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To cite this article: Benjamin Mutin, Hossein Moradi, Hossein Sarhaddi-Dadian, Hassan Fazeli Nashli & Mojtaba Soltani (2017): New Discoveries in the Bampur Valley (South-Eastern Iran) and Their Implications for the Understanding of Settlement Pattern in the Indo-Iranian Borderlands During the Chalcolithic Period, Iran

To link to this article: http://dx.doi.org/10.1080/05786967.2017.1356004

Published online: 11 Aug 2017.

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New Discoveries in the Bampur Valley (South-Eastern Iran) and Their Implications for the Understanding of Settlement Pattern in the Indo-Iranian Borderlands During the Chalcolithic Period

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ABSTRACT
This article presents the results of the first systematic archaeological survey of the Bampur Valley in south-eastern Iran. This survey discovered 39 Chalcolithic sites dating to between the mid-to-late fifth and mid-to-late fourth millennium BC and collected numerous archaeological ceramics. These new data include substantial evidence for relationships with cultural complexes extending in the neighbouring regions of Kerman to the north-west and Kech-Makran in Pakistan to the south-east, as well as materials with styles never previously seen. Analysis of this data provides important, new details as to the chronology and archaeological cultures of the Bampur Valley and enables a first assessment of settlement pattern in this valley during the Chalcolithic period. Data of this survey are also critical for comprehending the cultural spheres and interactions at the level of southern Middle Asia at that time.

KEYWORDS
South-eastern Iran; Bampur Valley; Chalcolithic period; settlement pattern; survey

I. Introduction
The Bampur Valley in south-eastern Iran (Figure 1) was surveyed for the first time by M. A. Stein in 1932. Stein found less than a dozen protohistoric sites in this valley and in the areas he explored east of it. Among these sites, Chah Husaini, Tepe Bampur and Khurab have been important markers for the Chalcolithic and Bronze Age periods in south-eastern Iran (fifth–third millennium BC). B. de Cardi reinvestigated Tepe Bampur in 1966, which allowed her to refine the chronology and definition of the material assemblage of this Bronze Age site. The same year D. Schmandt-Besserat began re-evaluating the Stein ceramic collection from Chah Husaini, Tepe Bampur and Khurab held by the Peabody Museum of Archaeology and Ethnology at Harvard University. The publication of this study was voluntarily postponed for 10 years and eventually included important new comparative materials excavated between 1967 and 1975 at Tepe Yahya, a site located c. 360 km north-west of the Bampur Valley in Kerman province (see Figure 1). Together with C. C. Lamberg-Karlovsky – the excavator of Tepe Yahya – Schmandt-Besserat identified clear stylistic parallels between the assemblage collected by Stein in the Bampur Valley and those dating to the Chalcolithic period excavated at this site and at the site of Tal-i Iblis, also located in Kerman. The authors drew attention to the pivotal role of this valley and of Chah Husaini for the understanding of the chrono-typological relationships between the Chalcolithic sites in Kerman and those located further east in Balochistan. Tepe Bampur was investigated again by S. M. S. Sajjadi in 2002, and additional, limited explorations were conducted in the Bampur Valley in 2002 and 2005. In 2009, one of us (B. M.) re-examined the Stein collection in the Peabody Museum with the hope of finding parallels for materials that had been freshly excavated c. 300 km to the south-east in the Kech-Makran region in south-western Pakistan. This re-evaluation provided up-to-date information regarding the chronology and cultures and cross-cultural interactions present in the Bampur Valley during the Chalcolithic period. More
specifically, it allowed identification, in that collection, of Chalcolithic ceramics with forms and painted designs similar to those of vessels from Kech-Makran, although this evidence – a small number of sherds – needed confirmation through the acquisition of more data in the field. In June and October–November 2011, one of us (H. M. with H. S. D. and M. S.) conducted a new survey – the first comprehensive and systematic archaeological exploration – in the Bampur Valley. Over two months, with the support of the Iranian Center for Archaeological Research, this survey discovered 81 sites including sites dating to the Chalcolithic, Bronze Age, and early historical periods, between the fifth millennium BC and the first millennium AD, and collected many ceramics including materials with relationships to Kerman and Kech-Makran and materials not seen before. As a result, in comparison with the few protohistoric sites reported by Stein, this recent fieldwork adds considerably more substance to the current knowledge of the archaeological cultures and cultural relationships, chronology and settlement pattern of the ancient Bampur Valley, as well as to the current picture of the Indo-Iranian Borderlands in Protohistory. In the present paper, we join our efforts to synthesise and present the results of this survey that pertain to the Chalcolithic period.

II. Environmental Settings and Archaeological Sites

The Bampur Valley lies in the eastern part of the Jaz-e Murian Basin located in the southern half of the Sistan-and-Balochistan province, c. 200 km north of the Gulf of Oman (see Figure 1). It runs east–west between mountain ranges including mountains exceeding 1500 m in altitude. The Bampur River flows from east to west and is the continuation – beginning around the city of Iranshahr in the east – of the north–south Karevandar River, whose source is in mountainous areas located further to the north.9 It is then absorbed

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9See Moradi, Sarhaddi-Dadian, and Rahman, “Development and Decline of the Bampur Valley.”
into the Jaz-e Murian Basin, which begins c. 75 km west of Iranshahr, and is today almost always dry west of this city.

The survey was conducted over c. 32 km from east to west and 8 km from north to south. It began in the east at Tepe Bampur, close to Bampur city, and then followed the direction of the Bampur River (Figure 1). The landscapes traversed include flat desert zones, dried riverbeds covered with stones and sand dunes. This survey reported 81 sites, virtually all of them recorded for the first time. They were found along both the northern and southern banks of the Bampur River. The sites were thoroughly explored on foot, their dimensions measured and the diagnostic sherds collected. Stein had reported the site of Khurab east of the surveyed area as well as Tepe Bampur, Tump-i Qasimabad (which we believe was located in the vicinity of the Qasem Abad sites, all of more recent date, and found by the present survey east of the Bishk Abad sites), Chah Husaini and Behest Abad within the surveyed area (see Figure 1). He did not, however, visit the numerous additional sites recorded here, especially in the sectors between Tepe Bampur and Chah Husaini along the northern bank, and the Bishk Abad and Shekar Abad sites along the southern one.

