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CHAPTER TWENTY-SIX

ELAMITE CERAMICS

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Bernadette K. McCall

INTRODUCTION

Elamite ceramics is the encompassing term applied to the mainly plain but occasionally painted wares that would come to dominate the archaeological assemblages of south-western Iran during the 2nd millennium and into the first half of the 1st millennium BC (Carter 1992). Defined in geographical terms as a territorial range incorporating highland and lowland zones that take in a large part of what is now western and south-western Iran (see Potts 2016: 14–ff.), the discussion of ceramics will focus on the better known material culture of the Susiana and surrounding plains leading into the Zagros Mountains. Carter (1984: 103) described a 'loose unity of material culture' focused around the political capitals of Elam, from Susa, the lowland centre, through to the highland capital of Anshan, Tall-e Malyan, in Fars province. Elamite ceramics are best documented at Susa and at sites and regions extending into the Zagros Mountains from Khuzestan to Fars (Carter 1971; Gasche 1973; Miroschedji 1981a, 1981b; Carter 1984: 144–ff.; 163–ff.; 1992: 294 for overviews), but renewed investigations in south-western Iran in more recent years warrant the present updated review (see Potts 2016 for overview).

Considerable research has been undertaken on Elamite ceramics, including comprehensive regional studies, but for reasons often as simple as limited access to sites and assemblages, there is still much to be explored. This chapter cannot claim to be exhaustive in terms of archaeological evidence, nor in thematic coverage, but the aims are to synthesise current scholarship, highlight potential avenues to pursue and encourage innovative approaches to future research. The goal is to introduce the main source materials for studying Elamite period ceramics, as a starting point for future research in the field, and to acquaint readers with the different resources available, and their critical application, as new data has been made available. It is impossible to present a comprehensive assessment of all scholarship for this volume. Instead, the chapter will provide an overview of the most relevant sources that characterise Elamite ceramics, document the distribution and composition of major assemblages, highlight the main phase markers and chronological developments in the wares. As a consequence, the chapter will also trace the ways in which research in this field has

developed and help identify areas which would benefit from further research. In most instances, it will be necessary to provide much-abbreviated summaries of available data underpinning the study of Elamite ceramics, without the level of detail or illustrations present in the original studies; these works should also be consulted to fully understand the major developments in this field, occasional gaps in our knowledge, or omissions of detail from original excavators that by necessity can escape overviews such as this one.

Given the cautionary remarks regarding the use of Elam as a toponym to describe the Zagros foothills and highlands east of Mesopotamia, and the extension of this to the presumably heterogeneous past populations that occupied the region and their associated cultural materials (see Potts 2016: 9–12; Álvarez-Mon 2012), it is appropriate to begin the discussion of Elamite ceramics with a similar caveat about the application of such a broad, externally assigned term to the ceramics from this region. By at least the mid-third millennium BC, the name Elam is attested from Mesopotamian sources to describe the lands to the east into the Zagros highlands, yet tracing the historical development of Elam through the third millennium, we are confronted with complex political and economic relationships within and beyond the Elamite realm (see Álvarez-Mon 2012; Potts 2016: 145–148; Stolper 1984). This complexity, coupled with internal social groupings and alliances, and the potential for transference of material traits across an extensive political network, makes it difficult, but not impossible, to define what is meant by the ceramics of Elam as a cohesive cultural assemblage, particularly during its early phases (Potts 2016: 145).

While the historical evidence supports the existence of Elam and Elamites as a political and cultural entity earlier in the 3rd millennium BC, the archaeological character and location for the earliest Elamite phases remain elusive. At Susa, where the most complete sequences covering the period have been uncovered, Mesopotamian traits dominate the material record, and in the period immediately before the 2nd millennium BC, material assemblages are further complicated by evidence of widespread external contacts (Potts 2016: 79–ff.; 111; Carter 1984: 133–135). The necessary focus on the Susa sequences, combined with the highly regional nature of Zagros Mountains material assemblages makes it difficult to understand the origins and early development of Elamite ceramics. It is not until the early 2nd millennium BC that materials identifiable as Elamite appear in archaeological assemblages, when Elam was under the control of the Shimashki dynasty (Carter 1984: 144).

BACKGROUND TO THE ARCHAEOLOGICAL RESOURCES

Although not the earliest research undertaken on Elamite ceramics, two quite different yet complementary studies appeared in the early 1970s that have become the main foundation works in this field (Carter 1971; Gasche 1973). Drawing on datasets that varied in their scope and methodological basis, they provided the main starting point for future research. The first, a comprehensive study of Elamite ceramics carried out by Elizabeth Carter (1971) was based on regional excavations and survey data from Khuzestan, Ram Hormuz and Deh Luran. The study established chronological divisions within Elamite assemblages based on ceramic markers, which were used to reconstruct patterns of Elamite settlement over the 2nd millennium BC.

This was followed by Herman Gasche's (1973) publication of Elamite ceramics from Susa, synthesising two decades of excavations at the Ville Royale mound. Gasche's work recreated an archaeological sequence spanning the second millennium BC from two discrete areas, Chantiers A and B. The finds were linked stratigraphically to the limited published data then available from other Elamite sites, Choga Zanbil, Haft Tepe, Tepe Farukhabad and Tal-i Ghazir. The study produced a comprehensive and stratified typology of vessel forms from two urban exposures at Susa, but one which Gasche noted was not without problems given the nature of the data and the potential for intrusive materials in different excavation strata (Gasche 1973: 7–8).

Gasche's classification of Elamite ceramics has provided an enduring typological framework which was considered at the time to represent an unbroken stratigraphic sequence for the period. As further regional excavation sequences became available, Carter (1979) re-evaluated the stratigraphy and dating assigned to Susa A and B levels, suggesting there was greater complexity in the mostly arbitrary archaeological 'levels' assigned, and noted interruptions in the sequence (Carter 1979: Table 26.1). However, many of the points raised were addressed soon after on the basis of dated textual and other historical evidence in support of the original phasing (Stève et al. 1980: 78). At this stage, the available Haft Tepe material was still to be published, study of the Middle Elamite/Qaleh phase at Anshan in Fars was incomplete (see Carter 1996) and the Neo-Elamite phase was largely unknown. Subsequent excavations at Susa, Ville Royale II, provided a more complete picture of the ceramics from the later Middle and Neo-Elamite phases with a sequence continuing into levels of the Achaemenid period (Miroshchij 1981a).

