Potter's Marks in Shahr-i Sokhta: Their Functions and Meanings

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1. Introduction

Shahr-i Sokhta is a familiar name in Iranian Archaeological history. Recent archaeological excavations at Shahr-i Sokhta have yielded valuable information about this part of the south-eastern Iranian Plateau, drawing the attention of archaeologists. The large population of the site, along with its satellite settlements, required the production of large numbers of pottery vessels. The presence of millions of pottery sherds as well as hundreds of kilns attests to the thriving pottery industry in this area. The presence of such a huge quantity of pottery on the main mound as well as the surrounding hills confirms this viewpoint.

Archaeological surveys in this site and the surrounding area, especially the eastern lowlands, show that it is dotted with kilns and pottery workshops, which is evidence that the majority of the pottery used in this area was produced in and around villages such as Tepe Dash or the hills of Rud-e Biyaban. On the surface of the city and its northwest area, i.e. the Monumental Area, there are the remains of pottery kilns that seem to belong to the site's later periods of occupation.

The site's large area, population and more than one thousand years of occupation are all evidence that the city was a major regional trading centre, maintaining

relations not just with the surrounding settlements but also far-off civilizations, which also explains the presence of such a large quantity of ceramics.

The pottery of the site has been the object of several studies, but we still do not have enough information regarding the pottery of the city and its production. Shahr-i Sokhta's pottery belongs to two main categories, Buff and Grey Ware. Red Ware is occasionally seen among the collected cultural material; however, Buff Ware is seen in all periods of occupation. Pots, jars, bowls and beakers are the main forms of Buff Ware. Beakers, especially pear-shaped ones, are present in all periods.

Large numbers of Period II beakers have potter's marks on the bottom. They take various forms, but the majority of them are either straight or slanted lines. Buff Ware bowls were among the common shapes, most of them unpainted and roughly hemispherical in shape. However, a good number of them are painted with geometric designs (Figs. 1-2), undergoing various changes from Periods I to IV.

The majority of geometric motifs on the Buff Ware bowls of Shahr-i Sokhta consisted of simple or composite lines, triangles, chains of triangles, hanging triangles, zigzags and festoons. Zoomorphic motifs were not as common as geometric ones, and were limited to animals such as goats, birds, stags/deer and fish. The most common zoomorphic motifs were goats and stags/deer, seen on beakers, but during Period III fish motifs appear on the inner surface of bowls and plates. Some of these decorative motifs on Buff Ware could be related to features of the region's natural environment, such as rivers, lakes and fields. Mostly seen on shallow bowls or dishes, these motifs usually range from light brown to dark brown and almost black (Figs. 3-4).

Shahr-i Sokhta's Grey Ware is a special type. This category mostly consists of bowls and/or small dishes/plates, and in a few instances trumpet-shaped vessels. The Grey Ware of Shahr-i Sokhta is usually burnt or blackened. Almost all the deep Grey Ware bowls from this site are painted, although there are also unpainted ones. In the case of deep bowls, motifs decorate both the inside and

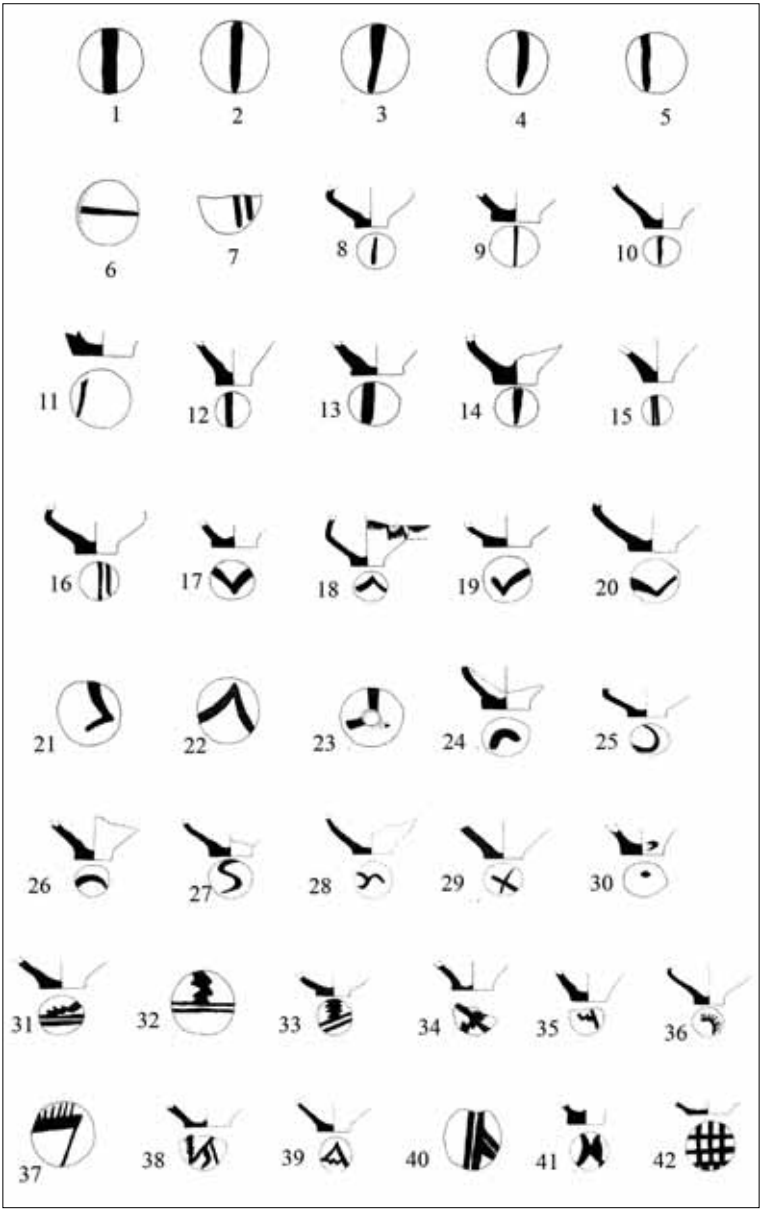

Fig. 1: Shahr-i Sokhta. Painted signs on the bottoms of vessels.

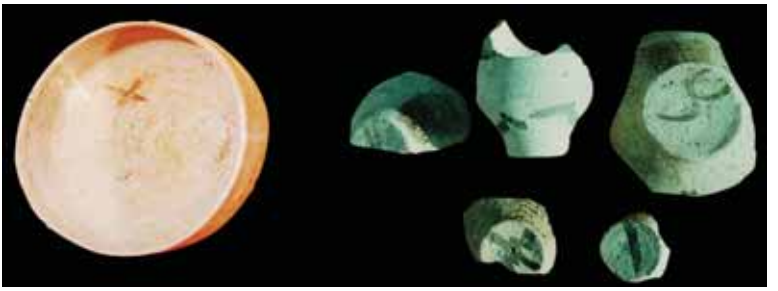

Fig. 2: painted signs.

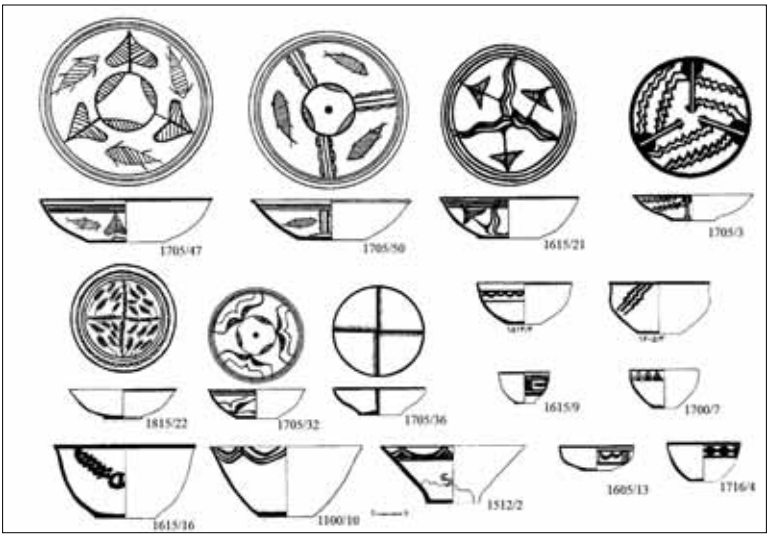

Fig. 3: Shahr-i Sokhta. Reflection of nature scene and geometric designs.

Fig. 4: Shahr-i Sokhta. Painted pear shape beakers with potter marks.

outside. The external motifs are mostly below the rim on the upper part of the vessel, consisting of geometric lines and crossed triangles, while the internal motifs cover the entire surface. The internal decoration consists of natural motifs. In the centre of plates or bowls there are two crossed S-shapes and sometimes two crossed arrowheads. These motifs are replicated on both sides, inside and out. The motifs on the outside of smaller bowls also consist of various lines and delicate crossed triangles on the rim, sometimes repeated inside the vessel.

Polychrome (yellow, red, orange, black) and bichrome ceramics, dated to the years from 3000 to 2300 BC, were also produced; samples are found in graves and residential areas. Bichrome beakers had flat bottoms and were decorated with orange, black and brown geometric patterns. Polychrome vessels included wide pots, in some instances cylindrical, and beakers with flat bottoms. The pigments were made with ferrous minerals, malachite, lapis-lazuli and coal among other components.

The pottery of Shahr-i Sokhta can be divided into several groups, of which the most important are:

1. Common vessels used in daily life such as beakers, plates, bowls, jars, pots and so on, consisting of both painted and unpainted types. Pear Shaped Beakers (PSBs) are the most common form in this group. They must have played an important role in burial rituals, and there are hardly any graves that do not contain at least one of these beakers.

2. The second group of pottery is new and unused vessels. It seems these vessels were made to be used primarily for inhumation purposes. These vessels include wide-mouthed pots, cylindrical jars and unpainted Buff Ware bowls. They were not only used in burial ceremonies, but also in daily life. A considerable number of vessels of this type were recovered from the catacombs, and they often carry potter's marks, either engraved or painted (Fig. 5a-b).

3. The third group of vessels consists of pottery specially made for burials. This type is less common in residential areas than graves. Almost all of them are deep Grey Ware bowls decorated inside and outside. Unlike most pottery from Shahr-i Sokhta, the decorations on these bowls in some way reflect life, or

Fig. 5a-b: Shahr-i Sokhta. New and unused bowls: a. Catacomb No. 1705; b. Catacomb No. 1400.

are borrowed from nature. Almost all of the bowls are marked with a crossed S-shape, similar to a swastika, that can be interpreted as a carousel or the carousel of life, along with fields, domesticated animals, lakes, fish, leaves and rivers. Considering the beliefs of Shahr-i Sokhta's inhabitants regarding life after death, one can deduce that these designs are interpretations of the role of the wheel or cycle of life (Figs. 6a-b, 7).

2. Potter's marks in Eastern Iranian Sites

The presence of potter's marks on the surface of pottery vessels has given rise to various hypotheses. It seems that the signs and patterns have meanings and interpretations, but they have not been deciphered. However, their presence on the pottery fragments, and in some instances on other items such as anthropomorphic and zoomorphic figurines, has attracted the curiosity of scholars. These signs are conventionally called potter's marks. A number of signs were discovered by the Italian archaeological Mission during the first stage of archaeological excavations at Shahr-i Sokhta (Tosi 1983). Some years later, during the second phase of investigations at Shahr-i Sokhta, more samples were found by the Iranian team, first during the excavations of the necropolis and residential areas and later during the archaeological surface surveys (Sajjadi 2003).

The presence of these signs is not limited to Shahr-i Sokhta, but is seen throughout the archaeological sites of the Eastern Iranian Plateau. A considerable number of signs have been found in Shahdad (Hakemi 1997; Kaboli 1990), Tepe Yahya (Lamberg-Karlovsky 1970; Beale 1986; Potts 1981) and to a lesser extent Bampur (de Cardi 1970). They have also been seen further east, in sites such as Dumb Sadat (Fairservis 1958), Amri (Casal 1964), Balakot (Fig. 8; Dales 1979), Quetta (Quivron 1980), Mundigak in Afghanistan (Casal 1961) and some Chalcolithic sites in India (Lal 1962). Potter's marks have also been reported in northern parts of the Iranian Plateau and sites in Central Asia (Masson - Sarianidi 1972) and Bactria (Sarianidi 1977), as well as Margiana, Tuqloq Depe, Gunor Depe and Dashli (Fig. 9) in Northern Afghanistan (Hiebert 1994), where they are found on or underneath small bowls and dishes. In Altyn Depe in Central Asia

Fig. 6 a-b: Shahr-i Sokhta. Gray Ware bowls with swastika and crossed S/'cycle of life'.