The present survey recorded 39 Chalcolithic sites with materials dating to the fifth and fourth millennia BC. The non-Chalcolithic settlements are essentially concentrated within the eastern half of the survey area, close to Tepe Bampur (see Figure 10), whereas most of the Chalcolithic sites were found to the west along both the northern and southern banks (see Figure 1). Of the 39 Chalcolithic sites, only one, Behest Abad, had previously been recorded by Stein,10 and we are adding here two sites discovered by him, Chah Husaini and Tump-i Qasimabad,11 as they are relevant to the present discussion. Present data thus consist of 41 sites (Table 1). They comprise 16 sites measuring less than 1 ha (0.1–3.5 m high); 15 sites between 1.5 and 3 ha (0.2–3 m high); 6 sites between 3.5 and 5.5 ha (0.5–6 m high) and 4 additional larger sites (7.5, 9.75, 12.5 and 24 ha). Most of these sites are not very substantial; half of them are less than 1 m high, and the other half are essentially between 1.5 and 3.5 m high. Only two sites are higher: Chah Husaini and Balanch 1 (respectively 4 and 6 m). The largest site (Shams Abad 15, 24 ha) is almost flat.

III. Criteria for the Chrono-cultural Characterisation of the Materials

As in many other areas of Iran, ceramic in the south-east is usually the most abundant type of artefact recovered from protohistoric sites, and the chrono-cultural framework of Chalcolithic south-eastern Iran is essentially based on the ceramic typology and distribution of ceramic types throughout stratigraphic sequences. It is also mostly through ceramic survey collection and typology that ancient settlement patterns – at the very least their chronological evolution – are analysed.12 An important issue in the Bampur Valley is that there is almost no excavated site dating to the Chalcolithic period. The only exceptions are Chah Husaini and Tump-i Qasimabad, which were sounded by Stein in the 1930s; he however conducted his excavations within a few days and without current methodological standards. As a result, he recorded and reported limited details on the Chalcolithic deposits he excavated, and radiocarbon dating did not exist at that time. Although Stein understood that part of the sites he found in the Bampur Valley dated to the Chalcolithic period, it is only much later, from the late 1960s onwards, that a better sense of the chronology and archaeological cultures of this period in south-eastern Iran began to emerge. Indeed, the current chrono-cultural framework of Chalcolithic south-eastern Iran was established principally through three stratigraphic excavations conducted in the 1960s and 1970s: at Tepe Yahya13 and Tal-i Iblis14 in Kerman and at Shahr-i Sokhta in Seistan (founded in the late fourth millennium BC).15 Additionally, more recent sondages in Kerman such as in the Halil Rud Valley (at Mahtoutabad16) and west of the Dasht-i Lut (in the area of Shahdad17) have complemented this framework, while fieldwork conducted in the 1990s and 2000s in the Kech-Makran region of Pakistan, including excavations at the sites of Miri Qalat and Shahi-Tump in the Kech Valley, defined the archaeological cultures and chronology of the Chalcolithic period directly south-east of south-eastern Iran.18 This work
Table 1. Chalcolithic sites found in the Bampur Valley, sorted from west to east and north to south and with an indication of the main diagnostic ceramics collected on the surface.

<table>
<thead>
<tr>
<th>Site</th>
<th>Approximate area (ha)</th>
<th>Chevorn-painted ceramics</th>
<th>Other Kerman-related ceramics</th>
<th>Husaini monochrome ceramics</th>
<th>Husaini polychrome ceramics</th>
<th>Bowls with inside painted decorations</th>
<th>Aliabad ware conical goblets</th>
<th>Aliabad ware/Miri ware flanged jars</th>
<th>Miri ware</th>
<th>Undefined Chalcolithic</th>
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<td>CD Chil Dargi</td>
<td>0.75</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CH Chah Husaini</td>
<td>7.50</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td></td>
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<tr>
<td>BA Behest Abad</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td>X</td>
<td></td>
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<td></td>
<td>X</td>
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<td>X</td>
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<tr>
<td>BL2 Balanch 2</td>
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<td></td>
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<td></td>
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<td>BL5 Balanch 5</td>
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<td>X</td>
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<td>121.77</td>
<td>21</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>14</td>
<td>4</td>
<td>6</td>
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</table>
has been particularly instrumental in characterising the materials previously collected by Stein as many of these materials have the same styles as those excavated and radiocarbon dated at the above-mentioned sites in Kerman and Kech-Makran.

In the Bampur Valley, Stein collected painted ceramics related to Black-on-buff ware and Black-on-red ware – two ceramic types studied in greater detail approximately 40 years later in Kerman – and to Miri ware, a product that was primarily defined in Kech-Makran. The presence of Black-on-buff ware, Black-on-red ware and Miri ware in this valley shows that communities settled there sometime between the mid-fifth and mid-fourth millennium BC and that this valley was part of a large c. 160,000 km² ceramic sphere extending to the north-west in Kerman (Black-on-buff ware and Black-on-red ware) and of one sphere extending up to Kech-Makran, c. 300 km to the south-east (Miri ware).19 The presence of additional ceramic types in the Stein collection, Aliabad ware20 and Shahi-Tump ware,21 led one of us to suspect the existence of similar relationships – to Kerman and Kech-Makran – during the second half of the fourth millennium BC.22 Lastly, Stein also collected monochrome and polychrome ceramics that have no clear parallels in the neighbouring regions. These ceramics are assumed to date to the Chalcolithic period based on a series of indications provided by Stein as to their contexts of discovery at Chah Husaini. This material was provisionally labelled Husaini monochrome ware and Husaini polychrome ware.23 With the exception of Shahi-Tump ware, the present survey in the Bampur Valley collected all the above-mentioned ceramic types in greater quantities and at more numerous locations than was done by Stein. It also provided previously unseen types, which appear to be characteristic of this valley as they are frequent there and are not reported or seem rare elsewhere. All these types, their parallels when existent, and their distributions in the Bampur Valley are presented below with a focus on the main diagnostics. They are divided into three main groups: (1) Kerman-related ceramics, (2) Bampur Valley ceramics and (3) Miri ware and Aliabad ware.

