

## Human and plant remains from Vestemin, Iran, 2015

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In the spring of 2015, an archaeological site was accidentally discovered near Vestemin during the construction of a pipeline. It was located near the top of a broad hill c. 4km east of Kiasar (36°14'19"N, 53°35'11"E, 1381masl) in the eastern part of Mazandaran province. During rescue excavations conducted by the Iranian Centre for Archaeological Research and directed by Abdelmotaleb Sharifi, a small settlement with relatively well preserved foundations of a few houses was discovered, as well as two cemeteries, one above (west to) the settlement and one below (east to) the settlement (**Figure 1**). Associated pottery and artifacts were dated to the Parthian period (c. 200 BCE – 250 CE).

The graves were cut in the bedrock, with a narrow shaft leading to an oval or rectangular chamber of variable size, up to 3m in diameter, located west of the shaft (**Figure 2**). Among c. 40 identified graves, most contained multiple burials, with articulated or disarticulated skeletons along the southern or northern wall of the chamber, head always to east, legs flexed. Sometimes human remains were found also in the center of the chamber or along its western wall. Single burials were uncommon. The burials usually contained grave goods, such as pottery, weapons (iron swords, daggers and arrowheads) and on occasion animal remains.

Because human remains were studied during ongoing excavations in late October, 2015, only some graves from the western cemetery were available for research. Due to the rescue character of the excavations, most skeletons were exposed on the ground for quite a long time and weathered with occasional sun bleaching (**Figure 3**). Some graves were also periodically flooded, and evidence of water staining may be still seen on some elements (**Figure 4**). For that reason observation of most other taphonomic agents, except root etching, and completeness scoring was not possible. Available elements were described and measured using standard protocols (Buikstra & Ubelaker



**Figure 1.** The site of Vestemin, view from the west. The settlement is behind the western cemetery.

1994; Steckel et al. 2006), with some modifications (cf. Sołtysiak 2010). In total, 21 graves were investigated and the minimum number of individuals is 53, with six graves containing only one skeleton (Table 1). In the case of eight graves the original position of human remains inside the chamber could not be reconstructed.

More males were recovered compared to females (17 versus 9), but this difference is not statistically significant and it seems that the cemetery was a burial place for both sexes. There is also no spatial pattern, with either sex being buried both in the northern and southern sides of the chamber. It seems, however, that the youngest age-at-death categories were under-represented at this cemetery, with no neonate skeletons and only four infants recovered, in spite of their having the highest mortality rates in pre-industrial populations (cf. Coale et al. 2014). It is possible that, like in other parts of the Near East, infants were buried at the settlement and not within outdoor cemeteries (cf. Sołtysiak 2009).

Although most skeletons were explored without documentation of articulation pattern, it seems likely that the graves contained mainly skeletons in their primary or disturbed primary context. At least some chambers had been opened a few times in antiquity to place new bodies, although the number of skeletons was never as high as at the Late Bronze Age cemeteries in the Zagros where the minimum number of individuals was as high as 23 (Sołtysiak 2013; Sołtysiak & Naseri 2017).



**Figure 2.** Grave TI39 G1 during excavations.



**Figure 3.** Sun bleaching on the surface of a femoral fragment; TH33 G3 S. Scale bar 1cm.

In most cases a high degree of weathering prevented the identification of pathological conditions and only a few cases of trauma were noted. The left mandibular fossa of individual TI39 G1 S was broken and its fragment fused to the mandibular notch, with a missing condylar process (**Figure 5**), which was likely a result of a sharp force trauma to the temporal bone. Fracture of the right acromial end of a robust clavicle was noted in individual TG34 G1 and some minor trauma occurred also to the feet of individuals TG34 G1 S (healed fracture of a metatarsal) and TH37 G1 N (fused toe phalanges). An area of new bone formation around a lytic lesion (35×10mm), with



Figure 4. Water staining on the left femoral midshaft; TG34 G1 S. Scale bar 1cm.

some pitting due to infection, likely also related to trauma, was observed in the right tibia of individual TH35 G2 S, starting c. 35mm below the nutrient foramen on the medial side (Figure 6). Finally, the right orbit of individual TH33 G3 S exhibited the cribrotic phase of *cribra orbitalia* (Figure 7), which is quite unusual in the Near East.

