Bioarchaeology of the Near East 3:47–51 (2009)

Short Fieldwork Report: Gohar Tepe (Iran), season 2009

A. Sołtysiak, A. Mahfroozi

(published online on www.anthropology.uw.edu.pl)

Acknowledgements. Thanks to Ebrahim Amirkolaee, Serollah Ghasemi and Meysam Miri for access to the human remains described in this report, and to Ali Mahfroozi for permission to use the Gohar Tepe dig house in Rostam Kola. Transportation of the Ghal-e-Kash skeleton to Rostam Kola was secured by Arman Massoudi.

Bibliography

Buikstra J.E. & Ubelaker D.H (eds.) (1994), *Standards for data collection from human skeletal remains*, Fayetteville: Arkansas Archaeological Survey.

Fürst C. (1939), *The skeletal material collected during the excavations of Dr. T.J. Arne in Shah Tepé at Astrabad-Gorgan in Iran*, The Sino-Swedish Expedition Publication 9, Stockholm.

Krogman W.M. (1940), *Racial types from Tepe Hissar, Iran, from the late fifth to the early second millennium B.C. A chapter in the protohistory of Asia Minor and the Middle East*, N.V. Noord-Hollandsche Uitgevers Maatschappij: Amsterdam.

Gohar Tepe (Iran), season 2009

Arkadiusz Sołtysiak*[1], Ali Mahfroozi[2]
[1]Department of Bioarchaeology,
Institute of Archaeology, University of Warsaw,
ul. Krakowskie Przedmieście 26/28, 00-927 Warszawa, Poland
email: a.soltysiak@uw.edu.pl (corresponding author)
[2]Iranian Center for Archaeological Research,
Baharestan Sq., 11416 Teheran, Iran

Iranian excavations at Gohar Tepe (36°40'42"N 53°24'07"E) began in 2005. The main objective of these excavations was to trace settlement history in the area from the Chalcolithic period until the Early Iron Age. Five years of excavations at the site revealed the presence of a dense cemetery. There was an overall lack of architectural remains which was surprising when considering the general shape of the site—with its clear central mound and a circle of satellite mounds resembling remains of massive walls. In 2009, the Iranian team was joined by a German expedition directed by Christian Piller (University of Munich). Parallel excavations in the nearby Komishan Cave by Hamed Vahdatinasab have revealed that the region of Gohar Tepe was occupied during the Upper Paleolithic and Neolithic periods.

The remains of 29 individuals from Gohar Tepe and its satellite mound (Goldar Tepe) were studied in 2007 (Sołtysiak & Mahfroozi 2008). During the spring of 2009 an additional 58 skeletons were analysed, most of them had, at one point, been left *in situ* as part of an open air exhibition. These particular skeletons had been subject to a high degree of weathering despite being covered by a roof. The remaining dozen or so skeletons were transported to the dig house immediately following excavation. In addition to this sample of 58 studied individuals, ~40 skeletons were left *in situ* and as a result, only preliminary sex determinations

and age assessments were possible. The sample studied in 2009 was more representative than the remains analysed in 2007, where subadult skeletons were few.

The cemetery at Gohar Tepe was in use for a long period of time; the earliest burials date to the middle 3rd millennium BCE (Early Hissar III) while the latest burials date to the first centuries of the 1st millennium BCE (Iron Age II). Most of the skeletons, however, date to the Late Bronze Age (second half of the second millennium BCE). In an area of the site excavated by the German team (Area AG), the Iron Age cemetery is close to the surface and one Late Bronze Age burial was explored in a deep trench. In other areas, however, the stratigraphy is much more complicated and graves from various periods may be found at the same elevation. Because many graves lacked grave goods, it is possible to only roughly date most of the cemetery to the Late Bronze Age (and most skeletons dated to the Iron Age 2/3 in the previous report also fall into this category), with a few often unspecified burials from the Early Bronze or Early Iron Age.

The proportion of subadult individuals in the sample from Gohar Tepe recovered in 2009 is high (33/58), and there are two areas in particular (AG IV and AJ XX) within the cemetery that contained mostly infant burials (see **Table 1** and **Figure 1**). The clustering of younger individuals may reflect chronological differences, as Area AG IV contained skeletons dating to the Iron Age and perhaps in this latest period of occupation at least some parts of Gohar Tepe had been considered by the local population as a cemetery of infants and young children. The difference between areas is statistically significant, for three subsamples (AG IV, AJ XX, AH+AI+AJ XXI+AL+STS) and three age categories (infants, children+adolescents, adults) χ^2=15.1 (Yates correction), p<0.005.