IV. Kerman-Related Ceramics

Kerman-related ceramics include vessels similar to Black-on-buff and Black-on-red ware. These two types are reported in large quantities in Kerman and at Chah Husaini. They consist of fine ceramics of which an important proportion shows painted chevron patterns. Black-on-buff ware is observed at Tepe Yahya essentially in Periods VB and VA, with larger amounts in the older Period VB than in Period VA. It was also found at Tal-i Iblis Period I (Bardsir painted ware).24 Black-on-red ware mostly corresponds to the continuation, with a red colour paste and changes in certain forms and designs, of Black-on-buff ware.25 It is common in Period VA and rarer in Period VB. Prickett writes: “…although there is no disagreement that most of the Yahya VB sherds are lighter than many of the Yahya VA examples, a chronologically precise introduction of ‘red’ fabrics at the commencement of Yahya VA is an oversimplification.”26 A variant of Black-on-red ware was identified at Tepe Yahya on the northern side of the site and particularly among necked jars. It consists of red-purple-slipped buff-tan vessels instead of the typical ceramics with pastes of red colour. Beale thinks that this variant could possibly be characteristic of the very end of Yahya VA,27 whereas Prickett believes that, based on the examples she collected in the Daulatabad Plain c. 20 km west of Tepe Yahya, it should be dated to Period VB.28 On the other hand, she recorded plain ceramics with “dark red-brown and orange-brown or rust surface darkenings or slips” that she assigns to Period VA.29 Black-on-red ware was also found at Tal-i Iblis Period II (Iblis painted ware).30

Black-on-buff and Black-on-red ware are typical of south-eastern Iran and spread over c. 160,000 km² in this region. They are recorded at other locations in the Soghun Valley (where Tepe Yahya lies), in the

21See Mutin, “Contribution à l’étude du peuplement des confins indo-iraniens au Chalcolithique”; “Ceramic Traditions and Interactions.”
26Prickett, Man, Land and Water, 1405.
29Ibid., 1427–30.
Daulatabad Plain, at additional sites in the Bardirs Plain (where Tal-i Iblis is located), at Tepe Langar north-east of Tal-i Iblis, and at Shahdad near the Dasht-i Lut. More recently, N. Eskandari (personal communication) identified more of these materials in the Shahdad area. Additionally, Prickett reports Yahya Periods VI–VA-related ceramics in the Khash area, north-east of the Bampur Valley, with no details as to the exact style of this material. The dates of area, north-east of the Bampur Valley, with no details are chevron-painted ceramics (Figures 2 and 3). abundant diagnostics for this group in the Bampur Val-

cult to classify small fragments from survey collection at Tepe Yahya. These issues make it particularly diffi-

cultly possible and supported by the dates from Tal-i Iblis, but this is difficult to estimate precisely over the entire region at present (the few radiocarbon dates obtained by Eskandari in the Shahdad area tend to cor-

roborate the older dating of the materials in north-cen-

tral Kerman). Furthermore, on the one hand, there are clear traits that enable a distinction between Black-on-

buff ware and Black-on-red ware; for instance, beakers with painted short friezes of chevrons on their rims and potter’s marks on their bases are characteristic of Black-on-red ware. On the other hand, many other forms and designs are shared by these two ceramic types and considered alone, paste colour is not always a clear diagnostic since, although there are evident buff and evident red ceramics, a broad range of colours extending from red to buff is observed at a minimum in the Bampur Valley, the Daulatabad Plain and at Tepe Yahya. These issues make it particularly diffi-
cult to classify small fragments from survey collection and we therefore include here both types within the same group – Kerman-related ceramics. The most abundant diagnostics for this group in the Bampur Valley are chevron-painted ceramics (Figures 2 and 3). Additional types of painted ceramics that are not detailed here (Figure 3/9–15) corroborate this relationship to Kerman.

Chevron-painted ceramics are reported from 21 sites, all located along the northern bank of the Bampur River (Figure 1; Figure 9/1–6; Table 1): Chil Dargi, Chah Husaini and Behesht Abad (Figure 2/17–18,21–23), Sorme Chashm 1 (Figure 2/10), Sorme Chashm 2 (Figure 2/4,7,9,13), Sorme Chashm 3 (Figure 2/2–3,11), Tepe Dare 3 (Figure 2/6,19), Tepe Dare 2 (Figure 2/8,14,27), Tepe Dare 1 (Figure 3/1,3–4), Jafar Abad 2 (Figure 2/5,24), Jafar Abad 1 (Figure 2/16), Posht Kor 3 (Figure 2/28), Posht Kor 2 (Figure 2/26; Figure 3/7), Posht Kor 1 (Figure 2/12), Posht Kor Qasem 2 (Figure 2/20,25,29), Posht Kor Qasem 1 (Figure 2/1; Figure 3/2,5), Shams Abad 6 (Figure 2/15,30; Figure 3/8), Shams Abad 2 (Figure 3/6), Chah Qajar 3, Balanch 1 and Balanch 2. These ceramics include beakers, bowls and larger jars with two main types of decoration: one consists of a short frieze filled with parallel chevrons painted on the outside surface of the rim (Figure 2), and the other is a panel that covers a larger portion of the outside surface and is filled with parallel multiple chevrons (Figure 3/1–8). Additionally, intermediate type of decoration consists of shorter parallel multiple chevrons inserted in a frieze painted on the rim (Figure 2/21,23–25). Variants of these decorations are also observed, where the frieze or panel is filled with interspaced groups of chevrons or of multiple chevrons (Figure 2/8,17,19,26). The forms of the chevron-painted ceramics are not very varied; they are limited to open vessels, and the most common type in the assemblage is the beaker/bowl with a short frieze and a rim diameter measuring 20 cm maximum. Additional, different types of profiles including ceramics with inverted or everted rims and larger vessels are also observed. Four beaker bases were collected including two with potter’s marks (Figure 2/27–30). Paste colours of the chevron-painted ceramics are buff to red, and vessels with a reddish slip or wash on their outside surfaces are observed at Behesht Abad, Tepe Dare 3, Jafar Abad 2, Posht Kor 1 and Posht Kor Qasem 2 (Figure 9/1–3). Two sherds of grey colour are also noted at Sorme Chashm 2 and Shams Abad 6.