The right femur of individual TH35 G2 S contained a deposit of seeds inside the medullary cavity. As the bone was complete at the time of excavation, and no large fractures were observed, a sample of seeds was taken for archaeobotanical anal-

Table 1. Sex and age-at-death distribution in the graves from Vestemin. M – male, M\* – probably male, M\*\* – more likely male than female, ? – sex unknown, F\*\* – more likely female than male, F\* – probably female, F – female, (a) – articulated skeleton.

Grave	North	West/Centre	South
TG34 G1		adult M	adult M
TH32 G1		adult M; adult F*; child 2-7 years old	
TH33 G3		adult F; child 4-5 years old	child 12-15 years old
TH34 G1	adult M; adult F*		adult M; adult ?; adult ?
TH34 G6	adult M**; adult ?		adult M
TH35 G1		adult M*; adult F**; child 7 years old; infant 1-2 years old	
TH35 G2	(a) adult ?	infant 2 years old	(a) adult F*
TH35 G3	(a) adult ?		adult ?
TH35 G4		adult M; adult ?; adolescent; infant 1-2 years old	
TH35 G6			(a) adult F
TH36 G1		adult F*; adult ?; adolescent	
TH36 G2		adult M**	
TH36 G3		adult M**; adult F**	
TH37 G1	adult M	adolescent	(a) adult M**
TH37 G2	(a) adult ?		
TH37 G4	(a) adult M**		
TH39 G5		adult ?	
TI37 G1		adult M; adult M*; adolescent	
TI37 G1			(a) adult ?
TI39 G1	adult F; child 8 years; infant c. 1 year old		(a) adult ?
TI39 G2	adult M; adult ?		(a) adult ?



**Figure 5.** Post-traumatic union of mandibular fossa and mandibular notch: medial view, lateral view and pseudo-articular facet; TI39 G1 S. Scale bar 1cm.



**Figure 6.** Lesion on the right tibia; TH35 G2 S.



**Figure 7.** *Cribra orbitalis*; TH33 G3 S. Scale bar 1cm.



**Figure 8.** Seeds and fruits from the femur of the individual TH35 G2 S.  
A – *Euphorbia* sp., B – *Nonea* sp./*Echium* sp.

ysis to interpret this unusual finding. All the seeds were uncharred, and the majority of them (35) belong to the same plant from Euphorbiaceae family (A on Figure 8). Their length is 2.0–2.4mm (average for 10 measurements: 2.21 mm) and breadth is 1.6–1.9mm (average for 10 measurements: 1.65 mm). They are most similar to *Euphorbia helioscopia* and *E. rhabdotosperma* (Pahlevani & Akhiani 2011; Salmaki et al. 2011). The first species is a cosmopolitan weed and ruderal plant of Old World origin, the second is an annual plant growing in the steppes of SW Asia (Irano-Turanian). Plants from the Euphorbiaceae family produce seeds with elaiosomes, which are struc-

tures that are nutritional and attractive to ants, allowing the dispersion of plants with the help of ants (myrmecochory). Two other seeds (mericarps), empty inside and destroyed in the same way are similar to *Nonea* or *Echium* from the Boraginaceae family (B on Figure 8). One undetermined seed belongs to a species from the Boraginaceae or Lamiaceae families. It is most likely that the seeds found inside the femur were collected by ants or other soil fauna.

Although human remains from Vestemin were heavily weathered, research on them produced some new evidence of mortuary practices in the Parthian period and introduced a new taphonomic agent, i.e., ants that may use the inner portions of human bone for food storage.

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