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The Second Season of Excavation of the Khirbat al-Mukhayyat Archaeological Project

Introduction

Khirbat al-Mukhayyat (hereafter Mukhayyat)[1], also called the Town of Nebo (Saller and Bagatti 1949: 204-217; Piccirillo and Alliata 1998: 53-83), is located approximately 6 km northwest of Madaba (Fig. 1), overlooking the Dead Sea and Jordan Valley to the west. Material culture from a wide range of periods has been documented at and around the site. Previous archaeological research at Mukhayyat has given us an in-depth understanding of certain occupation phases at the site (Saller 1941, 1966; Saller and Bagatti 1949; Schneider 1950; Ripamonti 1963; Piccirillo 1988; 1989; 1993; Michel 1998; Piccirillo and Alliata 1998; Mortensen 2002; 2005; Mortensen and Thuesen 2007; Thuesen 2009). In addition, intensive surveys of the archaeological sites in the Nebo region (Glueck 1935; Stockton 1967; Mortensen 1992; 1996; Mortensen and Thuesen 1998; Graham and Harrison 2001; Thuesen 2004; Mortensen 2009; Mortensen *et alii* 2013) have provided a solid foundation for exploring the extensive occupation in the area. While this work has provided a significant contribution to our knowledge of the history of the region, the absence of excavated material from a wide range of time periods has left a gap in our understanding of Mukhayyat's role within this region. With this issue in mind, the Khirbat al-Mukhayyat Archaeological Project (KMAP) was conceived to address this lacuna and explore broader themes, such as pilgrimage, economy, and landscape, across multiple periods.

[1] The directors, staff, and students of the Khirbat al-Mukhayyat Archaeological Project would like to express their gratitude to Fr. Massimo Pazzini and Fr. Eugenio Alliata of the Studium Biblicum Franciscanum who facilitated our second season of excavation.

History of Mukhayyat

The earliest archaeological remains in the vicinity of Mukhayyat date to the beginning of the Early Bronze Age. A large stone circle dating to the EB I (ca. 3300-3000 BCE) was first documented by Conder during his survey east of the Jordan River (Conder 1889) and later investigated by Peder Mortensen while he was conducting his survey of the Mount Nebo region (Mortensen 2002, 2005; Mortensen and Thuesen 2007; Thuesen 2009). This prominent feature highlights the ritual importance of this area from an early time.

The first textual reference to the site is on the mid-9th century BCE monumental stele known as the Mesha Inscription (Pritchard 1955: 320-321; Gibson 1971; Dearman 1997; Routledge 2004: 135-136; Gass 2009). Although the term Nebo is most often associated with Siyagha, or Mount Nebo, located 2.5 km northwest of Mukhayyat, the Mesha Inscription implies that ancient Nebo was in fact a settlement. Archaeological investigations at Mount Nebo have not uncovered any significant Iron Age occupation levels; thus, ancient Nebo must be associated with the nearby settlement at Mukhayyat (Ripamonti 1963; Saller 1966; Piccirillo and Alliata 1998: 110-127).

Mount Nebo and the region surrounding it feature prominently in a variety of Jewish sources dating to the Late Hellenistic and Early Roman periods. Most of these texts reiterate that this area is the location of the death and burial of the Prophet Moses. There are also a handful of texts that refer to inquiries about the tomb of Moses made by the Roman government in the 1st and 2nd centuries CE and their inability to locate it (Piccirillo and Alliata 1998: 65-69). Prior to the 2014 excavations, only scant remains dating to the Hellenistic period had been recovered at the site. Excavations conducted in the late 1990s exposed a large double cistern on the site's acropolis that dates to this period. In addition to this feature, a large collection of Late Hellenistic ceramics was also recovered (Michel 1998).

In addition to its association with the Mesha Inscription and the Late Hellenistic / Early Roman literature, Mukhayyat is perhaps best known for its cultural material dating to the Byzantine period. The town housed a number of churches that catered to the local Christian population and the growing influx of pilgrims during the 6th through 8th centuries CE. In addition to these churches, a small monastery, the Monastery of al-Kanisah dated to the mid-6th century CE, is located east of Mukhayyat on a ridge overlooking the Wadi Afrit (Fig. 1). The Byzantine structures at Mukhayyat seem to go out of use in the 7th century CE (Michel 1998: 380), at which time the site appears to have been abandoned completely. Occupation at Mukhayyat only resumed during the Late Ottoman period, sometime in the late 19th century CE, and this new settlement was confined to the slopes on the northeastern side of the mound.

