

## THE SKELETAL REMAINS FROM KHIRBAT UMM LEISUN, JERUSALEM

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Human skeletal remains were found in the crypt of the Byzantine monastery at Umm Leisun. The bones were attributed to the Georgian population of the monastery (see Seligman, this volume). The crypt included a central burial area with eight cist graves covered by stone slabs (Loci 275–282), and five open troughs—three on the northern side and two on the southern (Loci 267–271). Due to external constraints, the bones were inspected on-site, and then returned to the graves. Grave 281 was only partially excavated, while troughs L271 and L272 were not excavated at all.

### MATERIALS AND METHODS

Some of the bones were relatively well preserved, but most were fragmentary, their state of preservation poor to a degree that inhibited any morphometric study. Furthermore, all the bones disintegrated on touch. Nevertheless, demographic parameters (age at death and sex estimation) and epigenetic traits were recorded whenever possible. The specific age and sex estimation methodologies used for each individual are detailed in the anthropological report (Umm Leisun 2700, IAA Archives). The estimated age at death for most of the adult individuals was based on the stage of teeth attrition (Hillson 1986:176–201). This was supplemented, when possible, by examining the growth of osteophytes in the vertebral column (Waldron 1991) and chronological changes in the pelvis (Lovejoy et al. 1985; Brooks and Suchey 1990) and ribs (Loth and Iscan 1989). Sex was determined mainly by means of relevant measurements of the proximal femur and distal humerus

(Bass 1987:151, 219). The age at death of children was estimated by means of teeth-eruption stages and long-bone length (Hillson 1986:176–201; Bass 1987:149, 217).

### RESULTS

*Locus 267.*— Open trough. The remains included fragments of a skull vault, postcranial bones, and teeth, representing at least two individuals. The bones were scattered—skull fragments were concentrated in the west, while most foot bones were on the east—indicating a disturbed primary burial in an east–west orientation. The skeletons were estimated to be of adults, aged 15–20 and 40–50 years. Their sex could not be determined.

*Locus 268.*— Open trough. The remains included a skull vault and postcranial fragments representing at least one individual. The bones were found scattered; the original burial posture could not be determined. The minimum number of individuals and their age and sex could not be estimated; however, the proportions of the long bone-fragments indicated that this trough was used for the burial of at least one adult individual.

*Locus 269.*— Open trough. The remains comprised upper limb phalanx of an adult (>15 years), whose sex could not be determined.

*Locus 270.*— Open trough. A small skull vault fragment. The age at death and sex of this individual could not be determined; however, the fragment was not of an infant or a small child.

*Locus 275.*— Stone-covered cist grave with an inscription. The remains included a skull vault, postcranial fragments and teeth, representing one individual. Some of the bones were found in anatomical articulation, indicating a disturbed primary burial in a north–south orientation, with the head in the north. The skeleton was estimated to be that of an old male, aged >60 years.

*Locus 276.*— Stone-covered cist grave. The remains included a skull vault, postcranial fragments and teeth, representing at least two individuals. The bones were in anatomical articulation, indicating primary burial. The interred were buried on their back, in a north–south axis, with the head in the north. The skeletons were identified as a male aged 40–50 years, approximately 169 cm tall (estimation based on the femoral oblique length; Feldesman, Kleckner and Lundy 1990), and an individual aged >40 years, whose sex could not be determined.

*Locus 277.*— Stone-covered cist grave. The remains included a skull vault, postcranial fragments and teeth, representing at least four individuals. Some of the bones were in anatomical articulation, indicating a disturbed primary burial. The interred were buried lying on their back, on an east–west axis, head in the west. The skeletons were estimated to be of adult males, aged 20–30, 20–30, 40–50 and >45 years.

*Locus 278.*— Stone-covered cist grave. The remains included a skull vault, postcranial fragments and teeth, representing at least two individuals. The bones were found in anatomical articulation, indicating primary burial. The interred were buried lying on their back, on an east–west axis, head in the west. The skeletons were estimated to be of a male aged >30 years, and an adult aged 20–25 years, whose sex could not be determined.

