow, and white examples are less frequently observed (Gavagnin et al., 2016: 153–154). Occasionally, ceramics display bluish-white or silver-toned white hues, which appear along the edges or sometimes cover the entire surface due to firing conditions (Wood & Greenacre, 2021: 4, 8). These glaze characteristics, however, do not provide definitive insights into production locations. Moreover, it is currently not possible to distinguish between production techniques in Northern and Southern Mesopotamia based on typological differences.⁴ The most commonly encountered forms of alkaline-glazed ceramics are bowls and plates, while amphorae, pots, jugs, bottles, and vases are less frequent (Gavagnin et al., 2016: 152–154, Fig. 23.11–12). Alkaline-glazed ceramics believed to originate from Mesopotamia have also been found in neighboring regions and more distant locations, such as Oman, Yemen, Egypt, Somalia, Kenya, Tanzania, India, and Sri Lanka (Schenk, 2007: 59, **Figure 1**). In Türkiye, such examples have been documented in limited regions, particularly in Upper Mesopotamian settlements like Kuriki Höyük in Batman (D'Agostino & Genç, 2018: 12–13, Fig. 10–12) and Gre Amer (Pulhan & Blaylock, 2013: 402–403, Fig. 20; Pulhan & Blaylock, 2016: 347–349; Pulhan & Blaylock, 2018: 124–125, Fig. 19), as well as in Dara (Anastasiopolis) in Mardin (Tosun, 2020: 236, 280–286, 288, 293, 295–297, 326, 353, Cat. Nos. 131–132, 237, 240, 243–244, 248, 257, 266, 278, 282–285, 346, 422).⁵ Additional examples have been identified at Ilisu Höyük (Ökse et al., 2018, p. 141, nos. 1–12)⁶ and Hasan Tartar Höyük near Silopi in Şırnak (Algaze, Hammer & Parker, 2012: 110–111, no. 15, Fig. 27.15).⁷

The four bottles, one pot, and four vases preserved in the Mardin Museum are identified as examples of alkaline-glazed ceramics. Among these, three bottles are classified as Type 1, the pot as Type 2, and the four vases as Type 3. The bottles classified under Type 1 can be further divided into three subtypes.

In this study, a total of nine ceramic pieces—comprising bottles, a pot, and vases—preserved in the Mardin Museum will be analyzed using analogy methods. The analysis will focus on their typology, paste, and alkaline glaze, drawing comparisons with examples from various excavation sites. Furthermore, the function of these ceramics, potential production center(s), and contextual information from the sites where they were discovered will be evaluated. These evaluations aim to provide insights into the chronological ranges of their usage.

Within this framework, an effort will be made to conclude their production and historical significance.

Findings Description and Evaluation

The alkaline-glazed ceramics housed in the Mardin Museum are categorized into three distinct types: bottles (Type 1), pot (Type 2), and vases (Type 3). These types will be analyzed below, focusing on their

³Petrographic analyses conducted on the clay composition of alkaline glazed ceramics have revealed the presence of mineral grains and rock fragments derived from volcanic and plutonic rocks. The detection of this raw material in the sediments of the Tigris River has led to suggestions that these ceramics may particularly originate from Northern or Central Iraq. See Hill, 2006: 36–37; Hill, 2022: 393.

⁴For detailed information, see Hannestad, 1983a: 87–105.

⁵For information on other unglazed Parthian and Sasanian ceramics from Dara, see Tosun, 2020: 232–246, 277–302, 325–341, 352–354, 361–368, 381–384, 387–390, 407–411. Surface surveys conducted in the districts of Derik and Mazıdağı in Mardin have also uncovered numerous Seleucid/Parthian, Parthian, and Sasanian glazed and unglazed ceramics. See Menteşe, 2023, Cat. No. 1–69. Additionally, for unglazed Parthian ceramics found at Mor Yakup Church in Nusaybin, Mardin, refer to Ergürer & Ergürer, 2021, Fig. 2–4. Furthermore, a significant number of unglazed Parthian-Sasanian ceramics have been discovered at Zerzevan Castle, located near Dara within the Çınar district of Diyarbakır province. See Ayus, 2021, Cat. No. 1–4, 16, 33, 57.

⁶For examples with the diamond-shaped stamp motif featuring dot decorations, see Ökse et al., 2018: 237, no. 404–405.

⁷For other unglazed Hellenistic, Seleukos, Parth, and Sasanian ceramics from the Silopi and Cizre regions in Şırnak, see Algaze et al., 2012: 110–111, Fig. 27.1–14, 16–21; Kozbe & Güngör, 2018: 81, Res. 12, Çiz. 12.

typology, distribution, production techniques, function, production centers, analogies, and chronological dating.

Bottles⁸ (Type 1) (Fig. 1)

Four examples of bottle forms can be categorized into three sub-types based on their size, rim, body, and bases.

Type 1.1 (Fig. 1: Type 1.1)

The examples categorized as Cat. Nos. 1 and 2 under Type 1.1 measure 15.2 and 15.7 cm in height, featuring slightly pointed rims that flare outward and thicken towards the edges. They have long, concave necks, no shoulders, and vertically applied, slightly “S”-shaped handles on the necks, with bodies that expand from top to bottom and low conical bases. Similar types have been found at various sites, including Uruk/Warka in Iraq (Finkbeiner, 1991a: 578, Nr. 90; Finkbeiner, 1991b, Taf. 169.29a; Petrie, 2002, Fig. 8.29a), Nippur (Peters, 1898, Pl. VII.3), Tell Mahuz (Venco-Ricciardi, 1970-1971, Fig. 87.49, 54; 92.49-55) and Seleucia on the Tigris (Debevoise, 1934, Figs. 286, 290); Dura Europos in Syria (Toll, 1943, Fig. 23.Ph.I-96, I-146, 1938.4791, 1935-70); and Ram Hormuz, Susa, Chogha Mish, and Kabad/Luristan in Western Iran (Alizadeh et al., 2014, Pl. 161A; de Morgan et al., 1900, Fig. 226; Haerinck, 1983, Fig. 8.12-13, Pl. V.9; Delougaz & Kantor, 1996a: 8; Berghe, 1972, Figure 2).

The examples in Cat. Nos. 1 and 2 possess a clay color of 2.5Y 8/6 and include additives such as sand, lime, and very small pebbles.⁹ Both exhibit a yellowish-green alkali glaze, which has cracked and flaked due to prolonged exposure to moisture. These technical characteristics can lead to variations in both clay and glaze colors during the firing process. Some typologically similar examples also display variations in clay and glaze color and structure. For instance, at Seleucia on the Tigris, a cream-colored clay example with a completely flaked dark green glaze leaves behind a white surface (Debevoise, 1934: 98, Nos. 286, 290), while another example with cream-colored clay and light gray sand additives shows a green glaze (Debevoise, 1934: 98, Nos. 286, 290). At Tell Mahuz, seven specimens with beige, yellow, and very pale brown paste and white and green glazes were observed (Venco-Ricciardi, 1970-1971: 451-453, nos. 49-55, Fig. 92.49-55). Additionally, a blue-glazed example from Nippur (Peters, 1898: 393, Figure 3) and a green-glazed example from Uruk/Warka (Finkbeiner, 1991a: 567, Cat. Nr. 90) exhibit similar variations.

Furthermore, at Dura Europos, a green-glazed example has been identified (Toll, 1943, p. 42). At Ram Hormuz, a cream-colored clay example with minimal straw additives has been reported (Alizadeh et al., 2014, Pl. 161A). At Chogha Mish, a brownish cream-colored example with a light greenish-blue glaze (Delougaz & Kantor, 1996b, Pl. 70B.747.341) shares similarities with the examples in Cat. Nos. 1 and 2. Nevertheless, these examples demonstrate that variations in clay composition and glaze coloration occur even among typologically similar artifacts. This suggests that typologically similar examples could have been produced in different centers, making it challenging to propose a specific production center for Type 1.1. Nevertheless, considering the similarities in typological features, it is reasonable to suggest that these ceramics were at least produced in a region centered around Mesopotamia and Western Iran. The clay colors and additives also indicate connections to the Mesopotamia and Western Iran regions. Therefore, it is likely that the ceramics acquired by the Mardin Museum originated from a settlement in these areas.