Previous Research at Mukhayyat

Alois Musil was the first to systematically explore the site in 1901, describing the remains in detail and creating the first topographic plan (1907: 334-340). Nelson Glueck visited Mukhayyat in 1932, comparing its well-preserved fortifications to a Moabite fortress that he documented at nearby ʻUyun Musa (1935: 110-111).

Much of our current understanding of Mukhayyat, however, is the result of the efforts of the Studium Biblicum Franciscanum. Systematic explorations by the Franciscans began in 1932 under the direction of Brother Jerome Mihaic (Saller and Bagatti 1949). In the 1960s, an expedition led by Julian Ripamonti conducted excavations at Rujm al-Mukhayyat as well as a survey of the area around the site that produced two Iron Age tombs (Ripamonti 1963; Saller 1966: 165-298). The work of the Franciscans resumed in the early 1970s under the direction of Fr. Bellarmino Bagatti who initiated a comprehensive preservation and conservation program that would involve all of the excavated mosaics and related architecture at the site (Piccirillo 1973; 1988; 1989; 1993; Piccirillo and Alliata 1998: 221-244). In the 1980s, Fr. Michele Piccirillo continued this work and undertook excavations under the floor of the Chapel of the Priest John which succeeded in exposing an earlier mosaic pavement in this structure. In the 1990s, intensive excavations on the acropolis were undertaken, resulting in the recording of part of the occupational sequence at Mukhayyat (Michel 1998).

In more recent years, the Tall Madaba Archaeological Project conducted three survey seasons at Mukhayyat. The 2000 and 2001 seasons were devoted to topographic and surface collection surveys (Graham and Harrison 2001). The results of these two seasons have largely shaped the strategies for the renewed excavations at Mukhayyat. The 2012 season focused on preparing the site for excavation in future seasons and documenting the various caves, tombs, and architectural features visible on the surface. In 2014, KMAP conducted its inaugural excavation season during which three fields of excavation were opened (Foran *et alii* 2015). Work in Field A, on the south side of the acropolis, exposed a series of retaining walls that were likely built to support the southern extension of the Church of St. George on the summit of the mound. Excavations in Field B succeeded in exposing part of a monumental structure built of ashlar blocks and a collection of approximately 20 complete Late Hellenistic (1st century BCE) cooking pots. Two areas in Field C were opened. In the centre of the field, a number of bedrock-cut features were exposed. On the western side of Field C, portions of the Iron Age (9th-8th centuries BCE) fortification wall were uncovered along with a Late Hellenistic *miqveh* (Dolan and Foran 2016).

The 2016 Excavation Results

Excavations during the 2016 season concentrated on two areas previously explored during the 2014 season: Field B, located on a ridge to the south of the acropolis, and Field C West, situated along the western edge of the site to the north of the acropolis (Fig. 2)[2].

Field B

Excavations in Field B focused on two squares (B14 and B25) that were initially opened during the 2014 season and four new excavation units (B4, B24, B26, and B37).

Walls W2001 and W2002 (Plan 1) form the corner of a monumental structure. The lowest course of ashlar stones was exposed in 2014; however, in order to investigate the foundation of this building, a small probe was initiated to south, between walls W2001 and W2003. The unhewn stones that support this monumental structure (Fig. 3) were exposed to a depth of approximately 2.0 m and the soil layers sealing against it contained exclusively Iron Age material. While it is clear that the foundation of this structure dates to the Iron Age, the exact date for the superstructure remains unclear. Although this structure extends northward, the walls in this area (W2006 and W2007) are constructed of small boulders and chinkstones, thus it appears that only the corner of this building was reinforced. W2007 runs westward 7.6 m and has a maximum width of 0.73 m. It appears to have been constructed upon an earlier wall, though its exact date is uncertain. The area created south-west of W2007 and W2006 was filled with rock tumble consisting mostly of large boulders. The cultural material in this fill dates primarily to the Iron Age, indicating that the interior of the structure was intentionally filled in antiquity to fortify it.