A comprehensive synthesis of the material cultures found across the Elamite world followed, incorporating what was then known of the contemporary highland and lowland regions and including the Neo-Elamite finds from Susa (Carter 1984). More specifically focusing on ceramics of the second millennium, a further overview summarised Elamite phase markers, correlating the Sukkalmah to Middle Elamite phases with contemporary Kalfari to Qaleh material assemblages from the highlands (Carter 1992). This later review incorporated Carter's own more detailed analysis of the later Middle Elamite finds from highland Tal-e Malyan (Anshan), unpublished at the time (appearing in Carter 1996), based on data obtained before the 1980s, but not extending into the Neo-Elamite phases. In light of a renewal of archaeological research and excavations in Iran, a re-examination of research into Elamite ceramics is timely, as new and legacy data from fieldwork undertaken in decades past are published, along with current research questions and methodologies that are driving these studies (Wright and Carter 2003; Potts et al. 2009; Mofidi-Nasrabadi 2007, 2014a, 2014b; Carter and Wright 2010; Alizadeh et al. 2014, for example).

ARCHAEOLOGICAL PHASING AND MAIN ASSEMBLAGES

Elamite ceramics and material culture are now generally divided into four main phases: Shimashki, Sukkalmah, Middle Elamite and Neo-Elamite (see Potts 2016). Some variation and further subdivision exists within this framework, particularly from older publications (see Carter 1979, 1984, Gasche 1973, for example), but these standardised terms are retained here to minimise further confusion and avoid the

complexity of regional sequences or site-specific terminology. While broadly based on historical events, these archaeological phases were initially defined to help understand changes in a long and continuous Elamite ceramic sequence (Carter 1971, 1979). Devised on the basis of ceramic typology, the phases were not meant to directly correlate with historical or political changes, and initially included a 'Transitional' phase in the middle of the sequence (Carter 1971, 1984: 144–145). This Transitional phase has since been incorporated into the early Middle Elamite phase, but the similarities in ceramics between this and the preceding Suktalmah phase highlight the problem of synchronising changes in political structures with the material record (Carter 1992; Carter and Wright 2010: 15). The dates provided here are included as a general guide to the archaeological phases only, and have been drawn mainly from the recent synthesis of the archaeology and history of Elam by Potts (2016) unless otherwise noted. The phase summaries do not aim to provide a comprehensive list of excavated sites with archaeology dating to that phase but list the main assemblages considered to be either representative or having some utility for understanding the ceramics of the phase.

Old Elamite Shimashki and Suktalmah phases

Shimashki phase ceramics, although displaying many regional Mesopotamian characteristics, preface any discussion of Elamite assemblages and are often found at sites that continued to be occupied into the Suktalmah period (Carter and Wright 2010: 14). The Shimashki phase has been dated elsewhere to the late 3rd millennium BC, contemporary with the Late Akkadian and Ur III periods (Carter 1992; Carter and Wright 2010), but for the purposes of this review the Shimashki phase is dated from c. 2000–1900 BC and the Suktalmah phase from c. 1900–1500 BC; together they cover the first half of the second millennium BC, or the Old Elamite period (Potts 2016; Steve et al. 1980: 78). These two phases are best represented by excavated assemblages from Susa and smaller exposures from sites in Khuzestan, Ram Hormuz and Del Luran (see Carter 1984; 1992; Wright and Carter 2003; Alizadeh et al. 2014; Carter and Wright 2010: 14; and Potts 2016: 144, 169–172 for references to other known regional Elamite and related material in the highlands).

Shimashki phase (c. 2000–1900 BC)

At Susa, ceramics of the Shimashki phase are represented in the Ville Royale Chantier B (VR B) and in the Ville Royale I (VR I) sounding (Gasche 1973; Carter 1980). The first sample consists of a large selection of complete and near-complete vessels recovered from a series of small urban courtyard houses; the VR I assemblage comprises a smaller but complete sample of finds from exposures containing mixed domestic and burial contexts (Carter and Wright 2010: 14). Outside of Susa, finds from a sounding at Tepe Farukhabad (Layers B1 5–19) in the Del Luran plain have also been found to contain Shimashki phase ceramics with links to Susa VR B and to late 3rd millennium Mesopotamian types (Carter and Wright 2010: 14; Carter 1981, 1971). Kafari highland ceramic traditions focused on the region around Anshan have been found to be contemporary with the Shimashki period, but no clear parallels with Susa

materials are known until the following phase (see Pettie et al. 2005). Until the geographic extent of Elamite political influence at this time can be clarified, uncertainty remains about which archaeological assemblages from Khuzestan, Fars or elsewhere can be attributed to the Shimashkian Elamites (Potts 2016: 123). As noted above, the archaeology at Susa does not signal any clearly defined break in ceramic styles at the end of the 3rd millennium BC. The start date of c. 2000 BC assigned to the Shimashki phase is based on dated tablets found in floor deposits in B VII. These tablets date from 2035–2027 BC and place the B VII deposits in the period immediately before the Shimashki era (see Potts 2016: 142–143), following the chronology proposed by Seve et al. (1980: 78).

