

MADABA PLAINS PROJECT: TALL JALUL 2009

CONSTANCE E. GANE RANDALL W. YOUNKER PAUL RAY
Andrews University
with contributions by
KAREN BORSTAD, THEODORE BURGH, ROY E. GANE, PAUL ZELJKO GREGOR,
JENNIFER L. GROVES, AND REEM AL SHQOUR

Introduction

After ten seasons in the field, the archaeological excavations at Tall Jalul, led by the Institute of Archaeology at Andrews University under the directorship of Randall W. Younker, have resulted in significant clarification of the site's occupation.¹ Located on the rolling Madaba Plains in the central Jordanian plateau, Jalul rises above the plain, creating the highest elevation in the immediate Madaba region. As the largest ancient site in central Jordan, the early occupation of ancient Jalul covers more than 7 hectares (the equivalent of 18 acres), while later Islamic Jalul, referred to as the Jalul Islamic Village (JIV), covers about 28 hectares or 69 acres.²

History of Exploration

Several early explorers mention the ancient site of Jalul in their travel accounts. Swiss explorer Johann Burckhardt visited Jalul in 1812, and in 1822 wrote one of the earliest descriptions of the site: "In order to see Medaba, I left the great road at Hesban, and proceeded in a more eastern direction. At six hours and three quarters, about one hour distant from the road, I saw the ruins of Djeloul, at a short distance to the east of which, are the ruined places called El Samek, El Mesouh, and Om el Aamed."³

¹Previous reports from other Madaba Plains Project sites in *AUSS* include Lawrence T. Geraty, "The Andrews University Madaba Plains Project: A Preliminary Report on the First Season at Tell el-'Umeiri," *AUSS* 23 (1985): 85-110; Lawrence T. Geraty, Larry G. Herr, and Øystein S. LaBianca, "The Joint Madaba Plains Project: A Preliminary Report on the Second Season at Tell el-'Umeiri and Vicinity (June 18 to August 6, 1987)," *AUSS* 26 (1988): 217-252; Randall W. Younker, Lawrence T. Geraty, Larry G. Herr, and Øystein S. LaBianca, "The Joint Madaba Plains Project: A Preliminary Report of the 1989 Season, Including the Regional Survey and Excavations at El-Dreijat, Tell Jawa, and Tell el-'Umeiri (June 19 to August 8, 1989)," *AUSS* 28 (1990): 5-52.

²Several terms are used when referring to the Jalul region. The entire orbit, including both ancient and modern settlements, is referred to simply as "Jalul." Ancient Jalul, known as "Tall Jalul," is the tell proper, which rises above the surrounding countryside. The "Jalul Islamic Village" (JIV), is the area south of the ancient tell. Some modern usage of these ancient ruins continues in the western side of JIV to this day. The local residents call JIV "Old Jalul." Finally, modern Jalul is the current village of Jalul, inhabited primarily by the Beni Sakhr tribe.

³John Lewis Burckhardt, *Travels in Syria and the Holy Land* (London: John Murray, 1822), 365.

Sixty years later, in 1872, Henry Baker Tristram visited Jalul, which he referred to as “Jeljul.” He writes that shortly after leaving “Azizah,” he came to Jeljul: “Five minutes west of this [Azizah] was a small ruin, apparently of a fort and a village, which we visited, called Jeljul (Djellgood of Irby and Mangles, or Djeldjoun of Burckhardt).”⁴

Not long after Tristram’s visit, English traveler Charles Montagu Doughty records in 1886 of passing by a number of ruins, including those of Jalul: “The plots of khurbets [ruins] are mostly small as hamlets; their rude dry building is fallen down in few heaps of the common stones. I was so idle as to write the names of some of them, Khurbet Enjahsah, Mehnwara, el-Hahliah, Mehaineh, Meddain, Negaes, Libbun, *Jeljul*, Nelnockh, Mehrud, Howihih, Gamereyn (of the two moons) Harfa (where a Mohammedan shrine and mosque; anciently it was a church).”⁵

In 1933, William Foxwell Albright writes that the site yielded numerous Middle Bronze, Late Bronze, Early Iron I-II, Byzantine, and early medieval Arabic sherds. He notes that the ancient name is unknown and remarks that the “Middle Bronze occupation in the extreme east of Palestine was surprisingly dense.”⁶ In the same year, Nelson Glueck also visited the site, noting the late Bronze and Iron age remains on the ancient tell and, in addition, mentioned the remains of the Byzantine and Islamic village to the south of the ancient site.⁷

As part of the 1976 Hesban Survey, the ruins of Jalul were first surveyed by Robert Ibach.⁸ However, excavation of Tall Jalul did not begin until 1992. After scientific research was begun on the site, General Akkash Al Zaben, the late landowner of the ancient site of Jalul, ceded the land rights of Tall Jalul to the Jordanian Department of Antiquities, thereby enabling continued research on the site. Zaben’s daughter, Sabal Al Zaben, who serves as our field archaeologist, continues to support exploration on her ancestral land.

History of Excavations

Excavations at the site of Jalul on the Madaba Plains in Jordan began in 1992 with the opening of two fields.⁹ Since then some eight fields (Fields A-H) have

⁴Henry Baker Tristram, *The Land of Moab* (New York: Harper & Brothers, 1873), 118.

⁵Charles Montagu Doughty, *Travels in Arabia Deserta* (Cambridge: Cambridge University Press, 1888), 1:22, emphasis supplied.

⁶William F. Albright, “Archaeological and Topographical Explorations in Palestine and Syria,” *BASORSup* 49 (1933): 28.

⁷Nelson Glueck, “Explorations in Eastern Palestine,” *AASOR* 16 (1934): 5.

⁸Robert D. Ibach, *Archaeological Survey of the Hesban Region*, Hesban 5 (Berrien Springs: Andrews University Press, 1987), 3, 13, 14.

⁹Randall W. Younker, Lawrence T. Geraty, Larry G. Herr, and Øystein S. LaBianca, “The Joint Madaba Plains Project: A Preliminary Report of the 1992 Season, Including the Regional Survey and Excavations at Tell Jalul and Tell el-Umeiri (June 16 to July 31, 1992),” *AUSS* 31 (1993): 205-238. Subsequent reports published in *AUSS* include:

been explored, exposing material remains on the ancient site from the Middle Bronze Age through the Hellenistic period. Though the acropolis, located on the southwestern corner of the site, remains unexcavated due to its continued use as the local cemetery, the other eight fields have yielded informative administrative and domestic architectural remains as well as an impressive roadway leading into and through one of the ancient city's gate complexes. East of the acropolis, a deep central depression and a smaller depression to the north hold promise of a significant water system—a gem for future seasons. To the south of the ancient tell, the JIV has undergone two seasons of exploration and has yielded significant information relative to the later use of Jalul, whose occupation shifted sometime during the Hellenistic period from the upper ancient occupation site to the lower area south of the tell.