⁸The forms referred to as “bottles” are also described in some sources using the Greek term “Amphoriskos”. See Finkbeiner, 1991a, pp. 567, 578, 597, 626, Cat. Nr. 90, 198, 295. In some sources, the term “bottle” is preferred. See Yule, 2009, p. 83, Fig. 7.

⁹The color of this clay and the additives are largely similar to those found in many alkaline glazed ceramics from Mesopotamia and Western Iran. See Haerinck, 1983, p. 43.

Due to their miniature sizes and narrow rims, the bottles in Cat. Nos. 1 and 2 were likely intended for storing liquid products.¹⁰ No caps have survived to cover the rims of these bottles. This absence may result either from the use of organic materials to seal the rims, or from their recovery in graves, suggesting they might have originally lacked caps. Notably, examples found in graves may have been intentionally produced without caps to emit pleasant scents or left uncapped as offerings.¹¹

Early excavations in Susa revealed examples of Type 1.1, but their dating has not been definitively established. This type has been associated with the Sasanian period based on the latest findings from Susa.¹² A similar unhandled glazed bottle found in Ctesiphon has also been dated to the Sasanian period (Upton, 1932: 194, Fig. 11). Based on Sassanid coins dated to the 3rd and early 4th centuries, recovered at Tell Mahuz, similar ceramic findings have been attributed to the Early Sassanid Period (Venco-Ricciardi, 1970-1971: 471-482, Fig. 85). Another example discovered during the Nippur excavations has been dated to the Seleucid period (Peters, 1898: 393, Fig. 3, Pl. VII.3), while examples from Uruk/Warka are attributed to the Seleucid/Parthian period (Finkbeiner, 1991a: 541, 567, 578, Cat. Nr. 90, Nrn. 90). Similarly, an example from Chogha Mish has been dated to the Parthian period (Delougaz & Kantor, 1996a: 8; Delougaz & Kantor, 1996b, Pl. 70B), and those from Dura Europos have been assigned to the Seleucid and Early Parthian periods, corresponding to the Hellenistic period (Toll, 1943: 42).

Examples from Failaka Island have been dated similarly to those from Dura Europos (Hannestad, 1983b, Pl. 29.301-302). A grave in Kabad/Luristan, where ceramic finds were accompanied by other dating artifacts, contained bottles resembling Type 1.1, found alongside drachmas attributed to Sasanian King Ardashir (224-241 CE). This strongly indicates that this type of bottle was in use during the early Sasanian period (Berghe, 1972: 6, Fig. 2, Pl. 1.3-4).

These findings suggest that bottles similar to Type 1.1 were used from the Seleucid and Early Parthian periods through the early Sasanian period, indicating a continuous production tradition lasting approximately 500 years (Yule, 2001: 155; Yule, 2009: 84) (Figure 4).

Type 1.2 (Fig. 1: Type 1.2)

The single example discussed under Type 1.2, Cat. No. 3, stands at a height of 8.2 cm and features an outwardly flared, pointed rim, a short concave neck, and an oval shoulder transitioning smoothly into the body. The body widens from top to bottom, culminating in a low ring base. Compared to Type 1.1, it is smaller and features a shorter neck, a more pronounced shoulder, and a bulkier body. Similar examples have been found at numerous archaeological sites, such as Nimrud in Iraq (Oates & Oates, 1958, Pl. XXVI.4; Oates, 2005, Fig. 18.95), Uruk/Warka (Finkbeiner, 1991a: 606, 632, Nrn. 198, 295), Seleucia on the Tigris (Debevoise, 1934, Figs. 293-296), E.Babbar of Larsa (Lecomte, 1987, Pl. 13.5; Lecomte, 1993, Fig. 17.4), Dura Europos in Syria (Toll, 1943, Fig. 23.1931.471d, Baghuz E-9), and Susa in Western Iran (de Morgan et al., 1900, Fig. 228; Haerinck, 1983, Fig. 12.14).

The bottle examined in Cat. No. 3 is made of 2.5Y 8/6 yellow clay, densely mixed with sand, and containing minimal lime. Its surface is covered with a dark blue glaze, likely applied in a strip pattern, overlaid with a turquoise alkaline glaze. The surface glaze shows minimal wear, suggesting it was recovered from an area less exposed to moisture, resulting in fewer surface cracks compared to other examples. A similar glazed piece with the same glaze characteristics has been found in Kohgiluyeh, Western Iran (Roustaei & Azadi, 2011,

¹⁰In the literature, the term 'perfume bottle' is often used for such examples. See Bank & Yule, 2001, p. 18, Fig. 3; Yule, 1999, pp. 133, 135, Fig. 12; Yule, 2009, Fig. 7.3-7.9.

¹¹For examples found in graves, see Berghe, 1972, p. 6, Fig. 2, Pl. 1.3-4.

¹²For interpretations and dating based on all findings from the excavations, see de Morgan et al., 1900, pp. 119-124, Fig. 226.

Pl. III.4); however, it lacks typological similarities. Variations in clay and glaze colors can also be observed in other typological examples, potentially due to differences in firing processes or production centers. Examples with similar typological features include a yellow-glazed piece from Nimrud (Oates & Oates, 1958: 149, no. 4) and several cream and off-white examples with sand inclusions from Seleucia on the Tigris (Debevoise, 1934: 100, Nos. 293-296). Green-glazed examples from Uruk/Warka (Finkbeiner, 1991a: 597, 626, Cat. Nr. 198, 295) and numerous green-glazed examples from Dura Europos (Toll, 1943, Fig. 23.1931.471d, Baghuz E-9) further illustrate these variations. Based on the typological similarities of the examined pieces, it is suggested that this type was likely produced more intensively in Northern Mesopotamia and subsequently disseminated to neighboring regions.

The bottle in Cat. No. 3, like those in Cat. Nos. 1 and 2, was likely produced to store liquid products. Finds have been recovered from both burial contexts and regular habitation areas, indicating that Type 1.2, like Type 1.1, was produced for both everyday use and as grave goods.¹³

Forms similar to the bottle in Cat. No. 3 have been dated to various periods. At Uruk/Warka, these forms are attributed to the Seleucid/Parthian period (Finkbeiner, 1991a: 545, 548, 597, 606, 626, 632, Kat. Nr. 198, 295). At E. Babbar in Larsa, they are dated to the 2nd century BCE (Lecomte, 1987: 230, 243-244, 260, Fig. 2, Pl. 13; Lecomte, 1993, pp. 18, 36, Tab. 1, Fig. 17.4). In Nimrud, similar forms are associated with the Hellenistic period, while in Seleucia on the Tigris, they have been dated to between 43 and 200 CE (Debevoise, 1934: 9, 38, 100-101, Fig. 295).¹⁴ The example in Cat. No. 3 closely resembles the glazed ceramics from the Cheram cemetery in Kohgiluyeh, which have been dated between the 1st century BCE and the 2nd century CE (Roustaei & Azadi, 2011: 198-199). This indicates that Type 1.2 likely emerged during the Seleucid/Early Parthian period and continued to be used until the fall of the Parthian Empire (Figure 4).

Type 1.3 (Fig. 1: Type 1.3)

The single example analyzed under Type 1.3, Cat. No. 4, stands at a current height of 18.1 cm (originally estimated at around 20 cm) and has a broken rim. The partially intact neck features a long, concave transition. Vertical “S”-shaped handles are applied from the lower neck to the body. This bottle has a slightly pronounced shoulder and a body that expands downward, narrowing at the base and culminating in a low conical base. Compared to Type 1.1, it is larger, with a slightly bulging body and a more pronounced shoulder. Compared to Type 1.2, it is larger, has a longer neck, and a less pronounced shoulder.