Suktalmah phase (1900–1500 BC)

This much longer phase is represented by deposits from the Ville Royale Chantier A (VR A), levels AXV to AXII and VR B, level V at Susa, which contain the main Suktalmah phase assemblages (Gasche 1973; Steve et al. 1980). The VR A sample consists of whole and near-complete vessels in the large open area excavation at the northern end of the mound. Many vessels were found *in situ*, set into or underneath floors in a succession of building levels comprising private housing, public buildings and industrial complexes (Potts 2016: 161–162). Elsewhere in Susiana, at the small site of Tepe Sharafabad, the earliest of four Elamite occupation layers was uncovered in a discrete area of the site. It contained remains of architecture and a small but varied range of ceramics best paralleled in the Suktalmah phase at Susa (Schacht 1975: 323). The Suktalmah phase is also represented at Tal-i-Ghazir (Tall-e-Geser) in Ram Hormuz, in several areas from excavations conducted in the late 1940s, but only recently has a comprehensive publication appeared based on the original excavation records (Alizadeh et al. 2014; Caldwell 1968; see also Carter 1994, Carter and Wright 2003). As at Tepe Sharafabad, the Suktalmah phase represents a reoccupation of the site after a long gap commencing around the middle of the 3rd millennium with material from Mound A (Level 2) providing the bulk of the published finds found in association with architectural and non-structural contexts (Alizadeh et al. 2014: 12, 15–16). At Tepe Farukhabad, the Elamite sequence continues into the Suktalmah phase in Levels B 14–11b, with parallels from Susa in VR BV and A XV–XIV (Carter 1981: 209).

Recently, new excavations at Haft Tepe have uncovered a previously undocumented early occupation layer (Level I) from a small area of the site dated to the 17th–16th centuries BC (Mofidi-Nasrabadi 2014a). Ceramics were paralleled with several of Gasche's vessel types from Susa in levels B V, and A XV – XIII as well as some finds from B VII – VI (Mofidi-Nasrabadi 2014a: Pl. 9–16). Some dating anomalies from C14 samples in Level I may indicate a Shimashki phase date but are considered inconclusive, as the site stratigraphy and other finds support inclusion in the Suktalmah phase, from c. 17th century BC (Mofidi-Nasrabadi 2015). It is during this phase that painted and plain Kafari wares from the Zagros highlands show their earliest parallels with Elamite ceramics (Pettie et al. 2005: 53). Kafari ceramics are best known from Tale-Malyan (Anshan) and the surrounding plains (Nickerson 1983; Sumner 1989) and from soundings in Mammasani at Tole-Nurabad and Tole-Spid (Potts et al. 2009).

Middle Elamite period (c. 1500–1000 BC)

Phasing during the second half of the second millennium BC has seen the most revisions and there is considerable variation in proposed subdivisions and terminologies, and between archaeological and historical phases in the literature. Three historical phases are proposed following changes in dynastic control: Middle Elamite I, 1500–1400 BC; Middle Elamite II, 1400–1200 BC; and Middle Elamite III, 1200–1100 BC (see Potts 2016: 176–177). Archaeologically, the period is divided into two phases, but the dating is by necessity less precise and open to interpretation as new material becomes available: Middle Elamite I (replacing the Transitional phase), c. 1500–1400/1300 BC; and Middle Elamite II – III, c. 1400/1300–1000 BC (Carter 1992; see Potts 2016: 197). The end date adopted here is derived from the main archaeological sequence at Susa from the Ville Royale II (VR II) exposures, in keeping with the proposed division between Middle Elamite levels and a probable gap between this and the Neo-Elamite excavation levels (Miroscchedji 1981a), but differs in the use of MEII – III for the phase name to limit confusion between historical and archaeological data.

At Susa, the Middle Elamite I (or Early Middle Elamite) phase is represented in VR A XI and in the Ville Royale-Apadana (VR-Apadana) trench, Level 9. A gap in the VR A sequence separates the Middle Elamite II – III levels of A X and A IX from the previous phase Level 8 in the VR-Apadana trench (Miroscchedji 1981a: Table 26.2). The sequence uncovered in the later Ville Royale II excavations spans the Middle Elamite II – III, Levels 13 to 10 ending c. 1000 BC (Miroscchedji 1981a). It was noted, however, that the diagnostic samples from Levels 12 and 11 were small and the description of ceramic types for the later Middle Elamite phase relies on the very similar materials in Level 10 (Miroscchedji 1981a: 14–15). The original excavations carried out at Haft Tepe also uncovered extensive remains of building and burial complexes from the Middle Elamite I phase (Negahban 1991), and Levels II – IV from new excavations provide further evidence of this phase (Mofidi-Nasrabadi 2014a: 105). The ceramics and dated inscriptions place these levels in the late 15th–14th centuries BC, and radiocarbon determinations concur: Level II was correlated with the Terrace Complex 1 from Negahban's excavation and Level III with the royal tomb building (Mofidi-Nasrabadi 2015; see Potts 2016: 186 for updated site terminology). At Choga Zanbil, ceramics from the varied religious and tomb building complexes uncovered in initial excavations were dated to the 11th century BC, contemporary with Susa A X and A IX (Pons 1994; Ghirshman 1966, 1968). The site has also undergone renewed excavations, and further final Middle Elamite layers are identified as Level 3 (Mofidi-Nasrabadi 2007).

Late second millennium Middle Elamite II–III ceramics have also been found in Fars at Tal-e Malyan, in the EDD building, Levels IV–III, which closely match Susa types and exhibit affinities with local Qaleh wares (Carter 1996: 17–30), and from the small soundings and surface collections in Mamasani which point to more extensive Elamite settlement in the highlands (Potts et al. 2009; McCall 2013). Surface investigations at Tal-e Malyan indicate that further evidence of this phase exists elsewhere on the site (Carter 1996: 2). Similarly small stratified assemblages dating to the Middle Elamite phase were found at Tal-i Ghazir (Caldwell 1968; Carter 1994; Alizadeh et al. 2014), and the latest Elamite occupation level from Tepe Sharafabad belongs to Middle Elamite I (Schacht 1975).