Excavations directly south and east of this monumental structure succeeded in exposing more of the sloping soil layers, previously uncovered during the 2014 season, that contain several intact and upright Late Hellenistic cooking pots (Fig. 4). The renewed excavations in square B25 resulted in the removal of these layers and the exposure of the earlier occupation phase underneath. At a depth of approximately 4 m, a beaten earth surface was exposed which contained exclusively Iron Age pottery.

[2] The 2016 season was conducted between July 10 and August 6, with Debra Foran and Annlee Dolan acting as Project Co-Directors and Steven Edwards as Field and Survey Director. An archaeological field school was also run with students from Wilfrid Laurier University. Nisreen Fgaha and Basem Mahamid served as the representatives of the Department of Antiquities.

At the eastern end of Field B, a cobble wall (W2004) was visible on the surface. Excavations were initiated in this area with the hope of understanding the relationship of this wall to the monumental structure to the west. However, it became clear that this wall post-dates the Late Hellenistic occupation at the site, as several cooking pots were uncovered when the western portion of the wall was removed (Fig. 5). W2004 is only one to three courses high and was exposed for a length of 9.1 m. The soil layers around this wall contained numerous Late Hellenistic cooking pots, all found sitting upright and mostly intact. In total, 24 complete cooking pots (Fig. 6) were recovered from Field B during the 2016 season.

Field C West

Excavations in Field C West resumed in 2016 in order to expose more of the area associated with the Late Hellenistic *miqveh* (C300) uncovered in 2014 (Fig. 7). A Late Hellenistic wall (W3008) running perpendicular to and bonding with W3001 (Plan 2) was uncovered in the square to the north (D92) of the *miqveh*. This wall continued 2.0 m to the north and, although its preservation was quite poor, it likely originally continued further to the north. Sealing against this wall was a Hellenistic surface that would have been contemporary with the ritual bath.

To the west of C300 (squares C1 and C11), it was immediately evident that there was very little Hellenistic material, with the area being dominated by the Iron Age fortification walls (W3004, W3010, and W3011). Due to the high density of boulders in this area, it is possible that it was initially filled with debris, perhaps when the ritual bath was constructed. A hard-packed, beaten earth surface, which contained exclusively Iron Age pottery in addition to many fragments of bone and charcoal, was exposed to the west of and sealing against W3004.

The channel (C400) to the south of the *miqveh* begins at the eastern end of this area near a depression in the bedrock. It runs 9.45 m to the north-west before disappearing off the side of the mound (Fig. 8). The maximum width of this channel is 0.25 m, with a maximum height of 0.88 m. Its sides were constructed of cobbles and were several courses high. These stones were generally squared off or rectangular so that large cobble or small boulder capstones, which were generally circular or rectangular in shape, could be placed on top. The entirety of the channel was lined and sealed with mud plaster. It is clear that the channel was constructed after C300 due to the fact that it changes course in order to circumvent the *miqveh*. However, it is likely that these two features were in use at the same time, with the channel being built only slightly after the ritual bath.

To the south-east of these features (squares C13 and C23), several bedrock installations were uncovered. A natural dip in the bedrock at the northern end of this area creates a step that descends approximately 0.50 m. Five depressions

carved into the bedrock were found in this lower area, though the largest may be a natural depression (Fig. 9). The other four cuts or "cupmarks" surround a large stone, which was levelled on the bedrock using small cobbles. To the south of this area, several plaster installations were uncovered adhering directly to the bedrock (Fig. 10). The bedrock itself has two natural cuts in it: one running north-south and the other east-west. The latter creates a drop of approximately 1.0 m to the south. The platform created by these bedrock cuts contains two plastered basins (C500 and C600).