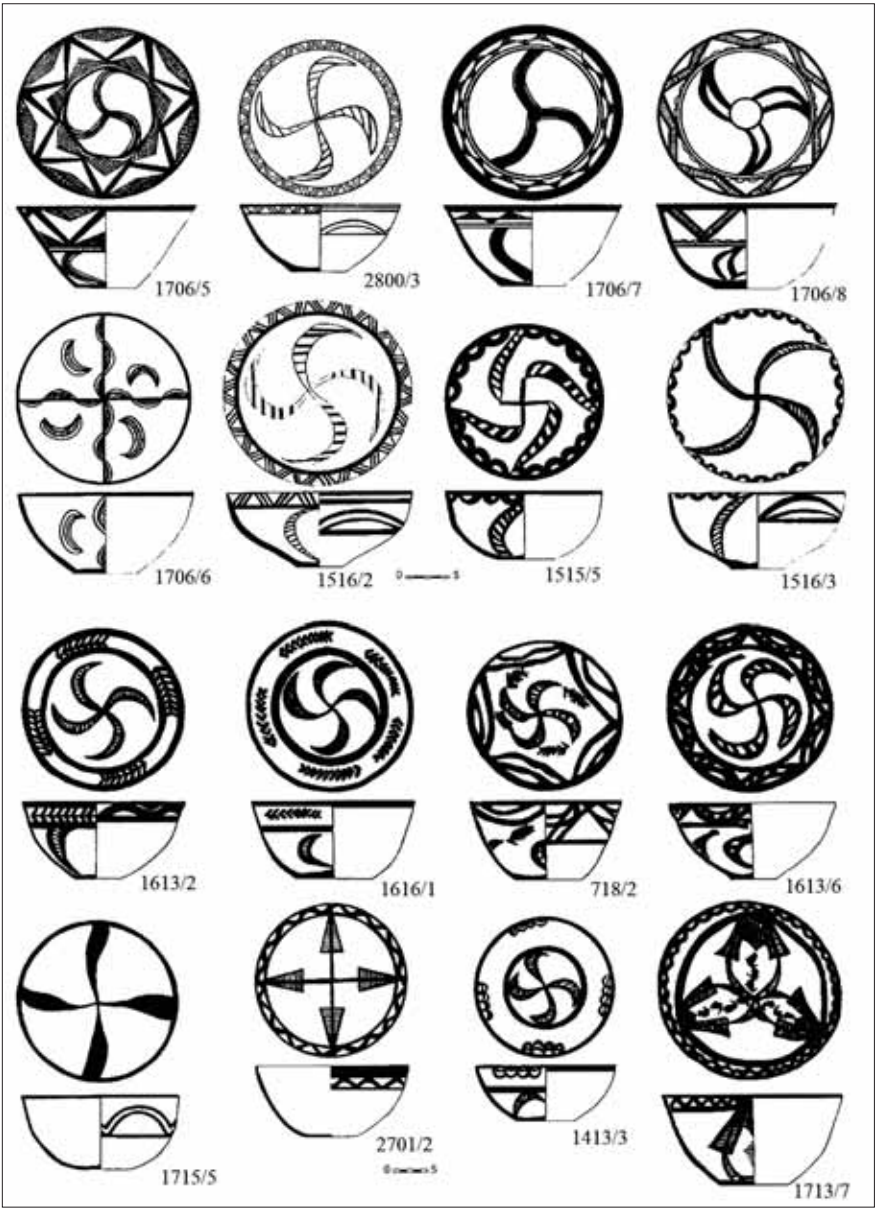

Fig. 7: Shahr-i Sokhta. Gray Ware bowls with swastika and crossed S/'cycle of life'.

there were signs on clay figurines. Masson compares them with Proto-Elamite, Sumerian and Harappan signs (Masson 1988; Fig. 10). Outside the Indo-Iranian Borderlands, the signs are reported less frequently. Those of Arslan Tepe in Malatya on the Anatolian Plateau could be mentioned (Frangipane 1996) (Fig. 11). In Iran, Shahdad, Yahya and Shahr-i Sokhta have yielded the most signs.

2.1. Shahdad

Shahdad is a large Bronze Age site located in the Kerman region. The site has yielded hundreds of burials with thousands of magnificent artefacts from the 3rd millennium BC (Hakemi 1997). During the recent excavations of the necropolis, a considerable number of architectural features from the 3rd millennium BC were unearthed (Kaboli 1989). Together with some other data, the site's wealth of cultural materials and its geographical location once prompted some scholars to identify Shahdad as the city of Aratta mentioned in a Sumerian text (Madjidzadeh 1976: 105-113; Kaboli 1986), although following the recent discovery of the Halil basin civilization, this has been rejected (Madjidzadeh, 'Aratta or Marhashi', in press.). A collection of 606 potter's marks were found on the ceramics, which is the largest corpus of potter's marks in Eastern Iran (Fig. 12). They are both engraved and stamped on Red Ware vessels from Necropolis A.

Signs are often found on the lower part of jars or on their base, their number varying from 1 to 6 (Hakemi 1997: 64). Some of the signs recorded in Shahdad recall Sumerian signs and Proto-Elamite tablets. It should be pointed out that since Shahdad Red Ware belongs to the second half of the 3rd millennium BC, the signs may be earlier than the Harappan inscriptions. The pottery collection of Shahdad includes a jar with 6 engraved signs (Fig. 13). These were studied by Hintz and are dated to the Old Elamite period. This "inscription" translates as: "60 Ka of fresh rain water". Together with the inscribed and non-inscribed tablets in Tepe Yahya as well as Shahr-i Sokhta, the discovery of this inscription is evidence of the strong presence and importance of Elamite culture in eastern Iran.

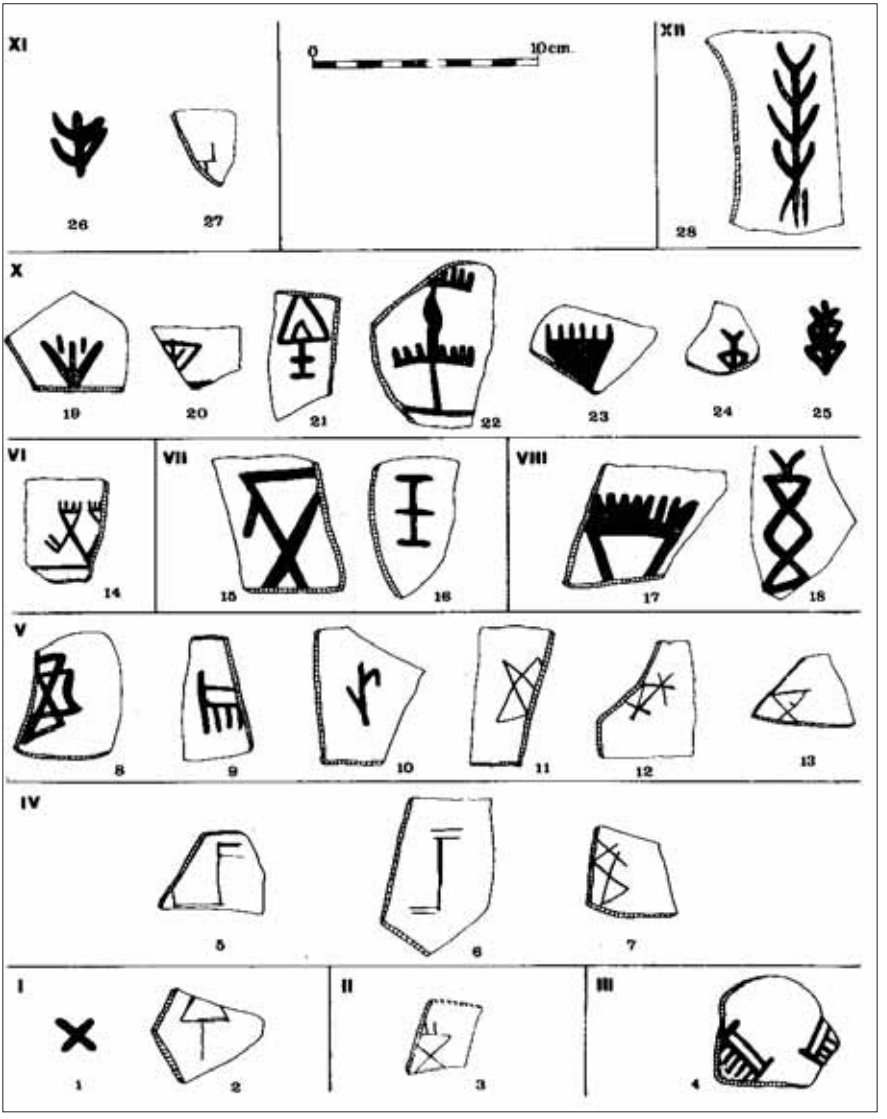

Fig. 8: Balakot. Potter's signs (Dales 1979).

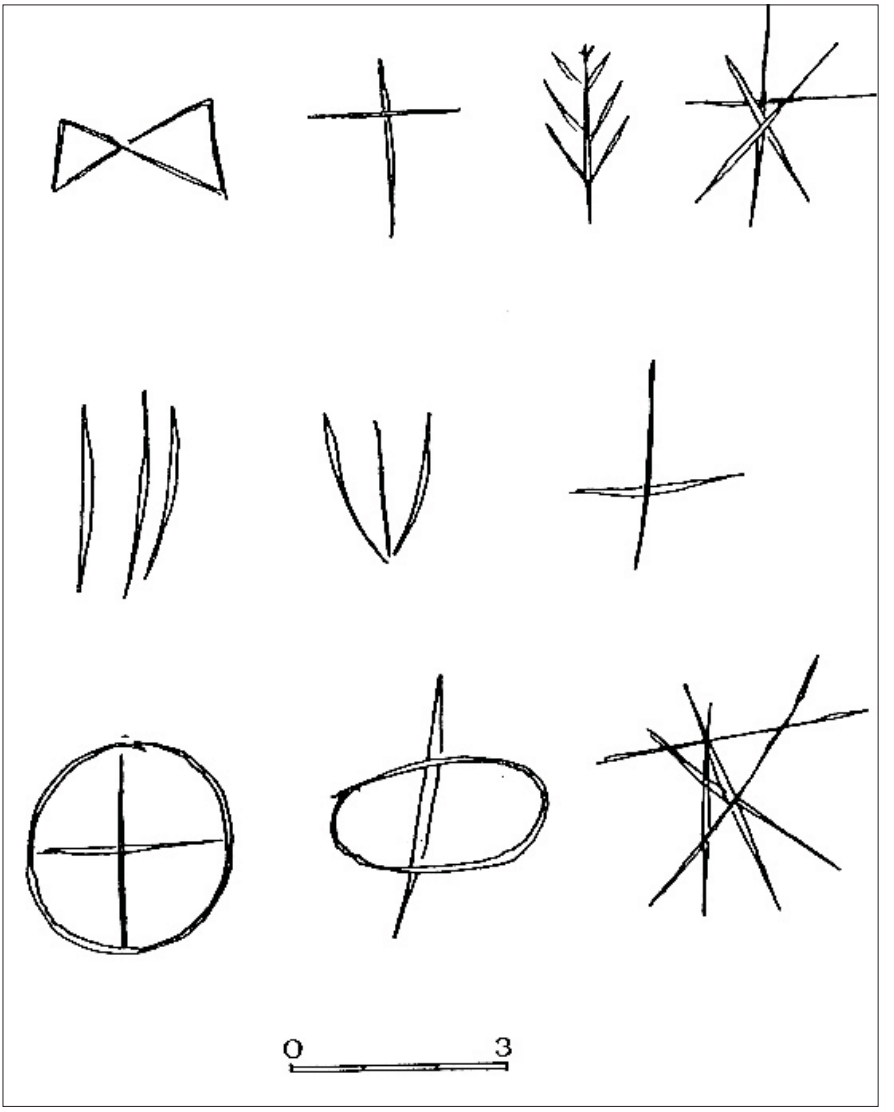

Fig. 9: Central Asia. Potter's signs (Masson 1988).

Site	Group					
	I	II	III	IV	V	VI
South of Turkmenia						
Proto Elamita " Texts"						
Sumerian "Texts"						
Harapa "Texts"						

Fig. 10: comparison table of signs (Sarianidi 1992).

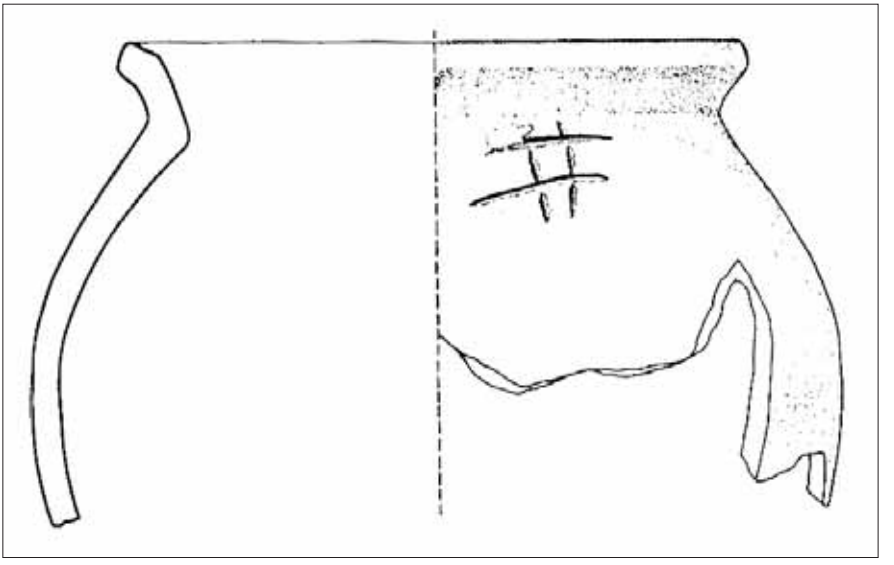

Fig. 11: Arslantepe. Potter's signs (Frangipane 1996).

The two main groups of potter's marks in Shahdad, stamped and engraved signs, number 275 and 331 respectively. The star is among the most widely used signs in both types. According to Hakemi, in Sumerian pictograms and Elamite tablets the star is the sign of the Gods, and is usually found before or next to other signs. According to Hakemi, due to the large number of signs and the presence of more than one sign on some of the vessels, they should not be seen as potter's marks, but rather as being comparable to the pictograms discovered in Tepe Sialk and Tepe Yahya. In Shahdad, the signs are mostly geometrical, but insects, reptiles, birds and creatures resembling rams, leopards and wild boar are also common. One of the most interesting signs is human body parts (Fig. 14).

In any event, the signs discovered in Shahdad are characterised by great variety. The site has continued to yield scores of signs that shed further light on their meaning. As we will see in the following pages, some of the signs found at Tepe Yahya (Potts 1981: fig. 5: 1a, 3) and Shahr-i Sokhta (Tosi 1983: 144) had numerical values from one to three. One of the signs found at Shahdad , which has also been seen in other sites, is in fact one of the most common in other locations such as Zab, Margiana, Mundigak, Bactria, Balakot and sites in the Quetta valley. Furthermore it is also seen in Proto-Elamite and Harappan sites. At Shahdad, this sign (Tab. 5: 32) was found under unique circumstances, which enabled Kaboli to propose a new interpretation of it. Kaboli reported that a group of signs were depicted on four bowls fitted inside each other. Engraved on the smallest was the sign 'I', on the second 'II', on the third 'III' and on the last and largest, ⋈ (Kaboli 1989: 74). Measurement of the vessels and their capacity showed that the bowl with the sign 'II' had twice the capacity and the bowl with 'III' had three times the capacity of the one with 'I', while the bowl with ⋈ 4 times the capacity of the one with 'I' and twice the capacity of the one with 'II'. The researchers thus concluded that these signs had to do with numerical values and were used for measurements and had nothing to do with potter's marks.

