



HAL
open science

Bronze Age glyptics of Eastern Jazmurian, Iran

M Heydari, François Desset, M Vidale

► **To cite this version:**

M Heydari, François Desset, M Vidale. Bronze Age glyptics of Eastern Jazmurian, Iran. *Paléorient*, 2018, 10.3406/paleo.2018.5790 . hal-03471183

HAL Id: hal-03471183

<https://hal.science/hal-03471183>

Submitted on 8 Dec 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

BRONZE AGE GLYPTICS OF EASTERN JAZMURIAN, IRAN

M. HEYDARI, F. DESSET and M. VIDALE

Abstract: *Here we present 29 silver and copper stamp seals and seal fragments and 19 ceramic stamp sealings from three sites of Central-Eastern Jazmurian (Chegerdak, Spidej and Keshik) in Iranian Baluchistan. These seals and sealings were recovered by the Iranian Cultural Heritage Organisation (ICCHTO), Zahedan, from disturbed contexts and illegal excavations, but have been typologically dated between the first half of the 3rd and the beginning of the 2nd millennium BC. This paper presents descriptions and comparisons of the stamp seals and sealings, and also includes a preliminary qualitative elemental analysis of micro-fragments of the metallic seal fragments. These seals and sealings improve our knowledge of the Bronze Age glyptics of South-Eastern Iran and have wider implications for our understanding of local identity and connectivity in this period.*

Résumé: *Nous publions ici 29 cachets, complets ou fragmentaires, en alliage cuivreux et argentifère, et 19 scellements de cachets, provenant de trois sites du Jazmurian central et oriental (Chegerdak, Spidej et Keshik), dans le Balochistan iranien. Bien qu'ils soient tous issus de contextes perturbés par des fouilles irrégulières, ces sceaux et scellements que l'on peut dater entre la première moitié du 3^e millénaire et le début du 2^e millénaire av. J.-C., élargissent néanmoins notre connaissance de la glyptique de l'âge du Bronze dans le Sud-Est de l'Iran. En complément de la description et de l'étude comparative de ces cachets et scellements, sont également présentés les résultats préliminaires d'analyses chimiques réalisées sur les sceaux métalliques.*

Keywords: *Glyptics; Iconography; Seals; Jazmurian; Bampur Valley; Bronze Age.*

Mots-clés : *Glyptique; Iconographie; Sceaux; Jazmurian; Vallée de Bampur; Âge du Bronze.*

INTRODUCTION

Illegal excavations and looting of archaeological sites in parts of the Indo-Iranian borderlands and regions of South-Eastern Iran and Central Asia have been rampant over several decades. Archaeologists have attempted to minimise the damage caused by the plundering of sites by studying and publishing artefacts abandoned by looters on-site, or those recovered by security forces. Examples include Y. Madjidzadeh's publication (2003) and additional reports on the finds from the plundered protohistoric graveyards of the Halil Rud Valley (near Jiroft, Kerman, Iran), A. Didier's (2013) survey of Pakistani Kech-Makran Valleys and recovery of pottery from destroyed graveyards, rescue activities at the Mahtoutabad cemetery site near Konar Sandal South near Jiroft (Vidale and Desset 2013; Desset *et al.* 2013 and 2017) and the publication of Nal and Kulli ceramics looted from Early Bronze Age grave-

yards of Southern-Central Baluchistan, Pakistan (Franke and Cortesi 2015; Lombardo and Vidale 2014). Recently, moreover, Heydari *et al.* (2015) have reported pottery from the looted cemeteries of the site of Chegerdak, in Eastern Jazmurian (South-Eastern Iran). In all of these examples, it was impossible to gain radiocarbon dates or any reliable stratigraphic information from the 'excavations'. It was thus necessary to establish cultural sequences through cross-regional comparisons. Currently, these studies are helping reconstruct the cultural history, technological trends, and interactions of protohistoric cultures and polities in these regions where archaeological evidence is disappearing even before being discovered and reported.

The artefacts discussed in this paper were recovered by archaeologists of the Iranian Cultural Heritage, Handicrafts and Tourism Organisation (ICHHTO), Zahedan, Iran, who made efforts to recover archaeological artefacts along the Jazmurian Piedmont and other regions of the Sistan-

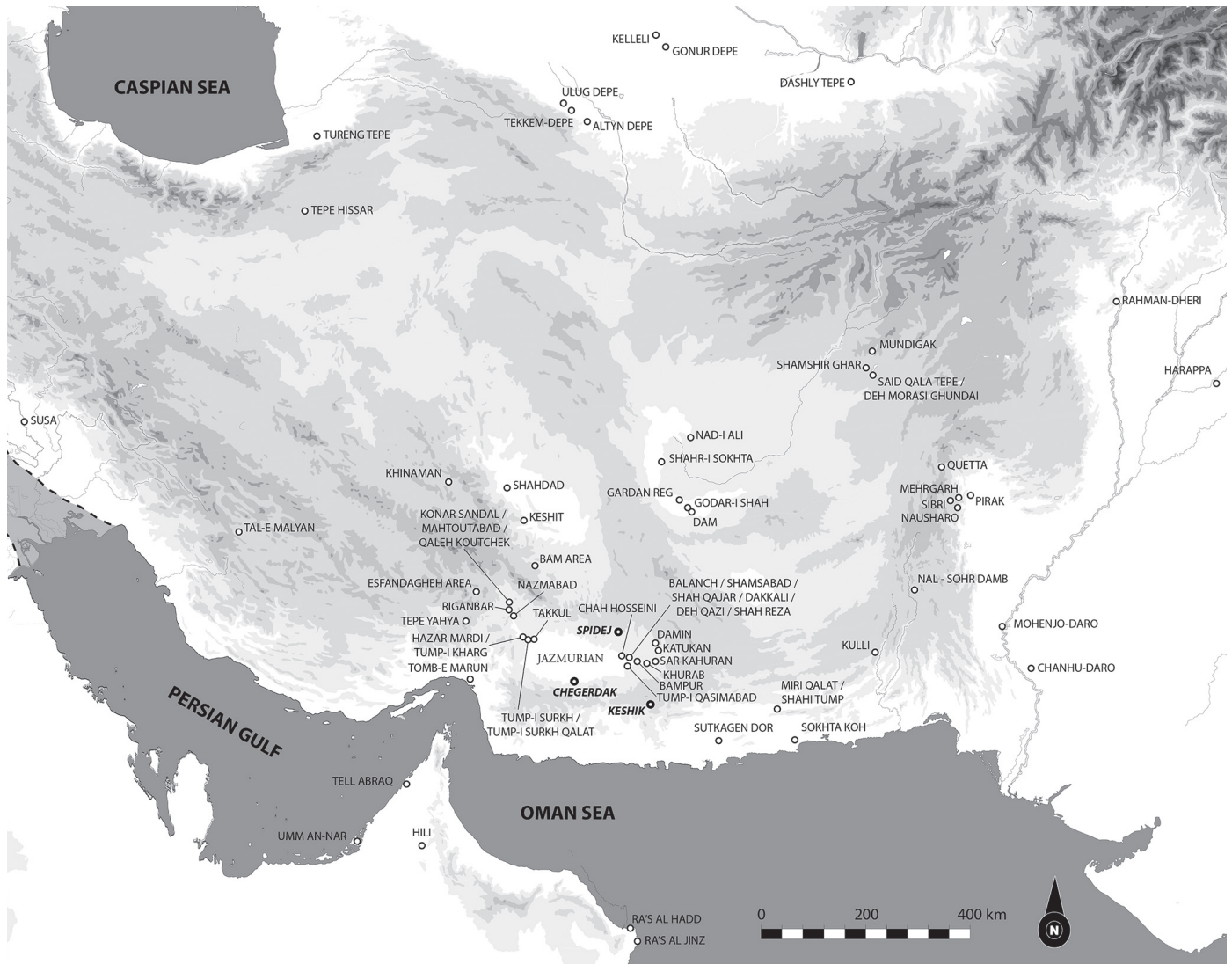


Fig. 1 – Map of Middle Asia showing the location of the sites mentioned in the text (drawing F. Desset).

Baluchistan Province. The collections are currently stored at the Zahedan Museum. In this paper the focus is on the glyptics recovered by one of us at the sites of Chegerdak, Spidej and Keshik (fig. 1) in the Jazmurian Basin. A catalogue of copper and silver seals is included (table 1; figs. 2-11 below), as well as a second catalogue of seal impressions on pottery from the disturbed graveyard B of Spidej (table 2), which is quite different in chronology and style. As we shall see, the two series illustrate contrasting patterns of cultural interaction in two periods: the first half of the 3rd millennium BC and the late 3rd – early 2nd millennium (ca 2200-1900 BC).

PREVIOUS RESEARCH IN THE EASTERN JAZMURIAN BASIN

The archaeology of Eastern Jazmurian (Bampur Valley; fig. 1) began in February-March 1932, when A. Stein (1937: 104-131), on his way to Jiroft and Kerman, passed along the northern piedmont of the Jazmurian Depression, recording and excavating the sites of Tepe Bampur, Deh-i Qadi, Pir Konar, Qala-i Sardagah, Seh Kandaki, Sar Kahuran, Damin, Katukan, Khurab, Tump-i Qasimabad and Chah Hosseini.

Table 1 – Catalogue of seals and seal fragments from Spidej (graveyard B), Chegerdak and Khashik, with comparisons. In the following entries, L is 'Length', W is 'Width', Th is 'Thickness'; in many broken seals, the original size could be reconstructed after the symmetry of the geometric patterns. CS means 'cross-shaped', OH stands for 'Ox hide seal' (i.e. 'Square with concave side'), S for 'Square', RC for 'Rectangular', R for 'Round'. ND is 'Not determinable'.

Seal no.	Provenance	Size	Description	Comparisons and references	Boss	Material
1, fig. 2.1 (Museum nr. 213)	Spidej	L 3.36 cm W 3.35 cm Th 6.05 mm	S, with 4 "T" like patterns converging to the centre.	– cf. with a square stamp seal in Baghestani 1997: 282, Abb. 76, 377, from Hona Qal'at 1 (Pakistani Makran) both for the pattern and the form of the boss	Ribbon-like, with central groove	Copper with minor amounts of lead
2, fig. 2.2 (Museum nr. 212)	Spidej	L 2.84 cm W 2.67 cm Th 3.68 mm	S, broken, with toothed edges. A central circlet bound by two parallel wavy lines	– cf. a impression on pottery at Shahdad (Hakemi 1997: 679, 26; 674; 112); cf. a copper square seal with a central circle and diagonal wavy lines from Bactria: Sarianidi 1998: 823	Broken	Probably a silver alloy (dark grey to purple corrosion)
3, fig. 2.3 (Museum nr. 215a)	Chegerdak	L 5.52 cm W 4.42 cm Th 3.29 mm (original size 7.2 x 7.2 cm)	CS, broken; in the central panel, two stepped crosses include a circle; the arms are rectangles filled with four parallel wavy lines; among the arms, four minor crosses with diagonal axes. Seal nr. 17 might have been one of the apexes of that seal	– a seal from Bactria (?) in Baghestani 199: 227, Abb. 51, 200 – a seal from Altyn Depe (<i>ibid.</i> : 229, Abb. 52,201), and another from the Burnt Building of Tepe Hissar (<i>ibid.</i> : 229, Abb. 52,202), Period IIIB, ca 2500-2200 (Gürsan-Salzmann 2016) – a simpler silver seal from Shahr-i Sokhta (Baghestani 1997: 258, Abb. 64,304), a square filled with wavy or zigzag lines; – circles within concentric stepped crosses framed in metopes feature on the polychrome pottery of Shahr-i Sokhta, Period II (ca. 2700-2500 BC, see Mugavero and Vidale 2003: fig. 13; and 2006), as well as on polychrome Nal pottery, Period II, ca. 3100-2700 cal. BC	Plain, ribbon-like	Copper
4, fig. 3.4 (Museum nr. 214)	Chegerdak	L 6.46 cm W 5.39 cm Th 3.55 mm. (original size 6.46 x 6.46 cm)	CS, broken; stepped cross, central square with concave sides, filled by a chess-board pattern of double opposed axes, and square ends filled with two opposed arches	– cf. designs on the pottery of Nal-Sohr Damb, Period II, ca. 3100-2700 BC (see, in our Fig. 14, the same precise motif on a cylindrical canister jar in Franke and Cortesi 2015: 254, cat. No. 593; and a variant at p. 239, cat. No. 537). The motif is still present in later phases of the greater Indus Valley tradition (ca 2600-1900 BC). – hatched patterns similar to the double axe design are known in ceramics from Tepe Bampur (period IV, de Cardi 1970: fig. 25.243; and period V.1, de Cardi 1970: fig. 35.351), Damin (Stein 1937: pl. 11.A.62); at Spidej and Chegerdak (example in Fig. 17). – a stamp seal from Mohenjo-Daro (Fig. 15; Shah and Parpola 1991: MD-1261 A,B,a; 158, bottom left,438), is an intricate example where every space is filled with fine rhomboidal incisions. The basic geometric pattern appears on a stamp seal in steatite found at Chanhu-Daro (Fig.16; Joshi and Parpola 1987: C-23 A,B,a in 133, 375)	Ribbon-like, with two parallel raised edges	Copper
5, fig. 3.5 (Museum nr. 217)	Chegerdak	L 4.70 cm W 3.78 cm, Th 3.96 mm (original size 4.7 x 4.7 cm)	OH, broken; in the centre 3 square fields, each occupied by 2 concentric circles. Side rectangles filled by wavy lines, one including asymmetric concentric circles		Plain, ribbon-like	Copper