Table 1. Sex and age distribution in the sample of Gohar Tepe skeletons studied in 2009.

Area	Infants (0–2 years)	Children (2.5–14 years)	Adolescents (14.5–21 years)	Adults			**Total**
				F	?	M	
AG IV (Iron Age)	8	1					9
AG IV (Late Bronze Age)				1			1
AG XXX					1		1
AH XX	1				1		2
AH XXI	1	1		1		1	4
AH XXII		1		1	1		3
AI XX				1			1
AI XXI	2	1					3
AI XXII					1		1
AJ XX	4	2	1				7
AJ XXI		1		1	1	1	4
AL XX	1	1		1		3	6
AL XXI	2	1		1	2	1	7
AL XXII	2	1					3
STS		1		2		3	6
Total	21	11	1	9	7	9	58

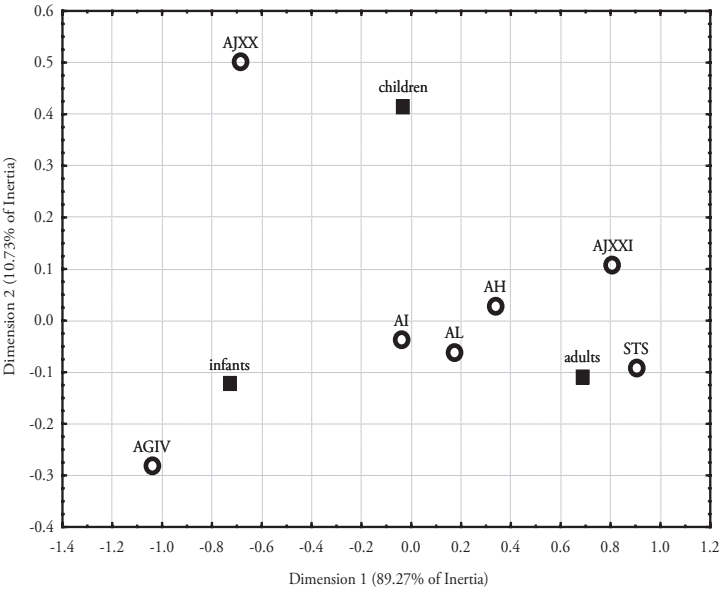

Figure 1. Correspondence Analysis biplot for age categories and areas at Gohar Tepe.

Figure 2. Femora of selected subadult individuals from Area AG IV, from left to right #6–8 (dental age 0.5+), #20-28 (dental age 1.0), #7-62 (dental age 1.25), #101-321 (dental age 0.75), #32-154 (dental age 1.0).

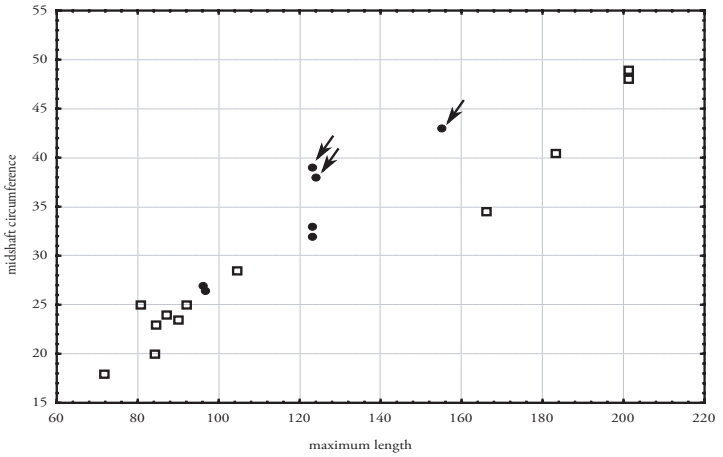

Figure 3. Maximum intermetaphyseal length *vs.* midshaft circumference in subadult femora from Gohar Tepe. Bones from Area AG IV are marked with circles, bones from other contexts are marked with squares, and the three individuals with exceptionally robust femora are indicated by arrows.

