

Human remains from Tell Nebi Yunus, Mosul, Iraq, 2018–2019

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In 2017 and 2018, archaeological prospection carried out in the ruins of Nebi Yunus (36°21'34"N, 43°09'10"E) mosque focused on documentation and estimation of the extent of destruction caused by members of the self-proclaimed Islamic State. The investigation was directed by prof. Peter Miglus of the Karls-Rupert University of Heidelberg, Germany. Investigators found, explored and documented many tunnels dug into archaeological layers and structures of the Neo-Assyrian palace located beneath the mosque. In 2018, while cleaning the drainage of the palace, archaeologists found skeletal remains including fragments of a human skull. In the following season (2019) archaeological excavation was directed by prof. Stefan Maul and prof. Peter Miglus and focused on unearthing selected structures of the palace and mosque. During that campaign, human remains were found in Islamic graves north of the mosque.

The results of archaeological prospection and excavations in both the 2018 and 2019 seasons can be found in Maul et al. (2020). In this short field report, a summary of the osteological investigation is presented.

Research initially focused on determining whether the unearthed human remains were in anatomical order and could be considered as a burial(s). Subsequent to this initial assessment, determinations of age-at-death, sex, and documentation of pathological conditions were undertaken. Human remains were found in two contexts: in the drainage of the Neo-Assyrian palace (NY.2018-G-001 and NY.2018-F-061) and in the graves north of the mosque (NY.2019-17am-011 and NY.2019-17am-015).

The completeness of human remains was described using the protocol proposed by Brickley and McKinley (2004). The age-at-death of subadults was assessed using the development of the dentition (Ubelaker 1989), and for adults based on the morphology of the pubic symphysis (Brooks & Suchey 1990), auricular surface (Buckberry & Chamberlain 2002), and dental attrition (Brothwell 1981). The sex of the adult individuals was determined using the morphological features of the pubic bone (Phenice 1969), and morphology of the cranium and mandible (Buikstra & Ubelaker 1994), as well as various long bone dimensions, including minimum femoral shaft circumference (Safont et al. 2000), epicondylar breadth of the humerus (Mall et al. 2001),

and maximum diameter of the femoral head (Šlaus et al. 2003). Pathological conditions were described following the recommendation of Brickley and McKinley (2004), with interpretations based on differential diagnosis of operational definitions (Waldrón 2008) when possible. Dental caries were described following Hillson (2005).

During the 2018 season, human remains (mixed with animal bones) were unearthed during inspections of the tunnel dug by the looters. The remains (NY.2018-G-001) were laying at the bottom of the brick drain (Figure 1). Analysis of comingled remains revealed the presence of a cranium (preservation >75%), a few other fragments of skull, and a single humerus. A minimum number of individuals (MNI) of two was determined based on preserved occipital and parietal bones.



Figure 1. Assemblage NY.2018-G-001 in the place of deposition.
Photograph by P.A. Miglus.

Analysis of the most complete cranium allowed for the estimation of an age-at-death based on dental attrition, which correspond with an age of 25–35 according to Brothwell (1981). The sex of the skull was determined as female based on the morphology of the glabella, supraorbital margins, nuchal crest. No pathological conditions associated with malnutrition were noted. The remaining dentition also showed no symptoms of pathological alteration. Other fragments of the skull, namely the cranial vault of the second individual, a fragment of occipital bone, and a few other fragments, did not allow for assessment of age-at-death nor sex. Similarly, the preservation of the humerus did not allow for assessment of sex or age-at-death.

The second bone assemblage (NY.2018-F-061), found in the brick drain, also included human and animal remains. An MNI of four was determined based on three adult proximal femoral epiphyses and the remains of a subadult individual. The age-at-death of the subadult individual was estimated based on dental development



Figure 2. Grave NY.17am-011. Photograph by P.A. Miglus.

at 6 ± 2 years old (Ubelaker 1989). The sex of one adult individual was determinable based a femur with a minimum shaft circumference of 91mm, which is typical for males (Safont et al. 2000).