bution of these ceramics.
32 Prickett, Man, Land and Water, 765, fig. 7.3, 771, fig. 7.4.
33 Beale, “The Site,” 12, table 2.1; Prickett, Man, Land and Water, 410, table 3.1.
34 Caldwell, “Setting and Results of the Kerman Project;” 24, fig. 2.
35 Beale, “The Ceramics,” 70, 72; see, however, Prickett’s slightly different opinion (mentioned above).
36 Ibid, 67.
38 Prickett, Man, Land and Water, 1403–5.
39 Mutin, “Chrono-cultural Sequence of the Bampur Valley,” 6, fig. 4.
40 See Beale, “The Ceramics,” 74, fig. 4.33; 77, fig. 4.36; 79, fig. 4.37.
Figure 2. Kerman-related ceramics: chevron-painted ceramics from the Bampur Valley (plate by B. Mutin, drawings by H. Moradi).
Lamberg-Karlovsky and Schmandt-Besserat reported unique types of painted ceramics in the Stein collection from Chah Husaini, which one of us later labelled Husaini monochrome ware and Husaini polychrome ware (and Husaini Groups C and D).\(^{41}\) As noted above, we assume these vessels were, at least partly, contemporaneous with the Kerman-related ceramics.\(^{42}\)

Technologically, they are not very different from the rest of the fifth–fourth millennium BC material observed on the south-eastern Iranian Plateau: their fabrics and surfaces are respectively as fine and smooth to the touch as Kerman-related ceramics and Miri ware; shaping marks (parallels grooves that result from shaping the vessels with a tool on a rotating device) are recurrently observed on these vessels as


they are on Chalcolithic materials from Kerman to south-western Pakistan; they are well fired and their paste and paint colours, respectively red to buff and black to brown in the case of the monochrome ceramics, are also similar. Additionally, as for Black-on-red ware, vessels with a reddish slip or wash are frequently observed. On the other hand, the profiles and some of the painted designs of these ceramics, particularly monochrome carinated vessels and vessels decorated with polychrome indented motifs, are essentially different from the other ceramics reported on the south-eastern Iranian Plateau. We observe certain similarities with Miri ware for some of these ceramics (not the above-mentioned carinated vessels and polychrome fragments), but we also find these analogies ambiguous, leading us to believe these ceramics represent a style specific to the Bampur Valley. (It is worth mentioning, however, that the indented motifs have parallels in Turkmenistan in the Namazga Chalcolithic period. If this relationship proves to be correct, it would antedate and considerably extend to the south that observed at Shahr-i Sokhta around the late fourth millennium BC). The present survey found many additional ceramics – bowls with inside painted decorations in particular – with no clear parallels outside this valley. These ceramics are technologically similar to the other above-mentioned Chalcolithic ceramics and were collected almost always at the same sites as the Kerman-related ceramics, so that we can assume they date to approximately the same period, between c. 4500 and 3500 BC (Table 1).

V.1. Husaini Monochrome and Polychrome Ceramics

The most distinctive types recovered by Stein from Chah Husaini are monochrome carinated ceramics and polychrome vessels with indented designs. The present survey records two additional ceramics at the nearby site of Behesht Abad and further east at Posht Kor 2, which clearly parallel the carinated vessels from Chah Husaini (Figure 4/2,4; Figure 9/14–15). Additional carinated fragments that more vaguely resemble these ceramics were collected at Behest Abad, Sorme Chashm 3 and Posht Kor 1, and also along the northern bank of the Bampur River (Figure 4/5–8). Polychrome fragments with indented painted designs, similar to those from Chah Husaini, were found at Behest Abad (Figure 4/11–12).

V.2. Bowls with Inside Painted Decorations

There are many bowls with inside painted decorations in the Bampur Valley that, to the best of our knowledge, have no evident parallels beyond this valley (although one relatively acceptable parallel for some of these materials – some of the garland-based compositions – is observed among ceramics recorded in Tepe Yahya Period IV C). Their forms have general equivalents in Kerman and Kech-Makran during the Chalcolithic period, but their decorations are original. These consist of friezes of triangles (Figure 5/12–20), garlands (Figure 5/1–6) and motifs made of inverted, symmetrical palm- or wing-motifs (Figure 5/7–11) painted along the inside surfaces of their rims (Figure 9/7–13). These friezes include variants arranged with different fillings and additions of motifs. The forms of the bowls divide between two types of profiles with everted rims: one with concave walls and one with straight walls most commonly with a convex inflection below the rims. The latter profile, which includes deeper shapes, is observed on bowls with garland- and triangle-based decorations and not on bowls with palms. The smallest vessels are 18 cm in rim diameter; many of them are between 20 and 30 cm; larger bowls, with rim diameters over 35 and 40 cm, are also recorded. Like the other materials observed in the Bampur Valley, these bowls have red to buff paste colours (one is grey; Figure 5/12) and black to brown paint colours. Of smooth textures and with fine fabrics, in several cases with a reddish slip or wash on their surfaces (Figure 9/7, 11), they appear to be part of a same ceramic tradition and also compare in technology to the other Chalcolithic fine painted ceramics known on the south-eastern Iranian Plateau.

These bowls are reported from 14 sites located along the northern bank of the Bampur River, which also produced Kerman-related ceramics, except for Balanch 5 (Table 1): Chil Dargi, Behesht Abad (Figure 5/8), Sorme Chashm 1 (Figure 5/10,16), Sorme Chashm 2, Sorme Chashm 3 (Figure 5/19–20), Tepe Dare 3 (Figure 5/18), Tepe Dare 2 (Figure 5/14), Jafar Abad 2 (Figure 5/17), Jafar Abad 1 (Figure 5/11–12), Posht Kor 2 (Figure 5/7), Posht Kor 1 (Figure 5/1,9), Posht Kor Qasem 2 (Figure 5/2,4–5,13,15), Shams Abad 6 (Figure 5/6) and Balanch 5 (Figure 5/3).