C500 has a rectangular base measuring 1.8 m × 0.8 m and is oriented east-west. It is preserved to a height of 0.15 m, though it should be noted that the plaster is broken and thus it would have originally been deeper. A small depression in the centre of the southern side may have allowed for the collection of sediment. A similar installation (C600) was found slightly to the south-east of C500. C600 is larger, measuring 1.4 m × 1.1 m, and the interior portion of the installation is a rounded rectangle. Like C500, C600 had a small depression on its central west side, presumably also for the collection of sediment. The area around these two features was also plastered and, combined with the cuts in the bedrock, created a curb that surrounds both basins on three sides.

The installations in this area, which include the channel to the west, the bedrock cupmarks in the north, and the plaster features to the south, may have been used for grape pressing and wine production. Several wine presses have been identified in the area surrounding Mukhayyat (Saller and Bagatti 1949: 13-15), and the importance of grape cultivation is certainly noted for the Late Byzantine period. The large stone feature may have been part of a lever pressing system. Although these types of stones normally have a hole in them, there is an example from the site of Yajuz that does not. In this instance, the excavators suggested that these blocks were the "remnants of a former pressing system" (Khalil and al-Nammari 2000:48). In addition, the association of cupmarks with wine production installations is well attested at many ancient sites (Ahlström 1978).

Survey and GIS

In addition to excavation, the survey component of KMAP yielded some important results during the 2016 season. A primary objective of this initiative was to create a digital elevation model (DEM) of the site and improve upon the topographic maps that were produced in 2001. The new model and plans cover an area that includes the entirety of Khirbat al-Mukhayyat and part of the adjacent slopes (Fig. 11).

The second objective for the 2016 survey was to introduce new methods for mapping squares and features using georectified overhead photography. Overhe-

ad imagery was obtained by mounting a Canon point-and-shoot camera atop a 5 m telescopic stadia rod. Prior to each exposure, a minimum of nine ground control points (GCPs) were evenly distributed across the excavation unit, and their locations were recorded using an RTK unit. Subsequently, the best photographs were imported into ArcMap for georectification. The resulting images served as orthophotos from which features like walls, installations and bedrock features could be mapped.

In addition to capturing standard oblique and overhead imagery, another objective for this field season was to generate 3D models of important features and buildings at Mukhayyat. These models were generated using Agisoft Photoscan. Building these models involved photographing the structure or feature from a wide range of angles, including from above (Fig. 12).

Building on previous documentation initiatives undertaken along the eastern slopes of Mukhayyat, efforts during the 2016 field season were also devoted to developing a survey and mapping strategy for this area of the site. The primary objectives were to 1) create 3D models of the standing Late Ottoman architecture; 2) map prominent surface features in the area; 3) assess the potential of the area as a focus of future excavations; and 4) document and evaluate looting activity and damage to the cultural remains at this part of the site.

Conclusions

The 2016 season at Mukhayyat succeeded in uncovering more of the structures and features that were investigated during our inaugural excavation season in 2014. Although many of our original objectives had to be modified in order to incorporate the newly excavated remains, the occupational history of the site is now more complete. Our excavations to date have confirmed that there are two clear occupation phases at the site that pre-date the Byzantine period: the Iron Age and the Late Hellenistic period.

The Iron Age settlement is still poorly understood, but we know that the site was enclosed by a fortification wall during this period. Habitation seems to be concentrated to the south of the acropolis as evidenced not only by the surface and fill uncovered in squares B14 and B25 but also the pottery collected from the surface of this area during the 2001 survey. We will hopefully be able to expose more of this Iron Age occupation in future seasons.

During the Late Hellenistic period, Mukhayyat appears to have been devoid of habitation and only used seasonally for agricultural and ritual purposes. The *miqveh* in Field C was constructed in a rural setting not associated with any settlement. It would have been used by agricultural workers who required ritual purity before commencing work. In Field B, Late Hellenistic cooking pots were careful-

ly placed on the ground and intentionally buried perhaps as part of ritual feasting or religious offering activities. We are planning to continue work in this area in 2017 in the hopes of determining the nature of these cooking pot deposits.