Similar types have been found at various archaeological sites, including Nimrud in Iraq (Oates & Oates, 1958, Pl. XXVI.5; Oates, 2005, Fig. 18.96), Seleucia on the Tigris (Debevoise, 1934, Fig. 288), Nuzi (Starr, 1939, Pl. 135.C-D, G), Tell Sitak (Saber et al., 2014, Fig. 18.9), Assur (Hauser, 1996, Fig. 6d), Uruk/Warka (Finkbeiner, 1991a: 563, Nrn. 67), Nippur (Peters, 1898, Pl. VII.1), Dura Europos in Syria (Toll, 1943, Fig. 23.1931.456, J-246), and others across Mesopotamia, the Arabian Peninsula, and Western Iran.

The bottle evaluated as Cat. No. 4 is made of 10YR 8/4 very pale brown clay, densely mixed with sand and with minimal lime content. The surface is coated with a dark green alkaline glaze, which has flaked due to moisture exposure. Similar to Types 1.1 and 1.2, Type 1.3 examples exhibit both uniformity and variation in clay and glaze colors.

For instance, a yellowish clay and greenish-yellow glazed example has been reported from Nimrud (Oates & Oates, 1958: 149, no. 5), a yellowish-green example with a crackled glaze from Seleucia on the Tigris

¹³For examples found in graves, see Oates & Oates, 1958, pp. 148-149, Pl. XXVII.4; Roustaei & Azadi, 2011, pp. 198-199, Pl. III.4. For examples found in normal settlement areas, see Debevoise, 1934, pp. 9, 38, 100-101, Fig. 295; Toll, 1943, pp. 129-131, Fig. 23.Baghuz E-9; Lecomte, 1987, pp. 230, 243-244, 260, Fig. 2, Pl. 13; Lecomte, 1993, pp. 18, 36, Tab. 1, Fig. 17.4; Finkbeiner, 1991a, pp. 545, 548, 597, 606, 626, 632, Kat. Nr. 198, 295, Nrn. 198, 295.

¹⁴In light of a similar bottle form found in a grave, along with chronological findings such as an Alexander coin and a cylinder seal, it has been dated to the Hellenistic Period. See Oates & Oates, 1958, pp. 148-149, Pl. XXVII.4; Oates, 2005, pp. 138-139, Fig. 18.95.

(Debevoise, 1934: 98, no. 288), and a green-glazed example from Uruk/Warka (Finkbeiner, 1991a: 558, Kat. Nr. 67). Similar blue-glazed examples have been identified at Khurha (Haerinck, 1983: 117, no. 7) and Susa (de Miroschedji, 1987: 126, no. 8). Examples from Chogha Mish reflect further variations, such as a cream-colored body with sand inclusions and a light green glaze (Delougaz & Kantor, 1996a, p. 8; Delougaz & Kantor, 1996b: Pl. 70C.B.748.341).

Due to the distribution and typological similarities across multiple sites, it is challenging to determine a specific production center for Type 1.3. However, the density of finds in Upper Mesopotamia suggests that this region might have been a primary production center.

The bottle in Cat. No. 4, like those in Cat. Nos. 1-3, was likely produced to store liquid products.¹⁵ Finds have been recovered from both burial contexts and habitation areas, indicating that Type 1.3 served both everyday use and ceremonial purposes.

During excavations in Nimrud, it was noted that similar glazed bottles of Type 1.3 were not found in a clear context, making reliable dating difficult. However, it has been established that this type generally appeared in the third quarter of the 2nd century BCE and can be dated to the Hellenistic period when contextual evidence is considered (Oates & Oates, 1958: 130; Oates, 2005: 125-126). Additionally, another similar example was recovered from a Hellenistic-period grave in Nimrud (Oates & Oates, 1958: 149, no. 5; Oates, 2005: 138-140, no. 96, Fig. 18.96). A similar example found in excavations at Seleucia on the Tigris has been dated to between 43 and 116 CE (Debevoise, 1934: 9, 38). Another similar example found at Tell Sitak was recovered from an IB layer, dating from the Late Iron Age to the Late Sasanian period.¹⁶ Examples from the Nuzi excavations have been dated to the Parthian period (Starr, 1939, Pl. 135.C-D, G), while similar forms from the Assur excavations have been dated to between the mid-2nd century and the mid-3rd century CE (Hauser, 1996: 59-60, 74, 80, Fig. 6d). In Dura-Europos, Syria, two similar glazed bottle examples have generally been associated with the Parthian period (Toll, 1943, Fig. 23.1931.456, J-246). In Kuwait, similar forms found on Failaka Island could not be reliably associated with a clear dating context, although they are noted as not dating later than the third quarter of the 2nd century BCE (Hannestad, 1983a: 27, no. 303; Vincent et al., 1990: 250). A similar find from the Mleiha excavation in the United Arab Emirates has been dated to the Hellenistic period (Benoist et al., 2003: 66, 68-69, Fig. 8.1). A comparable example from Khurha in Iran, which provides contextual data, has been dated between the 1st century and the first quarter of the 3rd century CE (Haerinck, 1983: 106-110, Fig. 17.7). Similar bottle forms from Susa indicate that these ceramics can be dated from the 3rd century BCE to the 2nd-3rd centuries CE. A similar bottle form found in a grave in Kohgiluyeh has been dated to the 1st century BCE-2nd century CE (Roustaei & Azadi, 2011: 198-199, Pl. III.5), while similar glazed bottle examples from Chogha Mish are generally dated to the Parthian period (Haerinck, 1983, Fig. 6.10; Delougaz & Kantor, 1996a: 8). Considering the chronological table presented by R. Boucharlat, which depicts the typological development of this type, it can be said that Type 1.3 aligns more closely with examples dated to the Seleucid and Early Parthian period in Susa (3rd-2nd centuries BCE) (Boucharlat, 1993: 45, 52, Table 8). Nonetheless, due to the broken rim of the example in the Mardin Museum and the inability to ascertain its typology definitively, it is necessary to relate this type to finds dated from the Seleucid/Parthian period to the Late Sasanian period. No similar bottle forms have been dated to the Sasanian period in any settlement except for Tell Sitak. Thus, it is quite difficult to date Type 1.3 definitively. However, it appears possible to assert that this form first emerged during the earliest Seleucid period and was predominantly used in the Parthian period (Figure 4). It is likely that some variants of this form were also used during the Sasanian period.

¹⁵See Type 1.1 and 1.2.

¹⁶It is suggested that the findings can predominantly be dated to the Late Sasanian Period. See Saber et al., 2014.

Figure 1

Drawing and photos illustrating the typological classification of alkaline-glazed bottles in the Mardin Museum (Photos: Mardin Museum Archive, Drawings: Murat Tosun – Tarık Günce – Miyaser Var)

**Pot (Type 2) (Fig. 2)**

The single example discussed under Type 2, is Cat. No. 5, is a miniature pot form measuring 6.5 cm in height, featuring an outward flaring, flat, and outwardly drawn rim, a short and slightly concave neck, a neck-body transition with a slightly sharp outline, a convex body, and a low ring base. Similar types have been observed at several sites, including Nippur (Peters, 1898, Pl. VII.15), Seleucia on the Tigris (Debevoise, 1934, Figs. 47-48, 51-53, 66, 236, Pl. XIV.66), E. Babbar of Larsa (Lecomte, 1993, Fig. 13.4), Uruk/Warka (Finkbeiner, 1991a: 604, Nrn. 171), Dura-Europos (Toll, 1943, no. 1938.4780), Susa (de Morgan et al., 1900, Fig. 10A-21.75), and Bahrain Island (Daems, Haerinck & Rutten, 2001, Fig. 11.3).