During the 2019 season, two graves (NY.17am-011 and NY.17am-015) were unearthed north of the ruins of the mosque. The first grave (NY.17am-011) was made

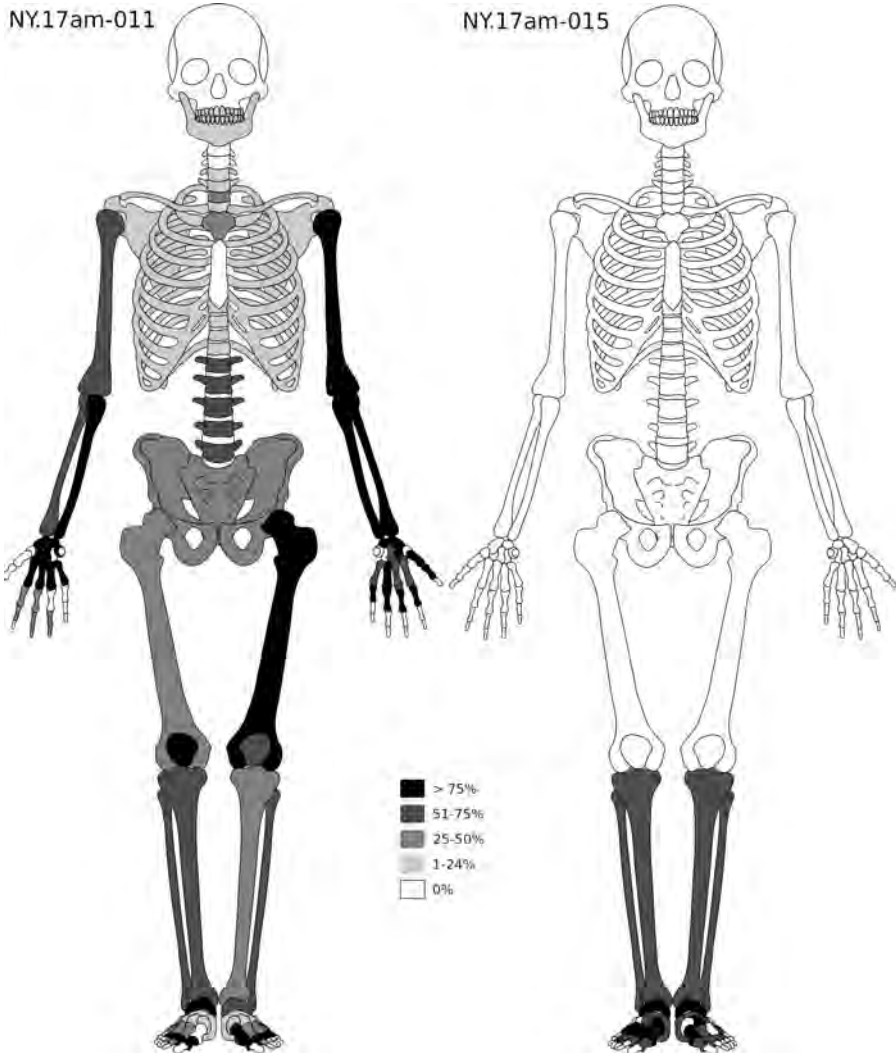


Figure 3. Completeness of the skeletons of the individuals from grave NY.17am-011 and NY.17am-015, based on drawing by Kazukiokumura, Wikimedia Commons, CC BY-SA 3.0.

of stone slabs creating side walls and a cover (**Figure 2**). One of the cover slabs had an inscription with a date corresponding to AD 1695–1696 which should be considered a *terminus post quem* (Maul et al. 2020:159). The northern part of this grave was destroyed, and the cranium was missing. The individual was lying in an extended position on their back, with the head to the north and facing west. Completeness of the skeleton is illustrated by **Figure 3**. A mature adult (probably between 35 and 50 years) male was identified in the first grave. Caries were noted only on one of eight teeth, namely the first left lower molar. Apart from that, pathology of the joint surface (osteophytes and porosity on the surface) of a rib was noted.

The second grave (NY.17am-015) was only partially exposed and only the distal ends of the tibiae, fibulae, and foot bones were available for analysis (**Figure 3**). The bones were laying on the east-west axis, with the distal segments at the east. The maturity of the bones indicate an adult individual, however, due to the poor state of preservation, the determination of sex based on the bone dimensions was not possible. The joints did not exhibit any signs of pathological conditions.

Two seasons of archaeological investigation on Nebi Yunus revealed commingled human deposits in the ruins of the Neo-Assyrian palace. The origin of the bones can be only a speculation. The remains were probably washed out from graves and pits located in the upper part of the tell. The commingled nature of the assemblage, location in the water drain and deposit of a washed in soil layer advocate for such an interpretation. The Islamic graves were most likely associated with the mosque. Orientation of grave NY.17am-011 shows variation from the most common orientation of Islamic graves (i.e., head at west and facing Mekka, which is located SSW of Mosul). The graves seem to be oriented at the mosque and grave of prophet Jonah itself. The main axis of the burial in the grave (NY.17am-011) was NNW-SSE, with the head at NNW and facing SWW. Moreover, the legs of the burial were pointing directly at the mosque. As far as the distal parts of the leg can be informative about position of the individual, this burial could have been oriented towards Mekka, as the head should be at the west, but the position of the face cannot be determined.

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