Seal no.	Provenance	Size	Description	Comparisons and references	Boss	Material
6, fig. 3.6 (no Museum nr.)	Keshik	L 5.85 cm W 5.77 cm Th 6.69 mm	OH, six rectangles filled with wavy lines form the corners and a median band, alternating with more rectangles filled with a cross and zigzag segments		Ribbon-like with two parallel, raised edges	Copper with minor amounts of lead
7, fig. 4.7 (Museum nr. 215b)	Chegerdak	L 4.81 cm W 4.78 cm Th 4.60 mm	OH, broken; with a single square field, filled with a continuous pattern of double/opposed axes (<i>cf.</i> seal nr. 4)		Ribbon-like with 2 parallel raised edges	Copper, lead and traces of arsenic
8, fig. 4.8 (Museum nr. 208)	Spidej graveyard (G.118, 9)	L 1.56 cm W 1.56 cm Th 1.17 mm	Solid pyramid-like seal. Perhaps a central axis or stylized "tree" with heraldic figures on the sides	– <i>cf.</i> for the size and shape of the handle, a seal from Tepe Hissar, Period IIB, republished in Baghestani 1997: 350, Abb. 109, 557; – two seals in Sarianidi 1998: 989.I and 990.I show an axis formed by an eagle with outstretched wings, figures combined heraldically at the sides	Upper ring for suspension	Copper
9, fig. 4.9 (Museum nr. 203)	Chegerdak	L 2.01 cm W 1.42 cm Th 7.28 mm	ND fragment. A corner with an angular pattern		?	Copper
10, fig. 5.10 (no Museum nr.)	Chegerdak	L 3.89 cm; W 3.60 cm Th 3.60 mm original size 3.8 x 3.8 cm	OH, broken; filled with wavy lines, scarcely visible		Plain, ribbon-like	Copper
11, fig. 5.11 (no Museum nr.)	Chegerdak	L 4.52 cm W 3.34 cm Th 3.08 mm (original size 4.5 x 4.5 cm)	OH, broken, divided in 3 inner bands: in the centre, a line divides 2 central ovals and 2 opposed rows of double semi-circles, while both the sides are filled with 2 wavy lines	– for the double semi-circles motif, <i>cf.</i> a square copper seal found on the surface of Shahr-i Sokhta (Baghestani 1997: 282, Abb. 76, 378; see also our Fig. 12, 2)	Plain, ribbon-like	Copper
12, fig. 5.12 (no Museum nr.)	Spidej	L 6.7 cm W 6 cm Th 7.52 mm original size 10 x 6.5 cm	RC, broken; part of a very large and thick seal, entirely occupied by a pattern of double/opposed axes (<i>cf.</i> seals nr. 4 and 7). See also seal 29		Plain, ribbon-like	Copper
13a, fig. 6.13 (no Museum nr.)	Chegerdak	L 3.22 cm W 2.49 cm Th 2.40 mm original size 5.5 x 5.5 cm	OH, broken; the pattern included two rectangles filled with parallel wavy lines. Possibly part of seal 25		?	Copper
13b (no Museum nr.)	Chegerdak	L 2.99 cm W 1.60 cm Th 2.39 mm	ND		tri-partitioned	Copper
14, fig. 6.14 (no Museum nr.)	Chegerdak	L 1.54 cm W 1.30 cm Th 3.52 mm	OH, broken; edge fragment, with a stepped line or a cross-like pattern		?	Copper
15, fig. 6.15 (no Museum nr.)	Chegerdak	L 2.36 cm; W 1.52 cm Th 2.75 mm	OH, broken; two attached rectangles, one filled with parallel wavy lines		?	Copper
16, fig. 7.16 (no Museum nr.)	Chegerdak	L 2.59 cm W 1.31 cm Th 2.51 mm	ND, broken, pattern not distinguished		?	Copper
17, fig. 7.17 (no Museum nr.)	Chegerdak	L 2.27 cm W 1.51 cm Th 3.96 mm	S or RC, broken; a wavy line		?	Copper
18, fig. 7.18 (no Museum nr.)	Chegerdak	L 1.61 cm, W 1.21 cm Th 3.45 mm	OH, broken corner, remnants of wavy lines		?	Copper
19, fig. 8.19 (no Museum nr.)	Chegerdak	L 2.17 cm W 1.43 cm Th 3.05 mm	OH, broken corner, remnants of wavy lines		?	Copper

Seal no.	Provenance	Size	Description	Comparisons and references	Boss	Material
20, fig. 8.20 (no Museum nr.)	Chegerdak	L 3.44 cm W 1.86 cm Th 2.43 mm original size 4.2 x 4.2 cm	OH, broken; from a central motif—3 concentric circles—departed 4 bands of 2 parallel wavy lines; in the corners, other threefold concentric circles		?	Copper
21, fig. 8.21 (no Museum nr.)	Chegerdak	L 4.09 cm W 1.86 cm Th 2.55 mm	OH, broken; seven parallel wavy lines		Broken	Copper
22, fig. 9.22 (no Museum nr.)	Chegerdak	L 3.72 cm W 2.13 cm Th 3.14 mm	OH, broken; multiple wavy lines aside concentric circles in the centre, poorly preserved		Plain, ribbon-like	Copper
23, fig. 9.23 (no Museum nr.)	Chegerdak	L 4.18 cm W 2.58 cm Th 3.18 mm (original size 5.5 x 5.5 cm)	OH, broken. Two perpendicular wavy lines, cross in the centre. The resulting fields, in the corners, are filled with a double concentric stepped cross, with diagonal axes. Each corner has a circllet	– for the pattern, <i>cf.</i> two metal compartmented seals in Sarianidi 1998: 745 and 744; – <i>cf.</i> the sketch of a stamp on pottery at Shahdad (Hakemi 1997: 673, 58)	Plain, ribbon-like	Copper
24, fig. 9.24 (no Museum nr.)	Chegerdak	L 3.84 cm W 3.68 cm Th 2.89 mm (original size 5 x 5 cm)	OH, broken; from 3 central circles depart, cross-wise, 3 straight segments; in the corners appear other threefold concentric circles		Plain, ribbon-like	Copper
25, fig. 10.25 (no Museum nr.)	Chegerdak	L 4.20 cm W 4.12 cm Th 2.60 mm (original size 5.5 x 5.5 cm)	OH, broken. Three elongated rectangles filled with three, four and three (?) parallel wavy lines respectively. <i>Cf.</i> seal 13a		Ribbon-like with two parallel, raised edges	Copper
26, fig. 10.26 (no Museum nr.)	Chegerdak	L 2.26 cm W 1.06 cm Th 4.41 mm	OH, broken corner. Remnants of two wavy lines		?	Copper
27, fig. 10.27 (no Museum nr.)	Chegerdak	L 2.48 cm W 1.54 cm Th 2.55 mm	OH, broken. Contained panels with wavy lines		?	Copper
28, fig. 10.28 (no Museum nr.)	Spidej	L 3.94 cm W 2.83 cm Th 3.71 mm (diameter ca. 4 cm)	R. A heraldic lion or leopard (?) with open fangs, the tail upraised. Some damaged signs near the mouth, and a small circle between the mane and the curved tail	– <i>cf.</i> with big cats in profile on pottery of the Kech Makran region dated to the first half of the 3 rd millennium BC pottery (Didier and Mutin 2015: 311, Fig. 11.21) and at Nal Period II, ca. 3100-2700 cal. BC (Franke and Cortesi 2015: 182, Fig. B.9 18).	ring-like	Silver alloy
29, fig. 5.12 (no Museum nr.)	Spidej	?	Multi-lobed stamp, each lobe formed by three concentric circles. Fixed on the back of seal 12 by intensive corrosion	– Type discussed in Cortesi <i>et al.</i> 2008: fig. 14, 20-21. Reported at Shahr-i Sokhta (<i>ibid.</i> , Fig. 12, 10), in the Sistan Basin (Baghestani 1997: 282, Abb. 76, 380) and at Shahdad (imprints <i>ibidem</i> : 271, Abb. 71, 341 and 342; 674), these seals are more frequent in northern Baluchistan (Tarakai Qila, Rehman Dheri, Mehrgarh and Nausharo, Nal / Sohr Damb) and in the greater Indus Valley (Bhirrana, Mohenjo-Daro and Harappa).	?	silver-copper alloy

Table 2 – Catalogue of seals impressions on ceramics from Spidej (graveyard A), with comparisons (fig. 18).