Compared to analyses carried out in 2007 (Sołtysiak & Mahfroozi 2008), no advanced porotic hyperostosis was observed and the frequency of cribra orbitalia was lower (one moderate and two initial per six children, three initial per 7 adults). The proportion of individuals with enamel hypoplasia was slightly higher compared to the 2007 analysis (5/7 in males, 4/5 in females, 3/6 in individuals of unknown sex), but the degree of this stress marker was moderate in most cases. The prevalence of spondylosis was similar in females (4/6) and in males (3/6), but osteoarthritis was slightly more common in females (3/9) than in males (1/8). Carious lesions were frequently observed in adults (3/6 in males, 4/6 in females, 1/5 in individuals of unknown sex) and the deciduous dentition was affected in two 4-year old children. Several of the long bones of subadults recovered in Area AG IV at Gohar Tepe were exceptionally robust. In three infants who died around the age of one year (#7-6, #32-154, #101-321; age assessment based on dental development) and in one ~4-year-old child (#40-284), the metaphyses and shafts were very broad in relation to intermetaphyseal length (**Figures 2, 3**), much broader even than in hyperarctic body proportions (cf. Duarte et al. 1999: Fig. 5). Prevalence of such condition in one context may suggest the presence of an inherited bone growth abnormality, although correspondence between dental age and intermetaphyseal length rules out achondroplasia or hypochondroplasia as possible diagnoses.

Acknowledgements. I would like to thank Mr. Ali Mahfroozi for his kind invitation to Gohar Tepe and Dr. Christian Piller for detailed discussions concerning the archaeological context of several burials excavated at the site. Many thanks are also due to Esmail Jafarian, Thomas Neumann, Serollah Ghasemi, Meysam Miri, Arman Massoudi as well as other local excavators at Gohar Tepe.

Bibliography

Duarte C., Maurício J., Pettitt P.B., Souto P., Trunkaus E., van der Plicht H., Zilhão J. (1999), *The early Upper Paleolithic human skeleton from the Abrigo do Lagar Velho (Portugal) and modern human emergence in Iberia*, Proceedings of the National Academy of Sciences 96(13):7604-7609.

Sołtysiak A., Mahfroozi A. (2008), *Short Fieldwork Report. Gohar Tepe and Goldar Tepe (Iran), seasons 2006-2007*, Bioarchaeology of the Near East 2:71-77.

Tell Hamoukar (Syria), season 2006

Arkadiusz Sołtysiak
Department of Bioarchaeology,
Institute of Archaeology, University of Warsaw,
ul. Krakowskie Przedmieście 26/28, 00-927 Warszawa, Poland
email: a.soltysiak@uw.edu.pl

Excavations at Tell Hamoukar (36°48'43"N 41°57'19"E) were initiated in 1999 by a joint Syrian-American expedition led by McGuire Gibson and were based chiefly in the Oriental Institute of the University of Chicago. Since 2004, expeditions at Tell Hamoukar have been directed by Clemens Reichel (now University of Toronto). Tell Hamoukar was an important urban centre from the late 5th to 3rd millennium BCE and was abandoned after the Akkadian period and re-settled occasionally to a much lesser extent in later periods. According to surveys, the site reached its maximum size, ~280ha, as early as in the Late Chalcolithic 2 (end of the 5th millennium BCE). Sherd scatter dating to the Late Chalcolithic 2 was found not only in the main mound, but also in the Khirbet al-Fakhar area to the south (Ur 2002). However, it was rather a seasonal or very dispersed occupation than a well developed urban centre. Only the main mound was occupied, covering ~15ha during the first half of the 4th millennium BCE. The most dramatic event in the history of the site is witnessed by a destruction layer dated to ~3500 BCE and was followed by the spread of the southern Uruk style throughout northern Mesopotamia (Lawler 2006). By the Early Bronze Age, Hamoukar was densely settled (~100ha) just before and during the Akkadian period (Ur 2010).

Several human remains were unearthed at Tell Hamoukar between 1999 and 2005. Following excavation, the skeletons were transported to the archaeological museum in Deir ez-Zor. Only the remains of five individuals excavated in 2006 were available for study in the dig house at Tell Brak in early October 2006 (for details see **Table 1**). The bones of these individuals were discovered close to the surface and as a result were incomplete and heavily weathered; even the enamel was demineralised with root etching present, which occasionally prevented tooth crown measurements from being taken and made the observation of the presence of enamel hypoplasia impossible in several instances. Following this study, the human remains were sent back to the storage rooms of the Hamoukar dig house.