Results of the 2009 Season

The 2009 season¹⁰ focused on three fields (Fields C, D, and G) (**Pls. 1 and 2**) and the JIV (**Pl. 2**). The primary chronological periods explored were the

Randall W. Younker, Lawrence T. Geraty, Larry G. Herr, Øystein S. LaBianca, and Douglas R. Clark, "Preliminary Report of the 1994 Season of the Madaba Plains Project: Regional Survey, Tall al-'Umayri and Tall Jalul Excavations (June 15 to July 30, 1994)," *AUSS* 34 (1996): 65-92; Randall W. Younker, Lawrence T. Geraty, Larry G. Herr, Øystein S. LaBianca, and Douglas R. Clark, "Preliminary Report of the 1996 Season of the Madaba Plains Project: Regional Survey, Tall al-'Umayri and Tall Jalul Excavations," *AUSS* 35 (1997): 227-240; Larry G. Herr, Douglas R. Clark, Lawrence T. Geraty, and Øystein S. LaBianca, "Madaba Plains Project: Tall al-'Umayri, 1998," *AUSS* 38 (2000): 29-44; Larry G. Herr, Douglas R. Clark, and Warren C. Trenchard, "Madaba Plains Project: Tall al-'Umayri, 2000," *AUSS* 40 (2002): 105-123; Larry G. Herr and Douglas R. Clark, "Madaba Plains Project—Tall al-'Umayri, 2002," *AUSS* 42 (2004): 113-128; Larry G. Herr and Douglas R. Clark, "Madaba Plains Project—Tall al-'Umayri, 2004," *AUSS* 43 (2005): 229-246.

¹⁰We are especially indebted to Fawwaz Al Kraysheh, Former Director General of the Department of Antiquities of Jordan, for his support of the project this season; we appreciate the services of Bassam Al Mohamid and Hussam Hjazeen, who served as representatives for the Department of Antiquities; and we are grateful to other members of the Department of Antiquities, including Khalil Hamdan, Hanadi Taher, Rula Quossus, and Aktham Oweidi, without whom we could not have had such a successful season. We wish to express our gratitude to the American Center of Oriental Research, Barbara Porter, Director, and Christopher Tuttle, Associate Director, for providing invaluable support and assistance. Our team was housed at the Mariam Hotel in Madaba, where we enjoyed attention to our personal comfort from the hotel's owner, Charles Twal, whose flexibility and willingness to accommodate our off-site needs was heroic.

The Director of the Tall Jalul excavations is Randall W. Younker. The Codirector of the ancient site of Tall Jalul is Constance E. Gane, and Reem Al Shqour codirected the excavation of the JIV. Staff members for the 2009 season included Paul Zeljko Gregor and Paul Ray, who served as associate directors. Sabal Al Zaben served as Field Archaeologist and facilitated the excavations of the JIV. The Field Supervisors were Paul Ray (Field C), Jennifer Groves (Field D), and Paul Zeljko Gregor (Field G). Paul

Late Iron II C/Persian period (539-332 B.C.E.) in Fields C and D, the Iron Age II (specifically ninth to seventh centuries B.C.E.) in Field G, and the Early and Middle Islamic periods (especially the Mamluk period, 1250-1516 A.D.) in the JIV. A total of 68 faculty, staff, students, and volunteers (**Pl. 3**) worked on the site, along with more than twenty Jordanian workers. Younker directed the excavations with the assistance of codirectors Constance Gane and Reem Al Shqour.

Excavations in Field C, directed by Paul Ray, focused on the Late Iron II/Persian architecture exposed in earlier seasons (1994-2007). By the end of the six-week season, two buildings were articulated in the southern part of Field C. A large southern building with at least three building phases was identified. A narrow street separates this large building from the northern Late Iron II/Persian-period pillared house, uncovered in 1994 and 1996. A second building in the southern part of Field C, also dating to the Late Iron II/Persian period, was found in the southeastern quadrant of the field.

Further clarification of the Persian domestic building complex in Field D was the focus of field supervisor Jennifer Groves. The significant and abundant finds from the Persian-period remains found in both Fields C and D at Jalul help to clarify the emerging picture of occupation during the Persian period in Transjordan. Archaeological sites that have yielded, or may have yielded previously, Persian-period remains in the Amman region include Tall Safut, Khirbet el-Hajar, Tall el-Dreijat, Umm Uthainah, Abu Nuseir, and tombs at Meqabelein, Khilda, Tall Hisban, Tall al-'Umayri, and Tall Jalul.¹¹

Paul Zeljko Gregor directed the vigorous excavation in Field G, further exposing the ninth-century B.C.E. fortified city wall, initially uncovered in 2007, further confirming a substantial presence in the Iron Age. With this

Ray served as the objects registrar and architect, and Jody Washburn was the pottery registrar. Karen Borstad and Theodore Burgh conducted the GPS survey of the JIV, while Paul Ray, Zech Ray, and Owen Chestnut oversaw the GPS readings on Tall Jalul and the JIV. The following individuals were responsible for creating architectural drawings: Bassam Al Mohamid (Field G), Paul Ray (Fields C and D), and Magalie Anna Dartus (the JIV). Zech Ray served as the objects artist. Square supervisors for Field C were Christie Chadwick, Chris Chadwick, Sarah Gane, Roy Gane, Jennifer Shrestha, and Audrey Shaffer; Field Supervisors for Field D were L. S. Baker, Jr., Sean Porras, Owen Chesnut, and Jasmine Saunders. Square supervisors for Field G were Micah Johnson, Jeff Hudon, Chad Washburn, Michelle Berglin, and Justin Singleton. Square supervisors for the JIV were Magalie Dartus, Thomas Pieters, Ehren Lichtenwalter, and Christine Chitwood.

Volunteers included Gary Achenbach, Stephen Allock, Abigail Arkusinski, Andy Arkusinski, Ryan Atkins, Arnie Baker, Einra Baker, Lora Baker, Stefani Clouzet, David Cox, Kristina Cress, Denis Fortin, Erika Fortin, Rebekah Gauthier, David Glazer, Eva Glazer, Sasha Glazer, Chelsea Grimstad, Madeliz Gutierrez, John Heczko, Young Kim, Suzanne LaRue, J. Amanda McGuire, David Merling, Jeremy Merling, Kohl Merling, Timothy Paulson, Nadine Plummer, Vern Porras, Daniel Regal, Zenaida Salazar, Douglas Simmons, Victor Tenorio, Tine Vekemans, Frances Watkinson (Wilkins), Robert Wilkins, and Florie Yang.

¹¹See E. Stern, *Archaeology of the Land of the Bible: The Assyrian, Babylonian, and Persian Periods (732-332 B.C.E.)* (New York: Anchor Bible, 2001), 2:454-459.

articulation, the southern portion of an eighth-to-seventh-century B.C.E. building north of the city wall was exposed. Cutting across both the city wall and the building and exiting beyond the city wall was a magnificently preserved water channel, dating to the seventh century B.C.E. of the late Iron Age II/Persian period. The significance of this unusual and intriguing find will be the focus of further investigation into what appears to be an abundant water supply, tapped by a sophisticated water reservoir system.

Below the southern slope of the ancient tell and southwest of the modern road excavation of the JIV, Field A, also called “old Jalul” (see below), was directed by Reem Al Shqour. The primary focus was further exploration and articulation of a possible *keban*, also known as a *caravanserai* or roadside inn. The rooms associated with this complex date to the Early Islamic period (Umayyad) and were subsequently reconstructed during the Mamluk period, with portions continuing in use as late as the Ottoman period. During excavation of the upper level of Field A, a second subterranean level was discovered, including an impressive vaulted room. The significance of a substantial *caravanserai*, which would demand an abundant water source for large animal caravans of camels and donkeys, underscores the probability that Jalul was a significant site on the caravan route across the desert.

