As-Sabiyah and Kadhima (Kuwait), seasons 2009-2011

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Recent excavations carried out by the Kuwaiti-Polish Archaeological Expedition to As-Sabiyah concentrated on the Ubaid period settlement SBH 38 and on the exploration of several tumuli located in two areas of the As-Sabiyah desert, referred to as Mugheira (acronym SMQ, 29°38'00"N 48°00'40"E) and Bahra (acronyms SB and SBH, 29°38'25"N 47°58'00"E). Only a few of these structures contained any recognisable human remains, with one unexpectedly rich deposit in SMQ 49 and just a small quantity of bones and/or teeth in SB 60, 65 and 66; all of them excavated in 2009 and 2010. Seven tumuli explored in 2011 yielded no skeletal remains except ~10 minute and heavily eroded human or animal bone fragments in SB 69.

In addition, several human bone assemblages gathered by the Kuwaiti team directed by Sultan al-Duwish were studied by the present author, among them five from As-Sabiyah Bahra (SBH 4, 7, 10, 18, and 29), three from Al-Khuwaysat (KH 1, 2, and 4), and two from Kadhima (KG 1 and 3). The latter site is located close to the eastern corner of Kuwait Bay (29°25'20"N 47°45'00"E) and contains primarily the remains of an Early Islamic settlement, recently surveyed by Derek Kennet, Durham University (Kennet et al. 2011). The human remains from Kadhima were excavated several years ago and then stored in the Department of Anatomy, Kuwait University.

Most of the human remains excavated at the five sites were strongly eroded and affected by several taphonomic factors such as root etching, surface mineralisation, insect tunneling, or trampling. Also microbial activity was evident, as many surfaces exhibited irregular black/blue staining. Bones and teeth were measured and described with the same protocol as the sample studied in 2008 (Sołtysiak 2008). This report provides a preliminary review of data gathered in April 2011 in the dig house of the Kuwaiti-Polish Archaeological Expedition to As-Sabiyah in Jahrah, Kuwait.

SMQ 49. A deep chamber of this tumulus revealed a multiple burial with an equid skeleton and as many as 18 stratigraphical units containing human remains, both articulated complete or incomplete skeletons and assemblages of disarticulated bones. The two deepest skeletons were almost intact and were located directly on the bedrock. One of them (**21**), although in poor condition, was fairly complete and belonged to a young female, most epiphyses were already completely fused, but the third molar had not erupted. Westwards, a skeleton of a 4/5-year old child was recovered (**23**); the skull was in poor condition and the upper portion of the body was more eroded than the lower portion of the body.

Above these two skeletons extremely eroded bones were found, still in articulation, but strongly damaged by trampling that had occurred in antiquity (**16**). The lower limb was relatively better preserved and the skull was represented by small fragments. No sex or more precise age-at-death assessment was possible in this case. Eastwards, both upper limbs of another adult individual were found (**17**) as well as the two parallel feet and lower portions of

the tibiae and fibulae belonging to two other individuals (**18**). Thus, there was one almost complete skeleton and at least two incomplete skeletons at this level; one perhaps belonging to a male, as suggested by robustness of the ulna and one set of metatarsals. A few bones, possibly from this individual, were gathered together with a deposit of animal bones (**9**), which was located above. Actually, one of these incomplete skeletal portions may perhaps belong to individual **13** that was found above individual 16. This one was likely female, with a maximum femoral head diameter of 42.5mm. On the same level, another incomplete skeleton was found (**12**), identified as an 8/9-year old child. Surprisingly, a skull located above the thorax of this individual belonged to a mature adult of unknown sex.

Human bones in the upper strata of this grave chamber were mostly disarticulated and scattered in large intrusive pits. The deepest of such pits (**14**), was located just close to individual 13 and it is possible that it contained remains of only one male individual (femoral head diameter 48.5mm), maybe the same as robust partial skeletons 17 and 18, which were found just below this pit. Actually, all of these remains together constitute more or less a complete skeleton lacking only the skull. The only stratigraphical problem is the relationship between pits 9 and 14, both containing robust skeletal elements, but differing in diameters of the retrieved femoral heads, 51mm in case of pit 9. If one of them belonged to skeleton 16, this would not change the MNI.