Impression no.	Description	Comparisons and references
Spidej (Sp.) sealing 1	Partial imprint of a triangular (?) stamp seal in the form of a bird facing right, with up-turned beak	– cf. seals of the same generic type in Baghestani 1997: 170, Abb. 21, from the Ordos area, in particular 173, nr. 34, dated to the late 2 nd millennium BC. Birds with open wings pointing upwards are common in Bactria, enclosed in a round field (Baghestani 1997: 300, Abb. 422; Sarianidi 1998: 140, 180-185). See also the stamps of Grave 74 at Shahdad (Hakemi 1997: 238, Obj. nr. O678) and Hakemi 1997: 675
Sp. sealing 2	Imprint of a stamp with a bird facing right, similar to Sp. sealing 1	See comments above
Sp. sealing 3	Partial imprint, left by a stamp seal with an irregular edge and an intricate pattern with multiple figures	Possibly left by a stamp in the style of the Halil Rud civilization, as those found at Konar Sandal South (Madjidzadeh and Pittman 2008: fig. 28.e)
Sp. sealing 4	Partial imprint of a round stamp seal, with a standing anthropomorphic character with snakes on the side	Perhaps a kind of "Lord of animals" (<i>Herr der Tiere</i> in Baghestani 1997: 287, Abb. 78, 390A; 297, Abb. 83, 407, 408; see also Sarianidi 1998: 25, 28, 29, 45, where the personage seems to be the eagle-headed demon or hero of the Oxus civilization). In Tepe Hissar IIIc, a stamp seal and a sealing display also a schematic character in a circular field (Schmidt 1937: fig. 18. H.4886 and plate 49. H. 5278b)
Sp. sealing 5	Imprint left by a stamp seal in the form of a seven petals "flower"	– cf. Baghestani (1997: 195, Abb. 34, 35, 36, 43, 44); 99, 102, 103 in Abb. 34 and 114, and 116 in Abb. 36. Sealing Abb. 34, nr. 99 comes from Shahdad, cemetery AT2; Abb. 36 nr. 114 comes from Dashly 1 in Bactria, and nr. 116 from "Bactria". See more examples in Hakemi's lists for Shahdad (1997: 672, 673, 683 and 717, 4514-4516; cf. also 660.la 8). The same flower-like stamp is common in Bactria (Sarianidi 1998: 672-674, with seven petals; 449, 1706, and 697-702, with eight petals; 721, 724, 729, 731, nine petals and more). In Margiana, they are rare (Masimov and Salvatori 2008; see Sarianidi 1998: 1597, 1607, 1797). A clay sealing with a small six-petal flower was found in the Burnt Building of Shahr-i Sokhta (Tosi 1983: Fig. 76). See other instances from Shahr-i Sokhta III and Damin in Tosi 1970: fig. 22 and fig. 21
Sp. sealing 6	Partial imprint of a round stamp, perhaps part of a star-like motif	– cf. Baghestani 1997: 323, Abb. 94, 476, 478 and 480; and Abb. 96, 492-494, from Shahdad and Altyn Depe. For the first site, see also Hakemi 1997: 672, 13, and 673, 45-47, and Sarianidi 1998: 603, 624, 649, 650, 681, 690. In Margiana, see the double impression of a similar round seal on the shoulder of a jar from Kelleli 3 (Masimov and Salvatori 2008: 106, Fig. 7.13.1; and other specimens in Sarianidi 1998: 1598, 1604, 1745, 1750)
Sp. sealing 7	Imprint of a square stamp seal including a diamond framed within diagonals	– cf. various bad sketches in Hakemi 1997: 672-673. The design in itself, as far as we know, is unknown; however, two seal impressions at Shahdad (<i>ibid.</i> , 673: 54, and 683: 142) look like variants of the same design
Sp. sealing 8	Imprint of a square stamp seal with a central cirlet and eight rays	The closest comparison is with a stamp "from Bactria" in Sarianidi 1998: 538
Sp. sealing 9	Imprint of a square stamp seal with a four petal "flower"	– cf. a imprint on pottery (Hakemi 1997: 672, 8) or a stamp seal (Hakemi 1997: 660. la 10 and 717. 4512) from Shahdad; and more generically with other "flower" motifs discussed above (see also Baghestani 1997: 277, Abb. 74, 360, 361)
Sp. sealing 10	Imprint of a round seal divided in triangular sectors by six rays	– cf. some specimens collected by Sarianidi in Bactria (1998: 675, 711-715, 735-736) and in Margiana (<i>ibid.</i> : 1600, 1601, 1605, 1740, 1743). Another similar "Bactrian" seal but without precise provenience is published in Baghestani 1997: 325, Abb. 95, 490
Sp. sealing 11	Imprint of a triangular seal with wavy sides and a central dot	– cf. Masimov and Salvatori (2008: fig. 7.1. 2), found at Kelleli 4 in Margiana. Another similar stamp comes from Sibri I in northern Baluchistan (Baghestani 1997: 373, Abb. 120, 628; Santoni 1988: 137 and fig. 2, 19). See also other specimens in Sarianidi's "Bactrian" collections (1998: 832, 837 and 838)
Sp. sealing 12	Imprint of an openwork seal with a swastika of spirals	– cf. similar finds from Bactria (Sarianidi 1998: 806, 807) and Margiana (<i>ibid.</i> : 1678.2). The same imprint was found at Shahdad (Hakemi 1997: 673, 70). Two items in Wu and Lecomte 2012: fig. 4 show that along the Kopet Dagh Piedmont (in Ulug Depe), seals with similar designs were still in use in the earliest moments of the Iron Age.
Sp. sealing 13	Imprint of a seal bearing four spirals symmetrically arranged on the two sides of a central axis	The motif appears on a bi-facial stone seal found in Margiana, at Taip 1 (Masimov and Salvatori 2008: fig. 7.7, 1). At Shahdad people may also have stamped pots with similar seals (Hakemi 1997: 676, 160-162)
Sp. sealing 14	Imprint of a three-lobed seal, or of a threefold spiral-like seal	– cf. a imprint from Shahdad, cemetery AT2 (Baghestani 1997: 269, Abb. 70, 338; Hakemi 1997: 674, 78); for spirals at Shahdad, see Baghestani 1997: 379. See also Sarianidi's collection from Bactria (1998: 831, 840, 841). A close match is with a seal equally ascribed to Bactria (Baghestani 1997: 372-373, Abb. 120, 627)
Sp. sealing 15	Imprint of a small triangular seal; the interior was plain or not impressed	– cf. a small triangular copper seal, reportedly "from Bactria" in Sarianidi 1998: 839. A good match is an impression on pottery at Konar Sandal North (Madjidzadeh and Pittman 2008, fig. 33.c)
Sp. sealing 16	Imprint of an eagle-like seal, somehow similar to Sp. sealing 2. The bell-like contour might have been due to lowered wings.	– cf. stamped wares at Shahdad (Hakemi 1997: 675, 131)
Sp. sealing 17	The imprint resembles a cross, with arms made of semi-circles, within a square frame	Generically compared with round copper seals of variable complexity, with crosses, alternating or ending in semi-circles. See various specimens from Giaur Qal'a and Gonur in Turkmenistan, Shahdad in south-eastern Iran, Shahi Tump in Pakistani Makran, Dashly 3 in Bactria (Baghestani 1997: 343-345, Abb. 105-106) as well as a terracotta stamp seal from trench IX nearby Konar Sandal South (Madjidzadeh and Pittman 2008: fig. 28.f). A Tepe Hissar seal (period I; Schmidt 1937: pl. 15. H.4708) might be an antecedent of this seal
Sp. sealing 18	Left by a square seal with a rhombus in the centre, surrounded by four circles	No exact match can be found, but in Sarianidi's "Bactrian" collection (1998: 386, 507, 533, 534, 536, 634, 636) many seals are based on a central square or rhombus surrounded by circles or petals
Sp. sealing 19	Even though poorly preserved, it is probably similar to Sp. sealing 10	See Sp. sealing 10

The material coming from Stein's trenches was studied later by C.C. Lamberg-Karlovsky and D. Schmandt-Besserat (1977), Hiebert and Lamberg-Karlovsky (1992: 6), with both studies focussing on the 3rd to early 2nd millennium BC. B. Mutin (2015) has subsequently examined the pottery of the 5th and 4th millennia BC.

In 1966, B. de Cardi (1967; 1968a and b and 1970) excavated two trenches (Y and Z) at Tepe Bampur and established a six-periods ceramic sequence (Bampur I to VI) whose absolute chronology was later much discussed (up to now, no radiocarbon dating is available for Eastern Jazmurian). Currently, many agree that the six Bampur periods date between 2600-2500 and 1900-1800 BC.¹ In 1970, M. Tosi (1970 and 1974: 37-47) published the contents of a 3rd millennium BC grave discovered in Damin (and criticized de Cardi's chronology).

Archaeological work was resumed in the Bampur area only in the 2000's. Several excavations and surveys were then carried out, and are listed below:

- In 1999, M. Heydari excavated at Tappeh Rubahak, 3 km east of Saravan, nearby the Pakistani border, to define the extension of this 3rd millennium BC settlement;
- In February 2002, M. Sajjadi (2005) excavated new trenches in the archaeological precinct of Tepe Bampur. Prehistoric occupation layers were found only in three of these trenches (M, T and U);
- M. Mortazavi (2006) carried out a survey in the Bampur Valley in July 2002, where 13 prehistoric sites have been discovered or rediscovered, such as Chah Hosseini (Tavassoli *et al.* 2012);
- In 2003, M. Rahbar excavated the graveyard of Saidabad, near Bampur, unearthing some 3rd millennium BC mud-brick walled graves;²
- In January 2006, M. Mortazavi led a survey in the Damin Valley (Mortazavi *et al.* 2010), discovering 19 sites dated to the 3rd millennium BC;
- In 2011, under H. Moradi's direction, the area west of Tepe Bampur was surveyed (Moradi *et al.* 2014), revealing 81 sites dated from the 5th millennium BC to the 1st millennium AD. The inventory includes several 4th–3rd millennia sites, such as Tepe Balanch, Shamsabad, Shah Qajar, Dakkali, Deh Qaz and Shahreza (some probably correspond to Stein's Deh-i Qadi and Qala-i Sardagahn locations);
- From 2002 to 2012, M. Heydari conducted several sur-

veys and rescue excavations in Baluchistan, including the looted and damaged sites of Spidej, Chegerdak and Keshik; 37 test trenches were opened in the 3rd millennium BC graveyards of Spidej (A and B), where two distinct material assemblages were recorded, the first one being related to the Bampur 'classical' 3rd millennium BC complex (graveyard A), while the second one (graveyard B) was linked to Shahdad and its early 2nd millennium BC burials. At Chegerdak, 55 test trenches were opened on the tepe and two graveyard areas. The digs revealed a phase related to the Halil Rud and Tepe Yahya complexes (first half of the 3rd millennium BC) and a mid-second half of the 3rd millennium occupation showing several similarities with the Makran (Miri Qalat / Shahi Tump) phases (Heydari *et al.* 2015). In Keshik, 32 cist graves ranging from 3 to 6 m length for 1,3 m width and closed by large stone slabs were reported. They contained Bampur 'classical' 3rd millennium BC complex materials as well as some 'miniature stone columns'.

Many of these discoveries are still unpublished, and information is consequently partial.³ However, preliminary data suggest that Eastern Jazmurian was probably occupied during two main periods, from *ca* 4500 BC to 3500 BC and from 2700/2500 BC to 1900/1800 BC, with a still elusive gap between these two periods.⁴ While the first occupation in the Halil area (Tepe Gav Koshi in Esfandagheh Valley, current research by N. Alidadi Soleimani), Bam area (Tell-e Atashi, Garazhian 2009) and Pakistani Baluchistan (Mehrgarh I) date back to the late 7th and 6th millennia BC, the first occupation period in Eastern Jazmurian, at present, is only dated between 4500 and 3500 BC. It is mainly documented in Chah Hosseini, the largest and probably oldest site in the Bampur area; the main ceramic comparisons for this period are with Iblis I-IV, Yahya VC-VA and Makran II (Miri ware).

After what may be just an apparent gap—no Uruk / Proto-Elamite related materials comparable to those found at Mahtoutabad, phase III (Desset *et al.* 2013) at present, are on record—, the eastern Jazmurian sequence re-started around

1. See for example Pittman 2013: 313.

2. R. Rahbar, *Preliminary report of excavation at the site number 13, Bampur (Saidabad graveyard)*. Unpublished report, 2003.

3. The emerging archaeological scenarios of Eastern Jazmurian are also supported by the researches of the French Mission in Makran (Besenval 2011), the Iranian excavations in the Iranian Seistan (under M. Sajjadi's direction) and the international project in the Halil Rud Valley directed by Y. Madjidzadeh.

4. The dating and chronological evolution of the fine painted grey ware of South-Eastern Iran in the Chalcolithic and Bronze Ages are not fully understood (Mutin 2013: 180).

2700-2600 / 2500 BC, with the six periods recognized by de Cardi in Bampur, and lasted until the beginning of the 2nd millennium BC, when an unexplained decline affected, roughly at the same time, urban life in Central Asia, the Indus Valley, Eastern Iran and the eastern coast of the Arabian Peninsula. In this period, the main ceramic comparisons concerning Eastern Jazmurian are with Shahr-i Sokhta III-IV and Mundigak IV.3, Yahya IVB, Konar Sandal South and the deepest layers of Konar Sandal North (these latter, with ceramics closely linked to Shahr-i Sokhta Period IV), Makran IIIB-C, the Umm an-Nar culture in Oman and the Barbar culture in Bahrain; for Barbar culture / Bahrain, see Højlund and Andersen (1994 and 1997) and Crawford, Killick and Moon (1997). A plain ware found in some graves of Khurab (Hiebert and Lamberg-Karlovsky 1992: 6), and similar to contemporary ceramics from the Oxus civilization / BMAC, is probably one of the latest pieces of evidence in the protohistory of Eastern Jazmurian.

SEALS AND SEALS IMPRESSIONS: MATERIALS AND METHODS

The seals, seal fragments and seal impressions we present in this paper were gathered by M. Heydari during the surveys and rescue excavations at Spidej (seals nos. 1, 2, 8, 12 attached to 29, 28 and all the sealings), Chegerdak (seals nos. 3-5, 7, 9-11, 13 to 27)⁵ and Keshik (seal no. 6), and can be assigned to the 3rd millennium BC. Their disturbed contexts are obviously a serious drawback, but even so they contribute to our understanding of the Bronze Age settlements of the region (Heydari *et al.* 2015). The objects, although waiting for a proper professional cleaning and restoration, were photographed and drafted by the authors in October 2015 at the Archaeological Museum of South-Eastern Iran – Zahedan (Sistan-Baluchistan).⁶

5. On Chegerdak, see also Heydari *et al.* 2015. Ceramics collected on surface were mainly attributed to the 3rd millennium BC (p. 19). For Shahr-i Sokhta, see Salvatori and Vidale 1997, Salvatori and Tosi 2005 and Piperno and Salvatori 2007; for Mundigak, see Casal 1961; for Tepe Yahya, see Potts 2001; for Konar Sandal, see Madjidzadeh and Pittman 2008; for Makran, see Besenval 1997, 2005 and 2011 and Didier 2013; for Umm an-Nar culture, see Frifelt 1975 and Méry 2000.