Karen Borstad and Theodore Burgh conducted the Tall Jalul Mapping Project, focusing on mapping the JIV (**Fig. 1** and **Pl. 4**). Using a rover unit of the ProMark 3 GPS system, twenty-two structures were located and their locations recorded. The mapped structures can now be displayed on a geo-referenced aerial photo of the JIV site (**Pls. 1 and 2**).

In the following sections, each field director and specialist presents preliminary scientific results of their contributions to the archaeological excavation conducted during the 2009 season at Tall Jalul and the JIV.

Field C: Late Bronze Age II through Hellenistic Period

PAUL RAY
Andrews University

This season of excavations brought clarification to the nature of the Late Iron II C/Persian period walls that have been exposed in the southern portion of this field in recent seasons (see below). Earlier seasons of excavation exposed the remnants of a tripartite building in the northern part of the field. It is of interest that most of the material culture from the earlier periods discovered in this field were found in the northern section, which is where we will begin our summary of the excavations.

*Field Phase 11 (Late Bronze Age II/
Iron Age I Transition)*

Although no architecture has been found to date, two Late Bronze Age II lamps (Objects 95 and 96)¹² and a chalice (Object 97), along with numerous

¹²The objects will be published in a forthcoming report.

frit, faience, carnelian, and quartz beads (Objects 93a-e), were found in a mud-brick detritus (C.3:23)¹³ layer, which were apparently fall from a wall immediately to the south.

Field Phase 10 (Iron Age I)

In the 1994 season, the remnant of an Iron Age I building was found just above bedrock, downslope of the acropolis, in Square 4. It consisted of a wall (C.4:29). Since an Iron Age II wall was built on top of it and slightly offset to the west, not much more can be said about the nature of this building, which is the earliest feature found in the field so far. Iron Age I sherds were found in the soil layer (C.4:30), just on top of bedrock to the east of the wall. More sherds from this period were also found in soil layers (C.3:40, 41) immediately above bedrock, elsewhere in the field.

Field Phase 9 (Iron Age II)

The eastern wall of an Iron Age II pillared house (**Fig. 2**), offset on a slight angle, was built on top of the earlier Iron Age I wall in Square 4. This wall (C.4:10 = 20) ran in a southwest-northeast direction throughout Squares 4 and 2, with its extension in the latter designated Wall 11. Near the southeastern corner of Square 4, the southern wall (C.4:34) of the structure turned to the west, continuing into Square 3 as Wall 29. The parallel north-south long wall on the west side of the building appears to have been scavenged for later building activities, as a robber trench was found that ran the length of Squares 1 and 3, and which can still be seen in the south balk of Square 3 (C.3:12) and the north balk of Square 1 (C.1:11). The northern perimeter wall, where the entrance was probably located, remains unexcavated. The building was subdivided on the south into a large broad room, with walls C.4:31 and C.3:21 to the east and west respectively, and flanking a doorway in the center. The northern part of the building was further divided by pillars, of which only five remain; three along the eastern side of the building (C.2:20, 22 and 25) and two (C.1:31 and C.2:27) paralleling pillar C.2:25 along the northern edge of Squares 1 and 2.

Later in the period, apparently during the seventh century B.C.E., the building was destroyed. There were at least twenty disarticulated skeletons, along with two ballistics (Objects 269 and 298), an iron axe head (Object 386), late Iron Age II ceramics and part of a horse figurine (Object 290) typical of the period in the bedrock pit (C.1:28) located in the center of the building. Above this, roof debris, a broken roof roller, two ballistics (Objects 136 and 184), two iron arrowheads (Objects 156 and 206), and part of an iron [dagger?] blade (Object 208) were found in the destruction debris in Squares 2 and 4. The pit may have originally served as a place for subterranean storage; because it was not plastered, a cistern would seem to be ruled out. An ephemeral wall (C.3:36), which ran along the western balk of Square 3, also appears to have been built sometime during Iron Age II, as suggested by the

¹³That is: Field C, Square 3, Locus 23.

ceramics found in its foundation trench (C.3:43). It is perhaps connected with another structure to the west of the pillared house.

After the destruction of the pillared house, activities seem, for the most part, to have centered to the south. Already in the 1996 season, a half square (C.5) was opened, with exposure widened to a full square in 1999. In 2005, three additional squares (C.6-8) were opened, broadening the field considerably.

Field Phase 8 (Iron Age II C/Persian Period)

During this phase, an Iron Age II C/Persian period building was built to the southeast of the Phase 9 pillared house. What has been excavated consists of walls (C.7:35 and 36), which appear to be the northwest corner of the building, and a cobbled pavement (C.7:38) to the north of the building (**Fig. 3**). Associated artifacts include a spindle whorl, a shell pendant, and a figurine fragment (Objects 768, 774, and 785). With the remainder of the structure lying unexcavated in the area between Fields C and D, nothing further can be said about this building at present. In addition, there seems to have been renewed activity in the northern part of the field, as ceramic remains from this period were found mixed with earlier (Iron Age II) material in the destruction debris of the following phase. If the pillared house was rebuilt or movements made in that direction during this phase, it was soon destroyed again, most likely by an earthquake, as large amounts of the mud-brick superstructure of Wall C.4:34 fell to the south into Square 5.

Field Phase 7 (Iron II C/Persian Period)

Field C appears to have undergone a period of abandonment at this juncture for an unknown, but probably relatively short, period of time. A considerable amount of decayed mud brick (C.5:9, 15, 26 = 27, 31 = 32 = 33; C.6:29, 32, 33, 36, and 37) and destruction debris from the earthquake, along with Iron Age II and Iron Age II C/Early Persian period material culture, accumulated at this time. This material eroded to the east, in Squares 5 and 6, most likely due to the seasonal rains washing downhill from the acropolis to the west. Artifacts found among the destruction debris include three ballistics (Objects 567, 568 and 731), two spindle whorls (Objects 569 and 584), a buzz toy (Object 581), a basalt lamp (Object 583), a stone weight (Object 734), and a pendant (Object 763).

Field Phase 6 (Iron II C/Persian Period)

The pillared house in the northern part of the field was no longer in use during this phase. It was probably at this time that its western perimeter wall was removed, as the latest pottery in the robber trench (C.1:11 = C.3:12) dates to this period. Instead, it appears that a new building was built immediately to the east that partially reused the eastern wall of the earlier building. A new wall (C.2:10) was built parallel to and slightly west of the eastern perimeter wall of the earlier building, with its southern extension (Wall C.4:10 = 20)

presumably being reused, and with new coursing added to its top as another new wall (C.6:19 = C.5:44) was built from its corner, which turns in a slight southeastern direction. Its foundation trench (C.6:28) was cut deeply through destruction and abandonment debris of the previous two phases. Not much can be said about this “eastern building,” as most of it remains outside the area of excavation.