At the lower level, articulated skeletons of at least 6 individuals may be identified, two adult females (13+18a and 21), one adult male (14?+17+18b+skull 12?), one adult of unknown sex (9?+16), and two children of differing ages (12 and 23). In addition, small quantities of human remains, most likely belonging to these individuals, were found in three other contexts (**15**, **19**, and **24**).

The uppermost strata in the grave chamber had been disturbed by a large pit in the center and human remains were found scattered all around. The northern scatter (**11**) contained the remains of at least 4 individuals, including three adults (based on the number of mandibles) and one child 3–7 years old, which was not the same as the individual 23. Several spiral fractures are present here and also in a small assemblage gathered during sieving of soil in this area (**10**), which suggests that bones were fragmented when collagen content was still relatively high.

A larger percentage of bone fragments was found in the southern scatter **(7)**, with a larger proportion of long bone shafts, especially from femora and tibiae. The minimum number of individuals is 5, including two males and one female. This time no subadult elements were noted. No mandibles were included in this assemblage and only a few femoral fragments were noted in asemblage 11. Thus, if these two scatters are related to each other, the total minimum number of individuals is 6 including five adults and one subadult individual. No anatomical relationships were present and several bones, chiefly femora, exhibit chop marks close to their metaphyses (**Figure 1**). Since femora, tibiae, and humeri constitute a major portion of the assemblage and they were broken in antiquity, it is possible that at least a part of this bone scatter was a secondary burial, transported from elsewhere, without careful retrieval of smaller skeletal elements in the primary context. Bone scatter 7 contained the cranium of an adult woman, again with possible chop marks on the vault.

Above bone scatters 7 and 11, on the top of the grave chamber, other assemblages of disarticulated human bones were excavated. They were clearly separated from the previous ones by a stratum of stones. The northern scatter (**2**, **3**) contained strongly eroded fragments of bone representing all portions of the skeleton of at least two individuals (MNI after the

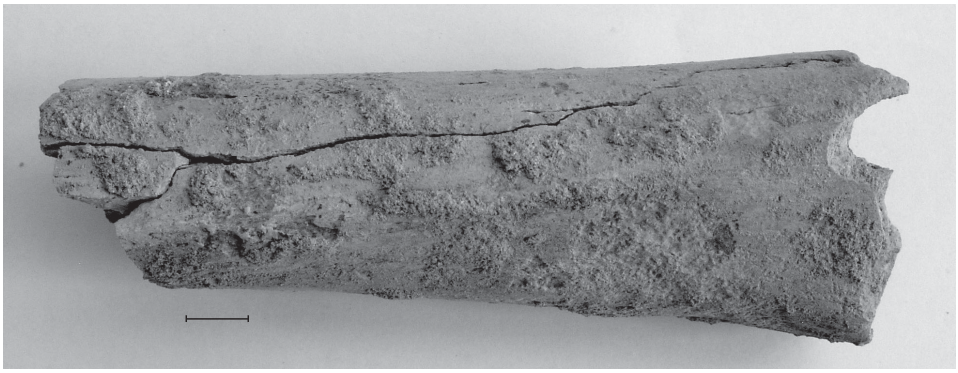

Figure 1. Chop marks on femur, SMQ 49/7.

number of glabellae) with evident trampling damage and root etching. The southern scatter (**4**) was again—as in the deeper stratum—more rich in human remains than the northern one. Elements from at least three individuals were found here, including three crania of a young (**5**) and a mature (**6**) female as well as of an adolescent individual of ~15 years. Also, one tooth of a child ~4/5 year old child was recovered. Since no other bones accompanied this element, it is possible that it could be linked to a child from bone scatter 11. There was also one robust femur, 92* in midshaft circumference, as well as several other robust skeletal elements. In total, this stratum contained the remains of at least five individuals including two females, one male, and one adolescent.