2.2. Tepe Yahya

Tepe Yahya is a site in Southern Kerman excavated by Harvard University over

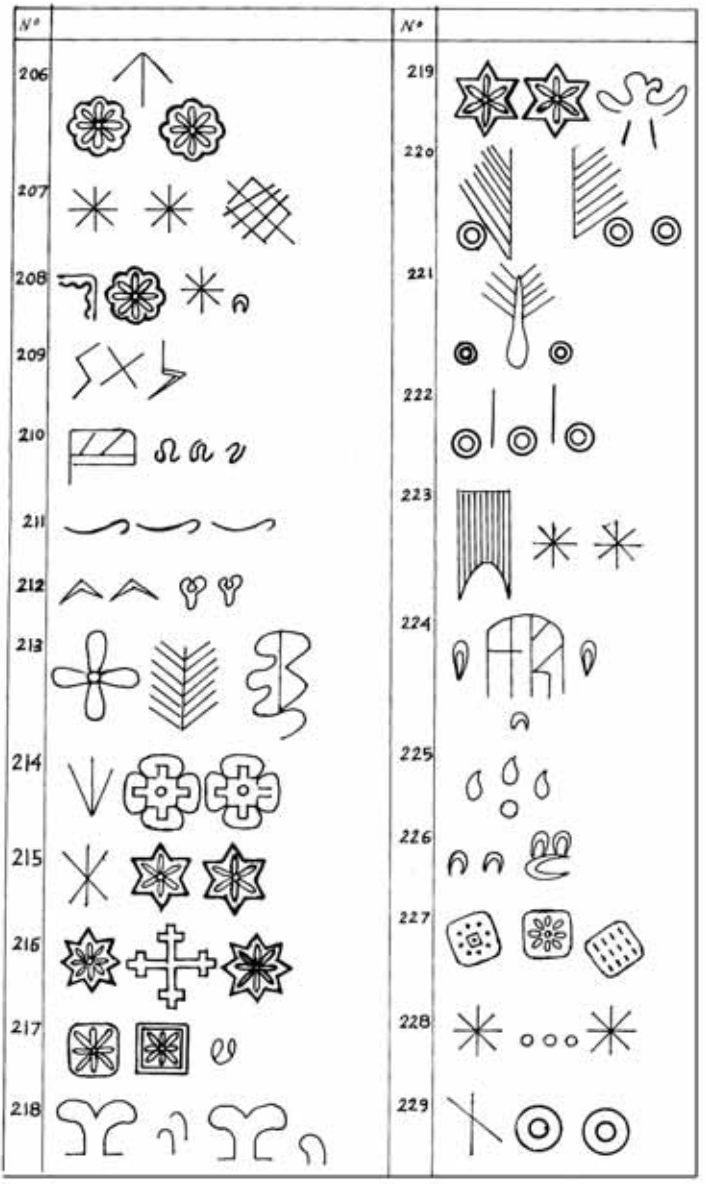

Fig. 12: Shahdad. Potter's signs (Hakemi 1997).

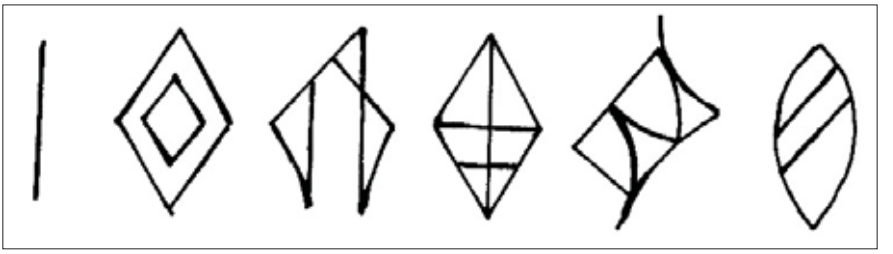

Fig. 13: Shahdad. Linear Elamite inscription (Hakemi 1997).

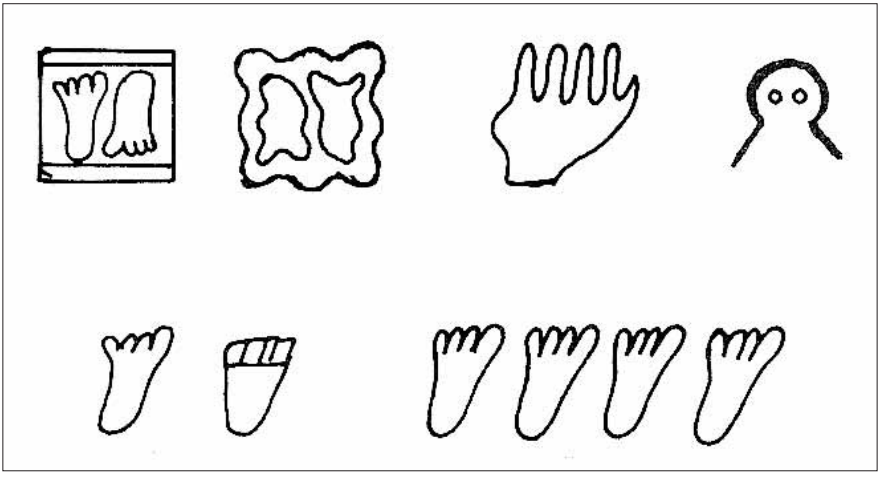

Fig. 14: Shahdad. Signs relating to human body (Hakemi 1997).

8 campaigns (Lamberg-Karlovsky 1970; 1986). The site was occupied from the fifth millennium BC until the Parthian period, with a few gaps (Beale 1986: 11). Overall, 353 signs are reported for Tepe Yahya (Potts 1981: 107). As with other sites, these statistics may not be accurate, but they do shed light on the signs from this ancient site. Unlike the signs discovered in Shahdad and Shahr-i Sokhta, which were on complete and intact vessels, the signs of Tepe Yahya were found on pottery fragments. The potter's marks of Tepe Yahya consist of 20 main groups and a number of sub-groups (Figs. 15-16). Like other signs, these were engraved on the surface of the vessels before firing.

The potter's marks of Yahya are mostly seen on handmade and Coarse Ware fragments, which is what prompted Potts to study them. The vessels are mainly cups, dishes and jars (Potts 1981: 109-111). Most of the signs are from Period IVA, although signs from IVC, IVB and Periods I-III have also been seen. According to Potts, although most of the signs belong to Period IVA, we should not overlook those of the preceding and subsequent periods, which constitute evidence of the pre-existence and continuation of this tradition in the area. Most of the signs in Yahya are engraved on the outer walls of vessels very near to the base, but signs on the bases themselves are less common (Potts 1981: 108). This contrasts with the vessels from Shahr-i Sokhta, where, for example with the pear-shaped beakers, most of the signs are either on the body surface or under the bases.

2.3. Shahr-i Sokhta

It was pointed out earlier that considerable numbers of potter's marks were observed on vessels from the necropolis of Shahr-i Sokhta, but it is noteworthy that the very same signs were also seen on pottery fragments from the Residential Area. The signs consist of three forms: scratched (Fig. 17), engraved (Fig. 18) and painted (Fig. 19).

The scratched and engraved signs were executed while the pottery was still wet and unfired with the help of sharp tools, probably made of bone. In this case, the vessels were mostly unpainted bowls, pots, jars and beakers. Painted signs were applied with the same methods used to paint decorative designs on the body of vessels. Painted signs are mostly seen on painted ware, especially on the bases of painted pear-shaped beakers (Fig. 20), but they are far less numerous than scratched and engraved vessels. (Figs. 21-22).

The difference between the scratched and engraved signs, which has not been reported in other sites, is that the former consist of thin, shallow lines, while those classified as engraved are deeper and wider. Further research on the two types has shown that scratched signs were executed with rudimentary tools such as bone awls, whereas for the engraved signs the tip of the tool must have been wider.

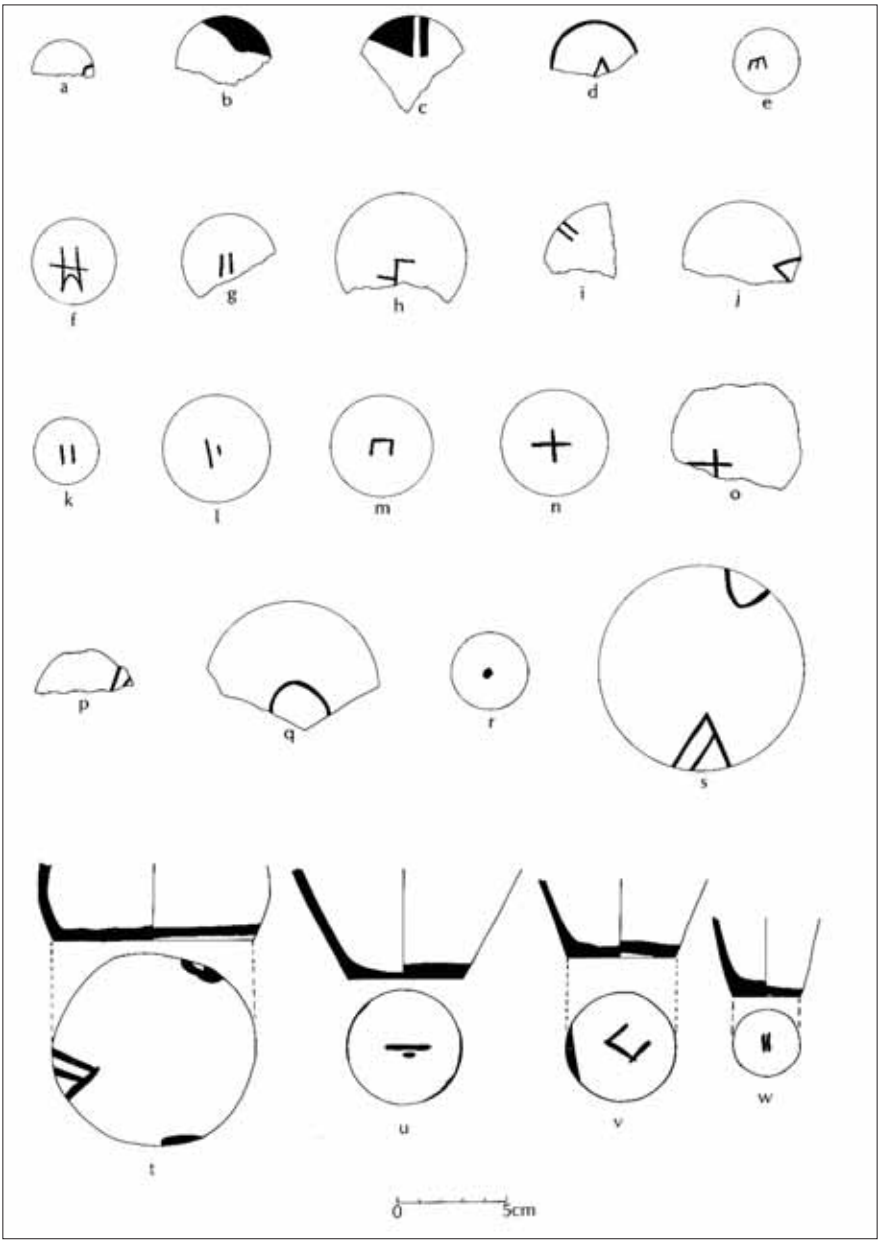

Fig. 15: Tepe Yahya. Potter's signs (Potts 1981).

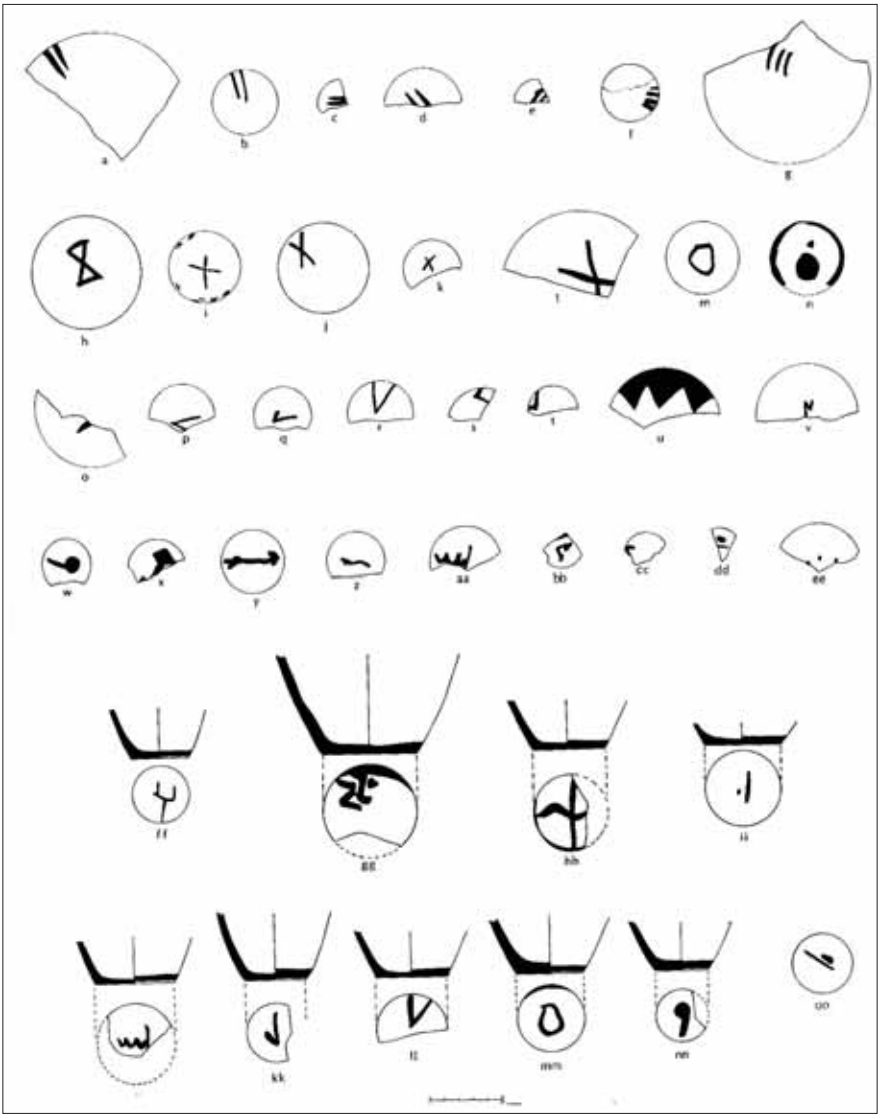

Fig. 16: Tepe Yahya. Potter's signs (Potts 1981).