To the south, a large building was erected with a paved street or alleyway (C.5:42) located between it and the building to the east. This building (**Fig. 4**) consists of Wall C.8:17 on the south; the remnant of an eastern wall (C.7:14), which was later scavenged; and Wall C.6:21 = C.5:8 on the north. Wall C.8:16 = C.7:12 forms an inner partition wall. There are also the remains of a stone pavement (C.5:25) on the northwest corner of the building. The foundation trench (C.6:30) of the north wall (C.6:21 = C.5:8), like that of Wall C.6:19 = C.5:44 of the “eastern building” across the street, was cut through the destruction and abandonment debris of the previous phases.

Field Phase 5 (Iron II C/Persian Period)

During this phase, there was a western expansion to the building on the southern end of the field. The western wall of the earlier phase seems to have been removed; thus far there is little trace remaining unless feature C.8:25 is a remnant. The southern wall (C.8:17) of the building was extended to the west as Wall C.8:17b and consists of much larger stones than its eastern counterpart. A new square (C.11) to the west of Square 8 was opened in the 2009 season. It is possible that the stonework (C.11:11) in its east balk is the westernmost extension of the southern wall of the building. On the north, Wall C.6:21 = C.5:8 was also lengthened to the west, with the extension of Wall C.5:13, which is slightly offset to the south. Part of the new western wall was found in Square 5 during the 1999 season and designated Wall C.5:21. In 2009, the north balk of Square 8 was removed, making it possible to trace this wall farther to the southwest as Wall C.8:26, until it also disappeared into the west balk of the square. At the same time, there was a thickening or widening of the center wall or pylon (C.8:16 = C.7:12) in the center of the building. Sections of a pavement (C.8:20 = 28 = 31 = C.5:29) were found throughout the building, consisting of alternating sections of small flagstones and plaster. The street between the two buildings—the “eastern building” apparently continuing in use at this time—was also repaved with a new set of flagstones (C.5:39 = C.6:11) on top of a dirt-fill layer (C.5:40-41 = C.6:24) during this phase.

Field Phase 4 (Iron II C/Persian Period)

The previous phase came to an end with the occurrence of another earthquake. As is typical of tectonic activity on the Transjordanian side of the Great Rift Valley, the Arabian Plate shifts to the north, causing architectural elements to fall to the south. This earthquake caused considerable damage to the building in the southern part of the field, destroying both the mud-brick superstructure and much of the stone coursing of Walls C.6:21 = C.5:8 = 13 and C.8:16 =

C.7:14. It took all of the 2007 season and part of 2009 to clear the massive amount of stones from southernmost squares (Square 7 and especially Square 8) before reaching undisturbed wall courses and the pavement below the destruction debris. The mud-brick superstructure (C.5:7, 10; C.6:26, 27, 38) and some stone work from the southern wall (C.6:19 = C.5:44) of the “eastern building” were also destroyed at this time, falling south into Squares 5 and 6. A number of artifacts were found in the earthquake debris; a stamp seal (Object 678) was perhaps the most significant find (**Fig. 5**).

During the postearthquake Phase 4, a buttress wall (C.7:13 = C.6:35) was added along the southeastern face of Wall C.6:21 = C.5:8, 13 to strengthen this end of the building, which apparently sustained the brunt of the damage caused by the earthquake. Curvilinear installation (C.5:23) in the northwest corner of the building may have come into existence at this time. The “eastern building” probably went out of use at this time, as a rubble layer (C.6:17) was found on top of the uppermost extant course of Wall C.6:19 = C.5:44. However, the street to the north of Wall C.6:21 = C.5:8, 13 was repaved (C.5:37b = C.6:8) a final time.

*Field Phase 3 (Hellenistic Period
and Later Remains)*

This phase appears to reflect the accumulation of post-Iron Age II C/Persian period debris as represented by the tumble or stone fall (C.7:42) in the post-use phase of the building on the southern end of the field.

Field Phases 1 and 2 represent subsurface debris and topsoil respectively within Field C.

Summary and Future Work

Parts of two buildings were articulated during the 2009 season in the southern part of Field C. Although this brought clarification to the late Iron Age II/Persian-period structures on this section of the tell, there is still much work to be done in future seasons both in terms of lateral exposure (to clarify some of the partially excavated structures on the current peripheral edges of the field) and depth (the potential discovery of earlier structures beneath some of the currently excavated buildings).



Figure 1. Karen Borstad using GPS Rover to map the JIV.



Figure 2. Pillared house in Field C, looking north.



Figure 3. Southeast building in Field C, looking west.



Figure 4. Southern building in Field C, looking west.



Figure 5. Stamp seal (Object 678) from Field C.

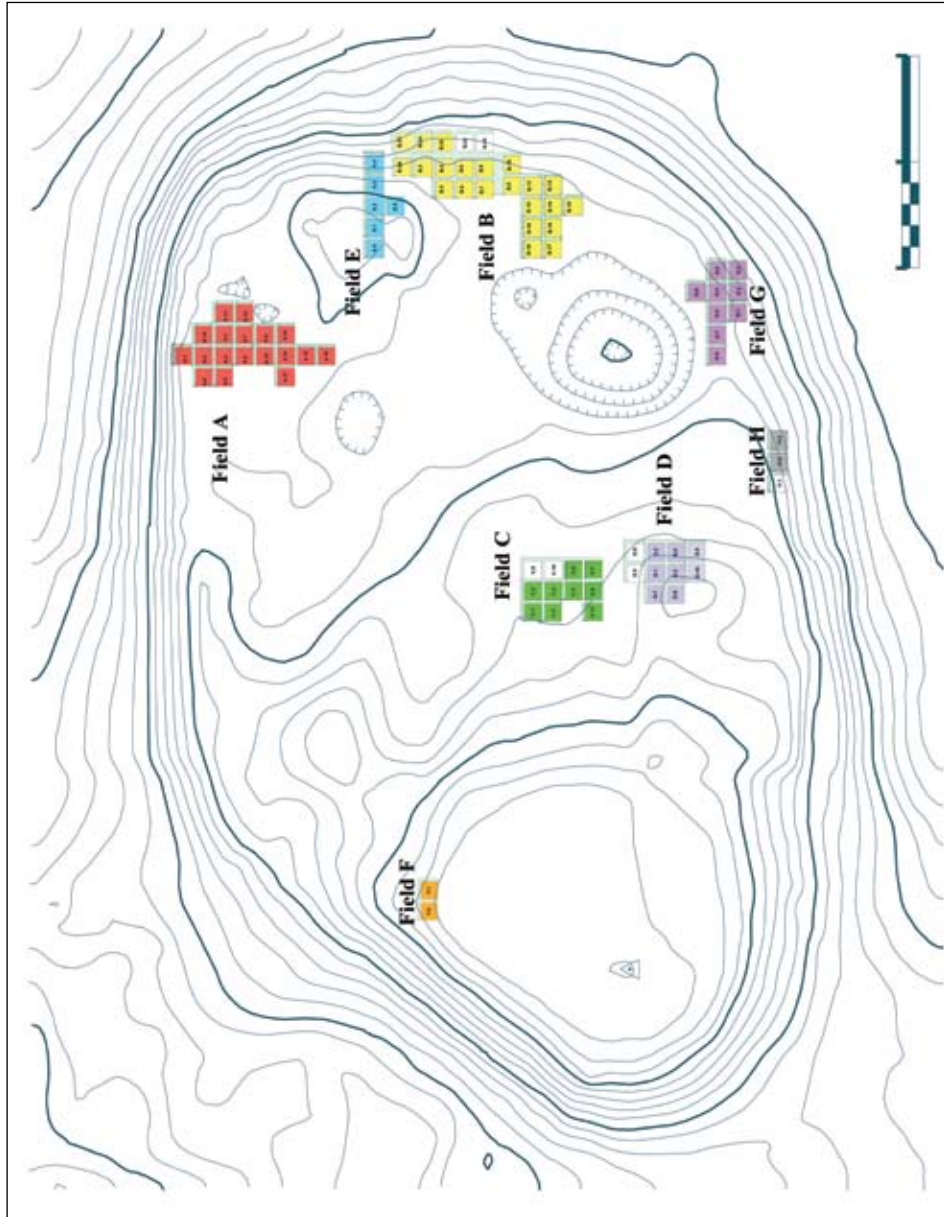


Plate 1. Topographical Map of Tall Jalul.