Neo-Elamite period (c. 1000–539 BC)

Similar issues to those noted above relate to this period when attempting to correlate three historical phases (see Potts 2016: 249) with archaeological data from Susa which was divided into two phases, Neo-Elamite I from c. 1000 BC to the later 8th century BC, and Neo-Elamite II continuing until the Achaemenid period (Miroscchedji 1981a: Table 26.2, 38–39). Starting at c. 1000 BC and possibly after a gap in the sequence at Susa following the final Middle Elamite Level 10 (Miroscchedji 1981a: 35), stratified Neo-Elamite ceramics are best known in the VR II sequence, Neo-Elamite I from Levels 9–8 and Neo-Elamite II from 7B – A, and the VR-Apadana sequence from Levels 7C and 7B – A, respectively (Miroscchedji 1981b). Added to this are the later phases revealed at Choga Zanbil, Level 2, 10th–9th centuries BC and Level 1, 8th–7th centuries BC, paralleled with the Susa finds (Mofidi-Nasrabadi 2007: 90). These two sequences from Susa and Choga Zanbil constitute the main Neo-Elamite assemblages for characterising the later phases of the period. Further ceramic evidence of the Neo-Elamite period is known from Ram Hormuz at Tal-i Ghazir (see Carter 1994; Alizadeh et al. 2014) and now also from western Fars in excavated soundings, particularly at Tol-e Nurabad, Trench B (see Potts et al. 2009). However, evidence from surveys and test excavations in Ram Hormuz, Mamasani and Deh Luran indicates that the full distribution of Neo-Elamite ceramics outside Susa and into the highlands is yet to be fully revealed (Carter 1994; McCall 2013; Carter and Wright 2010).

VESSEL TYPES

Gasche's classification of ceramics from the long Ville Royale A and B sequences at Susa provides the typological framework for the Elamite period (Gasche 1973). The resulting study created a typology primarily based on overall ceramic forms, and although new discoveries for the Middle and Neo-Elamite phases have expanded our knowledge, the major vessel types identified at Susa form the basic type-series for archaeologists studying this period. Gasche's aim was to trace the evolution of vessels and related ceramic forms through successive occupation layers, and the results offer a diverse sequence for the Elamite period from varied contexts within the Royal city, and combined with Carter's extensive work from surrounding regions has enabled ongoing changes in ceramic styles to be characterised between phases (Carter 1971, 1992). The typology was devised primarily on the basis of overall morphology and common variations within these groups, including manufacturing traits that were also consistently applied to certain forms. The assemblage was found to contain a large and complex variety of ceramic forms classified into 37 groups, and Gasche also added seven other categories that he termed *Hors groupe*, ceramics that could not be classified into the general typology. The complete range of forms is extensive and includes small and large vessels or utilitarian forms used in domestic, monumental, funerary and architectural contexts, including bowls, goblets, bottles, small and large jars, vats and less common forms such as flasks, high-footed cups, vessel stands and items used for drainage. The vessels are predominantly plain, but distinctive moulding and applied bands, incision and less common painted decoration are known. Motifs include linear bands in association with cross-hatched fill, triangles with cross-hatching, or wavy lines, and surface treatments for the most part consist of slips or smoothing only (Gasche 1973; Carter 1992).

The most common and distinctive vessel forms throughout the period are the small jars and goblets classified as Groups 19, 20 and 21, and although goblets of type 19b appear suddenly in the Sakkalmah phase and exhibit clear Mesopotamian attributes, they become typical and widely distributed elements in Elamite assemblages (Gasche 1973: 37; Pons 1994). At Choga Zanbil, the most frequent forms identified from diagnostic sherds are jars with banded rims (Gr. 29, 30 types), wide-mouth vats (Gr. 34) and burton bases from Groups 19c and 20 goblets (Mofidi-Nasrabadi 2007: 87); and at Hat Tepe, burton-base goblets or elongated jars of various overall forms were consistently the most frequent vessels identified (Mofidi-Nasrabadi 2014a: 83). Certain vessels have only been found in limited, often burial, contexts (Gr. 26 and Gr. 27 chalices, e.g.), and other vessel types are encountered in burials or domestic contexts alike – elongated jars and goblets, bowls and small vessels – which potentially had different practical and symbolic functions in either context, and some vessels were used for burial containers (see Carter 2011: 49). Architectural functions are often apparent from context, as can be seen with inset open-ended sumps or latrines, pipe sections and guttering, or can be inferred from storage vessels set into and under floor levels of buildings or associated areas at Susa, and Tepe Sharafabad, for example (Gasche 1973: Pl. 51–53, 68; Schacht 1975: 323; see Potts 2016: 161–163 for discussion of site contexts and potential vessel functions). To help understand how vessels were used at Choga Zanbil and Hat Tepe, they were assigned to different functional categories, including storage vessels, kitchen vessels, vessels used daily for eating and drinking, luxury vessels, cult vessels, vessels of an industrial nature and other miniature forms (Mofidi-Nasrabadi 2007: 80–ff.).

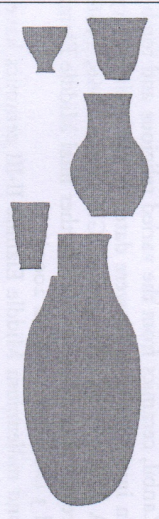
ELAMITE CERAMICS BY PHASE

From the main stratified assemblages excavated at Susa and throughout Khuzestan, the characteristic vessel types, wares and technological traits that typify certain phases underline the changes and continuity within the longer sequence (Carter 1971, 1984, 1992; Gasche 1973; Miroschedji 1981a, 1981b). These features are summarised in Table 26.1 based on previous scholarship and updated with currently available data. The table presents the main ceramic characteristics for each phase and, where detail permits, has been further subdivided (see the later Middle Elamite phase, for example). It is prudent to bear in mind that material complexity and ongoing uncertainty surrounding dates (particularly in the early levels at Susa) are not so easily translated into archaeological summaries, particularly during the Shimashki phase when the nature of Elamite material culture is still elusive (see Potts 2016: 145). The summaries are intended as a guide to understanding the main trends and developments that mark each phase. However, differentiating precisely between one phase and the next can be difficult in excavated assemblages and more so with survey collections. Dating should rely on broader categories of material or scientific dating methods which suit the scale of the investigation.

