

Human remains from Deh Dumen, Iran, 2013-2016

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The archaeological site of Deh Dumen (Deh-e Paeen, 31°09'03''N, 51°06'14''E) is located south of a village with the same name in the most northern part of Kohgiluyeh va Boyer-Ahmad province, Dena county. The site was excavated twice, in February-March 2013 and September-October 2016, as part of the salvage excavation project in the Khersan Dam 3 basin area. There were two cemeteries close to each other, one dated to the Early/Middle Bronze Age, and the other dated to the Late Bronze – Early Iron Age, located on a slope of the Khersan river valley (**Figure 1**) (Naseri 2013, 2016).

In total, 26 stone graves were excavated, including box-shaped flat roof as well as domed or arched roof constructions. Large slab stones were used to cover the graves; different sized pebbles were also used to fill empty spaces between the slabs (**Figure 2**). Grave goods included plain or decorated pottery, bronze objects (domestic items and weaponry), and stone objects, such as marble vessels and arrowheads (Oudbashi et al. 2016). Some of these objects seem to be imported from other parts of Iran along a major trade route of that time which originated in Shahdad, Kerman and then progressed via Fars and Khuzestan towards Mesopotamia (Naseri 2016).

Human remains excavated at Deh Dumen were studied by Arkadiusz Sołtysiak in the facilities of the Institute of Archaeology, University of Tehran after completing the excavations seasons (November 2015 and October 2016). Bones were described and measured using a standard protocol (Buikstra & Ubelaker 1994), with some modifications (see Sołtysiak 2010).

Human remains retrieved from the Early Bronze Age (EBA) cemetery were in extremely bad condition, being heavily fragmented and usually covered by hard soil. Some evidence of trampling, insect tunneling and weathering was observed (**Figure 3**). Many skeletons were represented only by a few tiny bone fragments and even differentiation between adults and subadults was not fully possible at times. It seems, however, that adults and adolescents in that period were buried in plain graves and children were buried in jars (see **Table 1**). In most graves the minimum number of



Figure 1. General view of the site: Early Bronze Age cemetery marked with yellow arrow, Late Bronze Age cemetery marked with red arrow.

individuals (MNI) is one. Only in G11 is it likely that two individuals were buried (based mainly on differences in dental wear). However, differentiation between single and multiple burials is not possible due to the extremely poor condition of the bones in most graves. The total MNI for all EBA graves is 16 and it includes three children and at least one adolescent.

Average wear of permanent teeth was low indicating that at least some of the individuals classified tentatively as adults may have been adolescents and that many adults died in relatively young age. There is no enamel hypoplasia on the 45 examinable permanent teeth (five canines included) nor dental caries in the 47 observable permanent teeth; only some calculus deposits were occasionally observed.

In contrast, human remains from the Late Bronze Age cemetery were much better preserved (Table 2). Although epiphyses were missing in most cases, many complete shafts of long bones and almost complete (although distorted) crania were included in this collection. It seems that most individuals were buried in collective graves, as the MNI in completely explored contexts varied between 3 and 7. Excavation of two graves (16 and 18) was not completed, and only a few human elements were retrieved from their fillings. Similar to the EBA cemetery, in this cemetery most skeletons



Figure 2. Late Bronze Age cemetery during excavation.



Figure 3. Evidence of weathering and insect tunneling, Jar #3. Scale bar 1cm.

belonged to adult individuals of both sexes. Subadult elements were very infrequently present.

Although it is likely that the graves were re-opened several times, the bones in this cemetery were not similarly affected by weathering like the elements retrieved from the EBA cemetery. The most common taphonomic agents were insect tunneling, although less frequent than in the EBA cemetery, and rodent gnawing (Figure 4).

Crania were the most represented skeletal elements, with shafts of the long bones, especially femora, tibiae and humeri, also typically well preserved, even if the epiphy-

ses were damaged or absent. Many long bones had very distinct morphology, with prominent deltoid tuberosity on humerus (**Figure 5**), very developed linea aspera on the femur, and platycnemic tibiae having prominent popliteal lines. Such pronounced muscle markings may be the consequence of a general high level of mechanical stress, which is expected in a mobile population, such as those examined here, living in high mountains.

The Late Bronze Age (LBA) cemetery of Deh Dumen is similar in several respects to the nearby and contemporary cemetery at Lama (Sołtysiak 2013). The dead were buried in collective graves at Lama, with adult skeletons being the most common

Table 1. The catalogue of human remains from Deh Dumen, Early Bronze Age cemetery, 2013 excavations.

Grave	Reg No.	Sex	Age-at-death	Comments
G3	116	?	adult	small fragment of femur
G4	126, 138, 311	?	adult?	a few bone fragments
G6	185	?	adult?	a few tiny bone fragments
G7	245	?	?	tiny fragment of cranial vault
G8	158	?	adult	small fragment of femur
G9	147, 152	?	adult?	a few tiny bone fragments
G10	205, 206	?	adult	a few tiny bone fragments
G11	257, 310	F??	adult	extremely fragmented
G11	257, 310	–	adolescent	a few teeth only
G12	166	?	adult	fragment of tibia
G13	216	?	adult?	a few bone fragments
G14	221	?	adult?	a few tiny bone fragments
G15	307, 301, 312	?	adult	a few tiny bone fragments
Jar #1	137	–	3-7	a few bone fragments
Jar #3	238, 314	–	12-13	extremely fragmented
Jar North	259	–	3-4	extremely fragmented

Table 2. The catalogue of human remains from Deh Dumen, Late Bronze Age cemetery, 2016 excavations.

Grave	MNI	MNI based on	Adults	Subadults
G16	1		F??	
G17	3	crania	M, M	child 1-3 years old
G18	1	humerus	?	
G23	7	crania	M, M?, F, ?, ?, ?	child
G24	4	crania	M, F, F?, ?	
G25	5	crania	M?, F, F?, F??	child
G26	5	petrous portions	F?, F??, ?, ?	adolescent?
Total	26		22	4



Figure 4. Rodent toothmarks on fragmented tibia, Grave 23. Scale bar 1cm.



Figure 5. Prominent deltoid tuberosity in humerus, Grave 23, bone 22.

in the majority contexts except one that was obviously dedicated to infants and children. Pronounced muscle attachment morphology, with developed *lineae asperae* and humeral deltoid tuberosities, has been previously noted at Lama and Tol-e-Khosrow, two other sites located in the high valleys of the Zagros Mountains and likely used by transhumance pastoralists (Sołtyśiak et al. 2010). The only difference is that skeletal elements at Deh Dumen were much better preserved, perhaps due to more favourable soil conditions and lower exposure to weathering.

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