Plate 2. Aerial photo of Tall Jalul and the JIV.



Plate 3. Participants of the 2009 Tall Jalul Excavation Team. A number of team members were missing from the photograph.



Plate 4. JIV workers Ehren Lichtenwalter and Thomas Pieters help Theodore Burgh map features in the JIV.



Plate 5. Ceramic horse figure (Object 660).



Plate 6. Ceramic plaque figure (Object 784).



Plate 7. Erika Fortin excavating cache of pottery in Field G.



Plate 8. Water channel in Field G.



Plate 9. Randall Younker, director of the excavation at Jalul, in subterranean vaulted room in the JIV.



Plate 11. Leg fragment in the shape of a lion's paw from a large basalt bowl (Object 716).



Plate 12. Mamluk potsherd from the JIV being analyzed on the 3-D scanner.

Field D: Domestic Complex

JENNIFER L. GROVES
Stevensville, Michigan

Excavations in Field D, the Persian-period domestic complex, were carried out again in 2009. The field was opened in 1996 with four squares (Squares 1-4) and expanded by the addition of two squares (Squares 7-8) to the west in 2005. The latter were opened to reveal more of Room 1 (primarily in Square 1) and Room 2 (primarily in Square 3).

The original objectives for the 2009 season were to conclude excavation of the domestic complex in the original four squares and continue excavating Squares 7 and 8 (on the western edge of the field) to reveal new areas of the house (**Fig. 6**). Upon initial in-field assessment, however, it became clear that the original 5-m-long east balk lines of Squares 2 and 4 and the north balk lines of Squares 1 and 2 were so eroded as to make excavation below them unsafe for the excavators. The east balk lines of Squares 7 and 8 had largely eroded into Rooms 1 and 2 more than 3 m below. In addition to safety concerns, the strategy of removing these balks would effectively halt erosion into Rooms 1 and 2 of the house because the western walls of these rooms would prevent further soil from being washed in. Balk and interseasonal debris removal throughout the Field occupied the first half of the season.

Room 1

Another objective was to complete the process of totally removing all floor surfaces in Room 1 (Square 1). Four dirt floors had been identified in Room 1 in previous seasons, indicating a lengthy occupation of Room 1 during the sixth century B.C.E. Portions of the two earliest floors (D.1:75, 76; **Fig. 7**) remained in the south end of the room. This objective was delayed and ultimately not completed in 2009 due to extensive balk and interseasonal debris removal, but the floor surfaces themselves remained well preserved.

The western wall (D.1:5 = D.7:13) of Room 1 was not fully excavated in previous seasons because it was partially obscured by the east balk of Square 7, leaving the southwestern corner of Room 1 hidden in the balk. After four years of exposure to the elements, rain had washed most of the soil away, nearly exposing the corner. Consequently, the remaining soil was removed to fully reveal the western wall. This exposed a blocked doorway (D.1:103; **Fig. 8**) in Wall D.1:35. It represents a later use of Room 1 and the latest occupation phase of the domestic complex discovered thus far. The later builders used earlier walls as foundations.

The threshold of the blocked door rests 1 m above the earliest floor. Earlier inhabitants would have used the lower, now-blocked entryway in the north wall (D.1:30) of Room 1 (see **Fig. 7**). The room was abandoned for some time before being reoccupied, but given the consistency of ceramic forms, the original construction, abandonment, and reuse, this period of disuse would not have exceeded a century. Collapse of the first roof and partial collapse of the earliest walls must have occurred fairly rapidly and

filled in much of the room, preserving the single-row walls to a maximum height of 3 m.

The clearing of the southwest corner of Room 1 also revealed the corner of another earlier, unexcavated building to the south. The builders of Room 1 chose to incorporate this corner into their new room (D.1:108; see **Fig. 8**). Continued excavation in Square 8 will presumably elucidate its relationship to the domestic complex. In spite of interseasonal conservation efforts, exposure to the elements has reduced the stability of the walls in Room 1. The continued removal of earth on the west side of the western wall in future seasons will require efforts to stabilize it.

The north balk of Square 1 suffered severe undercutting due to erosion. In Field D, the earth is primarily windblown silt, starting 20 cm below topsoil. Seasonal rains quickly compromised the integrity of exposed balks. Soil had washed into Room 1 via the door and window in the north wall (D.1:30) of the room. The erosion created a funnel between Wall D.1:30 and the north balk that descended 3 m down to the base of Wall D.1:30. Consequently, this area has only been excavated to a depth of 75 cm below the top of the wall and will likely not continue until the square north of Square 1 is excavated to that same depth. Wall D.1:88 also suggests the presence of an unexcavated building between Fields C and D.

Unexcavated areas of the domestic complex extend to the west of Room 1. Wall D.7:4 (=D.1:70) in Square 7 (**Fig 9**), discovered in 2005 a few centimeters below the topsoil, has now been definitively connected to the Persian house, but it remains uncertain if the portion of the wall in Square 7 is concurrent with the occupation of Room 1.

Room 2

Room 2, adjacent to and slightly southeast of Room 1, was transected by the north balk of Square 3 (**Fig. 10**). This balk served as a cross section of Room 2 in 2005, when the southern half of the room was initially excavated. In 2009, the balk was removed to provide a clearer picture of Room 2. As with Room 1, Room 2 appears to have had two major occupational phases during the early sixth to early fifth centuries B.C.E. Existing walls are 2.5 m high. The fill in Room 2, comprised of roof collapse followed by later wall collapse, was dense and somewhat protected from the elements by the standing walls. Consequently, the balk was in a better state of preservation and the integrity of the loci was easier to maintain than in the silt piles that had washed into Squares 1 and 2. Artifacts—particularly basalt implements—were frequent in the fill loci in Room 2. The balk contained several partial and a few complete loaf-shaped hand grinders, in addition to two fibula (Objects 693 and 694).

Room 2 was entered via a doorway in the northeastern corner (**Fig. 11**). The entrance is poorly preserved on the north wall (D.1:44), which was partially dismantled sometime after Room 2 had been abandoned (**Fig. 10**), as indicated by a robber trench (D.1:104) (**Fig. 12**). The northern end of the eastern wall (D.1:81 = D.3:28) of Room 2, however, is well preserved and created a nicely finished entryway (see **Fig. 11**).