PROBLEMS, QUESTIONS AND NEW RESEARCH

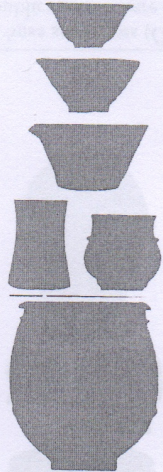
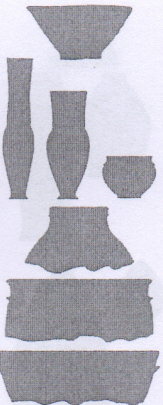
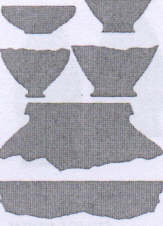
The table summarising ceramic trends from the Elamite period draws together data obtained using different collection strategies and from varying contexts and sites to

Table 26.1 Elamite ceramic characteristics by phase.

Period	Phases	Main sites	Main forms	Main ware types and surface treatments	Main forms and other diagnostic forms	Phase characteristics / comments
NEO-ELAMITE	NE II	VR II (L. 7B–6) Other key sites: Choga Zanbil (Ph. 1)		Common wares (cw): Red-brown group with mixed mineral and minimal vegetal temper; some crushed sherd temper; coarse, poorly smoothed surfaces, irregular string-cut bases. Buff to light brown group, with some vegetal and mixed mineral temper; buff slipped, either well smoothed or rough surfaces. Coarse mineral tempered wares (csw): four groups based on dominant inclusions, either white, grey, red or fine, sandy, with minimal vegetal temper. Surfaces are smoothed or occasionally rough. Glazed wares, fine red-brown or common wares; used on some bowls, bottles, jars; green or greenish white glazes.	<i>Main forms:</i> Bowls, small conical curving wall. Goblets, footed, short slightly everted open types without neck; or cylindrical necked forms (not illustrated, CZ, Mofidi-Nasrabadi 2007: Pl. 45–6). Jars, cylindrical neck, elongated body with round or pointed bases, height varies from 40–80cm; typical form. Jars, short neck, globular body; or wide mouth form with projecting rim with low relief ridge/groove high below. Small bottles, glazed surface. <i>Other forms:</i> Large wide-mouth vats (<i>pitthoi</i>), incurving wall with projecting rim and ridge combination; various small jars and bowls. (Miroschedji 1981a:29–33).	-Increasingly coarser wares than preceding phases; fine wares disappear. -Red-brown common wares 75% and buff 15% of assemblage at Susa; coarse wares 10%. All wheel formed; some large vessels partially hand-built. -Goblet types at Choga Zanbil similar to later Gr. 19c types (Mofidi-Nasrabadi 2007:Fig. 45-46). -Ceramics found in Ram Hormuz (Carter 1994); and limited evidence in highlands (Potts et al. 2009; McCall 2013).

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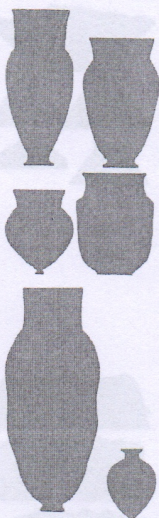
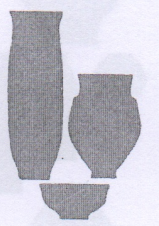
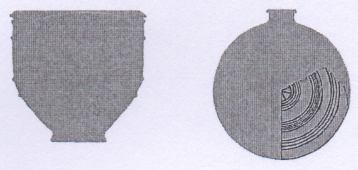
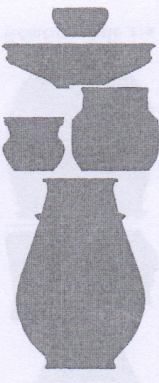
Table 26.1 (Continued)