6. We would like to thank all the staff working in the Museum, especially its young director, Mojtaba Saadatian. We thank also Kambyz Gohari, director of the Cultural Heritage Organization of Sistan-Baluchistan Province, for his support in Zahedan, as well as Alessandra Lazzari (CNR, Rome, Italy) for her constant information on the archives of the finds from Shahr-i Sokhta and her help in the preparation of Fig. 12. We are also very grateful to G. Guida, of the Laboratory of Chemistry and

Because almost all the metal seals were corroded and variously damaged, a series of pre-existing micro-fragments (2-4 mm wide) belonging to 11 specimens could be gathered from the plastic bags and analysed. The micro-fragments were analysed at low magnification, without previous cleaning, with an ESEM ZEISS EVO 60 equipped with an EDS probe Oxford Instruments, software Oxford INCA 4.15, at the Istituto Superiore per la Conservazione e il Restauro (ISCR) Rome. EDS measurements were taken, as a rule, from areal spots (in a range of *ca* 0.5-3 mm²) and compared to each other.

PRELIMINARY CHEMICAL ANALYSES

We analysed fragments of seals nos. 1, 6, 7, 18, 19, 27, 29 and four chips from non-documented small fragments in different conditions of alteration. Because in such contingency ESEM-EDS data bear no quantitative evidence, analytical details are omitted here.

Broadly speaking, ESEM-EDS analyses showed that the original base material for the seals was copper with traces of arsenic and minor, purposeful additions of lead, like great part of the bronzes found in 3rd millennium BC Eastern Iran sites, for example at Shahr-i Sokhta, Shahdad, Tepe Hissar and Tal-i Malyan (Piggot 2004: 30-34; Thornton and Lamberg-Karlovsky 2004: 267). Tin is absent in all seals. In seals nos. 18, 19 and 27 and in the four non-documented samples, copper carbonates and oxides were substantially less than the others, and areal measurements suggest Cu and Pb segregation. Interestingly, traces of vanadium (V), a quite less common element, were found in four of the seals (nos. 7, 18, 19 and 27; all from Chegerdak). Some spot measurements on various Pb segregation areas indicates that V might co-variate with Pb, so the two elements may have possibly come from the same ores.

On the rear side of seal no. 12, two round elements, made of three concentric circles, probably belonged to a four-lobes stamp seal (seal no. 29). Cast in a different metal alloy, this broken seal was embedded within the thick corrosion crusts of the larger stamp no. 12. The altered surface of seal no. 29 had a dark grey/purple colour. Tested with EDS at ESEM, while the more intensively altered areas revealed (in order of decreasing peaks intensity) silver, oxygen, chlorine, carbon and calcium, less affected spots suggested an alloy made, very grossly speaking, of 96-97% silver and 3-4% copper.

Non-Destructive Testing of ISCR, Rome, for the ESEM-EDS tests, and to C. Petrie, A. Suryanarayan and J. Flood for their precious editorial work of the English text.

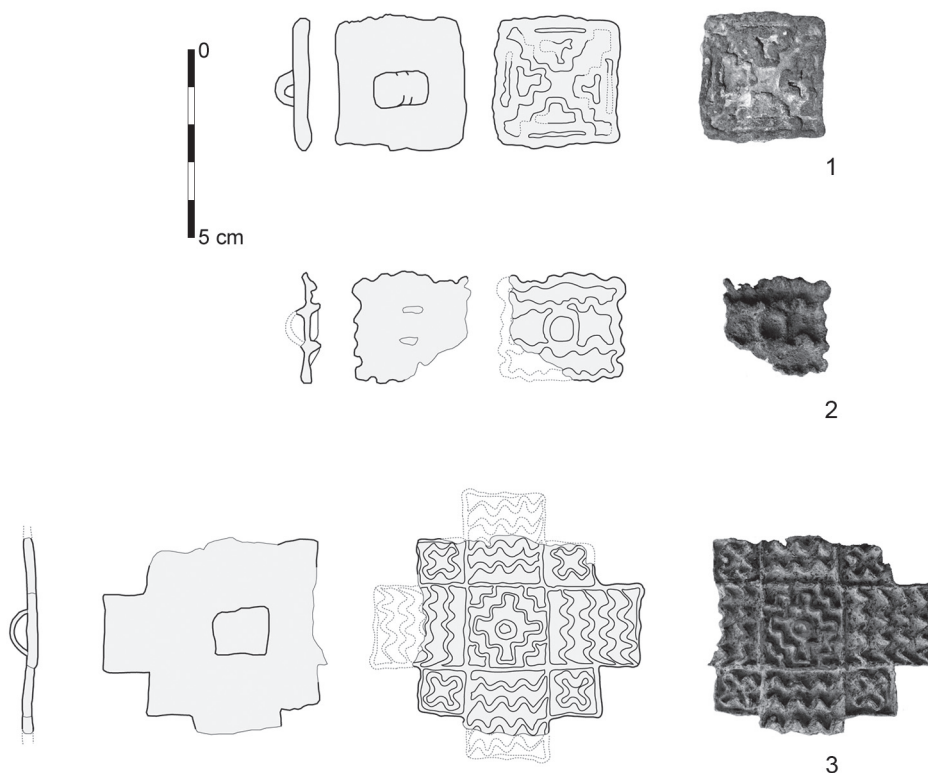


Fig. 2 – Seals 1, 2 and 3 (drawings and photos F. Desset).

CATALOGUE OF SEALS

COPPER AND SILVER SEALS

All the stamp seals in this catalogue (table 1 and figs. 2-10) belong to the metallic-compartmented stamp-type, whose variants are common in Middle and Central Asia from around the mid- to the end of the 3rd millennium BC (possibly since the last centuries of the first half of the 3rd millennium). These terms are therefore not repeated in the description of the single finds. With the exception of no. 8 (fig. 4; Museum nr. 208), found in a rescued damaged grave, all the others, as stated above, come from looted contexts. When the base material was not tested, identifications of ‘copper’ or ‘silver’ are just hypothetical as based on visual inspection. ‘Comparisons and references’ report specific comparanda; more generic similarities, at a group or series level, are more widely discussed in the following section.

TYPOLOGY AND DISCUSSION OF THE METAL STAMP SEALS

Figure 11 shows a preliminary classification of the seals. It distinguishes as a *unicum* an anomalous, unusually large rectangular seal (no. 12); a substantial series of square seals with concave sides, referred to, for the sake of brevity, as ‘Ox hide’ or OH seals (term adopted from the famous Mediterranean ingots of the 2nd millennium BC); two large cross-like seals; and a fourth series of heterogeneous specimens. While these latter may include some outsiders, all the other seals may be considered as belonging to a South-Eastern Jazmurian (SEJ) group.

The SEJ seals, so far unknown, have few parallels elsewhere in terms of both shape and iconography.⁷ On average, when compared with other copper stamps of the 3rd millennium BC in

7. At least Spidej seal no. 12 shares with this group a distinctive ‘chessboard pattern of double axes’ pattern (see below); thus, also the Spidej seals, in spite of its heterogeneity is somehow linked to the SEJ style.

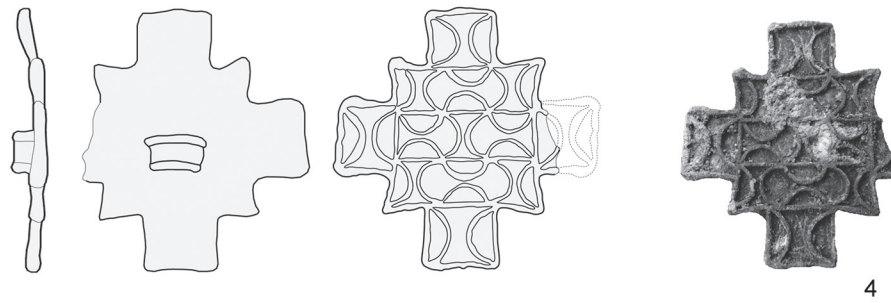
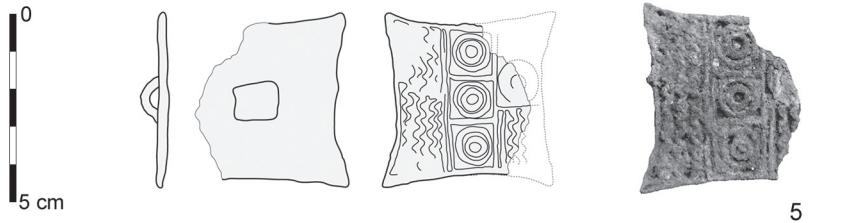
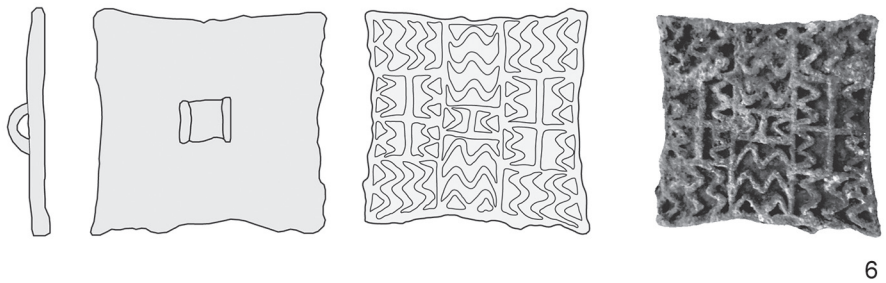


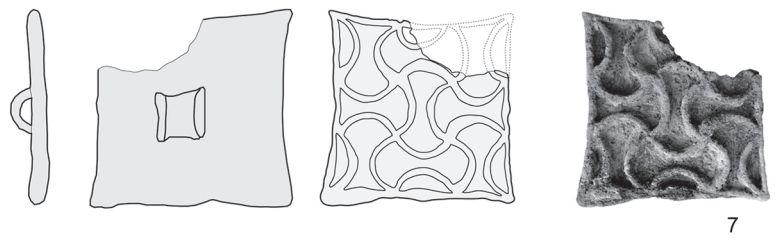
Fig. 3 – Seals 4, 5 and 6
(drawings and photos F. Desset).



0
5 cm

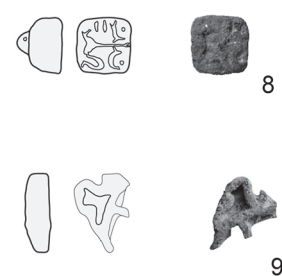


6



7

0
5 cm



8

9

Fig. 4 – Seals 7, 8 and 9
(drawings and photos F. Desset).

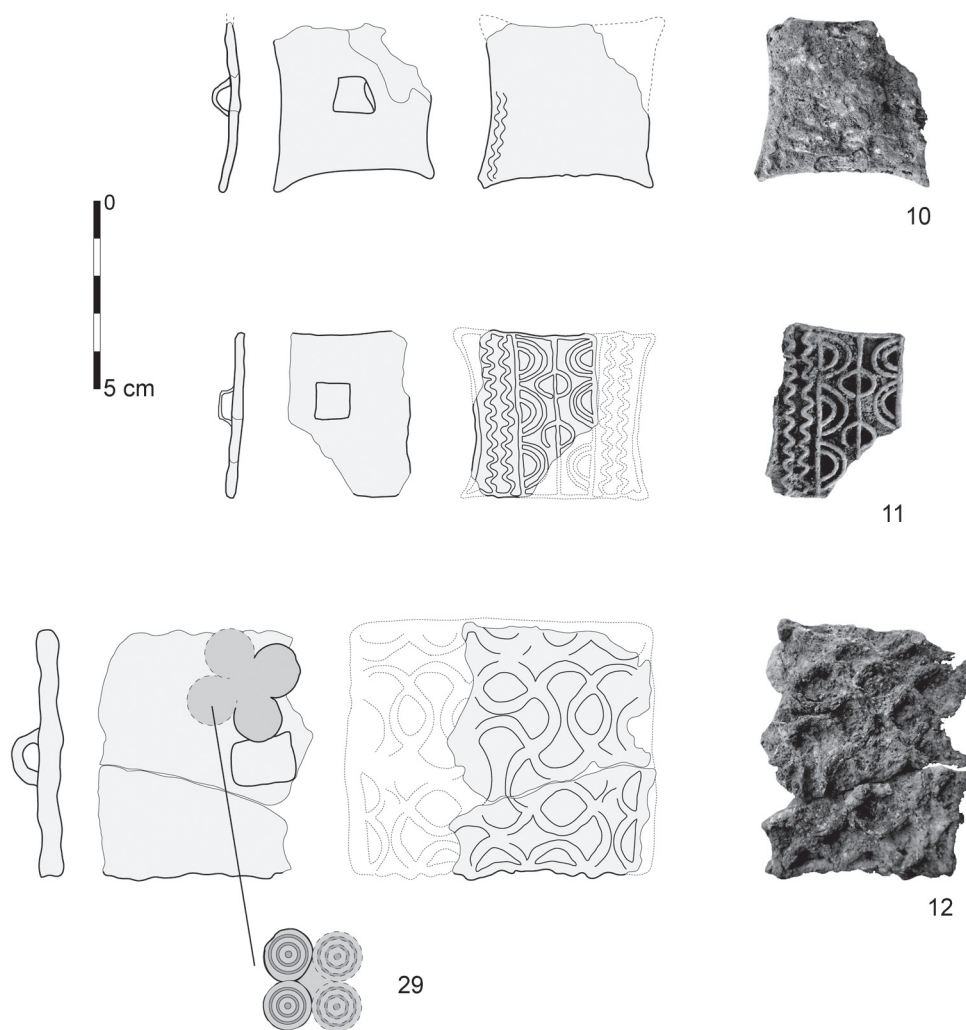


Fig. 5 – Seals 10, 11 and 12 (drawings and photos F. Desset).