This assemblage of bone was affected by various taphonomic agents and was more eroded than bones from deeper strata. In addition, several of the long bone shafts exhibited chop marks, although no prevalence of femora and tibiae was obvious and small skeletal elements were also abundant, including one toe segment with a healed fracture with small dislocation. Some spiral fractures, damage due to trampling, root etching, rodent tooth marks and insect tunneling were noted. Cranium 5 exhibited areas of advanced weathering on the left frontal bone and it is possible that this area was occasionally exposed. It was found lying on its base, but the distribution of microcrystalline deposits inside suggests that originally it had been located on its left side. The frontal bone of cranium 6 exhibited some regular linear features perpendicular to the vascular grooves; they may be related to some sort of manipulation during movement from a primary to a secondary burial location. An abundance of smaller skeletal elements suggests that the remains of these individuals, or at least most of them, were not transported from a distant place.

Based on stratigraphy and on the spatial distribution of the human remains, three phases of use of tumulus SMQ 49 may be distinguished. First, there were primary burials followed by secondary deposits, some of which may have been transported from a distant place. Finally, when the aforementioned remains were covered by stones, a number of individuals were buried again in a secondary context, this time perhaps in a shallow ossuary. Bones in this last context were strongly eroded, but some anatomical relations in at least one individual may be oberved. When remains from each phase are counted separatedly, the total number of individuals is 17, including 5 possible adult females, 4 possible adult males, 4 adult individuals with no sex assessment possible, one adolescent, and three children. The low number of children and complete lack of infants may be related to taphonomy.

SB 60. An assemblage of strongly eroded bones in a secondary context, chiefly broken shafts of long bones and pieces of skull, no anatomical relations were preserved and most postmortem fractures occured in antiquity. Smaller skeletal elements were infrequent and this assemblage had been possibly moved from elsewhere and re-buried here. These remains belonged to at least two adult individuals, one of them possibly female.
SB 65. A small assemblage of extremely eroded bone fragments, including the skull, femur, humerus, fibula, foot and hand bones, and vertebrae. The fragments appear to differ in robusticity, but there was not enough evidence to suggest that they belong to more than one adult individual.
SB 66. This burial included eleven small and strongly eroded fragments of femur or tibia (as suggested by cortical thickness), possibly of an adult human individual.
SB 69. A small number of extremely eroded fragments of bone; it was not possible to determine whether they were human or non-human.
SBH 4. A small number of extremely eroded fragments of bone, possibly from long bone midshafts; it was not possible to determine whether they were human or non-human.
SBH 7. A small assemblage of relatively gracile human remains perhaps in a secondary context, comprised chiefly of long bone midshafts and a few foot elements. They were covered by a hard sandy soil and damaged by intensive surface crystalline deposits.
SBH 10. A small number of extremely eroded fragments of bone, possibly from long bone midshafts, most likely that of femur or tibia; it was not possible to determine whether they were human or non-human.
SBH 18. Remains of two adult individuals in a primary context, each having a variable pattern of erosion. Only one relatively robust skull was preserved (including several teeth). Skull measurements and general robustness were used to determine that the skull likely belonged to a male. The teeth were more than moderately worn and all major cranial sutures were completely obliterated; all of which suggest that the individual was a mature adult. The left ulna of one individual was broken some 1–2cm below the coronoid process and did not heal properly forming an irregular three-splinter false joint (**Figure 2**). It is not clear whether the radius was also broken; only a small eroded fragment of the corresponding area of the radial tuberosity was recovered and its shaft was enlarged and deformed.
SBH 29. A small assemblage of animal bones (tag E) together with some human remains (tags B and D), chiefly fragments of a skull belonging to an older child and tiny strongly eroded pieces of long bone shafts. There were also two fragments of strongly worn permanent teeth, so at least one adult individual had also been buried in this location.
KG 1. Human remains labelled as KG 1 and KG were commingled and likely represent two individuals from primary contexts. KG 1 was incomplete, with both forearms, right femur, and both forelegs present as well as many foot bones and only a few fragmented elements from other parts of the body. Most bones were only slightly eroded. Several measurements suggest that the individual was male and was ~175cm tall (after Trotter & Gleser 1952). Some skull fragments may be assigned to this individual together with a few teeth with moderate and advanced wear.
KG 3. Bones of this individual were more robust and more eroded than these of KG 1 and the length of the talar articular surface (38.5mm) suggests that the individual was a male. Bones from all parts of the body were present, although highly fragmented, including a complete skull with some areas strongly affected by erosion. The dental wear degree was comparable