Period	Phases	Main sites	Main forms	Main ware types and surface treatments	Main forms and other diagnostic forms	Phase characteristics / comments
NE I	VR II (L. 9-8)	Other key sites: Choga Zanbil (Ph. 2)		<p>Mainly reddish-brown for all wares, some lighter and buff variants.</p> <p>Common wares (cw): red-brown, with mineral and vegetal inclusions, carelessly smoothed surfaces; a buff ware with abundant vegetal temper; and a less common red-brown ware with larger vegetal and abundant mineral temper, rough surface and thin slip or wash.</p> <p>Coarse wares (csw): coarse vegetal and crushed sherd temper, white mineral grit.</p> <p>Fine wares (fw): fine mineral, or no visible inclusions, slipped, well smoothed (minor component only).</p> <p>Surface treatments consist of beige or self-coloured slips, rare glazed (greenish) vessel.</p>	<p>Main forms: Bowls (cw), conical small and medium all irregularly formed and finished, string-cut bases (Gr. 1 types);</p> <p>Larger deep bowls (cw), sinuous profile with various plain or everted rims (Gr. 3 types); deep conical bowls with pinched spout at rim (new form); basins, plain or with projecting rim and ridge.</p> <p>Large necked jars, banded rims; or cylindrical neck, ovoid body (cw, csw).</p> <p>Large wide-mouth vats (<i>pitthoi</i>) and jars, mostly upright or incurving wall with projecting rim and ridge combination high on wall; most with ring-base, some with opening at base (csw).</p> <p>Other forms: goblets, mainly globular body with ridged shoulder (fw); cylindrical with incised decoration; and less common forms (cw).</p> <p>Jars, small rounded, mainly cylindrical necks (cw, occasional fw).</p> <p>Jars, medium narrow and wide-mouth forms with short neck, banded, bevelled or plain rims, some with side spouts (cw, csw).</p> <p>(Miroschedji 1981a: 19-22).</p>	<ul style="list-style-type: none"> -Limited continuity in forms, fewer goblets (10%) and new cylindrical incised form. -Elamite goblets virtually disappear at Susa; examples continue at Choga Zanbil (Mofidi-Nasrabadi 2007). -Bowls, large jars and vats main forms. -Common and coarse wares dominant types. -Glaze appears in Level 8. -Ceramics found in Ram Hormuz (Carter 1994); and limited evidence in highlands (Potts et al. 2009; McCall 2013).
ME II-III (c. 1300-c. 1000BC)	VR II (L. 12-10) VR A X-IX VR-AP (L. 8)	Other key sites: Choga Zanbil (Ph. 3) Tal-e Malyan (EDD)		<p>Dominated by light brown, buff ware. Fine ware (fw): very fine mineral, rare or no vegetal inclusions (small bowls).</p> <p>Common ware (cw): red-brown to buff, mainly light brown; abundant fine vegetal temper, white mineral grit, occasional crushed sherd temper.</p> <p>Coarse ware (csw): red-brown to buff, light brown; coarse vegetal and crushed sherd temper, white mineral grit.</p> <p>Slipped (self) and/or smoothed surface treatments.</p>	<p>Main forms: Bowls (fw, cw), small conical with string-cut base (Gr. 1); small (fw) and medium (cw); bowls with sinuous profile (Gr. 3).</p> <p>Goblets, elongated with high cylindrical necks (Gr. 19c); ovoid body with button-base; and globular body with ridged shoulder.</p> <p>Large jars, short neck with banded rim, ovoid or globular body; short neck with triangular shaped rim (Gr. 29a, 30).</p> <p>Small jars, narrow straight neck; and wide-necked forms.</p> <p>Large wide-mouth jars/vats (<i>pitthoi</i>), everted wall with opening in base; upright wall with projecting rim and ridge.</p> <p>Other forms: small bowls, bevelled edge rim; large shallow bowls; large jars without neck; jar stands.</p> <p>(Miroschedji 1981a:15-17; Carter 1992).</p>	<ul style="list-style-type: none"> -Simplified range of ceramic forms continues from ME I -Appearance of high-necked "Elamite goblet." -At end of phase (L. 10) goblets no longer made in fine wares. -Ware types at Susa equally dominated by common and coarse fabrics at end of phase with only c.10% fine wares. -Typical ME ceramic forms (including goblets) appear in Zagros highlands at Tal-e Malyan (Carter 1996), and Mamasani (see Potts et al. 2009; Fig. 3.121; McCall 2013).
	VR II (L. 13) VR A XI			<p>Fine ware (fw): brown to buff, as above.</p> <p>Common ware (cw): red-brown to buff, mainly light brown; abundant fine vegetal temper, white mineral grit, occasional crushed sherd temper.</p> <p>Coarse ware (csw): red-brown to buff, light brown; coarse vegetal and crushed sherd temper, white mineral grit.</p>	<p>Main forms: Goblets, small with button base; short with carinated shoulders; and ovoid body with button-base.</p> <p>Bowls, small, round and conical (fw and cw); and large versions (csw).</p> <p>Jars, with and without necks and large open forms (csw).</p> <p>(Miroschedji 1981a:13).</p>	<ul style="list-style-type: none"> -Even proportion of ware types in assemblage. -Bowls, large (cw) -Goblets in fine ware only. -No high necked elongated goblets at Susa in this phase. -Ware types/forms found in Fars, Tal-e Malyan (Carter 1996), Mamasani sites (Potts et al. 2009; McCall 2013).

MIDDLE ELAMITE
ME I-III (1500-1000 BC)

(Continued)

Table 26.1 (Continued)

Period	Phases	Main sites	Main forms	Main ware types and surface treatments	Main forms and other diagnostic forms	Phase characteristics / comments
ME I (Early Middle Elamite)	VR-AP (L. 9). VR A XI-IX	Other key sites: Haft Tepe (HT) L. II-IV		Plain buff wares, mostly greenish-buff, with occasional reddish or grey ware; grit-tempered; or grit and vegetal. Mostly wheel made. Slip colours buff, pink to green tinged. Minor painted component, crudely rendered geometric motifs (HT, Negahban 1991). Buff wares, fine vegetal temper (HT, Mofidi-Nasrabadi 2014a). Grey wares, painted decoration.	<i>Main forms:</i> Goblets, cylindrical neck, ovoid body (Gr. 19c), angular shoulder, ovoid body (Gr. 20a); rounded shoulder, squat globular body (Gr. 20b); small jar/goblet with carinated shoulder (Gr. 21b); and elongated ovoid type goblet/flask; button and pedestal bases, some with central plug to form foot (see HT Types V, VI, XIII, XIV, XVI). Jars, small with round or pointed base (HT types I-IV). Jars, large oval body, rounded base (see Gr. 30). <i>Other forms:</i> Painted flasks (Gr. 13), bowls (see Gr. 1, 2).	-Continuity in forms and ware types from Sukkalmah phase; difficult to differentiate but trend towards fewer forms. -Base types change on cylindrical goblet, from Gr. 19b flat types to Gr. 19c pedestal bases. -Large open ended vats continue (Gr. 35). -Highland (Kaftari/Qaleh) Elamite links in grey wares, painted forms.
Sukkalmah B V VR A XV-XII				Vegetal tempered buff wares more common; larger forms also contain sand, crushed sherd temper. Surfaces slipped and unslipped. Relief bands and ridges common on body of large jars, vats; projecting ridges on shoulder of closed forms.	<i>Main forms:</i> Goblets, elongated ovoid or cylindrical body, flat and stump base (Gr. 19b). Jars, squat, angular shoulder (Gr. 21a-b). Large open-mouthed jars/vats (Gr. 33-34). Large closed jars/vats (Gr. 36-37). <i>Other forms:</i> painted 'Elamite' flasks (Gr. 13).	-Major change in clay preparation (shift from mineral to vegetal temper) -Closed forms dominate. -Painted flasks characteristic Elamite form -Gr. 6 bowls disappear -Continued influences from Mesopotamia including appearance of string-cut bases.
OLD ELAMITE (c.2000-1500 BC)				Incised and impressed decoration also found on larger forms. Painted geometric decoration present but not common (flasks, small jars, beakers) Use of bitumen as a surface treatment (interior/exterior).	Bowls, angled/curved carinated wall (Gr. 3). Large vats, open-ended (Gr. 35).	-Haft Tepe, Level 1 assemblage includes Gr. 34, 29, 25, and Gr. 21a type jars; Hg. V large jars Hg. V, and Gr. 3, 9, 19, 33 miscellaneous forms (Mofidi-Nasrabadi 2014a: Pl. 9-16).
Shimashki	VR I B VII-VI			Mainly plain, grit tempered buff wares dominate. Occasional grey, brown-black reduction-fired wares with no vegetal temper (see Gr. 25). Occasional decoration: incised, impressed applied bands or ridges on larger forms; rare linear, wavy painted bands on miscellaneous small forms (see Gr. 16, Hg. III). Some use of bitumen on surfaces.	<i>Main forms:</i> Bowls, convex wall incurving rim (Gr. 5); flaring with indented band-rim (Gr. 6). Jars, small, multiple grooved rims, round body (Gr. 15); squat, angular shoulder and wall (Gr. 21); large, globular, angular ridge between neck and body (Gr. 18). <i>Other forms:</i> Bowls, small and large with flaring or carinated wall, rounded, everted and overhanging rims (Gr. 1, 3, 4, 7). Jars, small to large, squat biconical body (Gr. 12), large and squat jars with ridged, incised or rounded shoulder (Gr. 23, 24, 25, 29) and miscellaneous or ungrouped forms (Gr. 16, Hg. III, V).	-Some examples of 'Elamite' (Gr. 25) grey wares (see Carter 1979: 127). -Closest parallels with contemporary Mesopotamian Later Akkadian/UR III forms. -Regional variations during period (e.g. Deh Luran assemblages - Carter and Wright 2010).

