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Short fieldwork report

Human remains from Tappeh Poustchi, Iran, 2017

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Fars is one of the key regions within Iran in terms of the development of human societies from the Pre-Pottery Neolithic onwards. By contrast to central regions of Fars and the Kur River Basin, archaeological excavations in the Shiraz Plain have been scarce to date, with one of the few investigated sites being Tappeh Poustchi, which is also known as Tepe Shah Gholi Beigi A (29°36′03″N, 52°29′25″E). This site is located in the south-western part of the modern city of Shiraz, close to the Rahamt highway (**Figure 1**). Building activities have destroyed the southern part of the mound, and only about 3m of settlement strata are still preserved in that part of the site, which is, however, fairly well preserved in its central and northern parts (**Figure 2**).

Tappeh Poustchi was first identified by Paul Gotch (1968, 1969), however, a full report from this survey has never been published. Recently, several surveys were conducted by Alireza Askari Chaverdi, Saman Hamzavi (Hamzavi & Zeidi 2016) and Sirous Barfri (2012). Finally, in 2016 comprehensive excavations at Tappeh Poustchi were initiated by a team from the Art University of Shiraz and the Iranian Centre for Archaeological Research (ICAR), directed by Hasanali Arab and Alireza Sardari. So far, three fieldwork seasons (2016–2018) produced ample evidence of Late Neolithic and Early Chalcolithic occupation in six trenches opened in the central part of the site (**Figure 3**). Although no radiocarbon date are available so far, based on pottery assemblages and architectural remains, nine phases have been defined: Shams-Abad (Phases 7–9, c. 5200–5000 BCE), Early Bakun (Phases 5–6, c. 5500–4700 BCE), Middle Bakun (Phases 2–4, c. 4700–4300 BCE) and historical periods at the top of the site (Phase 1) (Sardari & Arab 2018).

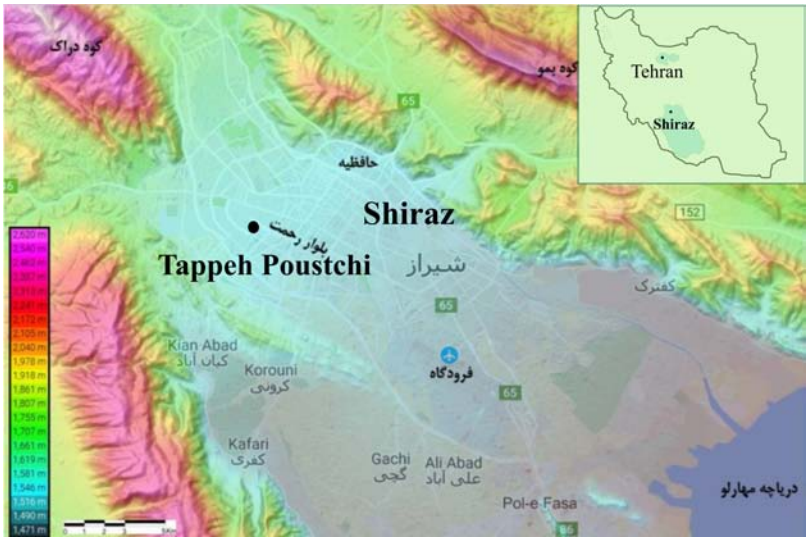

Figure 1. Location of Tappeh Poustchi (drawing by Alireza Sardari).

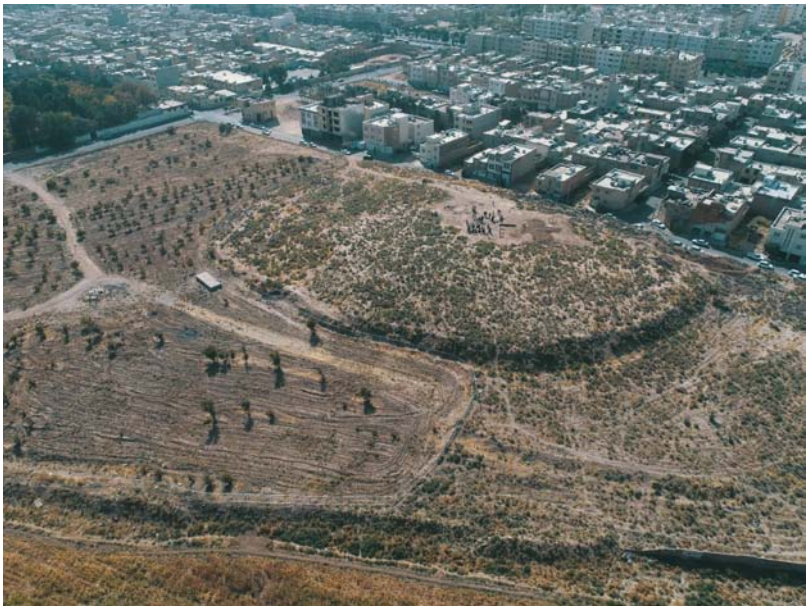

Figure 2. Aerial photograph of the site (by Hasanali Arab).