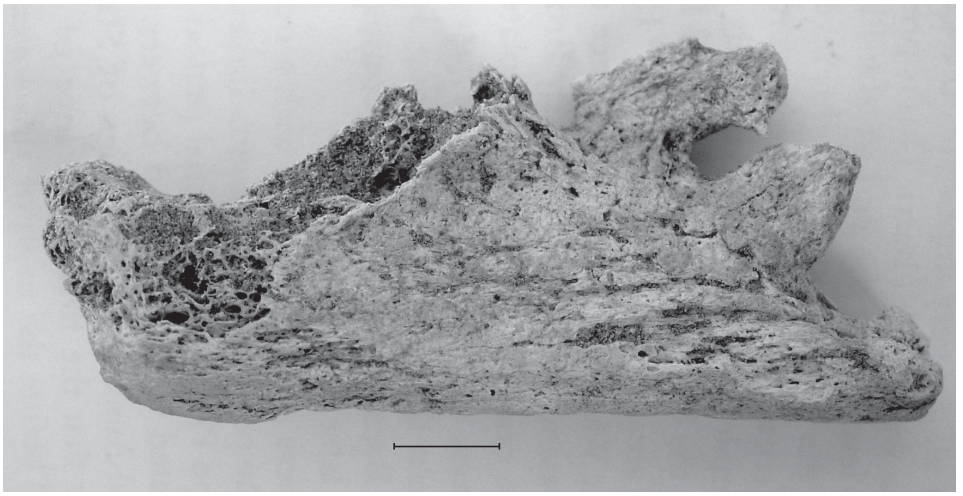

Figure 2. False joint in upper ulna, SBH 18.

with that of KG 1, so it is possible that both skeletons belonged to two males who died at a mature age.

KH 1, 2, and 4. KH 1 was a very small and random assemblage of human remains including fragments of an atlas, one thoracic vertebrae, a few small long bone shaft fragments, and two strongly worn teeth (the lower left canine and upper right first premolar). KH 2 included long bone shafts, cranium fragments, a finger segment and a rib. KH 4 included cranial fragments, toe segments, and a molar root.

Overall, the sample studied in 2011 consisted of at least 27 individuals (see **Table 1**). Because bones had suffered from high degree of erosion and chronology is not clear, it was too difficult to draw any solid conclusion regarding the living conditions at the time. However, some very cautious general observations may be given.

Table 1. Age and sex distribution in the studied sample (by location).

Area	Subadults	Adult F	Adult ?	Adult M	Total
SMQ	4	5	4	4	17
SB		1	3		4
SBH	1		2	1	4
KG				2	2
Total	5	6	9	7	27

First of all, the frequency of dental caries was low, with only one small carious lesion in the whole sample. Even taking into account the poor state of preservation of the teeth in most contexts, low consumption of sugars may be suggested. Also, the frequency of degenerative joint disease was very low, with virtually no cases observed except some initial signs in one

or two individuals. This observation may, however, be biased by the fact that joints affected by osteoarthritis were also more exposed to erosion. Four fractures were noted, including one severe (false joint in ulna) and three minor ones in a toe segment and in the ribs (two cases). Enamel hypoplasia was not common, but few teeth were preserved enough to allow for the observation of the condition to be made.

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