The pot was examined under Cat. No. 5 has a very pale brown paste (10YR 8/3) with a high sand content. The surface is covered with a turquoise glaze, which exhibits cracks. These pot types can be either glazed or unglazed. In Seleucia on the Tigris, two cream-colored, three ivory-colored, and one black paste examples were found unglazed (Debevoise, 1934, pp. 50, 52, 54, nos. 47-48, 51-53, 66), while one example exhibited a dark green glaze (Debevoise, 1934, p. 88, no. 236).

In E. Babbar of Larsa, an unglazed example was classified under simple goods (Lecomte, 1993, pp. 20, 32, Fig. 13.4), while another unglazed example was found in Uruk/Warka (Finkbeiner, 1991a, p. 591, Cat. Nrn. 171). In Dura-Europos, a green-glazed example was documented (Toll, 1943, no. 1938.4780), while in Susa, a yellow paste and turquoise-glazed example was reported (de Morgan et al., 1900, p. 59, Fig. 10A-21.75). Additionally,

a single-glazed example was found in Bahrain (Daems et al., 2001, p. 180, Fig. 11.3), highlighting the observed differences and similarities.

Due to the limited number of examples recovered from excavations and the scarcity of studies on this pot type, it is challenging to provide definitive information regarding its production location. However, based on published examples, it seems likely that this type is more prevalent in Upper Mesopotamia. The similarity in paste color and glazing between the Susa example and the one in the Mardin Museum suggests the potential for production in the western Iranian region as well.

The wider rim of this pot, in comparison to the miniature sizes and bottle forms, indicates that it was likely produced for storing powder or cream-like cosmetic products.¹⁷ No lids have survived to the present day, and there is limited information regarding lid examples in the literature. It can be suggested that examples found in graves may have been lidless, as the creams they contained likely emitted pleasant fragrances.¹⁸

An example from the Nippur excavation suggests that the form represented by Cat. No. 5 emerged during the Babylonian period and continued to be used in subsequent periods. However, this form was not found in a clear context. It is also known that this form was unglazed (Peters, 1898: 394, Fig. 15, Pl. VII.15). Similarly, another unglazed but typologically similar example found in Uruk/Warka has been dated to the Seleucid/Parthian period (Finkbeiner, 1991a: 545, 591, 604, Cat. Nr. 171). An example from E. Babbar of Larsa was found in a context dated to the 2nd century BCE (Lecomte, 1993: 32, Fig. 13.4). Numerous similar examples have been found during the Seleucia on the Tigris excavation, dated to layers spanning 141 BCE to 200 CE (Debevoise, 1934: 9, 35, 37, Figs. 47-48, 51-53, 66, 236, Pl. XIV.66). In Dura-Europos, similar glazed examples have been associated with the Parthian period (Toll, 1943, nos. 1938.4777-4780, 1935.540, 1935.549, H-811, I-918). A comparable glazed example found in a burial in Bahrain has been dated, along with associated finds, to the 1st-2nd centuries CE (Daems et al., 2001: 180-181, Fig. 11.3). Considering all similar examples, it is possible to date the miniature pot form in the Mardin Museum to between the 2nd century BCE and 2nd century CE (Figure 4).

¹⁷In the literature, it has been noted that the form of containers for cosmetic products such as powders or creams can be significant. See Debevoise, 1934, pp. 50-53, Fig. 38-56, 58-59.

¹⁸For examples found in graves, see Daems et al., 2001, pp. 180-181, Fig. 11.3.

Figure 2*Drawing and photo depicting the alkaline-glazed pot from the Mardin Museum***(Photo: Mardin Museum Archive, Drawing: Murat Tosun – Tarık Günce – Miyaser Var).**

Vases (Type 3) (Fig. 3)

The examples discussed under Type 3, Cat. Nos. 6-9, range in height from 9.1 to 10.1 cm and feature outward flaring and rounded rims, short and concave necks, vertically straight (Cat. Nos. 6, 8-9) or slightly tapering (Cat. No. 7) bodies, and low conical (Cat. Nos. 7-9) or ring bases (Cat. No. 6). Similar types have been observed in excavations at Dura-Europos (Toll, 1943, Fig. 26.1931.437; 1935.544-545, 547; 1938.4765, 4768, 4771-4772) and Palmyra (Al-Hariri, 2013, Fig. 12) in Syria, in a burial at Susa in Iran (Boucharlat & Haerinck, 2011, Pl. 27.GS-2478, 33b), and in the collection of the Gaziantep Museum in Türkiye (Kenrick, 2013, Fig. 12.PT330).

The four vases examined under Cat. Nos. 6-9 have yellow (2.5Y 8/6 for Cat. Nos. 6, 8-9) and pale brown (10YR 8/4 for Cat. No. 7) pastes, both exhibiting a high sand content. All examples have a turquoise glaze, which has likely cracked due to exposure to moisture. In Dura-Europos and Palmyra, examples with sand inclusions and green-blue transitional or turquoise glazes have been recorded (Toll, 1943: 54, Fig. 26.1931.437; 1935.544-545, 547; 1938.4765, 4768, 4771-4772; Al-Hariri, 2013, Fig. 12). A turquoise-glazed example from Susa (Boucharlat & Haerinck, 2011, Pl. 27.GS-2478, 33b) and a cream-colored, sand-rich, turquoise-glazed example in the Gaziantep Museum collection (Kenrick, 2013, Fig. 12.PT330) highlight these similarities. Given that this type is well-represented in Dura-Europos, it was likely produced there and subsequently disseminated to other sites.

Similar to the example in Cat. No. 5, the vases in Cat. Nos. 6-9 were likely produced for storing powder or cream-like cosmetic products (Toll, 1943, p. 54).¹⁹ No lids have survived for these vases, and there is limited information on lid examples in the literature. Due to their narrower rim structure compared to the ceramic in Cat. No. 5, it is probable that they were covered with an organic type of lid.

The fact that this form has been found in a burial at Susa (Boucharlat & Haerinck, 2011, Pl. 27.GS-2478, 33b) and generally in settlement excavations at Dura-Europos (Toll, 1943, Fig. 26.1931.437; 1935.544-545, 547; 1938.4765, 4768, 4771-4772) suggests that it has not been commonly found elsewhere, likely indicating limited

¹⁹Additionally, for the suggestion that a partially similar example could be a container for incense, see Debevoise, 1934, pp. 108-109, no. 320, Fig. 320.

production in a specific region. Additionally, the finding of such forms in burial contexts suggests they served as grave goods, likely containing pleasant-smelling creams.

Excavations at Dura-Europos have yielded examples from Cat. Nos. 6-9, which, based on contextual data, have been associated with findings dating from the 1st century CE onward and classified as limited production forms (Toll, 1943, p. 54). Similarly, one example of this type has been found in Parthian burials at Susa and dated to the 1st-2nd centuries CE (Boucharlat & Haerinck, 2011: 76, 85). Similarly, one specimen was found in a tomb in Palmyra, and together with the other finds in the tomb, it was assigned to the 1st-2nd centuries CE (Al-Hariri, 2013: 151). Furthermore, a published example exists in the Gaziantep Museum collection; however, due to the lack of reliable provenance information, this example has been interpreted in light of findings from the Dura-Europos excavations (Kenrick, 2013: 39-40, Fig. 12.PT330). Therefore, it is possible to date the examples in the Mardin Museum to the 1st-2nd centuries CE based on contextual data from Susa and Dura-Europos (Figure 4).

Figure 3

Drawing and photos illustrating the typological classification of alkaline-glazed vases from the Mardin Museum (Photos: Mardin Museum Archive, Drawings: Murat Tosun – Tarık Günce – Miyaser Var).