Middle Asia, these seals are unusually large⁸ and made of high-quality lost-wax castings; they also bear the same type of boss on their rear side. The seals are not very thick; and when seen from a side some show a distinctive convex profile.⁹

Stamps of the SEJ group share a variable repertoire of intricate patterns—geometric, cross-like, concentric circles, wavy/straight lines and chessboard pattern of double axes (for this latter, see below)—, which makes the South-Eastern Jazmurian group quite distinctive and well recognizable in terms of style. The redundant use of bands of wavy and straight lines, in par-

ticular, seems to be distinctive of this type. The cross-shaped forms may be generically linked to the 3rd millennium BC repertoires of the early urban sites of Southern Turkmenistan and Sistan, and, at least in part, to the Ordos collection (the so-called “Nestorian seals”; see Biscione 1985). Some motifs, as we have seen, may be related to compositions quite popular in the decoration of the material culture of the Early Bronze Age sites of Sistan and Baluchistan (for an example among many others possible, compare Figures 2 and 3 with Figure 12: 2 and with the design on the Nal, Period 2 vessel in Figure 13, from Lombardo and Vidale 2014: cat. nos. 37, 69).

A fragmentary seal, comparable to the OH series for the convex profile and the pattern, was found at Tekkem Depe in

8. Here, with sides > 4 cm, and up to 10 cm (*i.e.*, seals nos. 5-7, 11-13a, 23-25).

9. Seals nos. 4, 5, 7, 10, 11, 15, 20, 22-24.

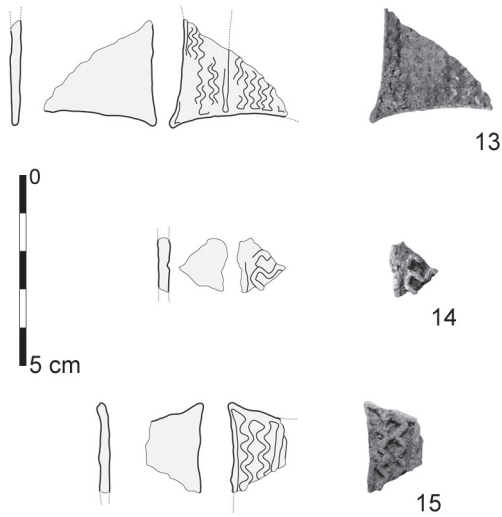


Fig. 6 – Seals 13, 14 and 15 (drawings and photos F. Desset).

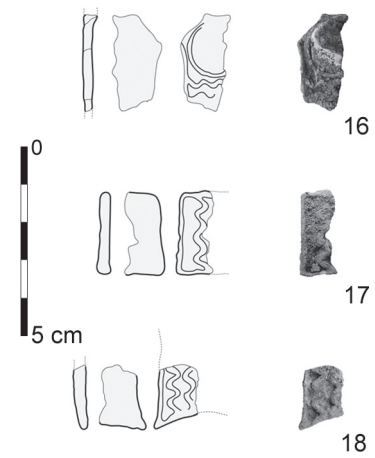


Fig. 7 – Seals 16, 17 and 18 (drawings and photos F. Desset).

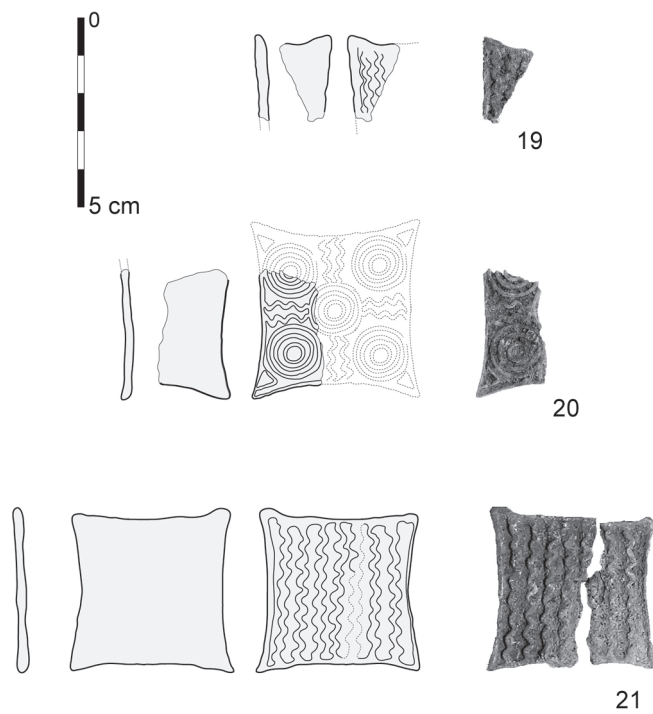


Fig. 8 – Seals 19, 20 and 21 (drawings and photos F. Desset).

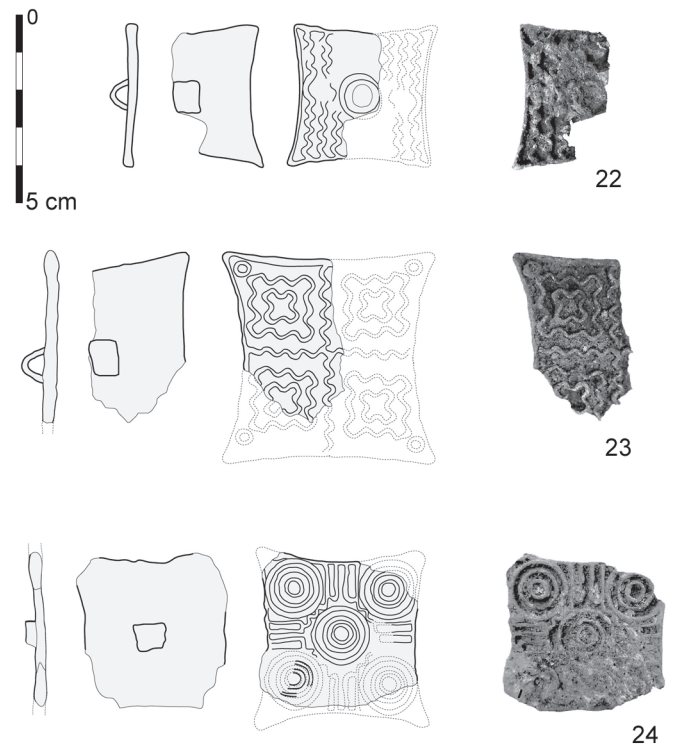


Fig. 9 – Seals 22, 23 and 24 (drawings and photos F. Desset).

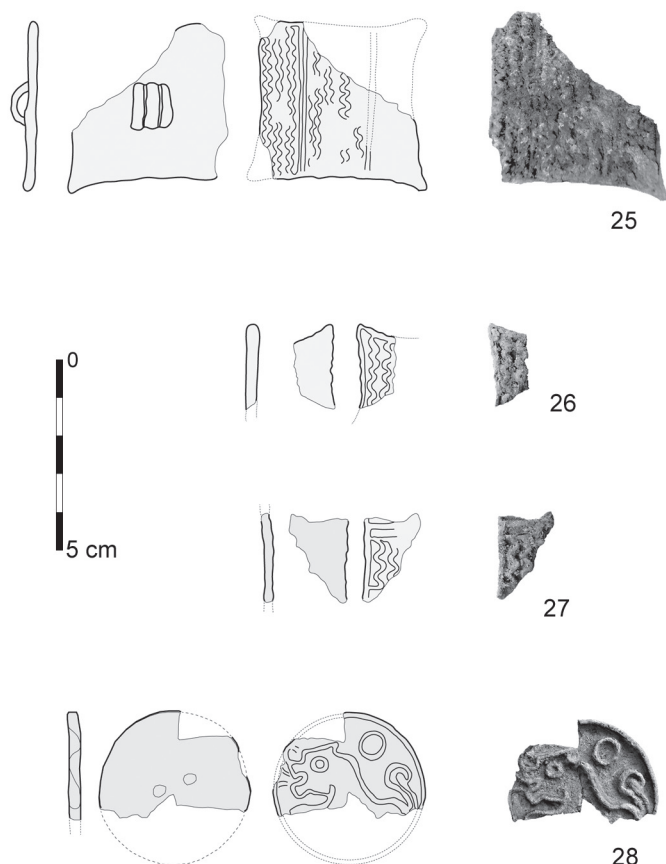


Fig. 10 – Seals 26, 27 and 28 (drawings and photos F. Desset).

Southern Turkmenistan and dated to the final Bronze Age (Namazga VI period; Baghestani 1997: 267, Abb. 68, 330). Another stamp seal very similar to the SEJ ones in terms of pattern and regarding the boss, but rectangular, comes from Shahr-i Sokhta, Grave IPW 132 inf., dated to Period II, phase 6, ca 2600-2500 BC (Piperno and Salvatori 2007: 180, 7151) (fig. 12: 2). This seal was placed inside the grave broken along a side, and together with a complete chlorite stamp (Piperno 1979: Fig. 5¹⁰). Seals with the double semi-circles were found on surface at Shahr-i Sokhta (fig. 12: 5).

A compartmented copper seal found at Konar Sandal South (Step Trench) may also be related to this style (Madjizadeh and Pittman 2008: Fig. 28.d), as well as the compartmented copper and stone seals found by de Cardi in Tepe

10. Baghestani 1997: 282, Abb. 76, 376 was evidently drafted after this photograph; but the drawing turns out to be largely fictional (the original seal in Piperno and Salvatori 2007: 180, 7152 is completely different in form and pattern).



Fig. 12 – A Nal polychrome vessel (Shahr-i Sokhta Period II) recovered from the illegal market in Italy and returned to Pakistan by Italian authorities: the cross and stepped line in a metope reminds the pattern of Seal no. 3 (fig. 2).

Bampur (de Cardi 1970: Fig. 47, 15-16, and p. 328-329). Two copper compartmented seals from phase IIIa graves in Makran, at Miri Qalat / Shahi Tump (Besenval 2011: Figs. 100a and 102), dated around or shortly after 3000 BC, may be considered as ancestors of this style.

The peculiar ‘chessboard pattern of double axes’ (defined as “butterflies” or “scallops” in Franke and Cortesi 2015) visible on seals nos. 4, 7 and 12 is not very common in the 3rd millennium BC repertoires of Middle and South Asia.¹¹ This highly dynamic pattern is the result of an ingenious geometric solution, in which two concave arches are precisely combined with two larger convex ones, with the optical result that the observer, focusing on the lines instead than on the inner spaces, can see at the same time curvilinear swastikas that run left and right in alternate rows. Figures 14 (courtesy of U. Franke and E. Cortesi), 15 and 16 show that the same motive was also known in the greater Indus Valley, in the 3rd millennium BC (Nal style finds, Mohenjo-Daro and Chanhu-Daro), while

11. Curiously, the pattern is better known, in entirely different and much later contexts, in floor mosaics of the 2nd–6th centuries AD at Rome, as well as in other sites of Central and Northern Italy, but also in Sardinia, Gallia, Spain and Northern Africa (Bueno 2011: 342; Balmelle *et al.* 1985). Retracing the origin and the long history of this design is outside the scope of the present paper, but a direct link between the Bronze Age in Middle South Asia and the central Mediterranean late classical tradition seems quite unlikely.