VI. Aliabad Ware and Miri Ware

Miri ware and Aliabad ware are two ceramics that emerged on the south-eastern Iranian Plateau mostly

43Lamberg-Karlovsky and Schmandt-Besserat, “Bampur, Khurab and Chah Husseini Collections,” 130–2; Mutin, “Ceramic Traditions and Interactions,” 259–60;
44Mutin, Proto-Elamite Settlement and Its Neighbors, 93–4, 362, figs. 3.47–3.48.

after Black-on-buff and Black-on-red ware. Miri ware consists of fine, monochrome painted ceramics. It is characteristic of Period II at Miri Qalat and Shahi-Tump in Kech-Makran, a period dating to the first half of the fourth millennium BC. Fragments of this ceramic were also previously recorded by Stein in the Bam-pur Valley. Aliabad ware includes plain ceramics as well as monochrome and polychrome painted ceramics and characterises Tal-i Iblis Period IV. It has strong connections with and is probably the continuation of Dashgar ware of previous Iblis Period III and also has connections with the ceramics of the following Period V. Besides Tal-i Iblis, Aliabad ware and ceramics related to this style were found in the Daulatabad Plain, at Mahtoutabad in the Halil Rud Valley, and near Shahdad (N. Eskandari, personal communication). Their presence in the Bampur Valley was suspected, a suspicion that is confirmed here. Aliabad ware is thought to have appeared in the second quarter of the fourth millennium BC and continued into the second half of this millennium, although some radiocarbon dates placed between the mid-fifth and early fourth

Figure 4. Bampur Valley ceramics: Husaini monochrome and polychrome ceramics from the Bampur Valley (plate by B. Mutin, drawings by B. Mutin [nos. 1, 3, 9–10] and H. Moradi).

References:

48 Caldwell, "Setting and Results of the Kerman Project," 36–7.
49 Prickett, Man, Land and Water, 1432–56.
50 Vidale and Desset, "Konar Sandal South, Jiroft."
Figure 5. Bampur Valley ceramics: bowls with inside painted decorations from the Bampur Valley (plate by B. Mutin, drawings by H. Moradi).
millennium BC were obtained from Tal-i Iblis and Mahtoutabad.\textsuperscript{52} Like Black-on-buff and Black-on-red ware, one may reasonably consider that the ceramics relating to Aliabad ware reported in south-eastern Iran are not all strictly contemporaneous. In this regard, it is important to add that diverse types of vessels are included under the label Aliabad and that this label needs clarification in its chrono-typology. Aliabad ware and related ceramics were also identified in Kech-Makran,\textsuperscript{53} where the relationship between this ware and the ceramic assemblage typical of this region is not clear. Indeed, there is evidence of actual Aliabad ware – polychrome sherds and fragments of typical conical goblets – at the end of Period II in levels that produced Miri ware. Furthermore, Miri ware contains many types that are different from Aliabad ware but, at the same time, a portion of this ware – bowls in particular – has painted designs similar to those observed on Aliabad ware. Miri ware and Aliabad ware assemblages also have in common distinctive types of flanged jars, which are present in the Bampur Valley as well (see below). Additionally, significant relationships with Aliabad ware are observed in Kech-Makran in the second half of the fourth millennium BC, during Period IIIa, the period that follows Period II. Many examples of typical Aliabad-related conical goblets were found in tombs dating to Period IIIa, associated with Shahi-Tump ware, a fine, painted ceramic characteristic of Kech-Makran during this period.\textsuperscript{54} Such goblets are also present in the Bampur Valley (see below). In Kech-Makran, Aliabad ware and related ceramics are not reported after Period IIIa, that is, after the late fourth and early third millennium BC. The same is noticed in Kerman; at the very least, Aliabad ware is not reported from the Proto-Elamite occupation at Tepe Yahya dating to around 3000 BC\textsuperscript{55} and is anterior to the Uruk/Proto-Elamite layers sounded at the site of Aliabad.\textsuperscript{59}

\textbf{VI.1. Aliabad Ware Conical Goblets}

Fragments of typical Aliabad conical goblets are recorded from three sites along the southern bank of the Bampur River, in the centre of the surveyed area: Bishk Abad 2, 3 and 7 (Figure 1; Figure 6; Figure 9/16–17; Table 1). An additional base fragment, that, with reservations, resembles the bases of these goblets is reported from Shams Abad 15, a site located along the northern bank and further to the east. The other few sherds collected at this site date to the third millennium BC. As noted above, such goblets have parallels from Kerman to Kech-Makran, for instance, at Tal-i Iblis.\textsuperscript{57} The hollow-footed bases found in the Bampur Valley are typical (Figure 6/1–3) and their diameters, between c. 4 and 5.2 cm, are also comparable to the examples recorded in Kech-Makran. The short goblet rim fragments (Figure 6/4–5) also resemble in profile and size (8.5–9 cm in rim diameter) the examples from Kech-Makran. On the other hand, the rim fragment Figure 6/6, measuring almost 26 cm, is larger than the usual goblets. Lastly, the painted decoration of sherd Figure 6/7 (Figure 9/18) has analogies at Tal-i Iblis\textsuperscript{58} and the site of Aliabad\textsuperscript{59} in Kerman.

\textbf{VI.2. Aliabad Ware/Miri Ware Flanged Jars}

Flanged jars are reported from Tal-i Iblis Period IV,\textsuperscript{60} additional sites in the same area,\textsuperscript{61} and Mahtoutabad Period I\textsuperscript{62} in Kerman as part of Aliabad ware, as well as in Kech-Makran Period II as part of Miri ware.\textsuperscript{63} In the Bampur Valley, six sites provided flanged jars: Jafar Abad 3, Jafar Abad 4, Posht Kor 5, Posht Kor 6 and Posht Kor Qasem 2, along the northern bank of the Bampur River, in the central portion of the surveyed area, as well as Bishk Abad 8, a site located south of this river (Figure 1; Figure 9/19–20; Table 1). The examples from this valley have parallels in Kerman and Kech-Makran, and their sizes, between 11 and 30 cm in rim diameter, are also in the ranges observed in these areas (Figure 7).