Courtyard

To the east of Rooms 1 and 2 lies the courtyard area (Squares 2 and 4; **Fig. 13**). No living surfaces or activity areas have yet been identified in the northern half of the courtyard; the northern limit is marked by Wall D.2:27 in the northeastern corner of Square 2.

Severe erosion in the north and east balks of Square 2 and the east balk of Square 4 made it advisable to cut the balks back to the 6-m line. In some areas, the erosion had already progressed beyond that line. Balk removal revealed a few new features.

In the process of the Square 2 north-balk removal, a concentration of small rock fall (D.2:36) was discovered west of Wall D.2:27 that may continue into the northeastern corner of Square 1. These rocks were primarily in the north balk and did not extend further south into the courtyard area. They are probably related to unexcavated architecture to the north, as is the tiny portion of exposed Wall D.2:46 (**Fig. 14**), 1 m in height and length, in the northeastern corner of Square 2.

A hollow ceramic camel's head (Object 749; **Fig. 15**), originally part of a *keranos* vessel, was found in this area between Walls D.2:27 and D.2:46.

Wall D.2:27 has two openings, as yet barely visible, that are probably doors or windows, with a supporting stone between them. Soil in this area had been disturbed by dogs, digging under the openings. Excavations here also revealed a trench (D.2:47) along the northern face of Wall D.2:27 (**Fig. 16**). The soil in the trench is loose and windblown, filling in around small rocks, which possibly fell from the wall after the trench diggers abandoned it. The trench may not be foundational because there is no sign of a trench or pit along the south face of Wall D. 2:27 and the openings suggest there is some distance remaining to be excavated before the bottom of the wall is reached. It is possible that the stones currently exposed represent a later phase of the wall and the trench signifies a rebuilding episode, but that will have to be confirmed by future excavation. A more likely scenario is that builders, centuries after the Persian period, seeing only the top preserved course of Wall D.2:27, dug along the north face of the wall to check its foundation, intending to use it in their own construction, but discovered that there were openings and abandoned Wall D.2:27 as unstable.

The double openings in Wall D.2:27 and its height relative to Wall D.1:30 may indicate that the two walls are contemporary. Both walls seem to be constructed in a similar style (two doorways/windows separated by an upright stone). If so, this could mean that the unexcavated building northeast of the courtyard area was inhabited concurrently with the earlier occupational phase of the domestic complex. Limited ceramic evidence from earth layers between Walls D.2:27 and D.2:46 supports this possibility.

East balk removal in Square 2 revealed an enigmatic stone feature (D.2:43) that may turn out to be a wall and further evidence for architecture to the east.

The southern half of the courtyard, principally in Square 4, has shown more evidence of activity areas in past seasons. A smashed sixth-century-B.C.E. pithos used to store olive oil was found in the northeastern corner, complete with a dipper juglet underneath. A haphazard wall (D.4:45, **Fig. 17**), composed of small boulders and discarded basalt implements, was unearthed in 2005. It had literally been thrown together. Its purpose remains unclear, but represents, along with the blocked doorway of Room 1, one of the last phases of occupation in the house. Wall 45 contained a nearly complete saddle quern, several loaf-shaped grinders, and numerous hand grinders, all probably grabbed from nearby areas when the wall was loosely constructed.

Removal of the east balk of Square 4 revealed several features. The corner of an unexcavated building (D.4:70, **Fig. 18**) to the east of the domestic complex was discovered. Based on limited ceramic evidence, it may have been contemporary with the Persian house or the slightly earlier building in Field C.

The southeastern corner of the courtyard in Square 4 included a large mound of packed roof material that is the consistency of concrete and was sterile in terms of artifacts, ceramics, and bones. The mound of collapsed material probably belonged to a building to the east of the courtyard associated with Wall D.4:70.

In the process of removing the last few centimeters of the east balk in Square 4, five courses of mud-brick wall (D.4:75) were uncovered. The individual bricks, mortar, and a mud-plaster facing on both sides of the wall were clearly delineated. Based on the wall's location and localized mud-brick debris in D4 from earlier seasons (found principally in the southeastern corner), this feature should be connected with a building to the east, which is as yet unexcavated. What appeared to be a pit (D.4:76) was in actuality windblown soil that filled in the area between the roof collapse and the wall.

*Small Finds in Field D*¹⁴

This season added to the growing corpus of seals and ostraca from Tall Jalul. One bulla (seal impression), half of a seal, and one ostrakon with four letters were found in Field D (for photos and analysis, see article by Gane and Chadwick¹⁵). Unfortunately, these objects were found during balk removal in levels above the architecture of the domestic complex, but the preservation of the letters is excellent.

The bulla (Object 745) was found in the southeastern corner of the courtyard during balk removal. The seal (Object 647) was found during the removal of the top 50 cm of the north balk of Square 1. The four-lettered ostrakon (Object 659) came from the top meter of east balk removal, in Square 2, and was discovered during pottery washing.

¹⁴For more information on small finds in this and other fields, see below.

¹⁵Forthcoming publication.

The domestic complex has continued to produce numerous figurines. In 2009, five fragments of horse figurines were recovered in Squares 1, 2, and 4 (**Pl. 5**). One example of the rear torso included a well-preserved painted saddle without a rider (Object 662; **Fig. 19**). Four fragments of female figurines from Squares 1, 2, and 3 were also found, including one nearly complete female plaque figurine (Object 784; **Pl. 6**).

Summary

Although little additional architecture or phasing was discovered in 2009, balk removal did afford another opportunity to capture photos and drawings of phases that are better understood now that more of the domestic complex has been excavated. While the exposure of new architecture in the northern balk of Square 1 and the eastern balk of Squares 2 and 4 and evidence of building collapse in Square 4 are limited, their presence suggests additional buildings to the north and east exist that may be roughly contemporary with the Persian house. The continuation of the walls of Room 1 into Square 7 and the newly discovered blocked door indicate that the domestic complex continues to the west. All lines of evidence reveal a greater density of occupation on the southern half of the tell during the seventh-fifth centuries B.C.E. than had previously been supposed.



Figure 6. View of domestic complex looking west. The grassy area in the background (west of Field D) is the acropolis of the tell.

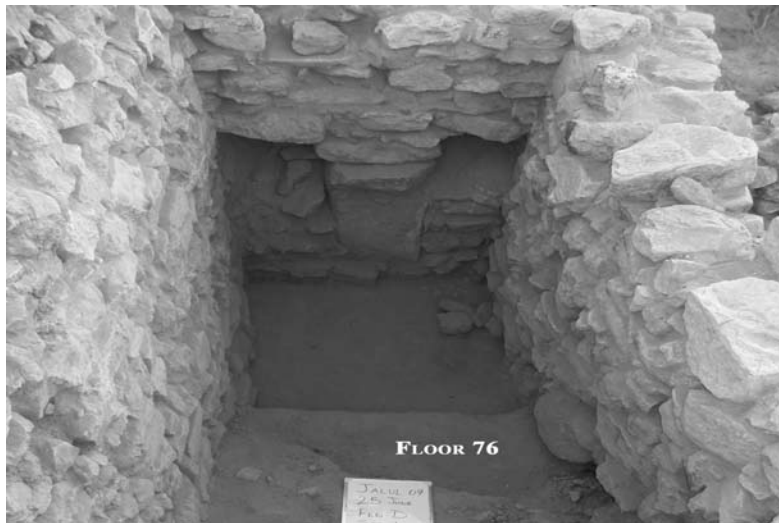


Figure 7. The north end of Room 1 of Field D is subfloor level, while the south end includes interseasonal debris covering Floor D.1:75.