Acknowledgements

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The Khirbat al-Mukhayyat Archaeological Project

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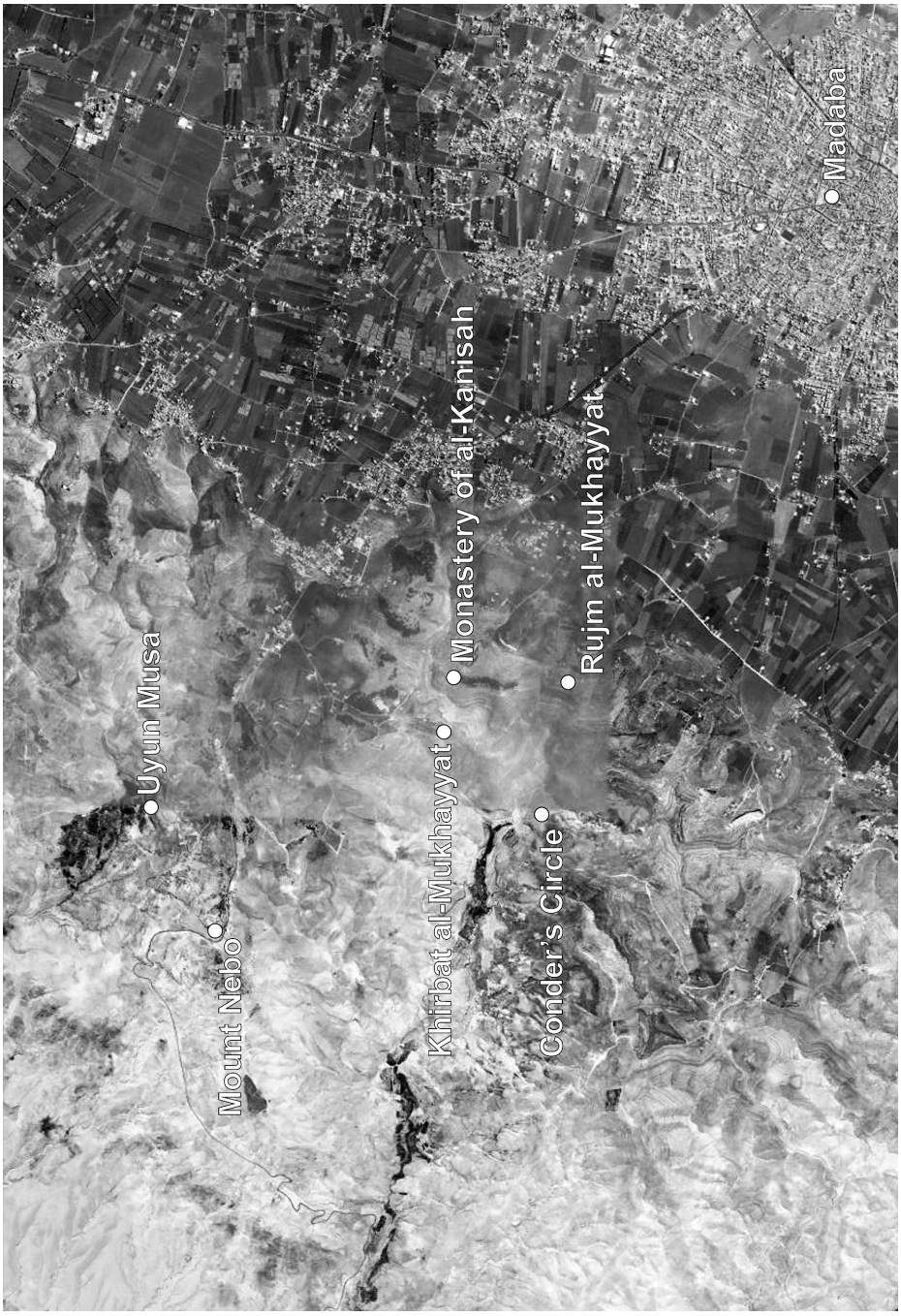


Fig. 1. Map of the Nebo Area.