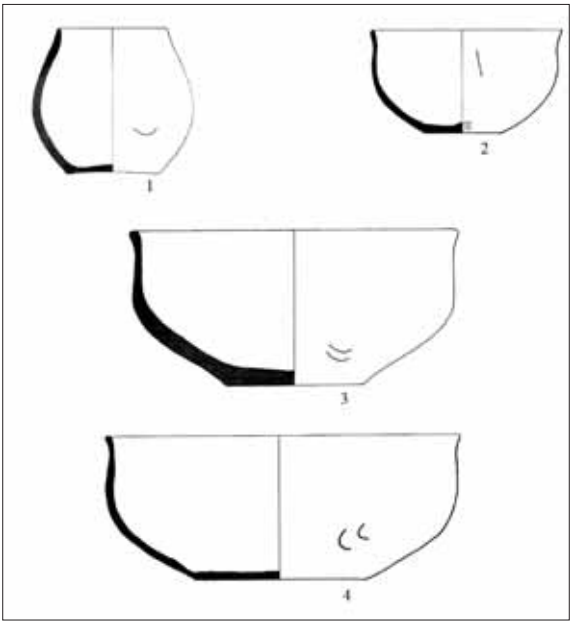

Fig. 17: Shahr-i Sokhta. Scratched..signs.

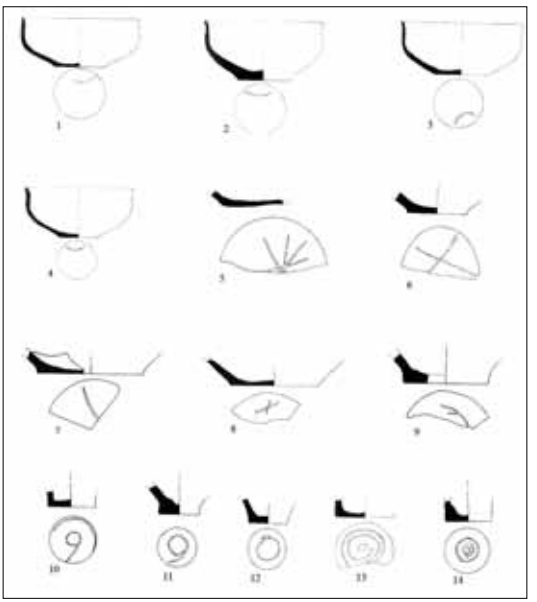

Fig. 18: Shahr-i Sokhta. Engraved signs.

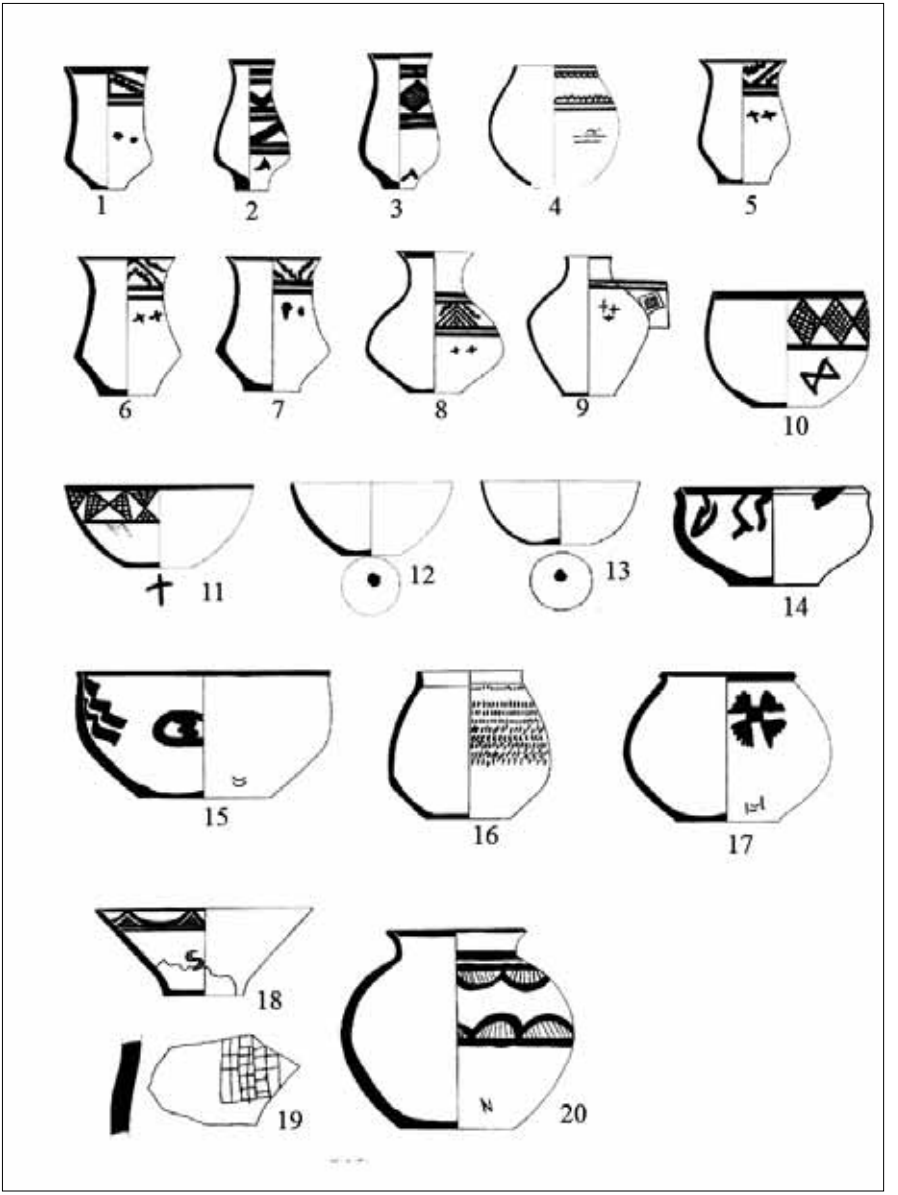

Fig. 19: Shahr-i Sokhta. Painted signs.

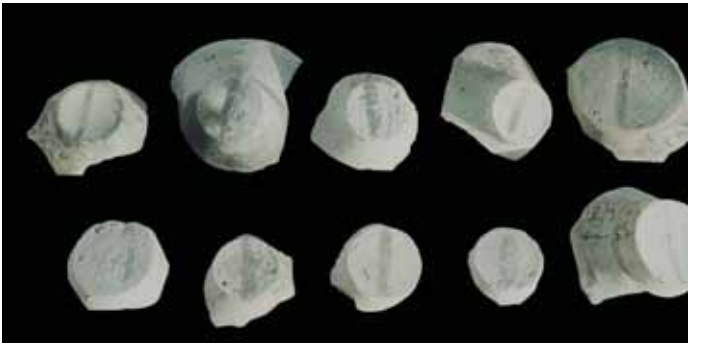

Fig. 20: Shahr-i Sokhta. Painted signs on the base of pear-shaped beakers.

Fig. 21: Shahr-i Sokhta. Engraved signs on cylindrical shape Buff Ware bowl.

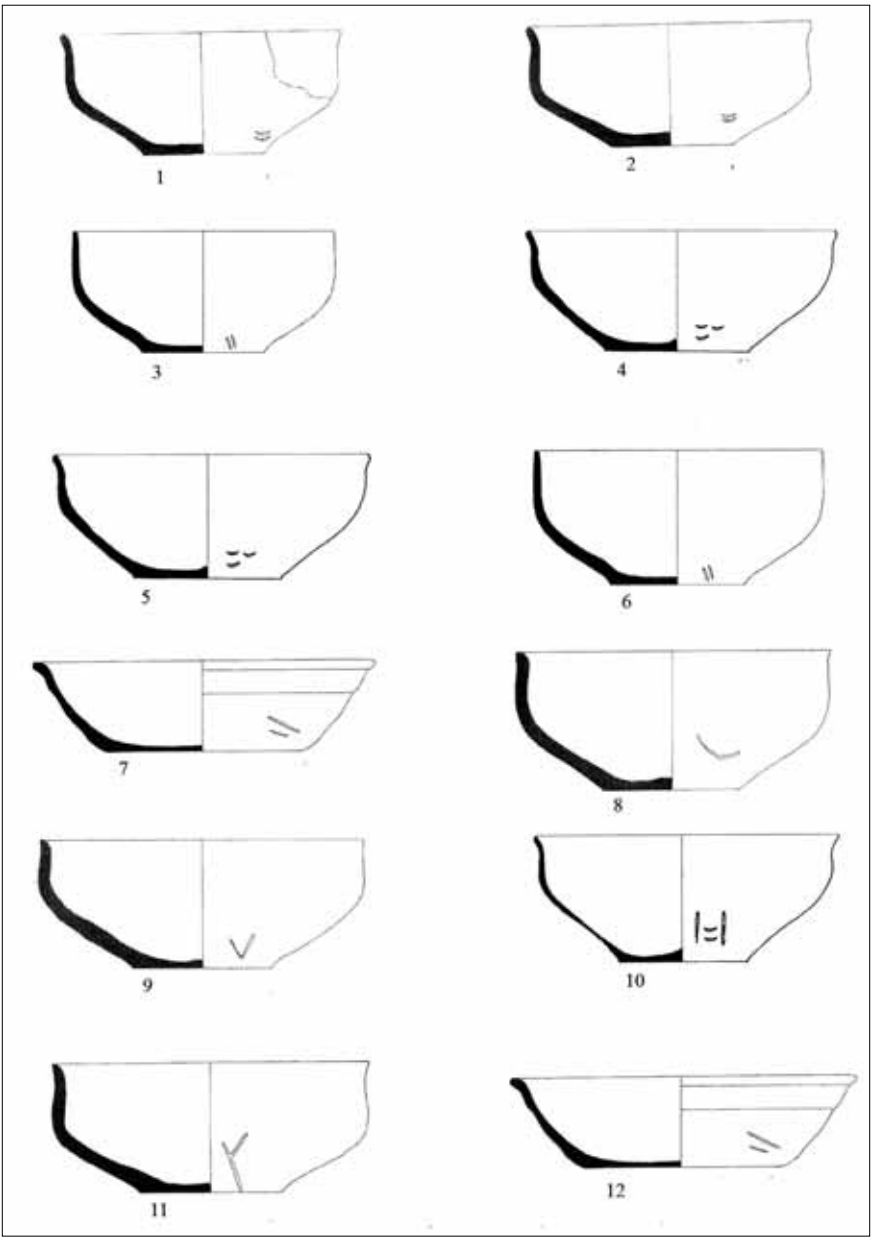

Fig. 22: Shahr-i Sokhta. Scratched signs on the bowl.

Potter's marks are seen all over the vessels. However, with bowls, the majority are near the bases, and with cylindrical jars, they are positioned in the middle or upper part of the vessel. Regarding painted vessels, for example pear-shaped beakers, the majority of the signs are on the bases, but the same signs are seen on the body of beakers and bowls and in some instances inside them. Some 444 potter's marks have been found on Shahr-i Sokhta ceramics[1] and they are divided into 3 main categories and 56 groups as follows:

Scratched. 111 marks in 14 groups

Engraved. 110 marks in 20 groups

Painted. 123 marks in 22 groups

A: Scratched: 111 marks in 14 groups (Fig. 23).

Group 1: simple straight vertical and near-vertical lines (Fig. 23: 1), straight left-leaning vertical lines (Fig. 23: 2), straight right-leaning vertical lines (Fig. 23: 3).

Group 2: parallel lines: vertical, left-leaning (Fig. 23: 4), vertical, right-leaning (Fig. 23: 5), horizontal (Fig. 23: 6), vertical (Fig. 23: 7).

Group 3: multiple parallel, vertical slanted lines (Fig. 23: 8), right-leaning (Fig. 23: 9).

Group 4: arched vertical and horizontal lines: two arched horizontal (Fig. 23: 10), one arched and one straight horizontal (Fig. 23: 11), two parallel arched horizontal (Fig. 23: 12), two parallel arched vertical (Fig. 23: 13), three horizontal parallel (Fig. 23: 14), multiple arched parallel (Fig. 23: 15).

Group 5: multiple small horizontal arched lines (Fig. 23: 16).

Group 6: compound angled lines: two lines forming an 'L' (Fig. 23: 17), two lines forming an inverted 'T' (Fig. 23: 18), and 3 lines forming a 'Π' (Fig. 23: 19).

Group 7: lines forming an 'S': horizontal (Fig. 23: 20), vertical (Fig. 23: 21).

Group 8: combination of an arched line with an attached straight slanted line (Fig. 23: 22).

1. From 1997 to 2002.

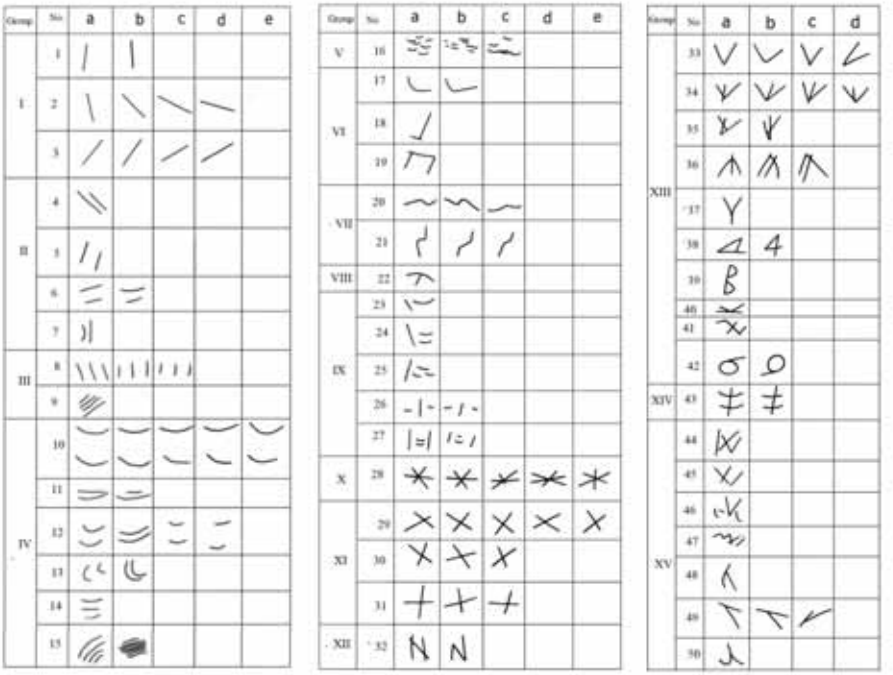

Fig. 23: Shahr-i Sokhta. Scratched signs.

Group 9: combinations of straight and arched lines: one arched on the right and one straight vertical slanted on the left (Fig. 23: 23), two arched on the right and one straight vertical slanted on the left (Fig. 23: 24), three arched on the right, and one straight vertical slanted on the left (Fig. 23: 25), one straight vertical in the middle with one arched on either side (Fig. 23: 26), two arched in the middle with one straight vertical on either side (Fig. 23: 27).