\textbf{VI.3. Miri Ware}

Numerous sherds in the Bampur Valley have general similarities with Miri ware in their textures, profiles and some of their painted designs. Nevertheless, these similarities are not limited to Miri ware and also concern other ceramic
types observed on the south-eastern Iranian Plateau, such as Black-on-buff ware, Black-on-red ware and some of the above-mentioned Bampur Valley ceramics. For instance, jars with geometric panels painted on their outside surfaces, such as those evoked below, are observed from Kerman to Kech-Makran during the Chalcolithic period, and it is difficult to determine precisely the ceramic tradition such vessels belong to on the basis of small fragments out of stratigraphic context. In addition to the above-mentioned flanged jars, however, there are within...
the Bampur Valley assemblage materials that appear to relate more to Miri ware from Kech-Makran\textsuperscript{64} than to any other Chalcolithic ceramics known on the south-eastern Iranian Plateau. These materials are observed at six sites: Posht Kor 6, Posht Kor 1, Posht Kor Qasem 1 and Balanch 5 along the northern bank of the Bampur River as well as Bishk Abad 7 and 10 on the southern side (Figure 9/21–25; Table 1). The profiles of two bowl rim fragments collected at Posht Kor 6 (Figure 6/12–13), with concave upper walls and rims, find better parallels among Miri ware (e.g. Figure 6/19–20) than among Black-on-buff, Black-on-red and Aliabad ware. The same remark applies to a bowl rim fragment collected at Posht Kor Qasem 1 (Figure 6/11). A vessel base from Posht Kor 1, of pinkish colour, with a fine fabric and bearing a potter’s mark, is also reminiscent of Miri ware (Figure 6/16). Two sherds from Balanch 5 strongly resemble Miri ware: the base of a miniature painted goblet (Figure 6/14; Figure 9/23) and a ring-base with radiating notches (Figure 9/24). This type of ring-base is a clear

\textsuperscript{64}See Mutin, “Contribution à l’étude du peuplement des confins indo-iraniens au Chalcolithique”; “Ceramic Traditions and Interactions.”
diagnostic of Miri ware (e.g. Figure 6/21). Another similar ring-base was collected at Bishk Abad 7 (Figure 6/15; Figure 9/25). Two rim fragments with profiles that are similar to bowls of Miri ware (Figure 6/8,10,17) were also found at this site. One of them, a grey vessel, has an inside painted decoration that seems to represent the horns of an ibex (Figure 6/10), a decoration observed on Miri ware (Figure 6/18). Lastly, a bowl fragment from Bishk Abad 10, with a pinkish paste, concave upper walls and an inside painted decoration (Figure 6/9), resembles examples of Miri ware. These sherds complement the Miri ware-related materials from Tump-i Qasimabad identified in the Stein collection, a site we believe is one of the Qasem Abad sites located east of the Bishk Abad sites (see Figure 1).

Lastly, additional ceramics collected at Bishk Abad 2, 5, 6, 8 and 9 as well as at Shekar Abad 1, 2 and 4, west of the Bishk Abad sites, are reminiscent of Miri ware and Aliabad ware, although this characterisation needs confirmation.

VII. Additional Painted Ceramics
The assemblage from the Bampur Valley includes numerous other painted ceramics such as bowls, large jars and necked jars. The technology and styles of these vessels conform to the standards for Chalcolithic fine, painted ceramics usually observed, although we cannot decide to which Chalcolithic ceramic tradition in particular they relate. The large jars (Figure 8/1–7) are particularly equivocal since such forms with geometric motifs painted on their outside surfaces are observed from Kerman to Kech-Makran during this period, although available data tend to show that they appear to be more common in the Bampur Valley and in Kech-Makran than in Kerman. We also cannot decide whether the bowls with everted walls and rims and outside painted decorations collected in the Bampur Valley (Figure 8/8–12) are part of any of the ceramic traditions known at present in south-eastern Iran or reflect the existence of a supplementary, different tradition. Bowls with outside painted decorations appear more common – though less frequent than bowls with inside painted decorations – among Miri ware in Kech-Makran than in Kerman, but exact parallels for the materials from the Bampur Valley are missing in the former region. Meanwhile, certain similarities with materials from Kerman deserve a mention, such as between the painted diamond motif on Figure 8/8 and a Black-on-buff ware from Tepe Yahya and between the wavy line on Figure 8/11 and those of Aliabad ware vessels from Tal-i Iblis. Characterisation of these materials is further complicated by the fact that the motifs observed are relatively varied; we do not see repetition of the same ones as observed on the bowls with inside painted decorations described above. Nevertheless, what seems to support our interpretation that these ceramics date to the Chalcolithic period is that they are virtually all recorded along the northern bank of the Bampur River on sites where diagnostic mid-to-late fifth/early fourth millennium BC Kerman-related ceramics were collected. As these materials are still under study, we are not discussing them at any length here (Figure 9).

Lastly, we have classified in Table 1 eight sites as “undefined Chalcolithic”. These sites are: Posht Kor 4 and Shams Abad 8 along the northern bank of the Bampur River and Bishk Abad 5, 6, 9, and Shekar Abad 1, 2 and 4 along the southern bank. As noted above, the southern bank sites produced ceramics reminiscent of Miri ware and Aliabad ware, which is not in contradiction with the fact that actual sherds relating to these products were collected in the same sector. As for the sites on the northern bank, we are more hesitant as to their chrono-cultural affiliations, although it seems likely that they were occupied during the Chalcolithic period.

VIII. Synthesis

VIII.1. Chrono-cultural Relationships
An issue in interpreting this survey collection is that these ceramic styles are of longue durée, so we are not in a position where we can evaluate precisely the relative chronology of all the sites recorded. Indeed, the sites with similar materials – the 21 sites bearing chevron-painted ceramics, for instance – were perhaps not all contemporaneous; chevron-painted ceramics were produced for probably over c. 500 years if one refers to the sequences in Kerman, and there is no indisputable, detailed chrono-typology of such material, although a few chronological trends were defined. It is therefore possible that this number of sites represents the sum of sequential shifts in habitat locations over time within the period such ceramics were produced. For the same reason, we cannot completely rule out the possibility that chronological
overlaps existed between the sites bearing Kerman-related ceramics and those with Aliabad ware- and Miri ware-related ceramics, considering the above-mentioned discrepancies observed in the radiocarbon dates obtained for such materials across south-eastern Iran. Despite these difficulties, a few remarks and interpretations as to the date and stylistic relationships of these materials may be formulated.