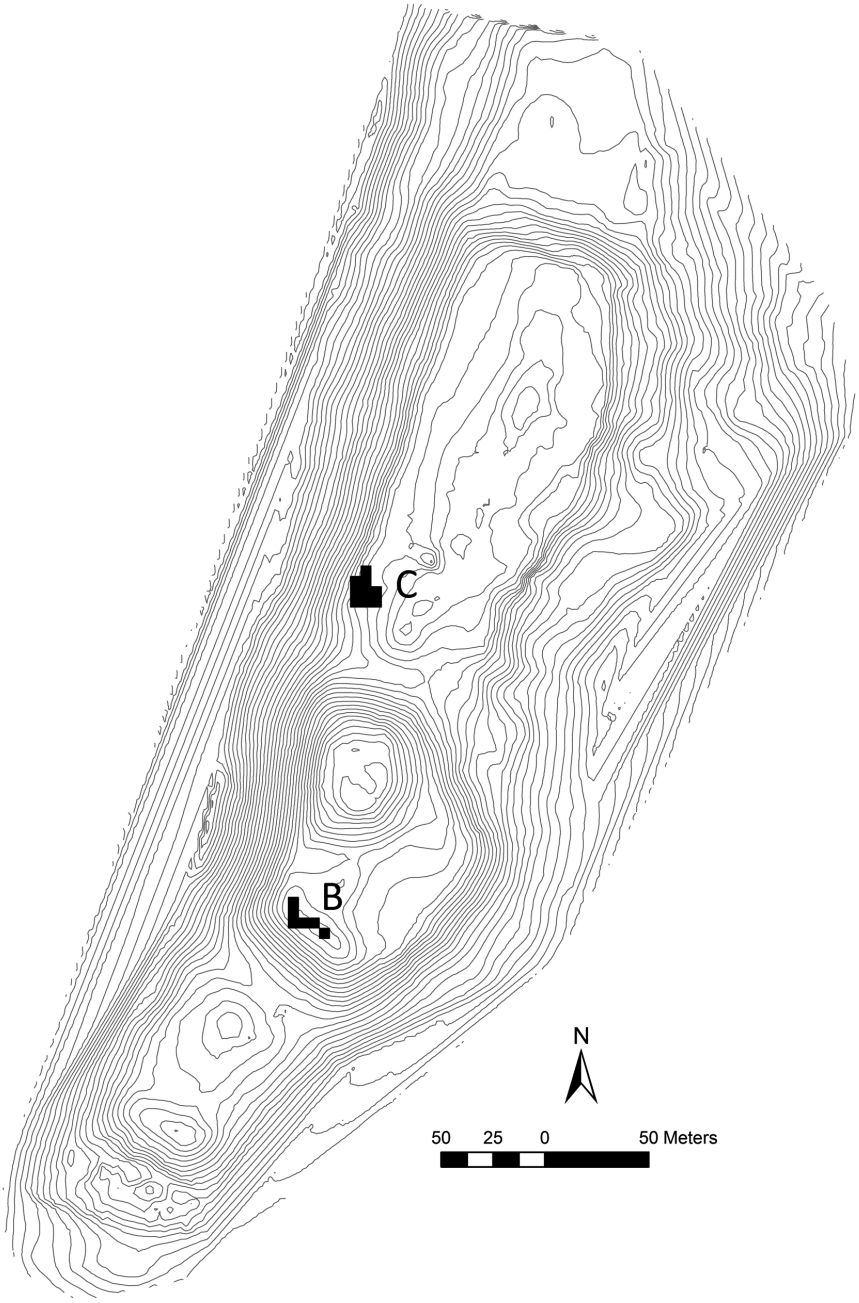


Fig. 2. Plan of Mukhayyat with 2016 Excavations Areas.

Fig. 3. Monument Ashlar Structure in Field B.

Fig. 4. Late Hellenistic Cooking Pot in Square B24.

Fig. 5. Late Hellenistic Cooking Pots under W2004 in Square B26.

Fig. 6. Late Hellenistic Cooking Pots from Field B.

Fig. 7. *Miqveh* in Field C West.

Fig. 8. Channel (C400) in Field C West.