Group 10: asterisks (Fig. 23: 28).

Group 11: X crosses (Fig. 23: 29-30), + crosses (Fig. 23: 31).

Group 12: Latin letters: 'N' (Fig. 23: 32), 'V' (Fig. 23: 33), 'W' (Fig. 23: 34), (Fig. 23: 35), 'M' (Fig. 23: 36), 'Y' (Fig. 23: 37), '4' (Fig. 23: 38), 'B' (Fig. 23: 39), Horizontal 'K' (Fig. 23: 40), slanted 'Z' (Fig. 23: 41), 'J' (Fig. 23: 42).

Group 13: one vertical line crossed by two parallel lines. (Fig. 23: 43).

Group 14: other combinations (Fig. 23: 44-50)

B: Engraved: 110 marks in 20 groups (Fig. 24-26).

Group 1: straight lines, vertical (Fig. 26: 1-2), slanted lines (Fig. 26: 3-5, 7-8), horizontal (Fig. 26: 6).

Group 2: sinuous curved lines (Fig. 26: 9).

Group 3: horizontal and vertical curved lines, e.g. one vertical curved line (Fig. 26: 13).

Group 4: two parallel vertical lines (Fig. 26: 15).

Group 5: multiple festoons: three parallel vertical festoons (Fig. 26: 16), two horizontal festoons (Fig. 26: 17), three horizontal festoons (Fig. 26: 18), four horizontal parallel festoons (Fig. 26: 19), two horizontal festoons and two parallel vertical festoons (Fig. 26: 20).

Group 6: wavy lines (Fig. 26: 21-24).

Group 7: combinations of vertical and horizontal lines: crossed (Fig. 26: 25), T-shaped (similar to cuneiform characters) (Fig. 26: 26).

Group 8: combinations of angled lines: as if forming a bottom right corner (Fig. 26: 27), as if forming a bottom left corner (Fig. 26: 28).

Group 9: forks: facing up (Fig. 26: 30), facing down (Fig. 26: 34-35), facing right (Fig. 26: 35), facing left (Fig. 26: 32, 38), curved (Fig. 26: 36-37)

Group 10: Latin letters and numerals: “V” (Fig. 26: 39), “M” (Fig. 26: 40), “W” (Fig. 26: 40), “9” (Fig. 26: 42).

Group 11: half circles (Fig. 24: 43), with extension (Fig. 26: 44).

Group 12: ‘X’ sign (Fig. 26: 45-48).

Group 13: ‘+’ sign (Fig. 26: 49).

Group 14: asterisks (Fig. 26: 50).

Group 15: ‘combs’: with two teeth (Fig. 26: 52), three teeth (Fig. 26: 51), four teeth (Fig. 26: 53).

Group 16: triangles (Fig. 26: 54-55).

Group 17: combinations of vertical, slanted and curved lines: one vertical and two curved horizontal above (Fig. 26: 56), one vertical and two parallel horizontal on the side (Fig. 26: 57), two vertical with two horizontal between them (Fig. 26:

58), two vertical with three horizontal between them (Fig. 26: 59), two vertical with four horizontal between them (Fig. 26: 60).
Group 18: Arrows: One head (Fig. 26: 61), two heads (Fig. 26: 62).
Group 19: Nested circles and spirals (Fig. 26: 63).
Group 20: other combinations, (Fig. 26: 64-71).

C: Painted: 123 marks in 22 groups (Figs. 27-29).
Group 1: simple bands, slanted vertical (Fig. 29: 1), horizontal (Fig. 29: 2-4).
Group 2: two parallel vertical bands (Fig. 29: 5).
Group 3: two parallel horizontal bands (Fig. 29: 6).
Group 4: two parallel horizontal curved bands (Fig. 29: 7).
Group 5: '+' signs: one (Fig. 29: 8), two (Fig. 32: 9), three (Fig. 29: 10).
Group 6: 'X' signs (Fig. 29: 11).

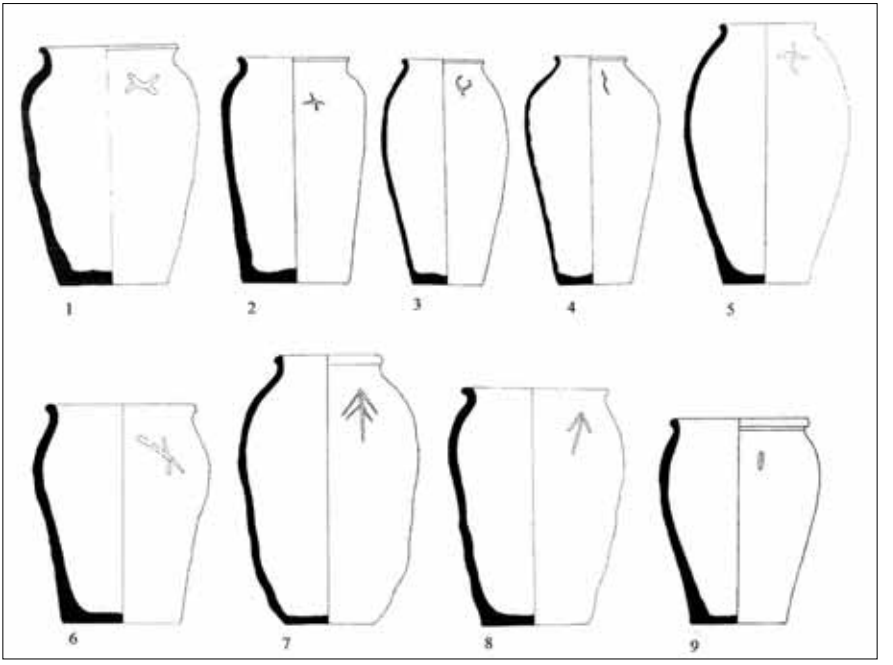

Fig. 24: Shahr-i Sokhta. Engraved signs on cylindrical shape Buff Ware bowl.

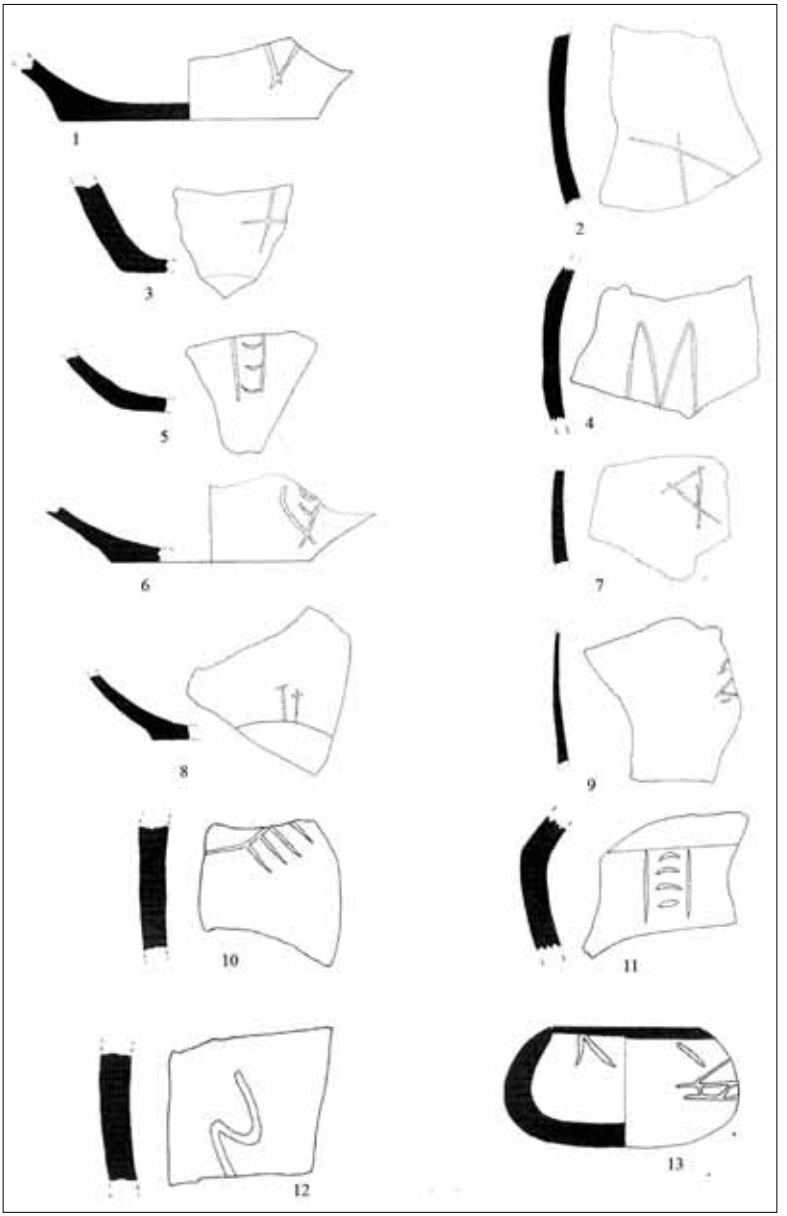

Fig. 25: Shahr-i Sokhta. Engraved signs.

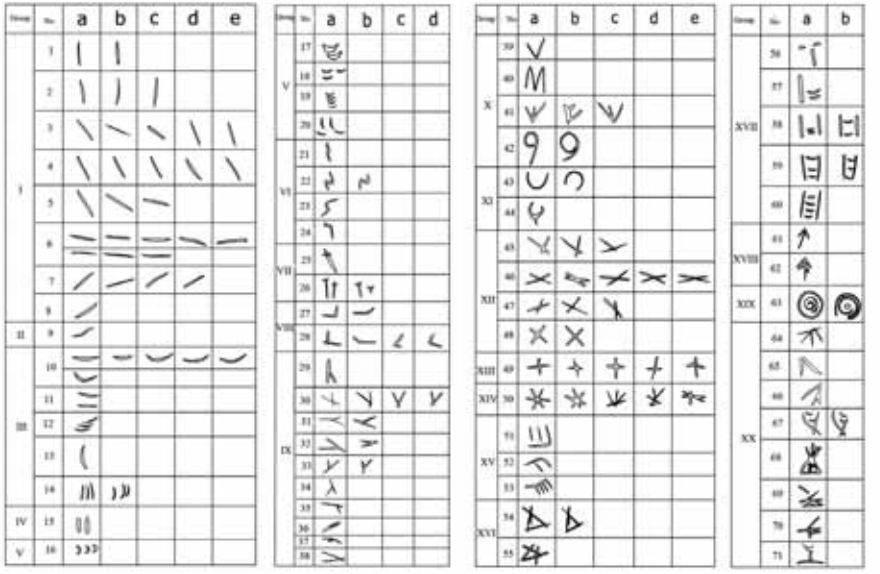

Fig. 26: Shahr-i Sokhta. Engraved signs.

Group 7: paint spots: one spot (Fig. 29: 12), two spots (Fig. 29: 13), three spots (Fig. 29: 14).

Group 8: chevrons (Fig. 29: 15-16).

Group 9: double chevrons (Fig. 29: 17-18).

Group 10: Latin letters: 'M' (Fig. 29: 19), 'S' (Fig. 29: 21).

Group 11: less-than sign (Fig. 29: 22).

Group 12: 'M' rotated 90° clockwise (Fig. 29: 23).

Group 13: half circles and curved lines: curved (Fig. 29: 24), half circle (Fig. 29: 25).

Group 14: parallel horizontal half-moons (Fig. 29: 26).

Group 15: dentate bands (Fig. 29: 27).

Group 16: combinations of serrated and simple bands: one simple horizontal band and one dentate vertical band (Fig. 29: 28-29), two simple horizontal bands and one dentate vertical band (Fig. 29: 30-31), one simple vertical band and one dentate horizontal band (Fig. 29: 32-33), two simple horizontal bands with one dentate horizontal band (Fig. 29: 34-35), two horizontal bands, one with two teeth

(Fig. 29: 36), two vertical bands, one with two teeth (Fig. 29: 37).
Group 17: combs (Fig. 29: 38-39).
Group 18: butterflies (Fig. 29: 40)
Group 19: triangles with simple and serrated bands (Fig. 29: 41-42).
Group 20: intersecting triangles (Fig. 29: 43).
Group 21: grid (Fig. 29: 44).
Group 22: other combinations (Fig. 29: 45-51).

The majority of the marked vessels from Shahr-i Sokhta were found in the catacombs. Most of them were new and unused, providing further evidence of the specialized organization of burial ceremonies, since on one hand these signs were drawn or engraved on the surface of vessels of uniform shape such as bowls, beakers and jars, and on the other hand almost all the vessels were new and not used at all, indicating that they were ordered, produced and used for special burial ceremonies.

During the excavations by the Italian mission in Shahr-i Sokhta, along with the above-mentioned signs, two other composite signs were found; one, a combination of different signs on the surface of a Buff Ware jar found in Rud-e Biyaban and the other on the shoulder of a clay bull figurine (Fig. 30).

It seems that the 'text' on the body of the jar is complete. It is important to point out that jars of this type in Sistan and Turkmenistan were found near the pottery kilns. The 'text' is composed of 6 marks consisting of pictograms and linear signs. Recognizable signs on this jar include a Maltese cross and a sign showing the shape of a jar, which has also been seen on the tablets of Susa C and Sialk IV, which are about 500 years older than the samples from Shahr-i Sokhta (Tosi 1983) (Fig. 31).

On the inner part of the rim of a small cream-coloured bowl from Grave 2400 of Period II were seven distinct signs painted in brown (Fig. 32) that resemble no other known signs from Shahr-i Sokhta (Sajjadi 2003; Fig. 31: e, 12). On another group of vessels from Grave 1700, a number of different signs were found, but on each vessel there were two similar signs (Fig. 32: b). A group of similar signs

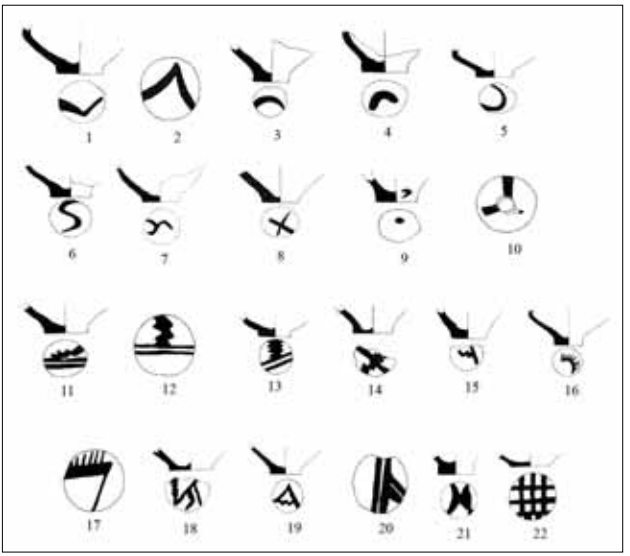

Fig. 27: Shahr-i Sokhta. Painted signs on the base of bowls and beakers.