Conclusion

Seleucid, Parthian, and Sasanian ceramics began to attract scholarly interest in the mid-19th century. During early excavations in Mesopotamia, ceramics discovered alongside Seleucid, Parthian, and Sasanian coins were documented, marking the first formal definitions of these ceramics in publications by the late 19th and early 20th centuries. Research from the 1930s through the 1970s advanced focused studies on these ceramics, while investigations starting in the 1980s have emphasized their regional characteristics and interregional distribution. Such research continues today, with significant activity in Iran, Mesopotamia,

Syria, settlements along the Persian Gulf (particularly in the Arabian Peninsula), Gulf islands, and even the Indian Ocean. In Türkiye, encompassing the northernmost and limited areas of northern Mesopotamia, studies on these ceramics have been relatively sparse, with findings primarily known through excavations and surveys in Batman, Diyarbakır, Mardin, and Şırnak. However, very few of these discoveries have been published.

In the study of Seleucid, Parthian, and Sasanian ceramics, pieces with specific decorative features are more clearly defined and dated than glazed ceramics. Glazed ceramics present challenges in identification and dating, as their characteristics are not always typologically distinct. However, a broad chronological range can be established, from the Seleucid Period to the late Sasanian Period, particularly for examples with alkaline glazes that exhibit surface cracking.

All ceramic forms examined from the Mardin Museum, including four bottles, one pot, and four vases, feature alkaline glazes. Among the four bottles, two exhibit a yellowish-green mottled glaze (Cat. Nos. 1-2), one has a turquoise glaze with dark blue vertical stripes underneath (Cat. No. 3), and one is coated with a dark green glaze (Cat. No. 4). The pot and vases (Cat. Nos. 5-9) all display turquoise glazes. Alkaline glaze covers the exterior surface and inner rim but is absent from the interior surfaces and, except for one example (Cat. No. 7), from the bases of the vessels. The pastel hues of the ceramic pastes include yellow (Cat. Nos. 1-2, 5-6, 8-9) and very pale brown (Cat. Nos. 3-4, 7). High sand content is a consistent characteristic across all examples (Cat. Nos. 1-9), with small amounts of lime (Cat. Nos. 1-4) and pebbles (Cat. Nos. 1-2) observed in some. These paste compositions are similar to ceramics believed to have been produced in Mesopotamia, both in terms of color and additives.

Each form has been categorized into distinct typologies. Among the bottle forms, only Type 1 is divided into three subtypes. Type 1.1 bottles, observed at numerous sites such as Uruk/Warka, Seleucia on the Tigris, Tell Mahuz, Dura Europos, Susa, Kabad/Luristan, and Western Iran, date from the Seleucid Period to the Early Sasanian Period. Type 1.2 bottles have been found in Nimrud, Seleucia on the Tigris, E. Babbar of Larsa, Dura Europos, Susa, and settlements bordering Mesopotamia and the Persian Gulf, dating from the Hellenistic Period to the end of the Parthian Period. Type 1.3 bottles have been extensively documented at sites such as Nimrud, Seleucia on the Tigris, Nuzi, Tell Sitak, Dura Europos, Khurha, Susa, Kal-e Chendar, Mescit-i Süleyman, Chogha Mish, Kohgiluyeh, Oman, Failaka Island, and Sri Lanka, spanning from the Hellenistic Period to the Sasanian Period (Figure 4).

The pot, classified as Type 2, has been observed in Nippur, Seleucia on the Tigris, E. Babbar of Larsa, Uruk/Warka, Dura Europos, Susa, and Bahrain Island, with dates ranging from the 2nd century BCE to the 2nd century CE. The vases categorized under Type 3 have been excavated at Dura Europos, Palmyra, and Susa, with an additional example in the Gaziantep Museum collection. These vases are dated to the 1st–2nd centuries CE (Figure 4).

In the literature, bottle-shaped examples similar to those in the Mardin Museum are commonly interpreted as containers for liquids, while pots and vases are associated with storing creams or powders. Given their forms, it is plausible that the ceramics in the Mardin Museum served similar purposes. However, no material remains have been found within any of the vessels discussed in this article, and the lack of residue analysis prevents definitive conclusions about their use.

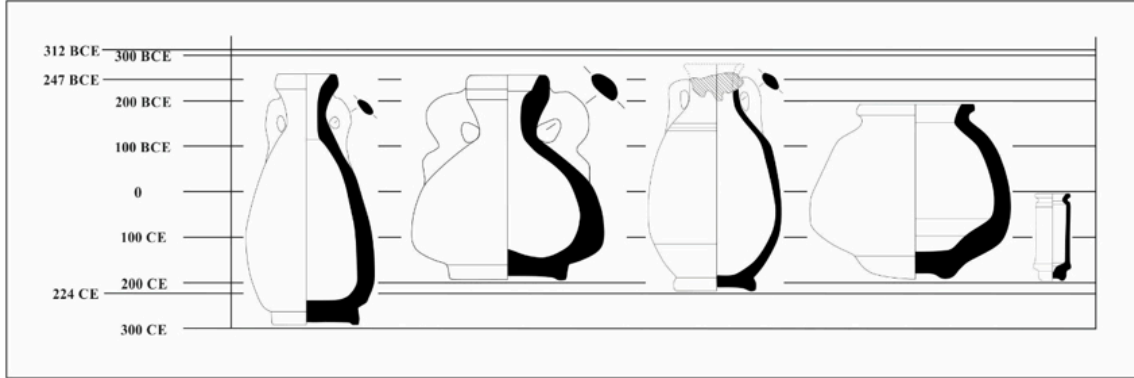
The examples acquired by purchase for the museum have been observed primarily in settlements across Mesopotamia and nearby regions. These ceramics were likely retrieved from settlements with similar typologies and paste characteristics and subsequently transported to Türkiye from Iraq or Syria. Recent research in Türkiye has revealed that ceramics with alkaline glazes are also found in southeastern Türkiye.

However, due to the limited number of complete or near-complete examples found during excavations and surveys, it is improbable that these ceramics originated from a specific production center within Türkiye.

The well-preserved state of the Mardin Museum's examples suggests they were likely retrieved from a burial context rather than a settlement. Based on the available evidence, these ceramics were most likely acquired from the necropolis of a settlement located on the borders of Mesopotamia and subsequently transferred to the museum.

Figure 4

Illustration depicting the chronological assessment of alkaline glazed bottles, pot, and vases from the Mardin Museum.



Catalog 1

Cat. No.	Mus. Inv. No.	Form	Sizes	Fabric	Glaze	Description	Analogy	Date
1	2005	Bottle	H.: 15.2 cm R.D.: 3.4 cm B.D.: 5.3 cm	2.5Y 8/6 (Yellow)	Light green blue (Turquoise)	Type 1.1	Type 1.1	3 rd /2 nd cent. BCE. – 3 rd cent. CE.
2	2006	–	H.: 15.7 cm R.D.: 4 cm B.D.: 6.7 cm	–	–	–	–	–
3	2015	–	H.: 8.2 cm R.D.: 3.5 cm B.D.: 4.9 cm	10YR 8/4 (Very Pale Brown)	Turquoise	Type 1.2	Type 1.2	3 rd /2 nd cent. BCE. – Early 3 rd cent. CE.
4	8350	–	P.H.: 18.1 cm R.D.: Broken B.D.: 7.9 cm	10YR 8/3 (Very Pale Brown)	Dark Green	Type 1.3	Type 1.3	–
5	2013	Pot	H.: 6.5 cm R.D.: 4.5 cm B.D.: 4 cm	2.5Y 8/6 (Yellow)	Turquoise	Type 2	Type 2	2 nd cent. BCE. – 2 nd cent. CE.
6	2038	Vase	H.: 9.7 cm R.D.: 4.8 cm B.D.: 3 cm	2.5Y 8/6 (Yellow)	–	Type 3	Type 3	1 st – 2 nd cent. CE.
7	2039	–	H.: 10.1 cm R.D.: 3.7 cm B.D.: 2.7 cm	10YR 8/4 (Very Pale Brown)	–	–	–	–
8	2040	–	H.: 9.1 cm	2.5Y 8/6 (Yellow)	–	–	–	–