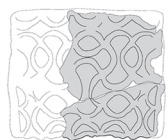



















SEAL SHAPE DECORATIVE PATTERN	BIG SEAL	OXHIDE SEAL	CROSS SEAL	SMALL SEAL
ANIMAL PATTERN				seal 28  seal 8 
GEOMETRIC PATTERN WITH WAVY LINES		seal 27  seal 6 	seal 3 	seal 1 
REPEATED CURVED PATTERN	seal 12 	seal 7 	seal 4 	
CENTRAL COMPOSITION WITH 4 CROSSES		seal 23 		
CENTRAL COMPOSITION WITH 5 CIRCLES AND STRAIGHT / WAVY LINES		seal 24  seal 20 		
CIRCLES AND WAVY LINES		seal 22  seal 5  seal 16  seal 11 		seal 2 
STRAIGHT AND WAVY LINES		seal 13  seal 25 		
WAVY LINES		seal 10  seal 21  seal 15  seal 26  seal 19  seal 18 		seal 17 

Fig. 11 – A typology of the copper stamp seals recovered from Spidej, Chegerdak and Keshik (drawings M. Heydari and F. Desset).

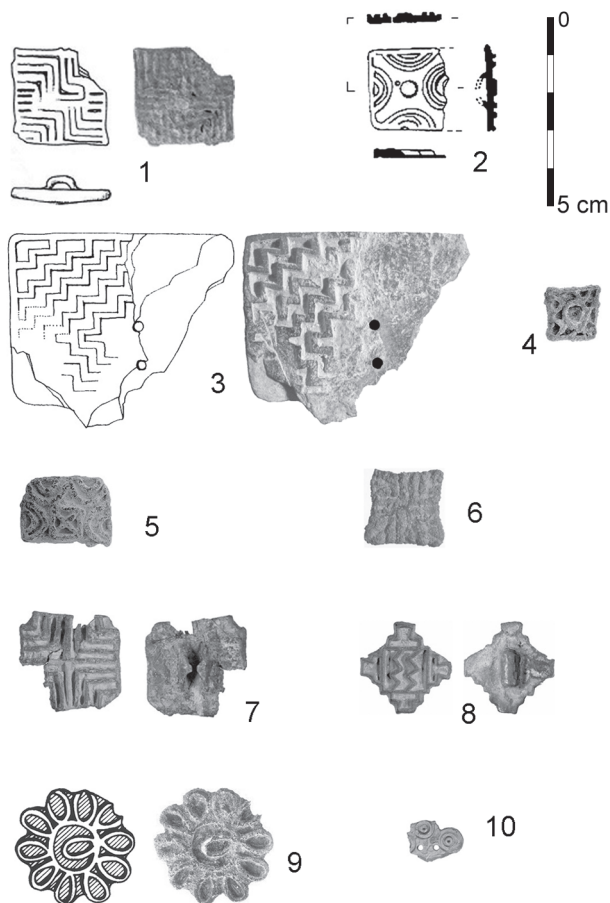


Fig. 13 – Selection of compartmented stamp seals from Shahr-i Sokhta. **1)** MAI 148, copper, found on surface (dimensions unknown); **2)** MAI 7151, copper, from Grave 132 inf. – length 2.50 cm; **3)** MAI 1436, chlorite, found on surface – length 6.80, width 5.60 cm; **4)** MAI 4357, copper, found on surface – sides 1.70 cm; **5)** MAI 147, copper, found on surface – 2.77 x 2.18 cm; **6)** MAI 6047, copper, found on surface – 2.38 x 2.49 cm; **7)** MAI 6025, copper, found on surface – 3.00 x 3.07 cm; **8)** MAI 6045, silver, found on surface – 2.78 x 2.75 cm; **9)** MAI 154, shell, found on surface – 2.60 cm; **10)** MAI 6032, fired steatite, found on surface – 1.60 x 0.40 cm.

Figure 17 shows the adoption of similar graphic templates at Chegerdak, in the Jazmurian Basin. All this, detailed in Table 1, suggests active contacts with the east through the western piedmont of Baluchistan and its central valleys from the early to the mid-3rd millennium BC.

SEAL IMPRESSIONS ON POTTERY FROM SPIDEJ

The seal impressions in this section belong to a totally different chronological horizon. They were stamped by various

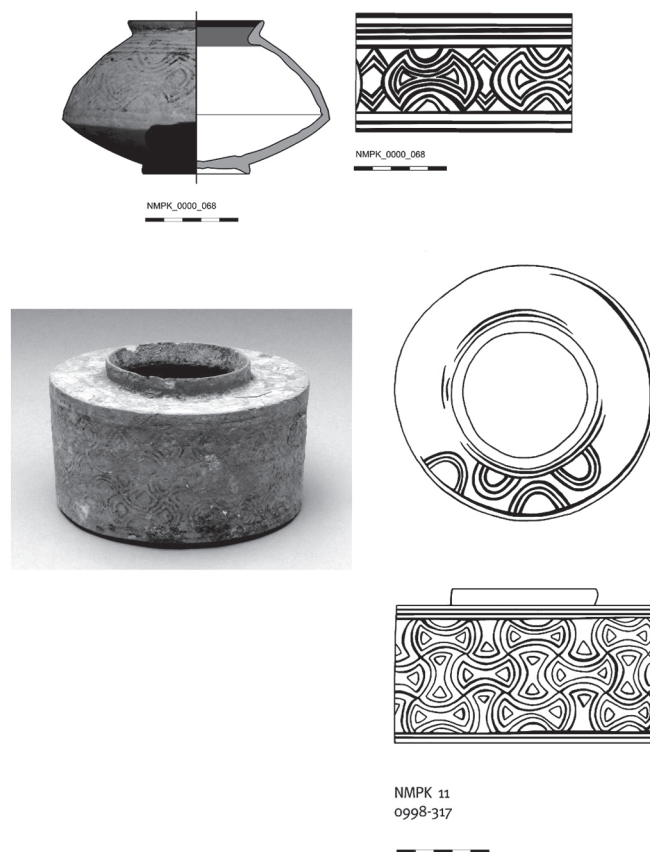


Fig. 14 – Two vessels of the Nal tradition illegally excavated in Pakistan and recovered by the Pakistani authorities, showing ‘double axes’ or ‘scallops’ geometrical patterns closely comparable to the motifs on seals nos. 4, 7 and 12 (courtesy of U. Franke and E. Cortesi; from Franke and Cortesi 2015: 254, cat. no. 593; 239, cat. no. 537).

metallic or stone (?) seals on potsherds found in graveyard B of Spidej. The imprints are related to similar ‘potter’ sealings in late 3rd to early 2nd millennium BC Kerman sites, such as the deep layers of the Konar Sandal north Tepe (Madjidzadeh and Pittman 2008: Fig. 33), Shahdad, Tepe Yahya IVA (Pittman 2001: 239) as well as Shahr-i Sokhta Period IV. Photographs were taken by M. Heydari and the imprints drafted by F. Desset. All artefacts appear in Figure 18 and are described in Table 2.

CULTURAL ASPECTS AND CHRONOLOGY

The two assemblages, the seals and the seal impressions, are clearly distinct in chronology and functions. SEJ seals of the first half of the 3rd millennium BC are loosely related, as we have seen, to seals and sealings from Central Asia, Sistan

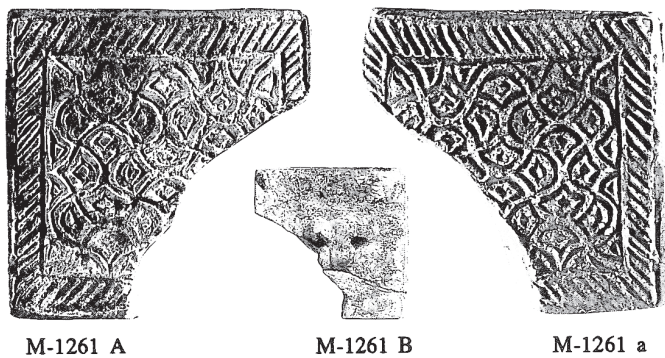


Fig. 15 – Seal M-1261, Mohenjo-Daro. From Shah and Parpola 1991: MD-1261 A, B, a; 158, bottom left, 438.

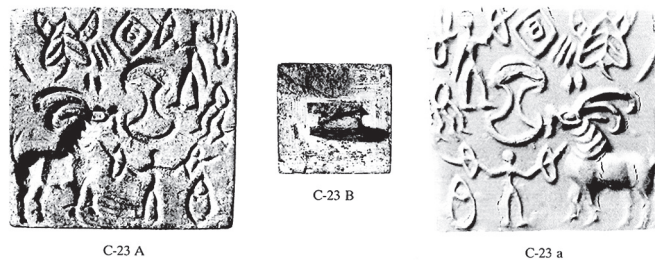


Fig. 16 – Seal C-23, Chanhu-Daro. From Joshi and Parpola 1987: C-23 A, B, a in pp.133, 375.

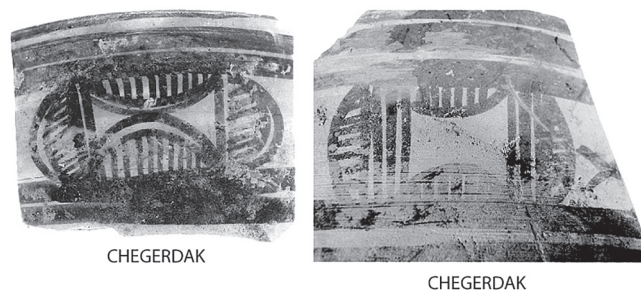


Fig. 17 – Sherds from Chegerdak (photos M. Heydari).

(Shahr-i Sokhta), Tepe Hissar, Kerman (first of all Shahdad, but also Tepe Yahya and Konar Sandal), Pakistani Baluchistan (particularly well with Nal / Sohr Damb Period II), the Indus Valley, and, of course, to Iranian Baluchistan.¹² However, similarities are always limited to specific attributes of the seals, or

12. No match could be found, so far, with the Persian Gulf or Western Iran.

are generic: no stamps of the OH and cross-like fashions range, at present, in the published materials.

Most of the metallic stamp seals (in copper and silver) from funerary contexts (the SEJ group and the other stamps found at Spidej, graveyard A) look formally and aesthetically elaborated, and might have been used and worn by elite persons in Eastern Jazmurian around, we suggest, 2800 / 2700-2600 BC as important symbols of identity and authority. While in other contexts their use for administration is certain, in absence of scientific excavations of the contemporary Jazmurian settlements, of which we know nothing, there is no evidence of clay sealings. Thus, their actual use for impressing clay tags is likely, but still not demonstrated. Perhaps, once deposited in graves, stamp seals expressed the social, legal, political or ethnic status or identity of their owners.¹³

Stamp seals nos. 12 with 29 and 13a with 13b, in both cases soldered by corrosion, show (if the graves had not been manipulated in ancient times) the practice of depositing different seals in the same funerary context. The objects recovered from the illegal dumps may have belonged to different funerary furnishings, implying collective burials. If, on the contrary, they were the property of a single deceased, he or she might have been endowed with different authorities and functions. The evidence might also imply that when a member of the elite died, some other individuals (her/his subordinates) were expected to give back their own administrative tools or badges of authorisation. Similar issues, of course, needs well excavated contexts and further research to be properly inquired.

As far as Chegerdak is concerned, seals with recognizable features (nos. 3-5, 7, 9-12, 18-22 and 24-26, almost entirely of the OH form) seem to overlap chronologically, in part, with the pottery from its plundered graveyards largely ascribed to the central centuries of the 3rd millennium BC (Heydari *et al.* 2015: 151; see Makran IIIb ceramics in Didier 2013). On the other hand, the close similarity of the 'double axes' motif on copper seals nos. 4, 7 and 12 with the same design on the pottery of Nal Period II, ca 3100-2700 BC, would point to the first half of the 3rd millennium BC, and even the big cat's head in profile with round eyes and open fangs on silver seal no. 28 from Spidej is reminiscent of rare profiles of big cats painted

13. According to Besenval (2011: 45), the Makran IIIa copper seals found in Miri Qalat and Shahi Tump graves "show on their shackles (or ring) traces of a thread (cotton and linen), probably used to fix the 'seals' on a cloth. It seems that the seals were found only in the female graves (the sexual identification of these 11 skeletons shows eight females, two children and an indeterminate adult)". In Altyn Depe (Masson and Sarianidi 1972: 122), the compartmented metallic stamp seals were frequently found in grave near the pelvis, indicating that they were perhaps suspended from a belt worn around the waist.