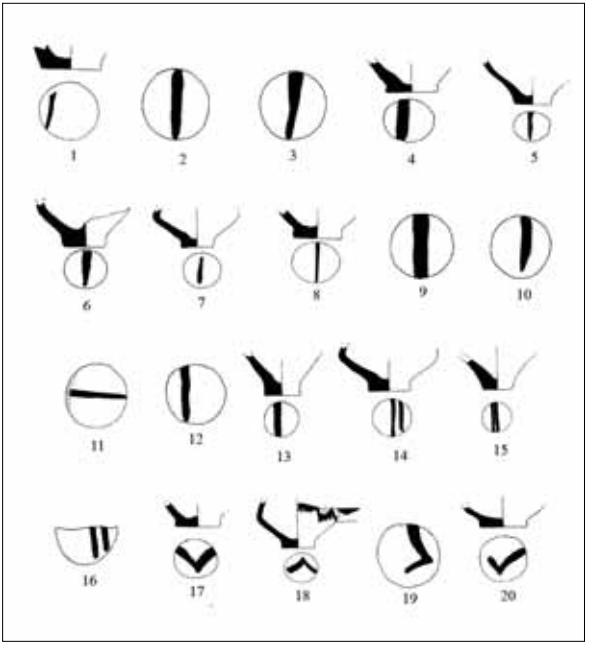

Fig. 28: Shahr-i Sokhta. Painted signs on the base of beakers.

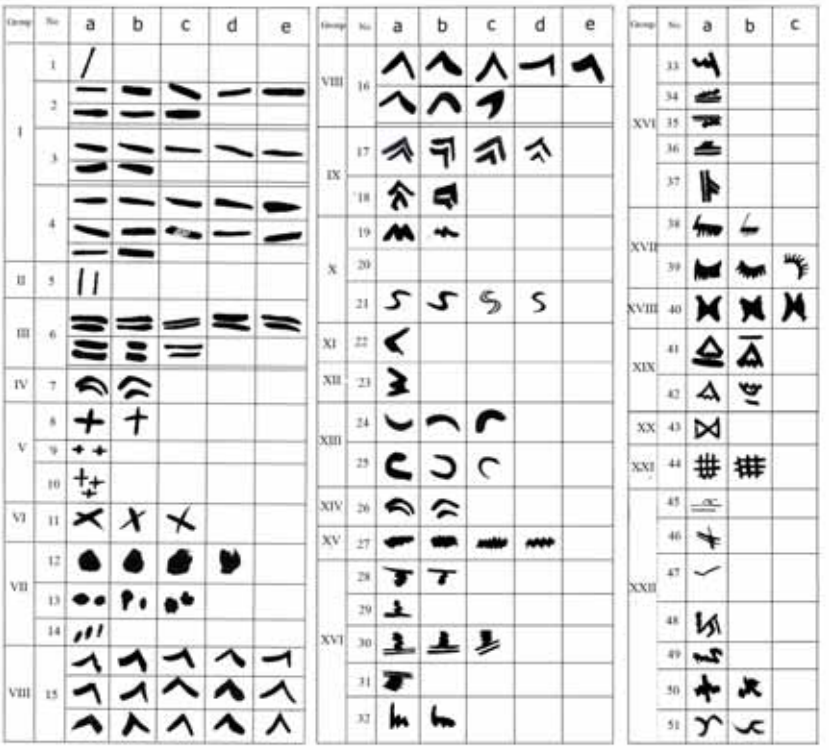

Fig. 29: Shahr-i Sokhta. Painted signs.

Fig. 30: Shahr-i Sokhta. Potter's sign on the shoulder of clay bull figurine (Tosi 1983).

were depicted on the shoulder of a buff-coloured Wet Ware jar from Grave 1705. Engraved under the rim and neck of this vessel were 16 stars that may represent 16 units (Fig. 19: 16) (Sajjadi 2003; fig. 14: 1705, 52). A similar vessel was seen in Mundigak IV3 (Casal 1961: fig. 98: 465).

Chronologically, as we get farther from Period II, during Period III and approaching Period IV, the signs become more linear and their resemblance to pictograms fades. The three types of sign, scratched, engraved and painted, share common elements, which is proof of the use of the same signs regardless of method.

Shared features are most common between scratched and engraved signs. At least 25 signs may be said to resemble each other. The most important common elements are shown in Table 1.

Of the 444 signs found at Shahr-i Sokhta, 32 closely resemble signs from either Shahdad or Tepe Yahya or both (Beale 1986: fig. 34.6, 34.7; Lamberg-Karlovsky 1970: fig. 18; Potts 1981: figs. 1-3, 5; Hakemi 1997: 665-688). Eleven signs are reported in all three sites, 9 signs are common to Shahdad and Shahr-i Sokhta and 12 signs are common to Shahr-i Sokhta and Tepe Yahya. The signs common to all three sites are (Table 2, Nos 5, 8), (Table 3, Nos 10, 11, 12, 13), (Table 4, Nos 18, 21), and (Table 5, Nos 26, 27, 32). Sign , in addition to Shahr-i Sokhta, Yahya and Shahdad, has been reported at least in 9 other eastern Iranian sites, as well as Mundigak IV3 (Casal 1961: fig. 87, no. 372; 105, no. 516), Quetta (Fairservis 1958), Zab Lorlay (Fairservis 1959; Potts 1981: 115), Bactria (Sariadini 1977: 97-110), Balakot (Dales 1979: fig. 6: 3, 7, 13) and southern India (Lal 1962).

Another sign common to Shahr-i Sokhta, Shahdad (Hakemi 1997: 665, Ma.1:59) and Tepe Yahya (Potts 1981: fig. 5:37) (Table 3, No 12), which is also seen in Zab Lorlay (Fairservis 1959), Mundigak (Casal 1961: fig. 105:520), the Quetta Valley (Fairservis 1958), Bactria (Sarianidi 1977), Site No 28 in Afghani Sistan (Fairservis 1961: fig. 19h) and southern India (Lal 1962). Also common to the three sites of Shahr-i Sokhta, Yahya (Beale 1986: fig. 4.36: n, o) and Shahdad

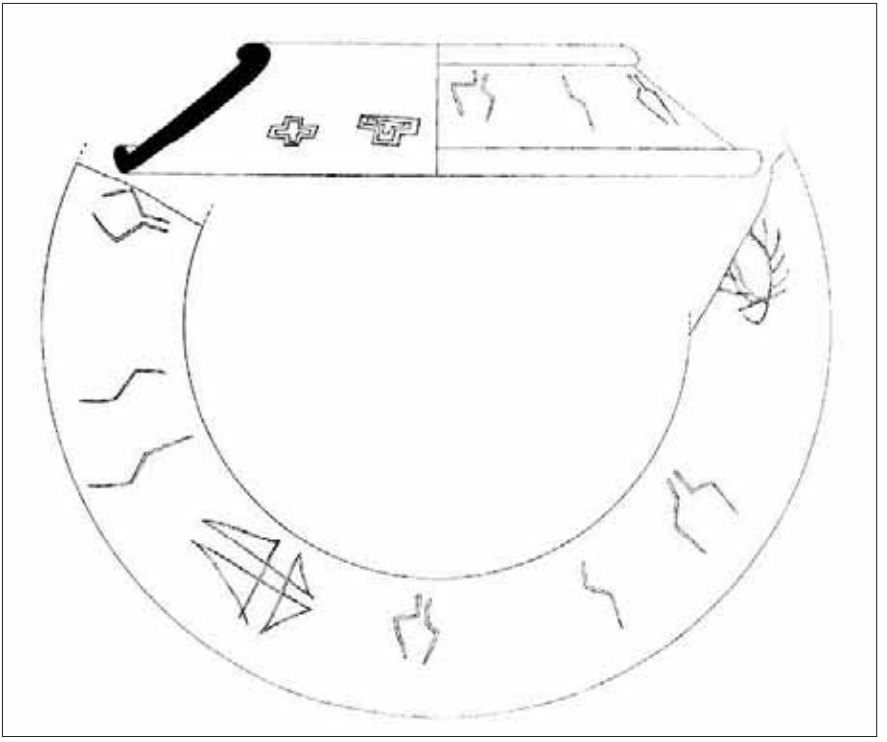

Fig. 31: Rud-i Biaban. 'Inscribed' jar Period III of Shahr-i Sokhta (Tosi 1983).

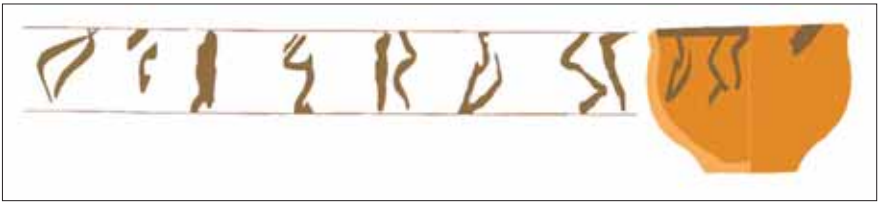

Fig. 32: Shahr-i Sokhta. 'Inscribed' bowl of grave 2400 Period III.

(Hakemi 1997: 665, Mc.1:31) (Table 3, No. 13).The 12 signs (Table 2, Nos. 1, 3, 4, 7; Table 3, No. 15; Table 4, Nos. 19, 20, 23, 24; Table 5, Nos. 29, 30, 31) are common to Shahr-i Sokhta and Tepe Yahya, but are not seen in Shahdad.

In this collection, only two signs closely resemble those seen in other sites: 'I' (Table 2), seen in Zab (Fairservis 1959), and (Table 4, No. 20), seen in Amri (Casal 1964), the Quetta Valley (Fairservis 1958) and Chalcolithic sites in Southern India (Lal 1962).

The 9 signs common to Shahr-i Sokhta and Shahdad but not seen in Yahya are: (Table 2, Nos. 2, 6; Table 3, Nos. 9, 14, 16; Table 4, Nos. 17, 22; Table 5, Nos. 25, 28) (Hakemi 1997: 666, Ma.1:109) is also seen in Amri (Casal 1964) and Mundigak (Casal 1961: fig. 93: 425).

One of the most striking signs is (Table 3, No. 11), which in addition to Shahr-i Sokhta, Shahdad and Yahya has been seen in Margiana (Masson 1988) and Mundigak (Casal 1961: fig. 86: 337). The sign has been interpreted as a symbol of the Gods, which we will discuss later.

A total of 12 potter's marks from Shahr-i Sokhta have parallels in Proto-Elamite and Harappan tablets and this resemblance has given rise to various hypotheses. Among them, (Table 2, Nos 3, 5), (Table 4, Nos. 20, 21) and (Table 5, No. 32), are common to all three cultures. Four are common to Proto-Elamite culture and Shahr-i Sokhta: (Table 2, No. 1: Table 3, Nos 10, 11: Table 4, No. 19). Three are common to Shahr-i Sokhta and Harappa: (Table 3, No. 13; Table 4, Nos. 23, 24) (Potts 1981: fig. 4).

2.4. The Proto-Elamite tablet of Shahr-i Sokhta

Despite the fact that Shahr-i Sokhta is the largest known city of the Proto-Historical period on the Eastern Iranian Plateau, no significant written text has yet been discovered there. The discovery of the only known Proto-Elamite tablet from Shahr-i Sokhta could be interpreted as a mere coincidence or in relation to contacts with Susa or Yahya. In fact it seems odd that during the 3rd millennium BC, which saw the rapid spread of tablets in various languages, the population of

Shahr-i Sokhta lacked a system for recording or writing. This inadequacy would have damaged the social and economic organization of the settlement and would have caused major harm and disruption to their social structures. It may therefore be assumed that this city either possessed an archive of registered documents which has not yet been found, or they used some other method unknown to us for registering and documenting their commerce and affairs.

It is true that many of the features of urban society seen in the west of Iran and Mesopotamia are not present in the eastern Iranian settlements, but it cannot be denied that in the absence of 'texts', the populations of societies such as Shahr-i Sokhta must have adopted some other system to record their commercial transactions and manage a populated and active society.

It seems that the potter's marks of Shahr-i Sokhta and other sites in Eastern Iran, such as Shahdad and Tepe Yahya, were directly connected with some of the Proto-Elamite signs. Although it is possible that some of the resemblances are coincidental, they cannot be dismissed, since they could well be due to cultural influences. Indeed, the similarities between the potter's marks from various Eastern Iranian sites and Proto-Elamite or Harappan signs are extensive.

About one hundred years ago J. De Morgan discovered two clay tablets at Susa with no resemblance to the writing systems of Mesopotamia, which came to be called Proto-Elamite. These clay tablets are of the late 4th millennium or early 3rd millennium BC, and later some of them were studied by V. Scheil (Scheil 1900; 1905; 1923; 1935).

Surveys and excavations in other Proto-Elamite sites established the use of this writing and numbering system not only in Susa and its satellite settlements, but also outside the Khuzestan plain and across a vast area.

Similar clay tablets were also found at Sialk in Kashan, Melyan in Fars (Stolper 1984), Tepe Yahya in Kerman (Lamberg-Karlovsky 1970), Godin Tepe in Kermanshah (Weiss - Young, 1975), Shahr-i Sokhta and a number of other sites dated to the 3rd millennium BC. The size of the territory under the influence of Proto-Elamite culture and the widespread use of these signs over such a huge area has prompted scholars to study the reason and explanation for the use of these

signs, in the region generally and in small sites such as Tepe Godin and Yahya in particular. Their research has sought to clarify the widespread use and influence of Proto-Elamite culture. The most widely accepted theory is that the presence of clay tablets and related artefacts outside Susa is the result of the gradual spread of culture and technological progress, as the inhabitants of other cities and villages borrowed and learnt the rudiments of 'writing' and 'recording' data, together with other advanced traditions, from Susa.

Another viewpoint is that the presence of tablets outside the Susa plain is evidence of a colonial system managed from the main settlement or capital city, which enforced its will and political views on the surrounding settlements either directly or indirectly via the activities of traders and merchants. Both theories were studied and evaluated by Young and Wise, both of whom are more inclined to accept the second viewpoint. This theory is supported by archaeological evidence showing population growth, migration and the creation of new settlements or colonies (Damerow - Englund 1989: 3-4).