Cat. No.	Mus. Inv. No.	Form	Sizes	Fabric	Glaze	Description	Analogy	Date
9	2041	–	R.D.: 3.7 cm B.D.: 3.1 cm H.: 9.2 cm R.D.: 3.5 cm B.D.: 3 cm	–	–	–	–	–

Cat. No.: Catalog Number - Mus. Inv. No.: Museum Inventory Number - H.: Height - P.H.: Protected Height - R.D.: Rim Diameter - B.D.: Base Diameter - BCE: Before Common/Christian Era - CE: Common/Christian Era - Cent.: century



Acknowledgements I would like to express my gratitude to Abdulgani Tarkan, the former Director of the Mardin Museum, Süleyman Bayar, the former Deputy Director of the Mardin Museum, and İdris Akgül, the Acting Director of the Mardin Museum, for granting me permission to work on the works discussed in this paper and for their support. I also extend my thanks to the staff of the Mardin Museum: Hasan Menteşe (PhD), Mehmet Şan (MA), Volkan Bağlayıcı, Muaviye Şahin, and Mesut Öğmen.

Conflict of Interest The author has no conflict of interest to declare.

Grant Support The author declared that this study has received no financial support.

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References

- Adams, R. McC. (1965). *Land Behind Baghdad: A History of Settlement on the Diyala Plains*. Chicago, USA: The University of Chicago Press.
- Adams, R. McC. (1970). Tell Abū Sarīfa: A Sassanian – Islamic Ceramic Sequence from South Central Iraq. *Ars Orientalis*, 8, 87-119.
- Ahmad, M. (2017). Girdi Qala, A Brief Overview of the Late Period's Ceramic. In R. Vallet, (Ed.), *Report on the Second Season of Excavations at Girdi Qala and Logardan* (pp. 131-138). Paris, FR: UMR 7041 Arscan – Vepmo 'From Village to State in the Near and Middle-East' Maison Archeologie Ethnologie (M.A.E.) – Nanterre, C.N.R.S. – University Of Paris 1.
- Akyay-Meriçboyu, Y. (2005). Kurşun Sırlı Seramiklerin Üretim Merkezleri, *TÜBA-AR*, VII, 99-126.
- Algaze, G., Hammer, E., & Parker, B. (2012). The Tigris-Euphrates Archaeological Reconnaissance Project: Final Report of the Cizre Dam and Cizre-Silopi Plain Survey Areas. *Anatolica*, XXXVIII, 1-115.
- Al-Hariri, K. (2013). The tomb of 'Aqraban. *Studia Palmyrenskie*, XII, 149-157.
- Alizadeh, A., Ahmadzadeh, L., & Omidfar, M. (2014). *Ancient Settlement Systems and Cultures in the Ram Hormuz Plain, Southwestern Iran: Excavations at Tall-e Geser and Regional Survey of the Ram Hormuz Area*. L. Schramer, & T. G. Urban (Eds.). Chicago, USA: Oriental Institute Publications, Vol. 140, The Oriental Institute of the University of Chicago.
- Atik, N. (1995). *Die Keramik aus den Südthermen von Perge*. Istanbul Mitteilungen, Beiheft, 40, Tübingen, DE: Wasmuth.
- Ayus, Ş. (2021). *Zerzevan Kalesi Geç Roma ve Geç Antik Dönem Mutfak Kapları*. (Master dissertation). Batman Üniversitesi Lisansüstü Eğitim Enstitüsü, Batman.
- Bank, C., & Yule, P. (2001). Al-Fueda near Amla, Sultanate of Oman. *Proceedings of the Seminar for Arabian Studies*, Vol. 31: *Papers from the thirty-fourth meeting of the seminar for Arabian studies held in London, 20-22 July 2000* in (pp. 15-22). Turnhout, BE: Brepols.
- Berghe, L. V. (1972). Recherches archéologiques dans le Luristan. Cinquième campagne 1969: Prospections dans le Pusht-I Kuh central (Rapport Préliminaire). *Iranica Antiqua*, 9, 1-18.
- Benoist, A., Mouton, M., & Schiettecatte, J. (2003). The artefacts from the fort at Mleiha: distribution, origins, trade and dating. *Proceedings of the Seminar for Arabian Studies*, Vol. 33: *Papers from at the thirty-sixth meeting of the Seminar for Arabian Studies held in London, 18-20 July 2002* in (pp. 59-76). Oxford, UK: Archaeopress.
- Bieliński, P. (1998). Tell Arbid: Second Campaign of Syro-Polish Excavations. *Polish Archaeology in the Mediterranean*, 9, 212-223.