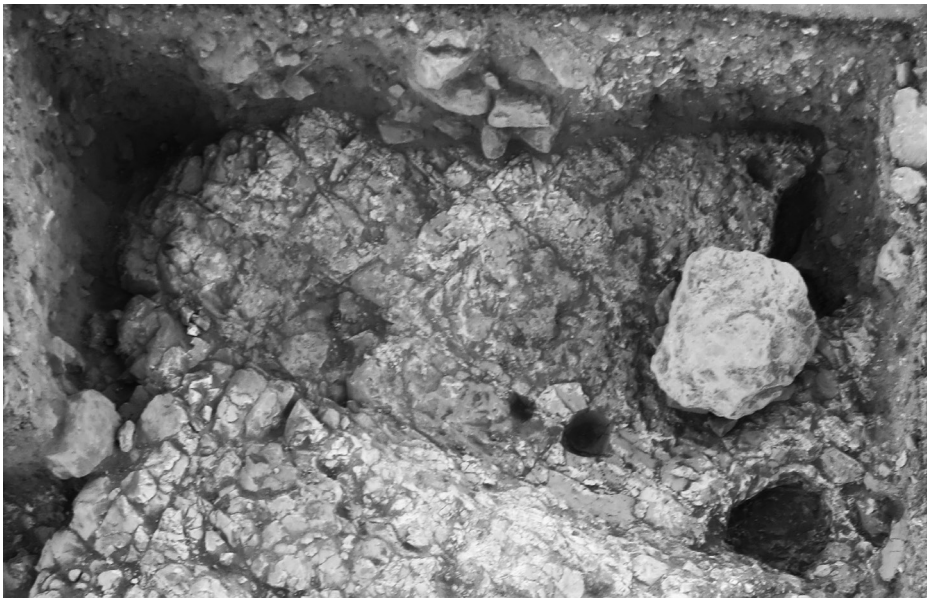


Fig. 9. Bedrock Installations in Square C13.

Fig. 10. Plaster Installations in Square C23.

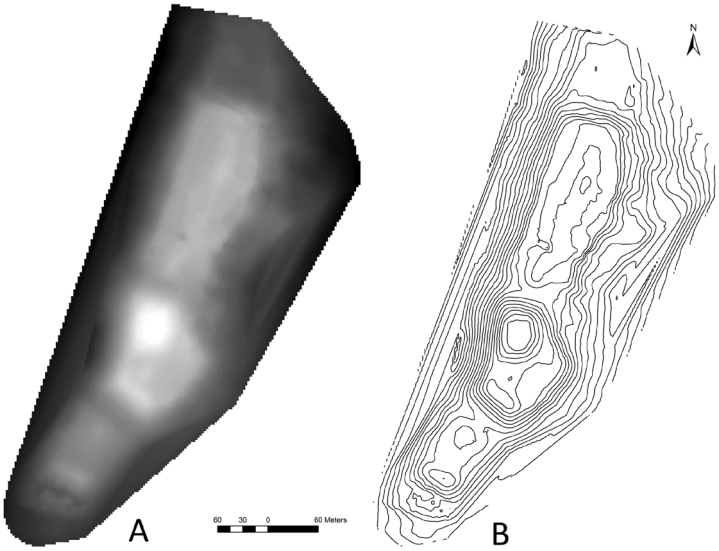


Fig. 11. Digital Elevation Model (A) and Topographic Map (B) of Mukhayyat.