Firstly, present data confirms the presence in the Bampur Valley of a Chalcolithic settlement that probably began between the mid-to-late fifth millennium BC and the first centuries of the fourth millennium and had ceramic relationships to Kerman. It also confirms the presence of materials dating to the fourth millennium BC related to Kech-Makran and the existence of distinctive Chalcolithic ceramics that are reported only from this valley. These observations were made previously but are here corroborated and more detailed by a greater number of sites and more abundant and diverse materials. These data also show the presence of Aliabad ware, which was strongly suspected but not firmly established before. Thus, it is now evident that the Chalcolithic occupation in the Bampur Valley was not limited to the few sites reported by Stein.

Figure 8. Additional painted ceramics from the Bampur Valley (plate by B. Mutin, drawings by H. Moradi).

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Secondly, some ceramics relate to Black-on-buff ware/ Bardsir painted ware as defined in Kerman, and this stylistic connection led us to push back the beginning of the Chalcolithic occupation in this valley to a period equivalent to Tepe Yahya Period VB.72 Nevertheless, although we know that the representativeness of our ceramic assemblage is biased by the inherent, aleatory nature of the survey collection, we must admit that the majority of the fragments connecting to Kerman have traits that, overall, relate to materials of the last Chalcolithic phase of Tepe Yahya, Period VA, and of Period II at Tal-i Iblis (Black-on-red ware/Iblis painted ware). Indeed, although paste colour, taken alone, is not a definite criterion for distinguishing Period VA- from Period VB-related ceramics, it remains an indicator. In the present case, red ceramics, particularly the typical Period VA beakers with short friezes of chevrons, are very common. Furthermore, sherds of Black-on-red ware style with reddish slips or washes covering their surfaces in lieu of red pastes are frequent. They match Prickett’s description of ceramics she dates to Period VA with “dark red-brown and orange-brown or rust surface darkenings or slips”.73 Potter’s marks are also most common on Black-on-red ware in Period VA74 and are recorded in the Bampur Valley. Lastly, curvilinear motifs are present on some of the Bampur Valley ceramics.

72Ibid., 24–6.
73Prickett, Man, Land and Water, 1429.
related ceramics found in the Bampur Valley connect to think that the majority
has yet to be excavated in Kerman or (2) a regional vari-
representing: (1) a chronological variation of this tra-
yahya VA and its transition to the Aliabad period. In
pur Valley ceramics. Furthermore, we do not know the
ance of reddish slips or (darkenings) between the Kerman-
the Bampur Valley ceramics and on the fact that the most abundant and clearest ceramic
connection to Kerman in the Bampur Valley is chevron-
ware- and Miri ware-related ceramics, a change in settle-
mention pattern is therefore apparent during the fourth mil-
related types are minor in comparison. In short,
view sees the relationship to Kerman as essentially
popular across multiple cultural groups in south-
eastern Iran and that perhaps represented a status
item, as suggested by Beale and Lamberg-Karlovsky.77
The second view considers the similarities in technology
(including the presence of reddish slips or “darkenings”) between the Kerman-related ceramics (chevron-painted
vessels in particular) and Bampur Valley ceramics (bowls with inside painted decorations in particular)
and in geographic distribution (they are found at the
same sites in the valley). It also considers the fact that
there are practically no other types of beakers recorded
among the latter group so that these beakers actually
complement well the vessel forms repertoire of the Bampur Valley ceramics. Furthermore, we do not know the
totality of the Chalcolithic ceramic repertoire of Kerman,
particularly in the phase corresponding to the end of
Yahya VA and its transition to the Aliabad period. In
summary, this view sees the Bampur Valley ceramics
as part of the Kerman-related ceramic tradition and representing: (1) a chronological variation of this tra-
dition, corresponding to this more recent phase that has yet to be excavated in Kerman or (2) a regional vari-
ation of this tradition, specific to the Bampur Valley.

VIII.2. Settlement Pattern
A glimpse at Table 1 shows several tendencies in sites and styles distribution. Firstly, the diagnostic Kerman-
related ceramics are all recorded along the northern
bank of the Bampur River. Secondly, the Bampur Valley
 ceramics are also all concentrated along the northern
bank and virtually all found at sites where Kerman-
related ceramics were collected. Among these sites,
Behest Abad seems particularly comparable to its neigh-
bour Chah Husaini in its ceramic assemblage. Thirdly,
Aliabad ware- and Miri ware-related ceramics are
recorded on the southern bank of the Bampur River,
whereas the Bampur Valley ceramics and Kerman-
related ceramics are not. This dichotomy is even more
evident when one includes the sites of Bishk Abad 5, 6
and 9, and Shekar Abad 1, 2 and 4, sites that produced
ceramics reminiscent of Miri ware and Aliabad ware,
all located on the southern side. On the northern side,
these ceramics were collected at sites that did not provide
any Bampur Valley ceramics and Kerman-related cer-
amics in five cases out of nine, and only at sites located
in the eastern half of the surveyed area from Jafar
Abad 3 eastwards. Considering that the Kerman-related
and Bampur Valley ceramics are both older than Aliabad
ware- and Miri ware-related ceramics, a change in settle-
ment pattern is therefore apparent during the fourth mill-
enium BC. Keeping in mind that this observation is
based on surface collection, a tendency emerges that
sees (Figure 10, Table 1): (1) abandonment of the mid-
to-late fifth to early fourth millennium BC sites located
in the north-western quarter of the surveyed area, from
Chir Dargi to Jafar Abad 1; (2) abandonment of six to
eight sites (including, or not, the undefined Chalcolithic
sites Posht Kor 4 and Shams Abad 8), continuity of occu-
pation of four sites and foundation of five new sites
during the fourth millennium BC in the north-eastern
quarter, from Jafar Abad 3 eastwards; (3) foundation of
new sites along the southern bank during the fourth mil-
enium BC and (4) while a few of the fourth millennium
BC sites are reoccupied during the third millennium BC,
a new shift in settlement pattern is apparent where most
of the third millennium BC sites are concentrated in the
north-eastern corner of the surveyed area, closer to Tepe
Bampur, roughly from Balanch 1 and Shams Abad 2
eastwards. In summary, two main shifts are apparent:
(1) a shift of c. 10 km towards the east during the fourth millen-nium BC, between Chil Dargi and a north-east–
south-west frontline joining Jafar Abad 3 and Bishk
Abad 10 (or Shekar Abad 4 if one considers this site to