- Boucharlat, R. (1979). *Le palais d'Artaxerxès II sur la nve droite du Chaour à Suse*. Paris, FR: Cahiers de la Délégation archéologique française en Iran, Association Paléorient.
- Boucharlat, R. (1993). Pottery in Susa during the Seleucid, Parthian and Early Islamic Periods. In U. Finkbeiner (ed.), *Materialien zur Archäologie der Seleukiden-Partherzeit im Südlichen Babylonien und im Golfgebiet: Ergebnisse der Symposien 1987 und 1989 in Blubeuren* (pp. 41-58). Tübingen, DE: Wasmuth.
- Boucharlat, R., & Haerinck, E., (2011). *Tombes d'Époque Parthe: Chantiers de La Ville des Artisans*. Leiden, NL: BRILL.
- Cuny, J., & Mouton, M. (2008). La transition vers la période sassanide dans la péninsule d'Oman: chronologie et modes de peuplement. In B. Clinique (ed.), *L'Arabie à la veille de l'Islam: Table ronde tenue au Collège de France (Paris) les 28 et 29 août 2006 dans le cadre du projet de l'Agence nationale de la recherche 'De l'Antiquité tardive à l'Islam'* in (pp. 91-133). Paris, FR: De Boccard.
- Curtis, J., & Green, A. (1997). *Excavations at Khirbet Khatuniyeh*. London, UK: British Museum Press.
- Daems, A., Haerinck, E., & Rutten, K. (2001). A Burial Mound at Shakhoura (Bahrain). *Arabian Archaeology and Epigraphy*, 12, 173-182.
- D'Agostino, A., & Genç, E. (2018). Kuriki Höyük, A Small Settlement at the Confluence of the Batman and Tigris Rivers: Evidence from the Late Iron Age to the Parthian Period. *Anatolica*, XLIV, 1-42.
- Day, F. E. (1940). *Mesopotamian Pottery: Parthian, Sasanian and Early Islamic*. (Doctoral dissertation). The University of Michigan, Michigan/Ann Arbor.
- de Miroschedji, P. (1987). *Fouilles du chantier Ville Royale II à Suse: 1975-1977: II. Niveaux d'époques achéménide, séleucide, parthe et islamique*. Paris, FR: Délégation archéologique française en Iran, Association Paléorient.
- de Morgan, J., Jéquier, G., & Lampre, G. (1900). *Recherches Archéologiques. Première série: Fouilles A Suse en 1897-1898 et 1898-1899*. Paris, FR: Ernest Leroux.
- Debevoise, N. C. (1934). *Parthian Pottery from Seleucia on the Tigris*. Michigan/Ann Arbor, USA: The University of Michigan Press.
- Delougaz, P., & Kantor, H. J. (1996a). *Chogha Mish Volume 1: The First Five Seasons of Excavations, 1961-1971, Parth 1: Text*. In A. Alizadeh (Ed.), Chicago, USA: The Oriental Institute of the University of Chicago.
- Delougaz, P. – Kantor, H. J. (1996b). *Chogha Mish Volume 1: The First Five Seasons of Excavations, 1961-1971, Parth 2: Plates*. In A. Alizadeh (Ed.), Chicago, USA: The Oriental Institute of the University of Chicago.
- Ergürer, H. E., & Ergürer, H. (2021). Mardin Mor Yakup Kilisesi'nden Ele Geçen Seramikler. In M. A. Yılmaz, M. Işıklı, & B. Can (Eds.), *Anadolu Arkeolojisiyle Harmanlanmış Bir Ömür: Mehmet Karaosmanoğlu'na Armağan* (pp. 309-334). Ankara, TR: Bilgin Kültür Sanat Yayınları.
- Firat, N. (1999). *Perge Konut Alanı Keramiği*. (Doctoral dissertation). İstanbul Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.
- Finkbeiner, U. (1991a). Keramik der Seleukidischen und Parthischen Zeit aus den Grabungen in Uruk-Warka I. Teil: Bit Akitu, Bit Res, Eanna, Irigal, J 18, K 18, Frehat en-Nufegi und Oberfläche. *Baghdader Mitteilungen*, 22, 537-637, Taf. 66-69.
- Finkbeiner, U. (1991b). *Uruk, Kampagne 35-37, 1982-1984: Die Archäologische Oberflächenuntersuchung (Survey)*. Mainz am Rhein, DE: Philipp von Zabern.
- Gavagnin, K., Iamoni, M., & Palermo, R. (2016). The Land of Nineveh Archaeological Project: The Ceramic Repertoire from the Early Pottery Neolithic to the Sasanian Period. *Bulletin of the American Schools of Oriental Research (BASOR)*, 375, 119-169.
- Gibson, McG. (1975). *Excavations at Nippur Eleventh Season*. Chicago, USA: The University of Chicago Press.
- Greene, K. (2007). Late Hellenistic and Early Roman Invention and Innovation: The Case of Lead-Glazed Pottery. *American Journal of Archaeology*, 111(4), 653-671.
- Haerinck, E. (1983). *La Céramique en Iran Pendant La Période Parthe (ca. 250 av. J.C. à ca. 225 après J.C.): Typologie, Chronologie and Distribution*. Gent/Leuven, BE: Iranica Antiqua.
- Hauser, S. R. (1996). The Production of Pottery in Arsacid Ashur. In K. Bartl & S. R. Hauser (Eds.), *Continuity and Change in Northern Mesopotamia from the Hellenistic to the Early Islamic Period: Proceedings of a Colloquium held at the Seminar für Vorderasiatische Altertumskunde, Frei Universität Berlin, 6th-9th April 1994* in (pp. 55-85). Berlin, DE: Dietrich Reimer Verlag.
- Hannestad, L. (1983a). *Ikaros – The Hellenistic Settlements Vol. 2:1: The Hellenistic Pottery*. Aarhus, DK: Jutland Archaeological Society Publications.
- Hannestad, L. (1983b). *Ikaros – The Hellenistic Settlements Vol. 2:2: The Hellenistic Pottery Catalogue and Plates*. Aarhus, DK: Jutland Archaeological Society Publications.
- Hill, D. V. (2006). *The Materials and Technology of Glazed Ceramics from the Deh Luran Plain, Southwestern Iran: A Study in Innovation*. Oxford, UK: John and Erica Hedges.
- Hill, D. V. (2022). Parthian, Sasanian and Islamic Pottery and Occupation of the Deh Luran Plain, South-west Iran. In St. J. Simpson (Ed.), *Sasanian Archaeology: Settlements, Environment and Material Culture* (pp. 389-395). Oxford, UK: Archaeopress.

- Hill, D. V., Speakman, R. J., Glascock, M. D., & Neff, H. (2007). The Technology of Mesopotamian Ceramic Glazes. In M. Glascock, R. J. Speakman, & R. S. Popelka-Filcoff (Eds.), *Archaeological Chemistry: Analytical Techniques and Archaeological Interpretation* (pp. 422-446). Washington DC, USA: Oxford University Press.
- Hojabari-Nobari, A., Khosrowzadeh, A., Kouhpar, S. M. M., & Vahdatinasab, H. (2011). Trade and Cultural Contacts between Northern and Southern Persian Gulf during Parthians and Sasanians: A Study Based on Pottery from Qeshm Island. *International Journal Humanities*, 18(2), 89-115.
- Keall, E. J., & Keall, M. J. (1981). The Qal'eh-i Yazdigird Pottery: A Statistical Approach. *Iran*, XIX, 33-80.
- Kenrick, P. M. (2013). Pottery Other Than Transport Amphorae. In W. Aylward (Ed.), *Excavations at Zeugma* (pp. 1-81). Los Altos/California, USA: The Packard Humanities Institute.
- Kian, J. M., & Messina, V. (2020). Preliminary Report on the Iranian-Italian Joint Expedition into Khuzestan: Kal-e Chendar; Shami (2013-2016). *Archaeology: Quarterly Journal of the Iranian Center for Archaeological Research*, 3(4), 49-77.
- Kozbe, G., & Güngör, A. (2018). Uygurliklar Kavşagında Cizre-Silopi Ovasının Erken Tarihi. In İ. Baz, A. Özdemir, H. Osmanoğlu, İ. Hüseyini, K. Ertaş, Y. Acat, & İ. Tunç (Eds.), *Üç Ülkenin Kavşagında Silopi (Uluslararası Sempozyum Bildirileri)*, 26-28 Ekim 2018 Şırnak in (pp. 47-88). Mardin, TR: Şırnak Üniversitesi Yayınları.
- Köhler, J. (2016). Hellenistic, Parthian, and Sasanian Pottery. In R. Eichmann & M. van Ess (Chief Authors). *The Eastern Habur Archaeological Survey in Iraqi Kurdistan: A Preliminary Report on the 2014 Season. Zeitschrift für Orient-Archäologie*, 9, 41-44.
- Lecomte, O. (1987). Un problème d'interprétation: l'E.babbar de Larsa aux époques hellénistique et séleuco-parthe, approches archéologique, économique et culturelle. In J. L. Huot (Ed.), *Larsa (10e campagne, 1983) et 'Oueili (4e campagne, 1983): Rapport préliminaire* (pp. 225-246). Paris, FR: Éditions Recherche sur les civilisations.
- Lecomte, O. (1993). Stratigraphical analysis and ceramic assemblages of the 4th-1st centuries BC E.babbar of Larsa (Southern Iraq). In Finkbeiner, U. (Ed.), *Materialien zur Archäologie der Seleukiden- und Partherzeit im südlichen Babylonien und im Golfgebiet: Ergebnisse der Symposien 1987 und 1989 in Blaubeuren* in (pp. 17-39). Tübingen, DE: Ernst Wasmuth Verlag.
- Menteşe, D. H. (2023). *Sikke ve Arkeolojik Buluntular Işığında Dicle Vadisinde Parth-Sassani-Roma Varlığı (MÖ 3. yüzyıldan Roma'nın Mezopotamya'dan çekildiği tarihe kadar)*. (Doctoral dissertation). Batman Üniversitesi Lisansüstü Eğitim Enstitüsü, Batman.
- Moorey, P. R. S. (1978). *Kish Excavations: 1923-1933*. Oxford, UK: Clarendon Press.
- Nováček, K. (2022). The Sasanian to Islamic Transition in Northeastern Mesopotamia: A Ceramological View. In P. M. M. G. Akkermans, E. Cancik-Kirschbaum, F. J. Kreppner, & K. Radner (Eds.), *Exploring 'Dark Ages': Archaeological Markers of Transition in the Near East from the Bronze Age to the Early Islamic Period (Studia Chaburensia 10)* (pp. 129-145). Wiesbaden, DE: Harrassowitz Verlag.
- Nováček, K., & Melčák, M. (2016). The Medieval Urban Landscape in Northeastern Mesopotamia (MULINEM): First Two Years of the Project. In O. Kaelin, & H. P. Mathys (Eds.), *Proceedings of the 9th International Congress on the Archaeology of the Ancient Near East: 9-13 June 2014, Basel, Volume 3, Reports* in (pp. 95-105). Wiesbaden, DE: Harrassowitz Verlag.
- Oates, D., & Oates, J. (1958). Nimrud 1957: The Hellenistic Settlement. *Iraq*, 20(2), 114-157.
- Oates, D. (2005). *Studies in the Ancient History of the Northern Iraq*. London, UK: British School of Archaeology in Iraq.
- Ökse, A. T., Erdoğan, N., Görmüş, A., Atay, E., Çetinkaya, İ., Güneş, A., ... & Görmez, A. (2018). *Ilisu Barajı İnşaat Sahası Kurtarma Kazıları III: Roma İmparatorluk Dönemi ve Orta-Yakın Çağ Yerleşmeleri / Salvage Excavations in the Construction Area of the Ilisu Dam III: Roman Empire Period and Middle-New Ages Sites*. Mardin, TR: mardinsesi yayıncılık.
- Peters, J. P. (1898). *Nippur or, Explorations and Adventures on the Euphrates: The Narrative of the University of Pennsylvania Expedition to Babylonia in the years 1888-1890*. New York, USA: G.P. Putnam's Sons.
- Petrie, C.A. (2002). Seleucid Uruk: An Analysis of Ceramic Distribution. *Iraq*, 64, 85-123.
- Potts, D. T., Radner, K., Squitieri, A., Ameen, A., Rohde, J., Yawar, P., ... & Potts, H. B. (2019). Gird-i Rostam 2018: Preliminary Report on the First Season of Excavations by the Joint Kurdish-German-American Team. *Journal of the Ancient Near Eastern Society*, 47, 91-127.
- Pulhan, G., & Blaylock, S. (2013). New Excavations at the Late Bronze Age and Iron Age Site of Gre Amer on the Garzan River, Batman Province. In A. Yener (Ed.), *Across the Border: Late Bronze-Iron Age Relations between Syria and Anatolia, Proceedings of a Symposium held at the Research Center of Anatolian Studies, Koç University, Istanbul May 31-June 1, 2010, Ancient Near Eastern Studies Supplement 42* in (pp. 393-416). Leuven, BE: Peeters.
- Pulhan, G., & Blaylock, S. (2016). Gre Amer, Batman, on the Upper Tigris: A Rescue Project in the Ilisu Dam Reservoir in Turkey. In K. Kopanias, & J. MacGinnis (Eds.), *The Archaeology of the Kurdistan Region of Iraq and Adjacent Regions* (pp. 333-352). Oxford, UK: Archeopress.
- Pulhan, G., & Blaylock, S., (2018). Garzan Vadisi'nde Üç Binyıl: Batman, Gre Amer Höyük Kurtarma Kazıları / Three Thousand Years in the Garzan Valley: Batman, The Gre Amer Höyük Salvage Excavations. In F. Baş (Ed.), *Batman Müzesi Ilisu Barajı HES Projesi Arkeolojik Kazıları / Batman Museum The Ilisu Dam HEP Project Excavations* (pp. 111-161). Batman, TR: Fikirzen Ajans Reklamcılık Yayınları.
- Roustaei, K., & Azadi, A. (2011). Discovery of A Parthian Tomb Chamber in Cheram, Kohgiluyeh, SW Iran. *Iranica Antiqua*, XLVI, 193-206.

