

# 'AYN GHARANDAL ARCHAEOLOGICAL PROJECT

## LOCUS 5336 & INHUMATION 5337

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### INTRODUCTION AND GOALS

The archaeological site at 'Ayn Gharandal is located in southern Jordan and lies to the W of the mouth of Wadi Gharandal on the E edge of Wadi Arabah, ca. 40 km SW of the ancient city of Petra, and 70 km N of the Gulf of Aqaba (Fig. 1). The archaeological project began in 2009 with a survey of the area. Subsequent field seasons uncovered a Roman bathhouse with charcoal graffiti on the walls. Additional excavations revealed a Roman fort, complete with dedicatory foundation inscription, and an early Christian church. Pottery, coins, and the inscription date the fort to the 4<sup>th</sup> century CE. Based on excavations during previous seasons, AGAP has hypothesized that the site was reused for an Islamic Period burial ground. Preliminary carbon testing on shrouds from the inhumations suggest the burials date to the twelfth-fourteenth centuries CE.



Fig. 1: Overlooking the site of 'Ayn Gharandal, facing W

The 'Ayn Gharandal Archaeological Project (AGAP), under the direction of Robert and Erin Darby (University of Tennessee Knoxville), has been working at the site since 2011. The objective of the 2019 field season was to excavate two areas in the fort that were reused in the church complex – Squares A:5-5/6-5 and A:4-3/7-6. The primary goal in A:5-5/6-5 (Fig. 2) was to uncover the Roman occupation level, which lies ca. 3 m below the modern walking surface. Based on previous seasons, the project anticipated uncovering several inhumations in the upper 1 m of deposition, and one of these is the focus of this presentation (L5337). AGAP partners with the Department of Antiquities of Jordan and the local Bedouin community to construct culturally sensitive policies for the excavation, repatriation, and presentation of all human remains.

### LOCUS 5336

**Locus 5336** (Figs. 3-4) was the soil layer into which **Inhumation 5337** was cut. L5336 consisted of wind-blown aeolian sand that, when exposed, was a very moist, thin, soft-yellow sand that quickly turned gray in color after exposure to the sun. **Locus 5336** produced several small finds, including two angular, bronze crumbs at elevation 226.38 m (1.29 g), one corroded coin, several organic small finds (including animal fur and burnt wood), worked stone, and several second-fourth century CE ceramic remains.



Fig. 2: Photogrammetrical Orthomosaic of the fort, showing location of A:5-5/6-5



Fig. 3: In-progress Photogrammetrical Orthomosaic of A:5-5/6-5, facing N



Fig. 4: 3D Rendering of A: 5-5/6-5 with L5337 in Orange

### INHUMATION 5337

Burial **5337** was cut into the soil layer of **5336** (Fig. 4). The burial was oriented toward the E. The positioning of the skeletal remains on the right side are consistent with other inhumations excavated at 'Ayn Gharandal in previous years. The skeletal remains were protected by a soil concretion which likely contributed a great deal to the well-preserved state of the skeletal remains. The remains were mostly intact and well-articulated (Fig. 5). Physical analysis indicated that the remains represent a sub-adult individual of approximately seven years of age (+/- 18mo.). Estimation of age at time of death was accomplished by analysis of skeletal dentition and long bone measurement, consistent with standard disciplinary best practices. Due to the pre-pubescent age range of the skeletal remains, biological sex cannot be reliably determined.



Fig. 5: Photograph of Partially Excavated 5337

### PALEOPATHOLOGY

During examination of skeletal remains signs of nutritional stress were not observed in the teeth; however, the remains did present with *cribra orbitalia*. *Cribra orbitalia* is defined as a sieve-like porosity of the orbital bone and is a marker of nutritional stress, specifically a lack of vitamin B12 or iron in an individual's diet. According to analysis of the remains, this dietary deficit was likely ongoing at the time of the individual's death, as there was no evidence of remodeling or healing of the *cribra orbitalia* present in these skeletal remains. Portions of the third and fourth right metatarsals showed evidence of *periostitis*—inflammation of the periosteum that closely covers most of all bone surfaces—which could have been caused due to an infection, injury, or fracture. Other than evidence of dietary stress and previous injury, the remains of this sub-adult appeared to be healthy and in the normative range of growth and development.

### PRELIMINARY CONCLUSIONS

The orientation of the remains, facing Mecca and the location of the burial stratigraphically (i.e., cut into the collapsed remains of the fort and overlying sand deposit) provide strong evidence to suggest that this was likely the burial of a Muslim child that was dug centuries after the fort was last occupied by the original Roman inhabitants. Several skeletal remains found during previous seasons were carbon dated between 1190 and 1340 CE. Based on similarities found in **Inhumation 5337** it is likely that the individual interred in **L5337** also was buried during the Middle Islamic period. These results add significantly to our knowledge of land use and burial practices during the Islamic Period and raise tantalizing questions about the length of time the site was reused as a cemetery, the origin of the population, and the possibility that they were nomadic or seminomadic.

### REPATRIATION OF REMAINS

Once the remains had been articulated they were photo documented and drawn before the remains were respectfully collected. The team used opaque collection bags that helped protect the remains from the sun and to allow for a measure of privacy before they were placed into buckets filled with protective sand. After the remains arrived at the lab in Aqaba, they underwent non-destructive analysis by our physical anthropologist. The remains were then wrapped in new cloth and buried under the direction of the local community in the designated repatriation areas on the site, less than 1 km from the original location.



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THIS RESEARCH WAS SUPPORTED BY THE JORDANIAN DEPARTMENT OF ANTIQUITIES, THE AMERICAN CENTER OF ORIENTAL RESEARCH, THE AMERICAN SCHOOLS OF ORIENTAL RESEARCH, THE UT OFFICE OF UNDERGRADUATE RESEARCH, THE UT OFFICE OF RESEARCH, THE UT COLLEGE OF ARTS AND SCIENCES, THE UT MARCO INSTITUTE, THE UT SCHOOL OF ART, AND THE UT DEPARTMENT OF RELIGIOUS STUDIES.