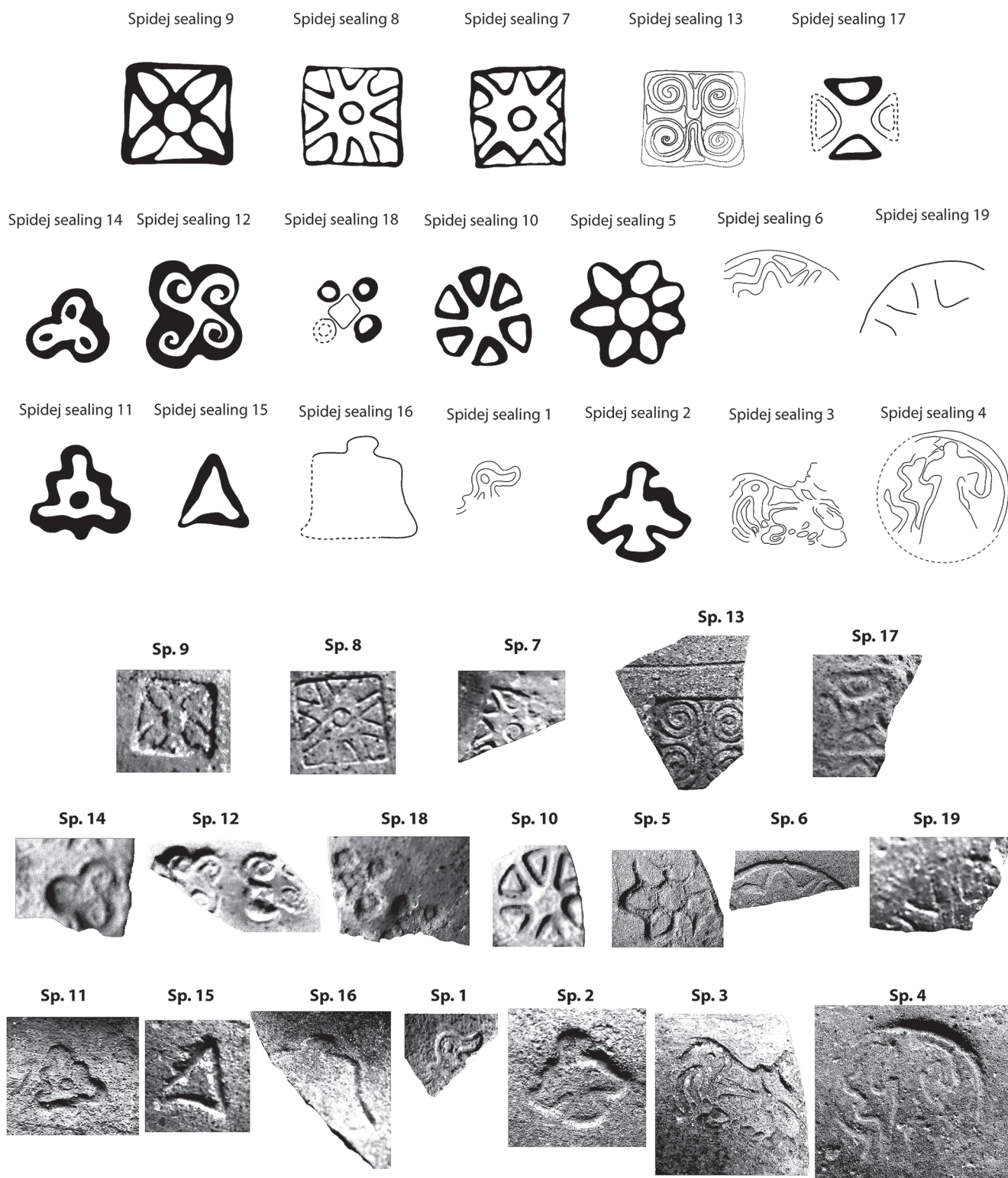


Fig. 18 – *Imprints of stamp seals on sherds collected on surface at Spidej, from contexts damaged by looting (drawings F. Desset, photos M. Heydari).*

on some vases of the Kech Makran region in Period IIIb and Nal Period II in Southern-Central Baluchistan (after the comparisons in Table 2).

The production and the circulation of such seals—well defined in terms of form, boss, limited thickness and the fine, particularly intricate geometric designs—may be preliminarily bracketed in the same period or slightly later. Their spatial distribution includes the two main sites so far identified in the Jazmurian northern and southern piedmont, Chegerdak and Spidej, but also includes some material from the unpublished graveyard of Keshik (Heydari, current study). Preliminary information on the chemistry of compartmented stamp seals supports that a variable amount of lead was added to arsenical copper. Of course, lead was ideal for casting intricately formed seals as it eased the flow of copper.

The imprints on ceramics from Spidej (with the exception of no. 4), recovered from the looted graveyard B of Spidej, seem date to the late 3rd–early 2nd millennium BC. Carelessly pressed on unbaked vessels before firing, the impressions, as a rule, are smaller, less visible and much simpler than those of the large copper and silver seals previously discussed. These features suggest more menial functions and a differently specialized context of use, perhaps limited to the potting community. They witness a dense, wider set of chronological-cultural links, within a more visible north-south oriented interaction sphere. Comparisons can be made with the Kelleli sites in Margiana and stretch to the late Namazga V-VI horizons of Margiana (Taip 1) and Bactria, Northern Baluchistan (Mehrgarh VIII at Sibri) and Shahr-i Sokhta (Period IV, Burnt Building), outlining a time range, in a preliminary estimate, from ca 2200 to 1900/1800 BC. The practice of sealing unbaked pots is also known at Shahdad, Konar Sandal North, Tepe Yahya IVA and Shahr-i Sokhta III, confirming a late 3rd to early 2nd millennium BC attribution.

CONCLUSIONS: BETWEEN LOCAL IDENTITY AND CONNECTIVITY

The strongest evidence of cultural connection in the SEJ group is probably represented by the distinctive ‘double axes’ motif, that indicates an unmistakable flow of information between Southern-Central Baluchistan and the largest endorheic basin of the south-eastern Iranian Plateau in the first half of the 3rd millennium BC. Additionally, the compartmented stamp seals in Shahr-i Sokhta, generally dated to the mid-3rd millennium (fig. 13) share some stylistic features with the SEJ,

hinting to relations between these areas, as already suggested on the basis of ceramic evidence (Heydari *et al.* 2015: 152–153). However, even a careful search in the Shahr-i Sokhta archives in Rome did not reveal any OH seal truly comparable to those published here.

Similarly, in the substantial repertoire of Bactria-Margiana copper seals collected by Sarianidi (1998: 822), there is only one stamp of this type, but its inner wavy lines are oblique, rather than parallel to the sides, as in our specimens. As said, the copper-alloy stepped-cross and OH seals (only found in Chegerdak and Keshik) seem to belong to a local SEJ repertoire (at least in the current state of our knowledge), as if their circulation and use were restricted to local groups in power. Such apparent regional ‘seclusion’ of SEJ stamps contrasts with the general evidence of connectivity revealed by ceramics and the much-discussed trade in rare valuable commodities among various regions of Middle and South Asia in the Early Bronze Age. The picture of a local style and possibly local production—if confirmed by additional data—might suggest that these seals were involved in some form of elite economical or ceremonial activities, rather than in long-distance communication and exchange (but the fragmented, episodic nature of the record suggests that these hypotheses should be considered with caution).

Apparently, at the same time, and in contrast with such stylistic idiosyncrasy, the same metallurgical materials, alloys (copper, arsenic and lead) and processes were used for making similar stamp seals from Altyn Depe in the Kopet Dagh Piedmont (Masioli *et al.* 2006; Salvatori *et al.* 2002) to the coasts of the Persian Gulf (a stamp seal found at Miri Qalat, in a Shahi Tump IIIa grave, ca 3000 BC, contained more than 13% lead: Besenval 2011: Figs. 100a and 102).¹⁴ This widespread technical choice represents a case of large-scale adaptation among different cultures and macro-regional polities that foreshadows the equally rapid, cross-cultural spread of tin bronzes across Middle and South Asia in the following centuries.

The so far less visible simpler seals used for stamping pottery in the late 3rd–early 2nd millennia BC indicate more restricted socio-economic function—first of all, their probable use by local communities of potters—, but in the face of a much wider sphere of interaction, that involved more intensive and frequent links along a north-south oriented economic network. Possibly, the developing long-distance tin trade was an important part of

14. Only the old analysis of a copper compartmented seal found at Bampur, in trench Y, phase IV-2/3 (De Cardi 1970: 328), reported more than 5% of tin and less than 1% of lead, differing notably from the arsenical copper leaded seals presented in this paper.

the new picture (see on this subject, among others, Weeks 2003; Kaniuth 2007; Wilkinson 2014). At any rate, it is clear that the preliminary evidence, in the dramatically compromised archaeological picture of Eastern Jazmurian, suggests that one or more elite groups of the Early Bronze Age made use of a very localized identity, formally expressed by a specific type of stamp seal whose functions, at present, are unknown; then, shortly after 2000 BC, completely different types of seals were more widely used with very practical functions in the economical reality of a new long-distance connectivity.

Muhammad HEYDARI

Cultural Heritage Organisation of Sistan and Baluchistan (ICCHTO)
Zahedan – IRAN
heydarism@gmail.com

François DESSET

Tehran University – Department of Archeology,
Qods St, Tehran – IRAN
francois.desset@wanadoo.fr

Massimo VIDALE

Dept. of Cultural Heritage
University of Padua – Piazza Capitanato 7
35139 Padua – ITALY
mass.vidale@gmail.com

BIBLIOGRAPHY

- BAGHESTANI S.
1997 *Metallene Compartimentsiegel aus Ost-Iran, Zentralasien und Nord-China*. Rahden/Westf.: Marie Leidorf (*Archäologie In Iran und Turan* 1).
- BALMELLE C., BLANCHARD-LÉMÉE M., CHRISTOPHE J., DARMON J.-P., GUIMIER-SORBETS A.-M., LAVAGNE H., PRUDHOMME R. et STERN H.
1985 *Le décor géométrique de la mosaïque romaine I. Répertoire graphique et descriptif des compositions linéaires et isotropes*. Paris: Picard.
- BESEVAL R.
1997 Entre le Sud-Est iranien et la plaine de l'Indus: le Kech-Makran. Recherches archéologiques sur le peuplement ancien d'une marche des confins indo-iraniens. *Arts Asiatiques* 52: 5-36.
2005 Chronology of Protohistoric Kech-Makran. In: JARRIGE C. and LEFÈVRE V. (eds.), *South Asian Archaeology 2001*: 1-9. Paris: ERC.
2011 Between East and West: Kech-Makran (Pakistan) during Protohistory. In: OSADA T. and WITZEL M. (eds.), *Cultural Relations between the Indus and the Iranian Plateau during the third millennium BCE; Indus Project, Institute for Humanities and Nature, June 7-8, 2008*: 36-159. Cambridge, MA: Harvard University, Department of Sanskrit and Indian Studies (*University Harvard Oriental series, opera minor* 7).
- BISCIONE R.
1985 The So-called "Nestorian Seals". Connections between the Ordos and Middle Asia in Middle-late Bronze Age. In: GNOLI G. and LANCIOTTI L. (eds.), *Orientalia Iosephi Tucci Memoriae Dicata*: 95-107 (*Serie Orientale Roma* LVI,2).
- BUENO M.
2011 *Mosaici e Pavimenti della Toscana, II secolo A.C. – V secolo D.C.* Padova: Università degli Studi di Padova, Dipartimento di Archeologia (*Antenor Quaderni* 22); Edizioni Quasar.
- CASAL J. M.
1961 *Fouilles de Mundigak*. Paris: Klincksieck (*Mémoires de la délégation archéologique française en Afghanistan* 17).
- CORTESI E., TOSI M., LAZZARI A. and VIDALE M.
2008 Cultural Relationships beyond the Iranian Plateau: The Helmand Civilization, Baluchistan and the Indus Valley in the 3rd Millennium BCE. *Paléorient* 34,2: 5-35.
- CRAWFORD H.E.W., KILLICK R.G. and MOON J.
1997 *The Dilmun Temple at Saar: Bahrain and its archaeological inheritance*. London, New York: Columbia University Press.
- DE CARDI B.
1967 The Bampur Sequence in the 3rd Millennium BC. *Antiquity* 41,161: 33-41.
1968a Bampur, a Third Millennium Site in Persian Baluchistan. *Archaeologia Viva (Tehran, the Iran Bastam Museum of Prehistory and Protohistory)* 1: 151-155.
1968b Excavations at Bampur, S.E. Iran: A Brief Report. *Iran* VI: 135-155.
1970 *Excavations at Bampur, a third Millennium Settlement in Persian Baluchistan, 1966*. New York (*Anthropological papers of the American Museum of Natural History* 51,3).
- DESSET F., VIDALE M. and ALIDADI SOLEIMANI N.
2013 Mahtoutabad III (Province of Kerman, Iran): An "Uruk-Related" Material Assemblage in Eastern Iran. *Iran* LI: 17-54.
- DESSET F., VIDALE M., ALIDADI SOLEIMANI N., BATTISTELLA E. and DANESHI A.
2017 A grave of the Halil Rud valley (Jiroft, Iran, ca. 2400-2200 BC): stratigraphy, taphonomy, funerary practices. *Iranica Antiqua* 52: 25-60.
- DIDIER A.
2013 *La Production céramique du Makran (Pakistan) à l'âge du Bronze ancien. Contribution à l'étude des peuplements des régions indo-iraniennes*. Paris: De Boccard (*Mémoires des Missions archéologiques françaises en Asie centrale et en Asie moyenne. Série Indus-Balochistan* 14).
- DIDIER A. and MUTIN B.
2015 The Kech Makran Region in Protohistoric Times. In: FRANKE U. and CORTESI E. (eds.): 297-318.
- FRANKE U. and CORTESI E. (eds.)
2015 *Lost and Found. Prehistoric Pottery Treasures from Baluchistan*. Berlin: Museum of Islamic Art, Pergamon Museum.
- FRIFELT K.
1975 On Prehistoric Settlement and Chronology of the Oman Peninsula. *East and West* 25: 359-424.