75Ibid., 82–4.
76Pickett, Man, Land and Water, 1411–30.
date to the fourth millennium BC); (2) a shift of c. 10 km towards the east during the third millennium BC, between this line and a north-east–south-west frontline joining Balanch 1 and Shams Abad 2. It is tempting to link these shifts to environmental changes: the river began to dry up (or to dry up more frequently) in the west, which led communities progressively to move eastwards, closer to the source and where water was more likely to be present and facilitate agriculture. A similar hypothesis was considered by Prickett regarding the change in occupation she observed in the Daulatabad Plain at the time of Yahya Periods VI–VB: “In the distal fan area, settlement shifts north-eastward”, which she thought probably resulted from “a movement upstream toward the main channels because of decrease flood flow”.78

VIII.3. The Bampur Valley and Southern Middle Asia

This survey greatly complements current knowledge of the Chalcolithic period in south-eastern Iran, a period mostly known through a limited number of excavations and surveys. It complements the ceramic typology of this area, corroborates previous delineation of the main ceramic spheres of the south-eastern Iranian Plateau,79 and reinforces previous conclusions80 that see the Bampur Valley as a region with connections to Kerman and south-western Pakistan; a region that was not affected directly by the phenomena represented in the west by the Bakun-related materials, Lapui ware and Uruk materials and in the east by ceramic types related to eastern Pakistan, since these types were not identified in the present survey; and a region with specificities.

The ceramics related to the Kerman Black-on-buff/Black-on-red ware tradition do not seem to extend to the west far beyond the areas of Tal-i Iblis and the Daulatabad Plain. The examples in the Bampur Valley are most likely among the south-easternmost examples of this tradition. Do they represent a late dissemination of this tradition from the north-west, as their style (mostly recent), with reservations, tends to indicate? What about the trajectories of Aliabad ware and Miri ware? These are questions that should be posed as part of future archaeological projects in south-eastern Iran. At a higher level, they are also key research questions to contribute to reconstructing the major settlement and cultural dynamics in southern Middle Asia during the fifth and fourth millennium BC.81 Firstly, an initial step would be to define in greater detail the territories of the Chalcolithic cultural groups in south-eastern Iran. As repeated by many authors in numerous publications, ceramics do not necessarily equate to people, and we are conscious that the Chalcolithic ceramic spheres delineated in south-eastern Iran82 do not necessarily represent exactly the territories of cultural groups. We agree, however, with approaches – such as that by Aurenche and Kozlowski83 – that consider that mapping material culture helps to estimate the boundaries of these territories. In this regard, these authors used the term “buffer zone” to characterise areas “where there is a relative interpenetration of elements from one territory to the next”, in the

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78Prickett, “Settlement During the Early Periods,” 234.
79Mutin, “Ceramic Traditions and Interactions”; “Chrono-cultural Sequence of the Bampur Valley.”
81See Mutin, “Cultural Dynamics in Southern Middle-Asia.”
82Mutin, “Ceramic Traditions and Interactions”; “Chrono-cultural Sequence of the Bampur Valley.”
83Aurenche and Kozlowski, “Archaeology and Cartography.”
context of the Near East during the Neolithic period.\textsuperscript{84} Could the Bampur Valley represent such a “buffer zone”? Secondly, what are the processes responsible for the dynamics observed through the ceramics between Kerman, Balochistan and Kech-Makran? There are many possibilities, for example:

- exchange of particular vessels and/or their contents[,]...
- imitation and emulation…[, and] mobility of people, ranging from entire populations to individuals, such as itinerant potters or marriage partners with technological knowledge, and the vocabulary of distinctive decorative motifs which move as a result of exogamous marriage traditions.\textsuperscript{85}

At present, we cannot distinguish among these processes which one(s) applied to the south-eastern Iranian Plateau during the Chalcolithic period. We know, however, that the relationships were certainly not limited to influences and imitations of designs and shapes, but also included transmission of technological knowledge. This is illustrated by the fact that technically comparable fine, painted, and well-fired ceramics are present in many regions of this area between the mid-to-late fifth and early fourth millennium BC, and also in the details; for instance, similar black-on-reddish-slipped ceramics are observed in both Kerman and the Bampur Valley. A more detailed investigation of precisely these technological similarities, combined with composition analyses, would provide a better understanding of the processes at play on the south-eastern Iranian Plateau during this period.

**IX. Conclusion**

This recent survey in the Bampur Valley has provided previously unknown data despite successive archaeological investigations in this area since the 1930s. These data greatly complement current knowledge of the south-eastern Iranian Plateau during the Chalcolithic period, and this valley increasingly appears as a key area for understanding chrono-cultural relationships between Kerman, Balochistan and Pakistan. The next step in the study of this Chalcolithic material should necessarily involve more detailed ceramic technological and composition analyses. It should also incorporate the sites’ characteristics such as their sizes and relative locations within the valley. Preliminary analysis of their distribution and comparison with those of the third millennium BC have shown a shift in settlement pattern over time, which we hypothesise may be linked to a gradual drying up of the Bampur River in the surveyed area. This hypothesis should also be tested in the future through detailed geomorphological analysis.

**Acknowledgements**

We would like to thank the Iranian Center for Archaeological Research for their support in facilitating fieldwork in the Bampur Valley.

**Disclosure Statement**

No potential conflict of interest was reported by the authors.

**Bibliography**


\textsuperscript{84}Ibid., 277–8.

\textsuperscript{85}Petrie, “Innovation and Interaction Across Southern Iran,” 169.