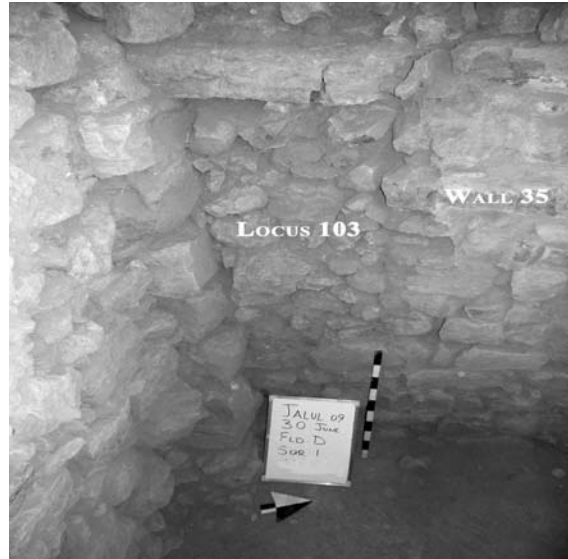


Figure 8. Door (Locus 103) in the southwest wall of Room 1 of Field D.



Figure 9. Wall 4 in Square 7 of Field D, Wall 35 of Room 1 in foreground.

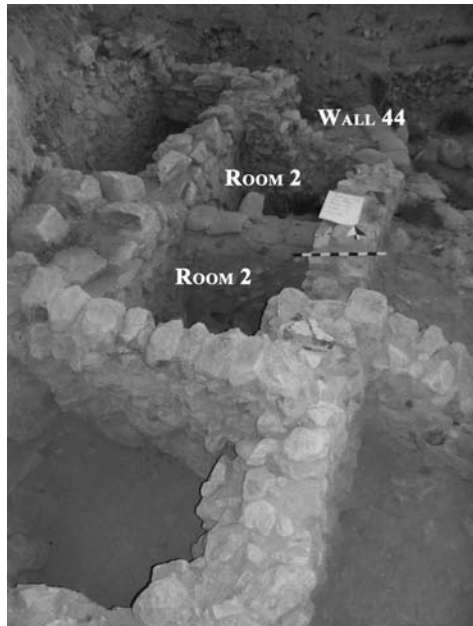


Figure 10. Room 2 of Field D transected by the north balk of Square 3. Note damage to Wall D.1:44 above (north of) the sign board.

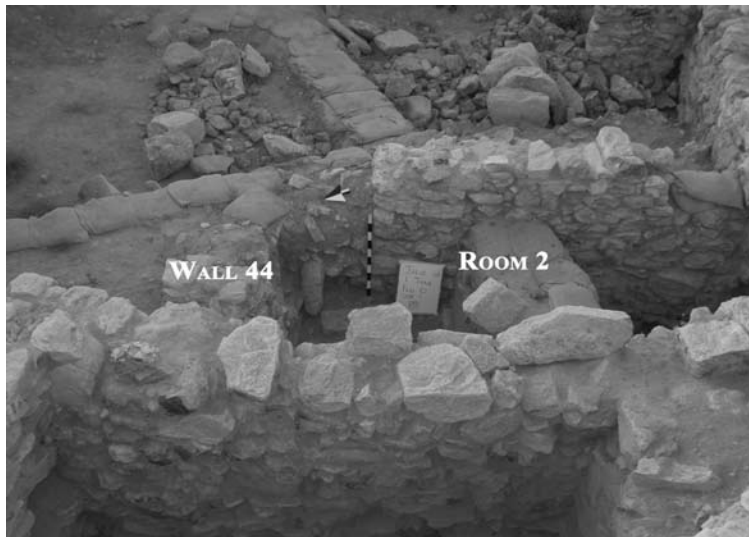


Figure 11. Field D, Room 2. Note blocked entry way to the left (south of) the meter stick below the arrow.



Figure 12. A robber trench cuts Wall D.1:44 of Field D.

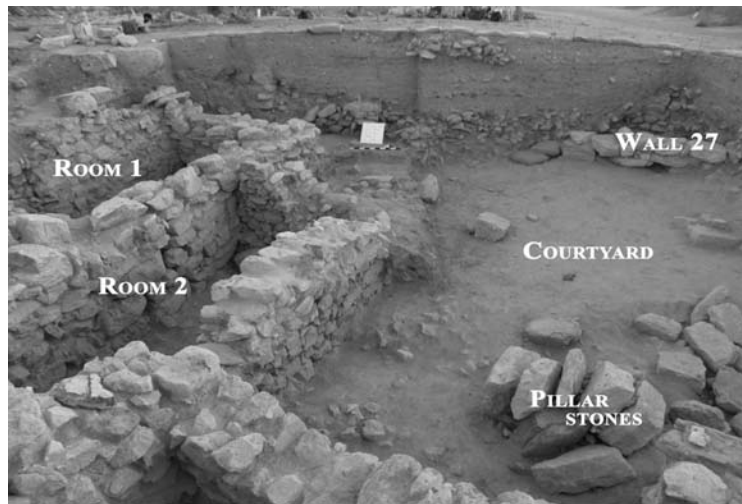


Figure 13. The Field D courtyard area. The boulders in the lower right are fallen pillar stones.



Figure 14. Field D, Walls 27 and 46.



Figure 15. Ceramic camel-head kernos fragment (Object 749), found between Walls D.2:27 and D.2:46 of Field D.



Figure 16. Trench on the north face of Wall D.2.27 in Field D. The arrow rests in the trench.

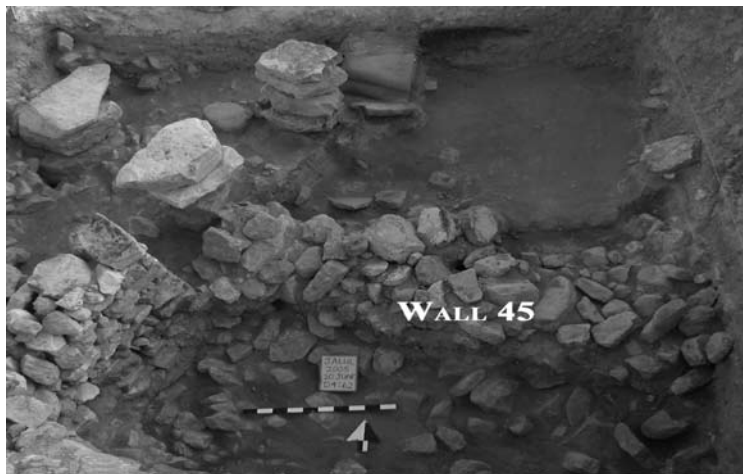


Figure 17. Field D, Wall D.2:45, excavated in the 2005 season.



Figure 18. Field D, Wall 70 is the corner of an unexcavated building to the east.



Figure 19. Ceramic riderless horse figurine with saddle (Object 662) from Field D.