Note: Based predominantly on Susa sequences (Gasche 1973; Miroschedji 1981a) and summaries (Carter 1984, 1992) unless specified otherwise; phasing or descriptions from original publications where possible, with reference to Potts (2016). Abbreviations: CZ refers to Choga Zanbil; Gr. to Gasche's type series (Groupes) with numbering system from Susa VR A and B typology; Hg. to Gasche's ungrouped categories; HT to Haft Tepe, for types and description (Negahban 1991) and for excavation levels at Haft Tepe, and additional ceramic data in the Sukkalmah phase (Mofidi-Nasrabadi 2014a), and for Choga Zanbil (Mofidi-Nasrabadi 2007); VR II for later Susa levels (Miroschedji 1981a); TN for Tol-e Nurabad (Potts et al. 2009). References for other sites with useful stratified assemblages including Haft Tepe, Choga Zanbil, Tepe Sharafabad, Tepe Farukhabad, and the smaller exposures in Mamasani are provided in text if not otherwise stated. Images adapted from Carter (1984: Fig. 10-12), based on Miroschedji (1981a, 1981b); and Potts et al. (2009) for Tol-e Nurabad.

present broad material trends, particularly important in a fragmented political landscape such as the Zagros Mountains. However, it also highlights limitations and several potential research streams. The problem of understanding the early development of Elamite ceramics with their obscure origins and the continued use of ceramic types with close ties to Mesopotamian characteristics remains (Potts 2016: 143). Many of the historically recorded Elamite regions have not been located, and the origins of the later cohesive material culture may have its roots in as yet unexplored areas (see Potts 2016: 127; Table 5.1). Not knowing their actual locations will make it very difficult to determine which group or groups contributed most to the development of later material assemblages. Shmashki ceramic types also continue to occur with later Sukkalmah ceramics, noted in Deh Luran and in the lower level at Haft Tepe which suggests a gradual shift in forms from one phase to the other (Carter and Wright 2010: 14; Mofidi-Nasrabadi 2014a). Continuity in forms coupled with a marked change in the technological aspects of ceramic production in the Sukkalmah period should be investigated further to see what mechanisms created change, such as local innovation or transfer of skills (Carter and Wright 2010: 14).

Unanswered questions such as these also add to the difficulty of correlating material and historical phases, which continues to be problematic throughout the Elamite period. The placement of these chronological terms in Table 26.1 is by necessity generalised in relation to excavation layers from Susa and other key sites that have been used to define ceramic trends, as are broad classifications of ceramic characteristics. Descriptions of Early Middle Elamite ceramics were not available for earlier reviews due in part to the paucity of material at Susa and the lack of published data. The Haft Tepe assemblage added important data (Negahban 1991: 25), particularly as evidence of links with highland forms and wares continued (Carter 1992: 295). Haft Tepe ceramics have been described generally as grit-tempered, buff wares (Negahban 1991: 25) but more recently noted to also include vegetal tempered fabrics and show greater variation within the assemblage that can be correlated to different forms (Mofidi-Nasrabadi 2014b: 386). These variations underline the need for regional archaeometric studies to characterise different ceramic pastes and identify variations in technology in addition to descriptions based on visual attributes alone.

Just as the origins of Elam are poorly known, the picture towards the end of the Elamite period is still unclear, and there is uncertainty about the Elamite presence in the Zagros regions of Fars. Much of Tal-e Malyan remains unexcavated, and early Qaleh assemblages are still poorly understood (Carter 1996). The distribution of sites with Neo-Elamite ceramics is mostly concentrated in Khuzestan, but sites in Ram Hormuz contain evidence of this period (see Carter 1994 for summary; Carter 1971, Wright and Carter 2003), as do the Elamite phases of Tol-e Nurabad and Tol-e Spid and surface collections in Mamasani which are only partially investigated (Potts et al. 2009; McCall 2013).

ARCHAEOMETRIC STUDIES

Previous analyses of Elamite ceramics based on petrographic characterisation and neutron activation analysis were carried out at Tal-e Malyan, aimed at investigating observed similarities between lowland and highland wares from Middle Elamite levels, but comparisons with lowland Elamite ceramics and the questions regarding

imported versus local manufacture are yet to be systematically addressed (see Carter 1996: 18). It is only recently that inter-site archaeometric analysis from Elamite sites in Khuzestan is becoming more prevalent, with the resumption of excavations at Haft Tepe and Choga Zanbil (Mofidi-Nasrabadi 2014b; Emami 2012; Emami and Tretin 2012). Already these studies have generated quantified data on fabric selection, vessel forming and updated technological studies.