- GARAZHIAN O.
2009 Darestan: a group of Pre-Pottery Neolithic (PPN) sites in south-eastern Iran. *Antiquity* 83,319 (Project Galley), accessed on June 2017 [antiquity.ac.uk/projgall/garazhian/].
- GÜRSAN-SALZMANN A.
2016 *The new chronology of the Bronze Age settlement of Tepe Hissar, Iran*. Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology.
- HAKEMI A.
1997 *Shahdad. Archaeological Excavations of a Bronze Age Center in Iran*. Rome: ISMEO (Reports and Memoirs 27).
- HEYDARI M., FAZELI NASHLI H., CORTESE E. and VIDALE M.
2015 A surface collection at Chegerdak, a Bronze Age centre in the Jazmurian basin (South-Eastern Iran). *Paléorient* 41,2: 133-155.
- HIEBERT F.T. and LAMBERG-KARLOVSKY C.C.
1992 Central Asia and the Indo-Iranian Borderlands. *Iran* XXX,1: 1-15.
- HØJLUND F. and ANDERSEN H.H.
1994 *Qala-at al-Barain, vol. 1, The Northern City Wall and the Islamic Fortress*. Contributions by Olivier Callot et al. Aarhus: Jutland Archaeological Society Publications 30,1.
1997 *Qala-at al-Barain, vol. 2, The Central Monument Buildings*. Contributions by Olivier Callot et al. Aarhus (Jutland Archaeological Society Publications 30,2).
- JOSHI J.P. and PARPOLA A.
1987 *Corpus of Indus Seals and Inscriptions. 1. Collections in India*. Helsinki: Suomalainen Tiedekatemia (*Annales Academiae Scientiarum Fennicae*, Series B 239; *Memoirs of the Archaeological Survey of India* 86).
- KANIUTH K.
2007 The metallurgy of the late Bronze Age Sapalli Culture (Southern Uzbekistan) and its Implications for the tin question. *Iranica Antiqua* 42: 23-40.
- LAMBERG-KARLOVSKY C.C. and SCHMANDT BESSERAT D.
1977 An Evaluation of the Bampur, Khorab and Chah Hosseini Collections in the Peabody Museum and relations with Tepe Yahya. In: YOUNG C. Jr. and LEVINE L.D. (eds.), *Mountains and Lowlands. Essays in the Archaeology of Greater Mesopotamia*: 113-134. Malibu, CA: Undena Publications (*Bibliotheca Mesopotamica* 7).
- LOMBARDO G. and VIDALE M.
2014 *Simboli Vivi / Living Symbols. The Power of Imagery in the Prehistoric Pottery of Pakistan*. Rome: Museo Nazionale d'Arte Orientale "Giuseppe Tucci".
- MADJIDZADEH Y.
2003 *Jiroft. The Earliest Oriental Civilization*. Tehran: Ministry of Culture and Islamic Guidance, Printing and Publishing.
- MADJIDZADEH Y. and PITTMAN H.
2008 Excavations at Konar Sandal in the Region of Jiroft in the Halil Basin: First Preliminary Report (2002-2008). *Iran* 46: 69-103.
- MASIMOV I. S. and SALVATORI S.
2008 Unpublished Stamp-Seals from the North-western Murghab Delta. In: SALVATORI S. and TOSI M. (eds.), *The Bronze Age and Early Iron Age in the Margiana Lowlands. Facts and methodological proposals for a redefinition of the research strategies*: 111-118. Oxford (BAR Int. Ser. 1806).
- MASIOLI E., ARTIOLI D., BIANCHETTI P., DI PILATO S., GUIDA G., SALVATORI S., SIDOTI G. and VIDALE M.
2006 Copper-melting crucibles from the surface of Altyn-Depe, Turkmenistan (ca 2500-2000 BC). *Paléorient* 32,2: 157-164.
- MASSON V. M. and SARIANIDI V. I.
1972 *Central Asia, Turkmenia before the Achaemenids*. London: Thames and Hudson.
- MORADI H., SARHADDI-DADIAN H. and SHUHAMI NIK ABDUL RAHMAN N.H.
2014 Development and Decline of the Bampur Valley, Based on the New Archaeological Evidence from Prehistoric Period. *Iranian Studies* 47,2: 263-287.
- MORTAZAVI M.
2006 The Bampur Valley: A New Chronological Development. *Ancient Asia* 1: 53-62.
- MORTAZAVI M. and MOSAPOUR NEGARI F.
2010 Past and Present: Human – Environment Interaction in the Bampur Valley. *Ancient Asia* 2: 7-13.
- MUGAVERO L. and VIDALE M.
2003 The Use of Polychrome Containers in the Helmand Civilisation: A Female Function? *East and West* 53: 67-94.
2006 The Helmand Polychrome Wares as Skeuomorphs. *East and West* 56: 433-438.
- MUTIN B.
2013 *The Proto-Elamite Settlement and its Neighbors: Tepe Yahya Period IVC*. Oxford: Oxbow Books (*American School of Prehistoric Research Monograph series*).
2015 Chrono-Cultural Sequence of the Bampur Valley (South-Eastern Iran) during the Chalcolithic Period: A Reevaluation of the Stein Collection at the Peabody Museum, Harvard University. *Iran* LIII,1: 1-28.
- PIGGOT V.
2004 On the importance of Iran in the study of prehistoric copper-base metallurgy. In: STÖLLNER T., SLOTTA R. and VATANDOUST A. (Hrsg.), *Persiens antike Pracht: Bergbau, Handwerk, Archäologie: Katalog der Ausstellung des Deutschen Bergbau-Museums Bochum vom 28 November 2004 bis 29 Mai 2005*: 28-43. Bochum: Deutsches Bergbau-Museum Bochum.
- PIPERNO M.
1979 Socio-economic Implications from the Graveyard of Shahr-i Sokhta. In: TADDEI M. (ed.), *South Asian Archaeology 1977, vol. 1*: 123-139. Naples: Istituto Universitario Orientale (*Seminario di Studi Asiatici Series Minor* 6).
- PIPERNO M. and SALVATORI S.
2007 *The Shahr-i Sokhta Graveyard (Sistan, Iran). Excavation Campaigns 1972-1978*. Rome: ISIAO (Reports and Memoirs New Series VI).
- PITTMAN H.
2001 Glyptic Art of Period IV. In: POTTS D.T. (ed.): 231-268.
2013 Eastern Iran in the early Bronze age. In: POTTS D.T. (ed.), *The Oxford Handbook of Ancient Iran*: 304-324. Oxford: Oxford University Press.

- POTTS D.T. (ed.)
2001 *Excavations at Tepe Yahya, Iran 1967-1975, The Third Millennium*. Cambridge, Mass.: Harvard University, Peabody Museum of Archaeology and Ethnology (*American School of Prehistoric Research* 45).
- SAJJADI S.M.S.
2005 *Bampur Tepe. The First Season of excavation at Bampur/ Bampur, gozaresh e yek fasl e gamanezani va kavosh dar Bampur*. Tehran: Iranian Center for Archaeological Research, Iranian cultural heritage and Tourism organization (*Archaeological Report Monograph Series* 6).
- SALVATORI S. and TOSI M.
2005 Shahr-i Sokhta Revised Sequence. In: JARRIGE C. and LEFÈVRE V. (eds.), *South Asian Archaeology 2001*: 281-292. Paris: ERC.
- SALVATORI S. and VIDALE M.
1997 *Shahr-i Sokhta 1975-1978: Central quarters excavations. Preliminary report*. Rome: ISIAO (*Reports and Memoirs, Series Minor* 1).
- SALVATORI S., VIDALE M., GUIDA G. and GIGANTE G.
2002 A Glimpse on Copper and Lead metalworking at Altyn Depe (Turkmenistan) in the 3rd Millennium BC. *Ancient Civilizations from Scythia to Siberia* 8,1-2: 69-106.
- SANTONI M.
1988 Aspects matériels des cultures de Sibri et de Mehrgarh VIII (plaine de Kachi, Baluchistan, Pakistan) à la fin du troisième et au début du deuxième millénaires. In: GARDIN J.-C. (éd.), *L'Asie centrale et ses rapports avec les civilisations orientales à l'âge du Fer, Actes du colloque franco-soviétique, Paris, 19-26 novembre 1985*: 135-141. Paris: De Boccard (*Mém. M.A.F.A.C.* 1).
- SARIANIDI V. I.
1998 *Myths of Ancient Bactria and Margiana on its Seals and Amulets*. Moscow: Pentagrapic.
- SCHMIDT E.F.
1937 *Excavations at Tepe Hissar, Damghan*. Philadelphia: University of Pennsylvania Press for the University Museum.
- SHAH S.G. M. and PARPOLA A.
1991 *Corpus of Indus seals and inscriptions. 2: Collections in Pakistan*. Helsinki: Suomalainen Tiedeakatemia (*Annales Academiae Scientiarum Fennicae, Series B* 240; *Memoirs of the Department of Archaeology and Museums, Gov. of Pakistan* 5).
- STEIN A.
1937 *Archaeological Reconnaissances in Northwestern India and Southeastern Iran*. London: Macmillan and Co.
- TAVASSOLI M.M., ABTIN A.A. and SAREMI NAEENI D.
2012 Analysis of Spatial-environmental Bronze Age Sites in Bampur Valley, Iran, with using GIS. *International Journal of Applied Science and Technology* 2,3: 175-182.
- THORNTON C. and LAMBERG-KARLOVSKY C.C.
2004 Tappeh Yahya and the prehistoric metallurgy of south-eastern Iran. In: STÖLLNER T., SLOTTA R. und VATANDOUST A. (Hrsg.), *Persiens Antike Pracht: Bergbau, Handwerk, Archäologie: Katalog der Ausstellung des Deutschen Bergbau-Museums Bochum vom 28 November 2004 bis 29 Mai 2005*: 264-273. Bochum: Deutsches Bergbau-Museum Bochum.
- TOSI M.
1970 A Tomb from Damin and the Problem of the Bampur Sequence in the Third Millennium BC. *East and West* 20,1-2: 9-50.
1974 Bampur: a Problem of Isolation. *East and West* 24,1-2: 29-50.
1983 *Prehistoric Sistan* 1. Rome: ISMEO (*Reports and Memoirs* 19,1).
- VIDALE M. and DESSET F.
2013 Mahtoutabad I (Konar Sandal south, Jiroft), preliminary evidence of occupation of a Halil Rud site in the early 4th millennium BCE. In: PETRIE C.A. (ed.), *Ancient Iran and its Neighbours: Local developments and Long-range interactions in the fourth millennium BC*: 233-251. Oxford: Oxbow Books (*British Institute of Persian Studies, Archaeological Monographs Series* 3).
- WEEKS L.R.
2003 *Early metallurgy of the Persian Gulf: Technology, trade, and the Bronze Age World*. Boston: Brill (*American School of Prehistoric Research monograph series*).
- WILKINSON T.C.
2014 *Tying the Threads of Eurasia. Trans-regional Routes and Material Flows in Eastern Anatolia And Western Central Asia, c. 3000-1500 BC*. Leiden: Sidestone.
- WU X. and LECOMTE O.
2012 Clay sealings from the Iron Age citadel at Ulug Depe. *Archäologische Mitteilungen aus Iran und Turan* 44: 313-328.