All human remains were collected during the second season (2017) and they were present only in two 5×5m trenches (D and E). The skeletons were retrieved from the

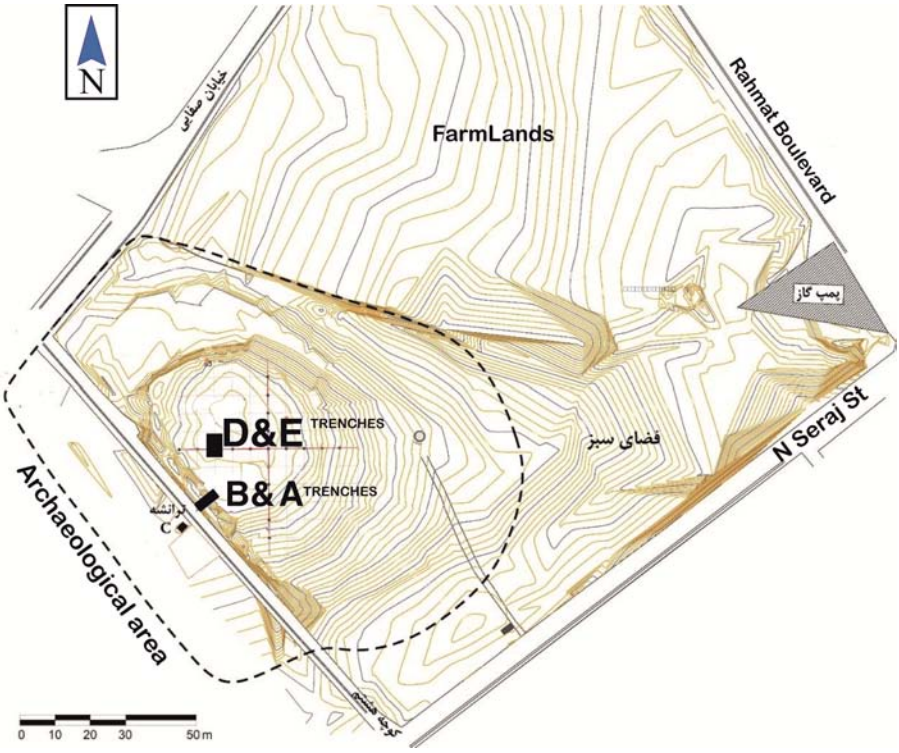

Figure 3. Map of the site and location of trenches (drawing by Alireza Sardari).

Figure 4. A coffin burial in Trench D, Feature 4 (photograph by Hasanali Arab).

Figure 5. A secondary burial in Trench E, Feature 7 (photograph by Tabasom Ilkhan).

upper levels of the mound (mainly Phase 1), which was partially removed by a bulldozer and agricultural activities (Hamzavi & Zeidi 2016). In total, human remains were present in 23 contexts, either within regular graves or scattered in the destruction layers. Generally, several types of grave structure have been identified, including jar or coffin burials, which were most common in Trench D (**Figure 4**). Pit burials, both primary and secondary, were also present in Trench D (**Figure 5**), sometimes within some mudbrick structures. Due to strong erosion of most skeletons, only in three cases it was possible to document their position within the grave structure. No artifacts were associated with the skeletons with the exception of three burials (Trench D Feature 8, Trench E Features 7 and 9). Most Phase 1 graves were oriented along a northwest-southeast axis.

Two articulated and fairly well-preserved skeletons (F5 and F9) were found in Trench E. The upper part of the first one was missing, but it was still possible to note the original position of the body, buried on the right side with extended legs. Also the skeleton F9 was placed on the right side, legs and arms slightly upward. This body was oriented east-west, facing north. This well-preserved skeleton was not collected from the trench and therefore was not available for osteological examination. In the northern section of Trench E, a secondary burial was found (F7) in a box (68×58×39cm) delimited by stones. Disarticulated elements were densely arranged in this narrow space.

Human remains from Tappeh Poustchi are currently stored at the Art University of Isfahan. They were studied in the bioarchaeology laboratory at the University of Kashan and some tooth samples for biochemical research have been transported to

the University of Warsaw, Poland. Initial osteological assessments were conducted following the methods presented in Buikstra and Ubelaker (1994), with some modifications (see Sołtysiak et al. 2019). Due to the high fragmentation rate, high degree of erosion in most contexts, and multiple interment character of several burials, sex and age-at-death assessment as well as observation of pathological conditions was very difficult.