This viewpoint also has its weaknesses however, based on the very same archaeological evidence. The lifespan of colonies in various places such as Godin (Weiss - Young 1975) and Tepe Yahya was short, more or less one century, which is not consistent with the idea of migration driven by population growth.

Information obtained from tablets does not help to solve this problem, since these data are either insufficient or in fact non-existent. Most of the signs and texts have yet to be clearly deciphered and understood; only a few preliminary steps have been taken, such as grouping physical characteristics and graphical designs with a view to the classification of the ideographical signs on the tablets and eventually classification of the meaning of the "words" and accounting practices (Sajjadi 2002).

It has been said that in addition to Khuzestan, Sialk, Godin and some other Proto-Elamite sites, texts were also found in Tepe Yahya IVC. This period of Yahya was rather short, about 100 years, 2850-2750 BC (Beale - Lamberg-Karlovsky 1986: 11). In any event, during this period, by means of the tablets and related technology such as seals for their products and storage, the population of Yahya

(and possibly of most of the sites on the eastern Iranian Plateau) standardized their systems of weights and measurements and became familiar with modern management methods which had probably been unknown to them before.

As mentioned earlier, this period in Tepe Yahya was short and after one century the settlement disappeared. The reasons for the abandonment of Proto-Elamite colonies on the Iranian Plateau are still a mystery. Whether the population of this culture returned to its original lands or became assimilated with the local inhabitants cannot be determined.

As pointed out above, there was a gap after the abandonment of Tepe Yahya during the Proto-Elamite period. In addition, after this short period in Tepe Yahya, there is no continuation or usage of tablets and bevelled-rim bowls (BRB) in Shahr-i Sokhta, Hesar, Tepe Maliyan, and Tepe Sialk (Sajjadi 2002: 135).

The signs on Proto-Elamite tablets mostly concern human beings, beasts, crops and numbers. Other than these signs, cylinder seal impressions have also been seen. Studying the form of the signs, texts and digits, it becomes clear that most of them are about the distribution of rations, statistics regarding workers and products. However, there are no signs relating to natural resources, mining, places, metals or stone vessels. This could indicate that Proto-Elamite society was not dealing with small-scale production; in other words, they did not engage with local and limited capitalism, but had much larger and broader intentions. On the other hand, the probable presence of slavery and payment of rations in place of wages means the absence of a free labour market.

Currently in Shahr-i Sokhta only one Proto-Elamite tablet has been found (Fig. 33). Apart from this tablet and some cylinder seals and impressions[2], none of the other discovered materials have anything to do with Proto-Elamite civilization and culture. The presence of this tablet in the oldest phase of the site could indicate that the foundation of Shahr-i Sokhta was the result of the encounter of Central Asian culture with western Proto-Elamite culture among the local inhabitants of Sistan. This event took place during the last two centuries of the 4th millennium BC, at a time when trade between Mesopotamia and the lands to the east was well under way (Amiet - Tosi 1978: 22).

2. Period I, Phase 10.

Amiet concluded that the oldest seals found in this city belong to Phases 9 and 10, in other words 3200 to 3100 BC, and are similar to Jemdet Nasr seals (Amiet 1983: 199-210). They include one seal which belongs precisely to Elam.

The tablet of Shahr-i Sokhta resembles the ones from Susa 16-13. Its shape is similar to that of traditional Proto-Elamite tablets. It has two carved signs on the right hand side and five signs consisting of 5 digits on the left side. The first sign on this tablet from the right is similar to sign n° 322h which has been found on 3 tablets from Susa (Meriggi 1971-1974). In Susa, this sign, together with digit I as a separate character, is depicted three times. From an ideographic standpoint, the sign represents a tree or a branch. The second sign has suffered major damage and is undecipherable. After these two signs, 5 more signs depict 5 digits written in the standard Susian form. In any case it is not clear whether the two first signs depict merchandise or persons or some organization and trading post or all of them. In the lower part of this tablet, like the other tablets of this period, the impression of a cylinder seal can be seen. Further examination of the tablet has shown that it was sealed before writing (Sajjadi 2002: 139).

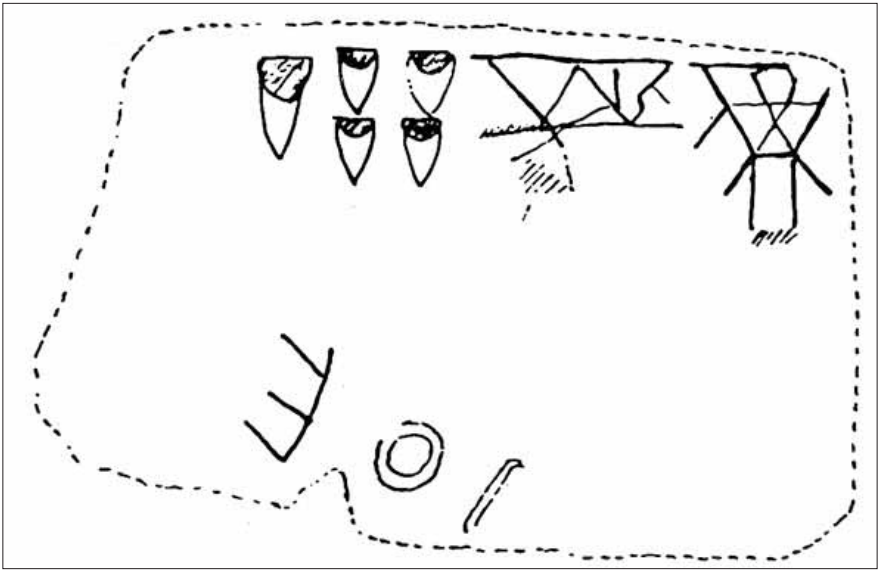

Fig. 33: Shahr-i Sokhta: Proto-Elamite tablet.

3. Conclusions

Regarding potter's marks, repeating what was said before, these signs have been seen in various sites in Eastern Iran, but despite their frequency their interpretation is rather difficult if not impossible. On the other hand, it does not seem that potter's marks were used throughout the area. For example, in Bampur only 9 signs were found (de Cardi 1970). In addition, only some of the signs from the various sites are common or resemble each other, although this is possibly due to the limited number of excavated sites, preventing further study and analysis. We might not expect close resemblances and similarities, but statistically, they are considerable, at least among the signs from Shahr-i Sokhta, Shahdad and Tepe Yahya. In any event, we cannot ignore that the signs (or at least the signs for which published descriptions are available, for example from sites such as Amri, Balakot, Mundigak, and Turkmenistan) are rather limited. On one hand, the lack of information makes comparison difficult, and on the other hand their interpretation and the determination of their practical application become more ambiguous. According to scholars, the most important functions of these signs are potter's marks, kiln marks, family symbols, conventional signs for measures and numbers, short messages, trademarks and abbreviations.

It seems that potter's marks represent the most common application of these signs, although in archaeological literature this expression is an arbitrary term. Attribution of this function may not always be valid. One of the reasons is the differences between the numbers of signs in the various sites. While in some sites such as Shahr-i Sokhta, Shahdad, and Balakot numerous signs are present, in other sites such as Bampur their number is limited, and in sites in Turkmenistan the reported numbers of signs are even lower. Though it is true that the numerous pottery fragments from Shahr-i Sokhta are indicative of large-scale pottery production, potter's marks are not present on all vessels, and if these signs were meant to be representative of the 'potter's signature', then it should have been present on all or at least a large percentage of the vessels. On the other hand the variety of vessel shapes should also be considered, since in all sites, signs are present on certain groups of vessels. For example in Shahr-i Sokhta, these signs

are seen only on three type of vessel: beakers, bowls and jars. These are almost all Buff Ware vessels, their presence on Grey and Red Ware vessels being very rare, while at the same time in Shahdad, they are present on Red Ware jars but not other types of vessels.

Worth mentioning in this regard is the presence of more than one sign on some of the specimens, since if these signs were meant to be the potters' signature, on each sample we would not expect to find more than one, whereas in some case more than 6 different signs are seen. In some cases there are combinations of engraved, scratched and stamped signs, but if the theory of the 'potter's signature' were true, there would not be more than one signature, since it is assumed that the potter would only have one. In addition, the similarities and commonalities among the reported signs from various sites should not be overlooked or treated as merely coincidental and accidental, as if a potter from Shahr-i Sokhta chose the exact same signature as a potter from Shahdad or Tepe Yahya purely by chance.

Another point is that the signs are not only seen on pottery vessels. A clear example of these signs on artefacts other than vessels is the anthropomorphic figurines discovered in Altyn Tepe, (Masson 1988: 84-85), as well as some zoomorphic figurines from Shahr-i Sokhta (Tosi 1983: fig. 48). Based on the above reasons therefore, these signs cannot be attributed to potters' signatures.

The signs on the figurines in Altyn Tepe are mostly seen on the shoulders or foreheads, and sometimes on the backs. The signs on the Altyn and Ilgingly depe figurines (Fig. 34) were classified into 6 groups by Masson, and based on his analysis there is a strong possibility that these signs were directly influenced by Western texts, especially Proto-Elamite and magical / ritual symbols which formed in Turkmenistan.

Another potential function of the signs could be as trademarks associated with certain pottery kilns. However, this theory can also be rejected on the basis of the same considerations made for the potter's signatures.

Another theory based on excavations in the necropolis was suggested by Potts (Potts 1981: note 3), although the emergence of new evidence subsequently led to it being rejected. This theory was that the signs in question were ordered by the

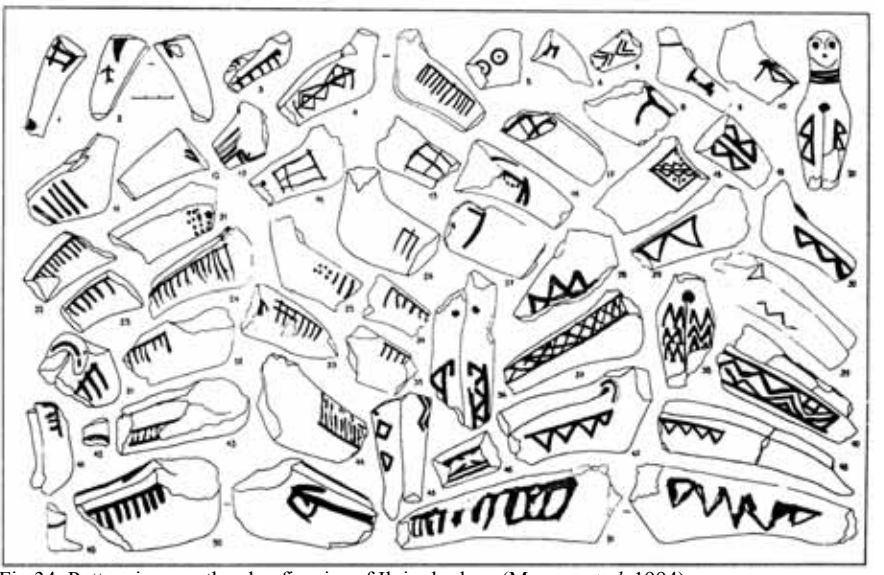

Fig.34: Potter signs on the clay figuries of Ilgingly depe (Masson *et al.* 1994).

potters' customers, in order to prevent objects from being mixed up. In this regard we need to emphasise that new and unused vessels with potter's marks were found in some of the graves of Shahr-i Sokhta III and IV, especially catacombs. All the evidence shows that these vessels were ordered for the burial ceremony by either the deceased person during their life or by their survivors, and that they were used for the storage of food and offerings placed in the graves after the person's death. The frequency of these new and unused vessels and their presence in relatively wealthy graves gave rise to the notion that the signs in question were chosen and ordered by the customers of the vessels, or even that they were symbols of the deceased person's family or tribe. However, this notion also quickly lost credence following the discovery of further evidence, since the frequency and variation of the signs on the vessels from the burials are inconsistent, and one person could not have chosen more than one sign or special identifying symbol, whether as a family symbol or an identifying sign when ordering the vessel from the potter. This hypothesis had earlier been suggested concerning the signs of Tepe Yahya, but as already mentioned, it also has its weaknesses and is not defensible either.

In a detailed and interesting argument regarding the potter's marks of Tepe Yahya, Potts mentions some of these points. It seems that at the time of publication of his article, Potts did not have sufficient data from certain sites, potentially affecting his reasoning and his conclusions. Whereas in Tepe Yahya, potter's marks are seen only on handmade vessels, in Shahr-i Sokhta and some other sites on the Eastern Iranian Plateau, signs are also seen on wheel-made pottery. Indeed, apart from some of the vessels of Shahr-i Sokhta III and IV, which were made by hand or hand-powered wheel, with rough bodies, all the signs are seen on wheel-made vessels and are therefore different from the samples of Tepe Yahya.

Potts argues that it is possible that handmade vessels were made by individual families in their own homes, but were treated and fired in public kilns. Therefore, in order to prevent the mix-up of vessels and clarify who owned what, they marked them accordingly. After a series of calculations Potts concludes that only 49 of the signs had a public and widespread function and adds that this figure could not represent all the families living in Tepe Yahya IVA, III, and II. He adds that there is no evidence with which to estimate the population of Tepe Yahya during the 3rd millennium, but if we assume that each sign belongs to a specific family, and the maximum number of signs used at the same time is 49, then we achieve a significant and logical figure. In this case we can assume that this number of families concurrently resided in the site, but this is a rather low estimate for Tepe Yahya, and the low number of signs could be a reflection of low domestic pottery production.

It is clear that Potts' reasoning is baseless, in terms of the assignment of signs to certain groups and families, the calculation of the population of Tepe Yahya and the low pottery production rate among families.

In contrast, the population of Shahr-i Sokhta during periods II and III, based on the number and concentration of residential dwellings, as well as available useful spaces, even in the most pessimistic estimates could not have been less than 7000 to 8000 and if we use this logic, assigning the signs to the families of the city, the numerical discrepancy means that we quickly run into some major difficulties. Firstly, based on this theory, in all graves containing pottery, at least

one signed vessel should be found, and secondly, all the signs in one grave should be the same or similar to each other. However, some graves yielded numerous signs that differ from one another. This is more evident in Shahdad, where there is more than one sign on each of the vessels, and each sign is different from the next.