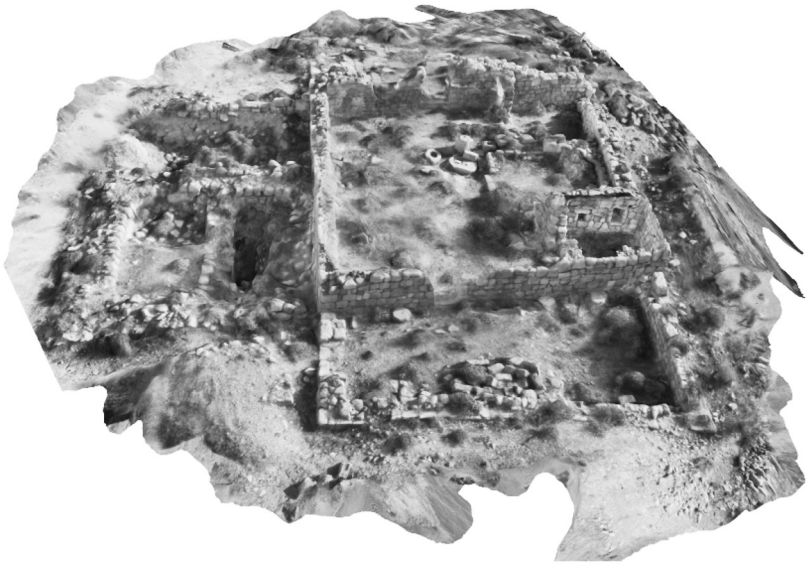
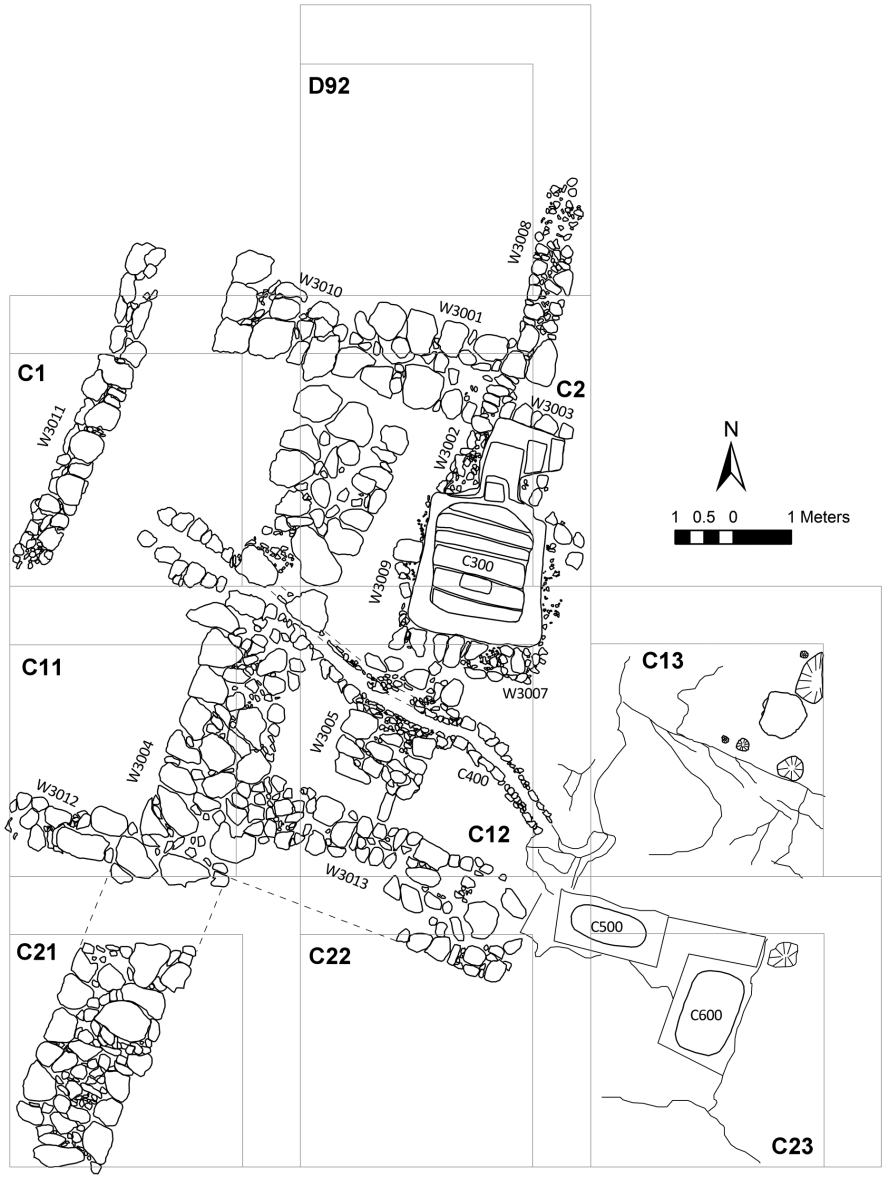


Fig. 12. 3D Model of Church of St. George.

Plan 1. Field B Excavations.



Plan 2. Field C West Excavations.