Detailed compositional and optical microscopic analysis of the ceramics from recent fieldwork undertaken at Haft Tepe has helped clarify some of the variation observed in the ceramic pastes (Emami 2012). The results identified locally sourced raw materials that clustered into two main mineralogical and chemical groups that were differentiated by clay preparation and firing technologies. The resultant ceramic groups were interpreted as representing a local transition from one technology to another (Emami 2012: 6).

The same analyses were applied on new excavation data from later Middle Elamite ceramics at Choga Zanbil to investigate ceramic manufacturing during and after this period of Elamite expansion (Emami and Tretin 2012). Samples were selected from a range of vessel types that spanned the period from c. 1200–700 BC. Different ceramic processing methods were identified based on differing firing temperatures; the choice of raw materials (locally available calcium-rich clays) and inclusions was more consistently selected to match firing choices (Emami and Tretin 2012: 365–366; 375). In addition to site-specific questions, these studies have produced a model for standardised characterisation of Elamite ceramics which could be adopted more widely for future comparative studies, and are especially useful for studying the technological aspects of ceramic production at other sites where kilns have been located. Using this data, it was also possible to show that ceramic raw material differences between Haft Tepe and Choga Zanbil were due to variations in locally sourced raw materials (Mofidi-Nasrabadi 2014b). Compositional analysis has also been used to explore ceramic evidence for the presence of local and non-local ceramics at Tal-i Ghazir, as a correlate for contacts and exchange between sites in the Ram Hormuz plain, the Susiana plain and major sites in Mesopotamia (Alden et al. 2014). Emphasis was on the earlier occupation phases at the site, but a small quantity of Sukkalmah to Middle Elamite sherds were analysed along with local clay samples. The results indicated a combination of two local fabric groups in use, and a lower number of Mesopotamian compositional wares representative of contact between the two areas from the late fifth to early second millennium BC (Alden et al. 2014: 266).

We also see a high degree of consistency in forms and decorations within assemblages and between sites which raises questions about standardised ceramic manufacturing, transference of technology and customs, or the distribution of vessels and their products. Mofidi-Nasrabadi (2014b) examined the seemingly mass-produced Middle Elamite burton-based goblets in light of the large numbers of these items at Haft Tepe and Choga Zanbil. Apart from the morphological differences, the earlier Haft Tepe goblets were made of finer fabrics, were more carefully formed and only some showed evidence that the foot was finished by filling with a central lump of clay to seal the bottom of the vessel (Mofidi-Nasrabadi 2014b: 387). This feature was consistently used later at Choga Zanbil and, based on other studies it was proposed that the technique was used to speed up the production process: the lower and upper vessel parts could have been formed separately on the wheel, the base sealed

and the two parts joined (Mofidi-Nasrabadi 2014b: Figure 9 and for full references). It was hypothesised that the change in production methods was an internal Elamite development driven by increased demand for mass production following a period of historically attested Elamite expansion and associated building programmes (Mofidi-Nasrabadi 2014b: 395). Results such as this are valuable for approaching changes in ceramic repertoires during the Middle Elamite period. The adoption of similar methods for existing assemblages, particularly in highland areas, may help address questions regarding local versus centralised production methods. This may also be a major factor contributing to the development of simpler and more consistent Elamite ceramic assemblages, a trend that is found throughout the second half of the 2nd millennium BC.

CONCLUSIONS AND FUTURE STUDIES

The variation in forms, size, decoration and contexts in which Elamite ceramics are found embodies a complex, multilayered society where ceramic vessels were used to perform some of the more mundane aspects of everyday life in domestic settings, facilitated social interaction, provided reliable storage and were used to manage resources or enabled long-distance trade; they contributed to town planning and improved public health, and were also elevated into the role of sacred in rituals for both the living and the dead (e.g. Gasche 1973; Potts 2016: 161–ff.; Carter 2011). The assemblages from Susa have hinted at these many roles, the sites of Haft Tappeh, Choga Zanbil and Tale-Malyan confirm others. However, to understand the specific functions of particular vessel forms and potentially how they were used, and the degree of planning that went into the production of certain forms, will require more inquisitive research designs and methodologies be adopted (e.g. Mofidi-Nasrabadi 2014b). Different forms hint at the highly specific intended functions of certain vessels, indicating well-defined social, economic and religious practices. The later conformity of production methods and forms exhibited within this variation contributes to the highly recognisable character of Elamite ceramics, and can be viewed as evidence of a widespread ceramic technology with potters able to create simple mass-produced forms efficiently, alongside more complicated and durable forms. Further archaeometric analysis will be crucial for understanding innovation and influence displayed in changing ceramic styles and forming methods. Studies of ceramics at all stages of their manufacture and use, from raw materials preparation, forming methods, assemblage makeup, distribution and contents analysis, could answer important questions about their Elamite users and how Elam adapted to changing political conditions from the beginning of the second millennium to the mid-1st millennium BC.

The vessels, and the customs and practices that were embodied within them, are found in many sites and regions throughout the Elamite sphere yet somewhat ironically are better known from the lowland assemblages centred on Susa and surrounding excavated sites. Crucial to understanding the highland realm of Elam will be further comparative studies of the assemblages of the Kafhari to Qaleh periods in Fars and the transition between these two traditions which is still largely unknown, even at Tale-Malyan (Sumner 1994: 97–99; Carter 1996; Alden et al. 2005: 39–41). Additional research into the ceramics from smaller sites away from the larger capitals, for

example, in Ram Hormuz and Mamasami, will also help scholars understand how fragmented regional Elamite settlements functioned and how they interacted with existing local populations (Potts 2016: 145; McCall 2013). The important points to note from this brief review of the background to Elamite ceramic studies is that new data can quickly change existing views and that recourse to multidisciplinary approaches to ceramics can be used to ask different questions that will enhance our knowledge of the Elamite world.

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