Another theory proposed by Potts regarding the signs belonging to low-income families who were forced to produce their own handmade vessels at home is refuted by the riches of the graves from Shahr-i Sokhta and Shahdad, unless we assume that signs belonged only to a certain class of the community, such as artisans. Another reason why this cannot be true is that the signs on the vessels were varied and different from one another even in same grave. In some graves, such as No 1615, there was a variety of vessels with different signs (Sajjadi 2003: fig. 13, Grave 1615, 25; 14). Potts further suggests that it is possible that the signed vessels could be the work of non-professional potters, but even he agrees that it is not possible to confirm this idea (Potts 1981: note 3). In fact, the application and reasons behind the use of these signs would make this extremely unlikely, if not entirely impossible.

Some other scholars, without insisting on specific meanings and interpretations, consider some signs to be combs, butterflies or stylized and elaborate four-legged animals, while attributing some other signs to simple numerical values, which could be considered linear metric signs (Vats 1940: pls. XCV 401-406, XCVI-XCVII, XCVIII 581-598, 600-613).

In fact, some of the signs on ceramic vessels from Shahr-i-Sokhta are seen on small rectangular Harappan stamp seals too (Tosi 1983: 144). They could be directly compared with cultural materials from Period III of Shahr-i Sokhta, but it should be pointed out that proper interpretation of the meanings and functions remains ambiguous. In some cases, various meanings and functions were attributed to a group of signs, but it does not seem possible to separate the meanings of signs one from the other in a group found in a single grave, or at least it seems to be a daunting task, which requires solid proof in order for its findings to be validated.

Regarding the differentiated interpretation of multiple signs in a single collection, in groups found in both Tepe Yahya (Potts 1981: fig. 5) and Shahr-i Sokhta (Tosi 1983: figs. 4-5), some marks are considered to be digits with numerical values, while in the very same groups other signs are interpreted as combs or butterflies. The problem with this interpretation is that it is not fully convincing: how is it possible to separate some of the signs from a group and assign different meanings and interpretations to them with respect to the remaining signs in that group? If we assign numerical values to some signs and these interpretations are correct, it requires that we assign these same interpretations to all of the signs in the same group. The same holds true if we assign pictographic meanings to some of the signs: to preserve uniformity, we must assign the same meaning to the rest of the signs in the same group.

Although attributing meaningful and acceptable interpretations to these signs is an impossible task at the current time, it should be remembered that these signs were not meaningless or just random or arbitrary decorative designs: without a doubt, every one of them had a special meaning, and even though we do not have a clear idea of what this was, we can still be sure that for their authors they represented some special belief and concept. One of the most prominent theories is that by painting and engraving these signs, the inhabitants of Shahr-i Sokhta, as well as other protohistoric sites on the eastern Iranian Plateau, were seeking to transfer beliefs, ideas or messages to future generations.

This point, that the signs represented a kind of brief message, in which they acted as some of today's common signs do, i.e. as the abbreviations of certain phrases, ideas, thoughts or beliefs,[3] could very well be one of their functions.

Some of the signs, for example vertical straight lines, have been interpreted as digits and numbers, while others such as stars, are considered signs of Gods, and others simply represented an object. All of these meanings are assumptions however and will remain so until further information can be obtained. Another

3. In today's world and everyday life we encounter hundreds of signs without any explanation and comment, yet merely by looking at these signs we can figure out their intended meaning, for example, instead of "no smoking", z, and instead of "Auto repair shop". By the same token this sign i shows where we can obtain information, è informs us that we can find a place to park our cars and so on.

point is that whatever the functions of these signs were, whether potter's marks, workshop trademarks, signs of private ownership, counting and accounting signs, family or tribal symbols, special signs for blessing the vessel and its contents, the owner's name[4] or other meanings that we are totally unaware of, in any event, the people who marked the vessels and objects were trying to convey some kind of message to future generations. This may represent the starting point of an attempt to record and analyse the data from eastern parts of Iran, which was far from the centre of the writing innovations associated with Proto-Elamite sites.

An interesting point is that some of the signs bear a resemblance to Proto-Elamite writing signs, which could be considered a mere accident, but also raises the question of why there are so many accidental resemblances. On the other hand, considering the large distances between the sites of the 3rd millennium BC on the Iranian Plateau, can these signs be considered the result of special and directed thought processes which appeared in the region at that time?

The question of geographical distance and transfer of thought processes from one location to another, in addition to the spread of trade, commerce and exchanges among these areas, is plausible, but the close resemblances among the signs in these areas reflects the presence of some kind of unique thought or ideology, which was introduced and disseminated among the populations of a vast region.

The connections between these signs and Proto-Elamite and Harappan pictographic signs have attracted the attention of scholars. A range of hypotheses have been expressed, but the only thing they all agree on is that it is possible to decipher Harappan texts by revealing the meanings of these signs.

Regarding the possible connection between Harappan and Proto-Elamite texts, Brice (1967) sought to establish the connection between the writing structures of Proto-Elamite and Harappan signs, which he called Proto-Indian. A decade later, Fairservis (1976: 28-32) continued the same efforts to connect Proto-Elamite signs with Indian signs, suggesting that not only the 'texts', but also modern Dravidian languages could be related to what he called 'Proto-Dravidian'.

4. Writing short phrases, blessings or the name of the owner on ceramic and metal vessels and other objects was common practice in the Islamic period.

Based on previous discussions, it is probably possible to dig deeper and find the roots of the writings and Harappan texts and signs among the potter's marks of the eastern Iranian Plateau. This is supported by a number of scholars (Lal 1962: 4; Casal 1966: 19; Fairservis 1976: 279; Dales 1979: 256; Potts 1981: 114-115). For example, B.B. Lal has shown in various instances that during the Mature Harappan period (Lal 1962: 4-24; 1975: 173), when these texts were used, eastern Iranian potters' marks would also appear among Harappan and pre-Harappan texts and signs. One of the difficulties regarding these determinations is chronological: dating the Proto-Elamite and Harappan texts that have the potter's marks. However, spatial questions are also an issue.

The great distances between Proto-Elamite and Harappan sites and the eastern Iranian sites with potter's marks could be explained with reference to commerce and exchange in the 3rd millennium BC. However, the accepted date for the Proto-Elamite period is generally 3400-2800 BC, while that of Mature Harappa is 1800 to 2500 BC, a major discrepancy. This time difference reduces the chance of any direct connection between these two civilizations to zero, although there are undeniable resemblances among the signs from Shahr-i Sokhta, Tepe Yahya, Shahdad and Proto-Elamite and Harappan sites (Tables 2-5). The question remains however as to whether we can deduce or assume any meaning from these similarities. After all, these resemblances are unlikely to be meaningless.

According to Lal, in any case the potter's marks were not without influence on the progress of Harappan writings. Pre-Harappan and Harappan signs are seen in areas where 'writing' was prevalent. In support of Lal's opinion it is worth adding that among the signs we encountered were some that were used in 'texts' as well, and it seems that some of the signs and symbols of the pre-Harappan period found their way into later, more developed Harappan texts. Lal has shown that these signs were used after the Harappan period as well (Lal 1962; 4-24; 1975: 173). Therefore, in this case there should be no ambiguity concerning chronological distance between the similar signs of Elam, Harappa and Eastern Iran, despite Potts's assertion (Potts 1981: 115-116) that there are no plausible historical or chronological conditions to explain or connect them. However, without doubt,

Proto-Elamite signs had an impact on Harappan 'texts', and to confirm this we shall once more refer to Lal's reasoning, which highlights the fact that some of the Harappan and Proto-Elamite signs are identical to each other, just as some of the potter's marks of the Indian-Iranian borderlands are identical to some Harappan signs, while others share common features with Proto-Elamite signs. One explanation for the similarities between Proto-Elamite and Harappan signs is that potter's marks from before, during and after the Harappan period influenced some of the signs on Harappan seals.

Given what has been said in the preceding pages, it seems that the signs and symbols found on pottery vessels and objects of the 3rd millennium BC in Eastern Iran, the Indus Valley and Central Asia are subject to a range of different interpretations regarding their function, each of which has its strengths and weaknesses. However, two points are irrefutable: First, these signs contain silent messages from their creators, who tried to communicate their thoughts and beliefs to future generations; second, these signs were very probably precursors and initial steps towards 'writing', which first emerged in Harappan sites. This writing made use of proto-Elamite signs, which had reached these sites in circumstances yet to be determined, acting as a bridge between Proto-Elamite signs and Harappan writing

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Bibliography

Amiet, P., 1983. The Archaic Glyptic at Shahr-I Sokhta (Period I). In M. Tosi (ed.), *Prehistoric Sistan 1*. IsMEO, Rome, 199-210.

Amiet, P., and M. Tosi, 1978. Phase 10 at Shahr-i Sokhta Excavations in Square XDV and the Late 4th Millennium BC Assemble of Sistan. *East and West* 28, 9-31.

Beale, T.W., 1986. The Ceramics. In C.C. Lamberg- Karlovsky and T.W. Beale (eds.), *Excavations at Tepe Yahya, Iran 1967- 1975*, American School of Prehistoric Research Bulletin 38.

Brice, W.C., 1967. The Structure of Linear A, with some Proto-Elamite and proto-Indic Comparisons. In W.C. Brice (ed.), *Europa: Festschrift Ernst Grumach*, Berlin, 32-44.

Casal, J.M., 1961. *Fouilles of Mundigak*. 2 Vols. Paris.

Casal, J.M., 1964. *Fouilles d'Amri*. Paris.

Dales, G.F., 1979. The Balakot Project: Summary of Four Years of Excavations in Pakistan. In M. Taddei (ed.), *South Asian Archaeology 1977*, Naples.

Damerow, P., and R.K. Englund, 1989. *The Proto-Elamite Texts from Tepe Yahya*. American School of Prehistoric Research, Bulletin 39. Cambridge, Mass.: Peabody Museum, Harvard University.

de Cardi , B., 1970. *Excavations at Bampur, A third Millennium Settlement in Persian Baluchistan 1966*, Anthropological Paper of the American Museum of Natural History 51/3. New York.

Fairservis, W.A., 1958. *Excavations in the Quetta valley, West Pakistan*, Anthropological Paper of the American Museum of Natural History 45/2. New York

Fairservis, W.A., 1961. *Archaeological Studies in The Seistan Basin of Southwestern Afghanistan and Eastern Iran*. New York, American Museum of Natural History.

Fairservis, W.A., 1976. *Excavations at Allahdino I: Seals and Inscribed Material*. Papers of the Allahdino Expedition, New York.

Fairservis, W.A., 1977. *Excavations at Allahdino III: The Graffiti A Model in the Decipherment of the Harappan Script*. Papers of the Allahdino Expedition. New York.

Frangipane, M., 1996. *La nascita dello Stato nel Vicino Oriente*, Editori Laterza Roma.

Hakemi, A., 1997. *Shahdad. Archaeological Excavations of a Bronze Age Center in Iran*. IsMEO-Rome.

Hiebert, F.T., 1994. *Origins of the Bronze Age Oasis Civilization in Central Asia*. Peabody Museum of Archaeology and Ethnology. Harvard University. Cambridge, MA.

Kaboli, M.A, 1986. Šahdād. Markaz-e eyālat-e Ārātā. Majjalleh-ye Bāstānšenāsi va Tārix. 1, 50-62.

Kaboli, M.A., 1990. Šahdād: Šahrhā-ye Iran. Be kušeš-e M.Y. Kiāni. Jeld 3, Tehran.

Lal, B.B., 1962. From the megalithic to the Harappan: tracing back the graffiti on the pottery. *Ancient India* 16, 4-24.
Lal, B.B., 1975. The Indus Script: Some Observations based on Archaeology. *Journal of the Royal Asiatic Society*, 173-177.
Lamberg-Karlovsky, C.C., 1970. *Excavations at Tepe Yahya, Iran 1967-1969. Progress Report I* (American School of Prehistoric Research Bulletin, 27). Cambridge.
Majidzadeh, Y., 1976. The Land of Aratta. *Journal of Near Eastern Studies* 35, 105-113.
Masson, V.M., and V.I. Sarianidi, 1972. *Central Asia: Turkmenia Before the Achaemenids*. Thames & Hudson, London.
Masson, V.M., 1988. *Altyndepe*. The University Museum, University of Pennsylvania. Philadelphia.
Masson, V.M., Berezkin, Y., and N.F. Soloyevo, 1994. Excavations of House and Sanctuaries at Iglinly-depe, Chalcolithic site, Turkmenistan. In: *New Archaeological Discoveries in Asiatic Russia and Central* Asia, Sankt-Petersburg, 18-26.
Meriggi, P., 1971-1974. *La scrittura proto-elamite I-III*, Roma.
Potts, D.T., 1981. The Potter's Marks of Tepe Yahya. *Paléorient* Vol. 7/1: 107-122.
Quivron, G., 1980. Les marques incises sir les poteries de Mehrgarah au Baluchistan, du milieu du IVe Millénaire a la primiére moité su IIIe millénaire. *Paléorient* 6: …
Sajjadi, S.M.S., 1990. Tarix-e Qoum-e Kūč dar dowrān-e Eslāmi: Faṣlnāme-ye A'šāyeri, Zaxāer-e Enqelab. 'Elmi, Farhangi. No. 7, 105-116; Nos. 8-9, 95-108, Tehran.
Sajjadi, S.M.S., 2002. Gelnevešteh-ye Āqāz-e Ilāmi Šahr-e Suxteh: Majjalleh-ye 'Olūm-e ensāni Danešgāh-e Sistan va Baluchistan. Sal-e haftom, No.15, 131-148.
Sajjadi, S.M.S., 2003. Excavations at Shahr-i Sokhta. *Iran* 41, 21-97.
Sarianidi, V.I., 1977. Bactria: Center of Ancient Art. *Mesopotamia* 12, 97-110.
Scheil, V., 1900. *Texts elamites-semitiques* (= MDP2), Paris.
Scheil, V., 1905. *Documentes en escriture proto-elamite* (=MDP6), Paris.
Scheil, V., 1923. *Texts de compabilite proto-elamite* (= MDP17), Paris.
Scheil, V., 1935. *Texts de compabilite proto-elamite* (= MDP26), Paris.
Stolper, M.W., 1984. *Texts from Tall-i Malyan*. Occasional Publications of the Babylonian Found 6, Philadelphia.
Tosi, M., 1983. Development, Continuity and Cultural Changes in the Stratigraphical Sequence of Shahr-i Sokhta. In M. Tosi (ed.), *Prehistoric Sistan 1*, IsMEO, Roma, 127-171.
Vats, M.S., 1940. *Excavations at Harappa*, Calcutta, 324-326, 581-598, 600-613.
Weiss, H, and T.C. Young, 1975. The Merchants of Susa: Godin V and Plateau – Lowlands Relations in the Late Fourth Millenium B.C., *Iran* 13, 1-18.