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Short Fieldwork Report: As-Sabiyah and Al-Khuwaysat (Kuwait), seasons 2007–2008

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As-Sabiyah and Al-Khuwaysat (Kuwait), seasons 2007–2008

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During the last week of November 2008 in the dig house belonging to the Kuwaiti-Polish archaeological mission to As-Sabiyah Mugheira (located in Al-Jahrah), the remains of at least 18 individuals were studied. These skeletons came from six burials excavated by the Kuwaiti-Polish team directed by Piotr Bieliński (The University of Warsaw, Poland) in the As-Sabiyah Mugheira area (29°38'00"N 48°00'40"E), three burials excavated by the Kuwaiti team directed by Sultan al-Duwish (Department of Antiquity & Museums, National Council for Culture, Arts & Letters, Kuwait) in the As-Sabiyah Rukham area (29°39'00"N 47°59'06" E), and two burials excavated by Sultan al-Duwish in Al-Khuwaysat near the town of Al-Jahrah (~29°23'N 47°40'E). All graves were small stone barrows of various shapes scattered in the desert environment.

Preservation of the skeletons was generally poor in all areas; only four burials contained what might be considered as nearly complete skeletons. Although a desert environment, water was the chief factor in post-depositional damage to the burials at the sites. Nearly all of the individuals buried in the As-Sabiyah area were placed directly on bedrock, covered by stones and only a thin layer of sand. Unfortunately for the burials, water frequently flowed over this bedrock, dissolving bone as it went. Moreover, trabecular bone withholds more moisture com-

Figure 1. Example of water erosion in bones from As-Sabiyah (SRF).

pared to sand and the roots of desert plants were drawn to this moisture in their search for water. Their roots subsequently penetrated and destroyed the moist areas, especially flat bones and epiphyseal regions of long bones which are rich in trabecular bone. Additionally, rapid changes in humidity caused the bones to crack; a situation observed in some examples that were characterized by very regular fractures, especially parallel to the axis of long bones.

In spite of the general poor state of preservation of the human remains and a very small number of individuals, the sample is very valuable as it is the first studied set of human skeletons from continental Kuwait. In the past, only a small collection of bones of twelve Hellenistic individuals from Failaka Island was thoroughly examined by George J.R. Maat (Maat et al. 1989, 1990; Maat 1993; Maat & Baig 1997). The main confounding issue related to the human remains from the Kuwaiti deserts is the general lack of a precise chronology for the burials. Grave goods are limited to beads and the only possibility to have at least a rough chronology for the burials is by radiocarbon dating the bones themselves. However, another obstacle persists, the human remains are demineralized and their collagen (which is used for radiocarbon dating) is degraded.

The human skeletons were described using a standard form which included (1) a detailed pattern of bone preservation, (2) a basic description of erosion due to humidity, plants, and insects, (3) possible measurements (i.e., chiefly diaphyseal diameters), (4) a few observable skeletal non-metric traits, (5) dental measurements, and (6) some pathological conditions which were not altered by post-depositional processes: degenerative changes, dental caries, and linear enamel hypoplasia. Tooth and bone samples were taken to Poland for further biochemical analyses (to be reported elsewhere). Sex and age were assessed using the methods recommended by Buikstra and Ubelaker (1994). A basic description of the examined skeletons is provided below (SMQ = As-Sabiyah Mugheira, SR = As-Sabiyah Rukham, and KH = Al-Khuwaysat).

SMQ 30: strongly eroded remains of at least two adult individuals; there were several gracile bones (e.g., cranium, humerus, two sets of ulnae and radii, vertebrae, ribs, tibia, possibly a femur and fibula, and many tooth fragments); the minimum number of individuals (MNI) was assessed by the number of right occipital condyles, the individuals were also differentiated by dental wear degree; one of them was likely a female (sharp upper orbital margin, overall gracility of bones).

SMQ 33: strongly eroded and incomplete bones of one gracile individual, including fragments of a femur, humerus, os coxae, small cranial fragments, broken LM^3; adult individual, most likely female (sex determination based solely on measurements of the clavicular midshaft).

SMQ 35A: remains of at least four individuals (MNI based on the number of left femora and cranial fragments) including two well-preserved partially articulated skeletons. The two most complete skeletons most likely belonged to females, the older of the two had the best preserved skull in the entire sample (age estimation based on cranial sutures and dental wear, sex determination based on cranial morphology and diaphyseal measurements; left and right femoral midshaft circumferences 78mm and 81mm respectively). There were also a few partially articulated bones of an adult male (sex determination based on pelvic and diaphyseal measurements, femoral midshaft circumference 93mm) and one older child or adolescent (a few bones with unfused epiphyses, femoral midshaft circumference *80mm). Partial articulation of the skeletons suggests that the burial was re-opened after soft tissue decomposition. A more detailed description of these skeletons, which were much more complete and better preserved compared to other Mugheira burials (SMQ 30, 33, 35B, 38 and 45), will be included in the final report.

SMQ 35B: ~70 very small and strongly eroded fragments of bone, representing all areas of the skeleton (from the atlas to a fibula); an adult individual.

SMQ 38: four very small fragments of bone including a possible fibular midshaft; adolescent or adult individual.

SMQ 45: ~30 very small and strongly eroded fragments of bone, only a tibia and possibly a femur were present together with LM^3; young adult.