If every context may be taken as a separate unit, the minimum number of individuals (MNI) is 18 in Trench D (**Table 1**) and 16 in Trench E (**Table 2**). It is possible, however, that some elements from two different contexts belonged to one individual, e.g. Trench D, Features 4 and 5 where very thick cranial vault fragments (up to 9.8mm) were found and the morphology of their diploe is very similar (**Figure 6**). Most individuals have been dated to the Phase I (the Safavid period, as suggested by two radiocarbon dates: Trench E Layer 6, Poz-120656, 1470–1640 cal. AD; Trench E Layer 11, Poz-120654, after 1520 cal. AD) and only three very incomplete skeletons from Trench E have been retrieved most likely from Phase II strata, i.e. Middle Bakun period (the first half of the fifth millennium BCE).

In the whole historical sample, a bias in distribution of age-at-death categories may be observed: there are no neonates nor infants up to 1 year old. In Trench E, adult individuals are much less frequent than expected, and the number of older subadults

Table 1. Basic characteristics of human remains from Trench D at Tepe Poustchi.

	Feature	Sex	Age-at-death	Caries	Comments
1	L1	?	adult	0/1	
2	L1	–	1.5 years	0/1	
3	L2	F**	adult	2/11	MNI based on right petrous parts
4	L2	?	adult	0/17	
5	F4	F**	adult		
6	F5	–	1.25 years	(d) 0/1	
7	F5	–	3 years	(d) 0/18	
8	F5	–	5 years	(d) 0/7	
9	F5	M**	adult	0/4	MNI based on teeth
10	F5	?	adult	0/16	
11	F5	?	adult	2/11	
12	F7	F**	adult	0/3	MNI based on glabellae
13	F7	M**	adult	2/5	
14	F8	F**	adult	1/3	
15	F9	M**	adult		
16	F10	?	adult		
17	F12	F**	adult		
18	F12	–	10 years	0/10	

Figure 6. Diploe of the cranial fragments: (a) Trench D Feature 4, (b) Trench D Feature 5 (photograph by Arkadiusz Sołtysiak). Scale bar 1cm.

(7–20 years old) is higher than expected at an attritional cemetery. Even if the number of subadults in the multiple burials may be to some extent overestimated (Sołtysiak 2013a), the difference between Trenches D and E is statistically significant (adults

Table 2. Basic characteristics of human remains from Trench E at Tepe Poustchi.

	Feature	Sex	Age-at-death	Caries	Comments
19	L1	F*	18–20 years	0/25	
20	L1	–	1.25 years		
21	L1	–	3 years	(d) 0/2	
22	L1	–	3 years	(d) 0/9	
23	L1	–	2–4 years		
24	L1	–	10 years		
25	F5	F*	adolescent		
26	L6	–	1–2 years		
27	L6	–	7–14 years		
28	F7	–	5 years	(d) 0/4	
29	F7	?	adult	0/3	
30	F8	–	12 years	0/21	
31	L11	–	7–14 years		
32	F12	–	8 years		dated to Phase 2
33	F12	–	14–18 years	0/2	dated to Phase 2
34	L13	?	adult		dated to Phase 2

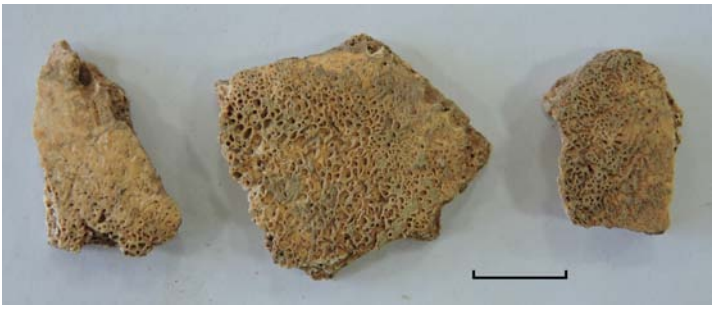

Figure 7. Porotic hyperostosis; Trench E Feature 12 (photograph by Arkadiusz Sołtysiak). Scale bar 1cm.

versus subadults; N=31, Fisher's exact test, p<0.02) and therefore some specific burial pattern with preference for subadults, but not neonates, seems to occur in Trench E. Although more skeletons were identified as females, due to the high fragmentation of human skeletal remains and, as a consequence, uncertainty of sex assessment, this difference cannot be taken as sound evidence of sex-specific burial customs.

Due to high fragmentation and erosion of most skeletons, the presence of pathological conditions could only be fully documented for a relatively small proportion of the individuals analysed. Where assessment was possible, there is little evidence of degenerative joint disease, with the only certain example being slight osteophytes in the area of the proximal radial epiphysis of the individual from Trench D Feature 9. One case of partially obliterated *cribra orbitalia* was observed in the individual from Trench D Feature 8. Interestingly, cranial fragments of the Early Chalcolithic individual from Trench E Feature 12 exhibited active porotic hyperostosis (**Figure** 7), which is quite a rare condition in the Near East (Sołtysiak 2013b).

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