- Saber, S. A., Hamza, H., & Altaweel, M. (2014). Report on the Excavations at Tell Sitak: The 2010 Season. *Iraq*, 76, 205-229.
- Sarre, F. (1925). *Die Keramik von Samarra: Die Ausgrabungen von Samarra II. Forschungen zur islamischen Kunst 2.2*. Berlin, DE: Verlag von Dietrich Reimer.
- Sarre, F., & Herzfeld, E. (1920). *Archäologische Reise im Euphrat- und Tigris-Gebiet Band 4*. Berlin, DE: Verlag von Dietrich Reimer.
- Schenk, H. (2007). Parthian Glazed Pottery from Sri Lanka and the Indian Ocean Trade. *Zeitschrift für Archäologie Außereuropäischer Kulturen*, 2, 57-90.
- Simpson, St. J. (2013). Rams, Stags, and Crosses from Sasanian Iraq: Elements of A Shared Visual Vocabulary from Late Antiquity. In A. Peruzzetto, F. Dorna-Metzger, & L. Dirven (Eds.). *Animals, Gods and Men from East to West: Papers on Archaeology and History in Honour of Roberta Venco Ricciardi* (pp. 103-118). Oxford, UK: Archaeopress.
- Starr, R. F. S. (1939). *Nuzi: Report on the Excavations at Yorgan Tepa Near Kirkuk, Iraq, Conducted by Harvard University in conjunction with the American Schools of Oriental Research and the University Museum of Philadelphia, 1927-1931*. Cambridge: UK: Harvard University Press.
- Toll, N. P. (1943). *The Excavations at Dura-Europos: Final Report IV, Part I, Fascicle I, The Green Glazed Pottery*. New Haven, USA: Yale University Press.
- Tosun, M. (2020). *Dara (Anastasiopolis) Roma ve Geç Antik Dönem (Parth-Sasani) Seramikleri*. (Doctoral dissertation). Mimar Sinan Güzel Sanatlar Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.
- Upton, J. M. (1932). The Expedition to Ctesiphon, 1931-1932. *Bulletin of the Metropolitan Museum of Art*, 27(8), 188-197.
- Ur, J. A. (2010). *Urbanism and Cultural Landscapes in Northeastern Syria: The Tell Hamoukar Survey, 1999-2001 (Tell Hamoukar – Volume 1)*. Chicago, USA: Oriental Institute Publications – Volume 137, Oriental Institute of the University of Chicago.
- Vallet, R., Abd-El-Ali, J., Al-Debs, R., Bachelot, L., Charpin, D., Darras, L., ... & Chamel, I. (2020). Preliminary Report on the XIVth and XVth Campaigns at Larsa. *Sumer – Journal of Archaeology of Mesopotamia*, 66, 133-175.
- Venco-Ricciardi, R. (1970-1971). Sasanian Pottery from Tell Mahuz (North Mesopotamia). *Mesopotamia: Rivista di Archeologia, Epigrafia e Storia Orientale Antica*, V-VI, 427-470.
- Vincent, B., Jacqueline, G., & Jean-Francois, S. (1990). Apostilles en marge de la céramique des États IV et V de la forteresse. In Y. Calvet, & J. Gachet (Eds.). *Failaka, fouilles françaises 1986-1988* (pp. 241-284). Lyon, FR: Maison de l'Orient et de la Méditerranée Jean Pouilloux.
- Wilkinson, T. J., & Tucker, D. J. (1995). *Settlement Development in the North Jazira, Iraq: A Study of the Archaeological Landscape*. Warminster, UK: Published for the British School of Archaeology in Iraq and the Department of Antiquities & Heritage, Baghdad, by Aris & Phillips.
- Wood, J. R., & Greenacre, M. (2021). Making the Most of Expert Knowledge to Analyse Archaeological Data: A Case Study on Parthian and Sasanian Glazed Pottery. *Archaeological and Anthropological Sciences*, 13(7), 1-14. <https://doi.org/10.1007/s12520-021-01341-0>
- Yule, P. (1999). The Samad Period in the Sultanate of Oman. *Iraq*, 61, 121-146.
- Yule, P. (2009). Sasanian Presence and Late Iron Age Samad in Central Oman, some corrections. In B. Clinique (Ed.). *L'Arabie à la veille de l'Islam: Table ronde tenue au Collège de France (Paris) les 28 et 29 août 2006 dans le cadre du projet de l'Agence nationale de la recherche 'De l'Antiquité tardive à l'Islam'* in (pp. 69-90). Paris, FR: De Boccard.