*Locus 279.*— Stone-covered cist grave. The remains included a skull vault, postcranial fragments and teeth, representing at least four individuals. Some of the bones were in anatomical articulation, indicating primary burial of at least two individuals. The interred were buried lying on their back, in an east–west axis, head in the west. The rest of the bones were scattered and their original burial posture could not be determined. The skeletons were estimated to be of a child aged 6–10 years, and three male adults aged >20, >20, 40–50 years.

*Locus 280.*— Stone-covered cist grave. The remains included a skull vault, postcranial fragments and teeth, representing at least four individuals. Some of the bones were found in anatomical articulation, indicating primary burial of at least two individuals. The interred were buried on their back, on an east–west axis, head in the west. The rest of the bones were scattered and the original burial posture could not be determined. The skeletons were estimated to be of a child aged 2.5–4.5 years, and three male individuals, aged >20, >20, 40–50 years.

*Locus 281.*— Partially excavated stone-covered cist grave. The remains included a few unidentifiable bone fragments.

*Locus 282.*— Stone-covered cist grave. The remains included a skull vault, postcranial fragments and teeth, representing at least two individuals. The bones were found scattered and the original burial posture could not be determined. The skeletons were estimated to be of a child, aged <4 years, and an individual aged 40–50 years, whose sex could not be determined.

#### DISCUSSION

Fragmentary human skeletal remains, representing at least 24 individuals, were found

in 12 out of the 14 graves in Umm Leisun. In the large grave with the inscribed covering slab (L275; see Seligman, this volume), only one old male individual was interred. Two to four individuals were identified in each of the other graves, whenever the state of preservation allowed for reliable counting of the minimum number of individuals.

The age at death could be estimated for 21 out of 23 individuals at Umm Leisun, while sex was determined for 11 out of the 18 adult individuals. The small sample included 18 adults, 3 children, and 2 individuals whose age could not be determined (Table 1).

The overall demographic profile of the Umm Leisun skeletal sample is irregular in a number of ways: All the adults whose sex could be determined were males; children constituted only 13% of the skeletal population; no infants were found. The small sample size and the bias caused by the poor state of preservation could explain the low proportion of children. However, a contemporary skeletal population from the Kidron Valley (North), Jerusalem (Nagar, forthcoming), highlights the unusual nature of the Umm Leisun population. In

a similar sample size (27 individuals), the population at the Kidron Valley included 17 children (more than 60%) and at least 5 adult females.

Skeletal samples in which all the individuals are of the same sex are typical of monasteries, as is demonstrated by the Byzantine cemeteries of Khan el-Aḥmar (Hershkovitz et al. 1993), Deir Ḥajle (Peleg 2009) and Ḥorbat Ḥani (Permit No. A-3753). Although only adults were reported in the 11 graves at the Deir Ḥajle cemetery (Peleg 2009), paleodemographic study of the much larger skeletal sample at Khan el-Aḥmar identified a small number of children (Hershkovitz et al. 1993). Out of 138 individuals (15%) at Khan el-Aḥmar, 21 were identified as children, a proportion similar to that of Umm Leisun.

#### CONCLUSIONS

In spite of the poor state of preservation of the bone remains from Umm Leisun and the rapid on-site study imposed by outside constraints, the remains of 23 individuals from 12 graves were inspected, and the age at death and sex

**Table 1. Estimate of Age at Death for the Umm Leisun Skeletal Sample**

Locus	Age Estimation (years)										MNI
	NB-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	>60	Unknown	
267				1			1				2
268										1 (adult)	1
269										1 (adult)	1
270										1	1
275									1		1
276							1				1
277					2		1	1			4
278					1						1
279		1					1			2 (adults)	4
280	1						1			2 (adults)	4
281										1	1
282	1						1				2
<i>Total</i>	2	1		1	3		6	1	1	8	23

of most of them were estimated. The small Umm Leisun skeletal sample included 3 children and 19 adults. All those for whom sex could be determined proved to be male. Other monastic cemeteries such as Khan el-Ahmar show great similarity, proving that the

irregular demographic profile of the Umm Leisun skeletal population was not due to a bias caused by the small sample size or the state of preservation. On the contrary, it seems to be a faithful representation of the death pattern of a monastic population.

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