SRE: very well-preserved remains of at least three individuals (MNI based on the number of right femora). There was one complete skull, part of another, and a few fragments of a third one, as well as many complete bones and bone fragments from all areas of the skeleton. In most cases, it was impossible to distinguish between the three individuals, as there were no dramatic differences in robusticity. Regardless, the complete skull belonged to a young adult of undetermined sex (average cranial robusticity and relatively small degree of dental wear). The two other individuals were male; one younger (25-30 years old, diagnosis based on the pubic symphysis) and one older (35-40 years old, diagnosis based on pubic symphysis and degree of dental wear). Sex determinations were based on the pubis and cranial morphology. The sex pattern is reflected also in the diaphyseal measurements of the right femora (midshaft circumferences 84mm, *87.5mm, *95mm respectively). There were several instances of osteoarthritis of the lumbar vertebrae which likely belonged to the older male.

SRF: strongly eroded fragments of a femur and tibia, most extreme example of demineralisation due to water in the whole studied sample; one adult individual.

SRG 6: strongly eroded fragments of bone, this time chiefly due to plant root penetration. Most of the bones were visible only due to a slight colour change in the soil. Small fragments of the skull and a portion of the radial midshaft were preserved enough to be cleaned. The bones belonged to an adolescent or young adult.

KHG 4: a poorly preserved and incomplete skeleton of a possible male, although the sex determination is far from certain in this case (male morphology of the pubis, but wide greater sciatic notch and a very gracile mandible). More certain is the age at death between 35 and 40 years, confirmed both by pubic symphysis and auricular surface morphology as well as by the degree of dental wear. There was slight spondylosis and osteoarthritis in the thoracic and lumbar vertebrae as well as destruction of the articular surface of the distal end of right first metatarsal, perhaps due to an injury.

KHI: well-preserved bones of one individual and a few remains of another. There was almost a complete skeleton of a mature male (sex determination based on skull morphology and diaphyseal measurements, age estimation based on the degree of dental wear and on the intensity of degenerative changes) and a few teeth most likely belonging to a younger individual (smaller degree of dental wear).

Despite small sample size and post-depositional damage to the bone, some preliminary observations can be made. Firstly, there is a complete lack of skeletons of newborn children and infants, although in a regular pre-industrial society, subadult mortality was sometimes as high as 40-50% (Hassan 1981) and usually exceeded 30% (cf. Sołtysiak & Tomczyk 2007 for age profiles in the middle Euphrates valley populations). Such a sample bias may be an effect of water erosion which would completely dissolve the small and less mineralised subadult bones compared to the more dense adult bone. There are obvious differences in soil conditions between the sites and erosion due to flowing water was not as strong in Al-Khuwaysat compared to As-Sabiyah. Thus, a larger sample of bones from Al-Khuwaysat will be helpful in answering questions regarding whether social customs were responsible for this age bias. Also

the sex distribution seems to be biased in favour of females at Mugheira and for males at the other sites (see **Table 1**). However, in most cases, sex determinations were not very reliable and sex differences between sites may be purely accidental and related to small sample size.

Table 1. Age and sex distribution in the samples (divided by site).

Area	Juveniles	Adults			**Total**
		Females	?	Males	
SMQ	1	4	4	1	10
SR	1	–	2	2	5
KH	–	–	1	2	3
Total	2	4	7	5	18

At this time it is difficult to determine definitively whether the people buried at As-Sabiyah and Al-Khuwaysat were farmers, pastoralists, or fishermen. Previously, researchers have observed sharp differences in the frequency of dental caries in prehistoric populations from the Arabian Peninsula, with some sites having very low frequencies, such as the Mesolithic site of Ra's al-Hamra (Macchiarelli 1989), Bronze Age Umm an-Nar (Højgaard 1981), and Iron Age sites in Bahrain (Jarman 1977). Conversely, other authors have reported some very high frequencies of dental caries at sites such as Bronze Age Janussan (Højgaard 1983, 1984, 1986), historical Samad Oasis (Nelson et al. 1999), and many sites in Bahrain (Littleton & Frohlich 1989, 1993). These differences are thought to reflect two completely different subsistence strategies: 1) agriculture (including the highly cariogenic date palm) and 2) the exploitation of marine resources or animal husbandry (both correlated with a low dental caries frequency) (Kunter 1981; Maat et al. 1990). There was no single cariotic tooth in the sample of ~70 teeth examined in the three Kuwaiti samples. This alone suggests that the skeletons may not belong to an agricultural population.

Skeletons from As-Sabiyah and Al-Khuwaysat also exhibit a high frequency of separated talar articular surfaces of the calcanei, much higher than in rural populations of north-eastern Syria. However, the sample is too small to draw any conclusions, but with a larger sample of skeletons and more non-metric traits observed, it may be possible to check whether there was affinity between prehistoric Kuwaiti populations and ancient Mesopotamian farmers.

Biochemical methods may prove helpful in the future in determining the ancient diet and subsistence strategies of individuals buried at the sites. Unfortunately, an overall lack of collagen as a result of poor preservation prevents the analysis of stable isotopes (O, N, C) which would help in understanding diet. However, the untouched deeper layers of enamel may prove useful for analyses of trace elements (Sr, Zn, Ba). So far, no animal remains were found in the primary context, and because of this, no comparative scale for a local ecosystem may be offered. It is however still possible that this problem will be solved in future excavation seasons.

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