Field G: Iron Age City Wall and Water Channel

PAUL ZELJKO GREGOR
Andrews University

Due to the fact that after five seasons of excavations Field A failed to produce any evidence of the city's fortifications, the decision was made in 2007 to open Field G¹⁶ located on the southeastern ridge of the tell, where signs of a possible fortification wall were visible. During this season, several walls of a building complex were discovered. One of the outer walls appeared to be a city wall, but since the excavated area was limited, its nature remained uncertain. Full-scale excavation resumed at Field G during the 2009 season, where the work continued in some of the existing squares (Squares 1, 2, and 4), and in new squares that were opened (Squares 5-9) to clarify the nature of previously excavated structures.

Ninth-century B.C.E. Occupation

At the end of the season, it was concluded that Field G revealed three occupational phases, each followed by an abandonment phase. The earliest occupational phase came into existence in the earlier part of the ninth century B.C.E. This occurred soon after the kingdom of Israel divided into two kingdoms: the Northern Kingdom, also known as Israel, ruled from Samaria; and the Southern Kingdom, known as the Kingdom of Judah, ruled from Jerusalem. This earliest phase consists of city walls that were revealed in all of the squares except Square 5. Since foundation trenches were not found at the base of the walls, it is obvious that they were erected on a preexisting surface. The southern wall runs through several squares. It is excavated to a length of more than 20 m (see **Fig. 20**), is approximately 1 m wide, and is made of large- and medium-size boulders supported and stabilized with chink stones. The wall is preserved up to 2 m or more in some places, and follows the southern ridge of the tell. At its southeastern corner, the wall turns sharply at a right angle toward the north (see **Fig. 21**). It seems that the southern flank of the wall was protected by a tower, found in G.8 and located approximately 15-20 m away from its southeastern corner (see **Fig. 22**). This wall is probably part of the city's defense system, which encompasses the entire settlement and was effectively used throughout the Assyrian domination (eighth century B.C.E.). The wall suffered its final destruction during the Babylonian invasion, sometime during the end of the seventh or beginning of the sixth century B.C.E. It is still unknown whether the structures inside of the city wall came into existence at the same time as the city wall. A small probe was excavated under the floor of one building; the pottery found in the probe is very similar to that found under the first course of the city wall, indicating that the wall and structures inside of the wall might have been contemporaneous. However, due to limited excavation that has produced insufficient material for dating,

¹⁶During the 2007 season, Field G was excavated by a team from Cincinnati Christian University, supervised by Mark Ziese.

it is better to date the structure inside of the city walls to the eighth century B.C.E.

Eighth-century B.C.E. Occupation

A structure emerged during the 2007 season and parts of it were completely excavated during the 2009 season. The building is located in the southeastern corner of the tell, and the city walls were used to support the structure. It was only partially excavated and probably was a single-level building whose roof was supported by pillars that were located in its courtyard. Whether the building was a “four-room house” is not certain, but it does have a small back room measuring 2.6 m long by 1.3 m wide. This room yielded a significant quantity of broken pottery (**Pl. 7**). The room seems to have been used for depositing damaged or broken pots that ranged from small tripod-based storage jars, small jars, oil lamps, plates, flasks, jugs and juglets to cooking pots, all dating to the eighth century B.C.E. (see **Fig 21**). The walls of the building and its associated pillars are well preserved. One of the pillars is preserved almost in its entirety, reaching to the ceiling of the building (up to 2.5 m in height; see **Fig. 23**). A preliminary reading of the pottery found on the floor of the building’s courtyard suggests a date similar to the ceramics found in the small room, indicating that the structure was extensively used in the eighth century B.C.E. when the prophets Isaiah, Micah, Hosea, and Amos were operating in the lands of Israel and Judah. At least part of the building (a small back room) was abandoned after the eighth century B.C.E., while the courtyard and other rooms might have been used during the seventh century B.C.E.

Seventh-century B.C.E. Occupation

Sometime after the destruction of Samaria and the Northern Kingdom, a water channel was constructed as the newest addition to the building complex. The direction of the channel seems to indicate that it was connected to what appears to be the city’s water reservoir. The reservoir is located in close proximity to the southeastern corner of the city. The channel runs from the reservoir toward the southern part of the city wall and curves around structures almost parallel to that wall before it cuts through the eastern section of the wall at the place where the eastern and southern walls meet (**Figs. 21, 24, and Pl. 8**). The builders carefully navigated the path of the channel to avoid demolition of the existing building. In this way, most of the building was left intact apart from several small rooms located closest to the southern city wall (see **Fig. 21**). Based on a preliminary reading of the pottery found under the foundation of the channel, it is evident that it was constructed during the seventh century B.C.E., while the pottery found inside the channel on its floor suggests that it went out of use during the end of the seventh or beginning of the sixth century B.C.E., probably during the Babylonian invasion.

The channel is well preserved. It is .8 m wide, while the height of both its walls is up to 1 m in certain places. The floor of the channel was well constructed of neatly placed flagstones covered with a thick layer of lime plaster. The channel walls were also plastered on the inside for better water

flow. The channel slopes from the inside out, leading the water outside the city walls toward possible open pools or reservoirs below the tell.

Water System

Water was always a rare, yet essential, commodity for ancient peoples and as such played an important role in settlements that were established from earliest human history. Cities were always established around a water source. Sometimes a well-supplied stream outside the city perimeters was used as the main source of water. From here, the water was carried in jars and jugs into the town for food processing and cooking. Additionally, the same water source was used for irrigation, washing, and watering animals. A typical example of such a settlement was Khirbet Iskander, which was established and occupied during the time of Abraham, located near biblical Dibon in central Jordan.

However, when a water source was located outside the city walls, it created a problem for its occupants during a time of siege. As a result, people who tried to find protection inside the city walls could not last long because they had no access to the water source outside the city walls. To prevent this hazardous problem, sometimes the inhabitants dug two channels, one horizontal and one vertical, to bring the water inside, so as to have access to it without exposing themselves to invaders. Such an elaborate system was established in Jerusalem during the reign of King Hezekiah in the eighth century B.C.E. At this site, the excavators dug a vertical shaft and then two teams dug a horizontal channel from opposite ends, eventually meeting in the middle. This way they had access to fresh water at all times.

In the absence of natural springs, streams, or rivers, city inhabitants dug massive cisterns inside the city walls, where rainwater could be channeled and collected. The cisterns were dug into bedrock and plastered on the inside to protect water from leaking (Tall Hisban is a good example for such a cistern or reservoir). This method of collecting and preserving water was the most widely used from the time of the Judges onward. In addition to the main city cistern, which was accessible to all citizens, rich individuals might have excavated cisterns in their own backyards for private use (Jer 38:6).

In addition to the above methods, inhabitants sometimes dug deep wells to reach the water table from inside their cities. usually wells were wide with stairs around the walls, making deep spring water accessible. One such well was found at Gibeon, in Israel. Cisterns used to collect rainwater contributed to health problems, while digging deep wells provided access to clean and healthy fresh water. Since it was not easy to reach the water table through bedrock, digging wells inside city walls was rare.

There seems to be a city reservoir at Tall Jalul. It has not yet been excavated, but it appears that the reservoir was dug in ancient times either to provide a place to collect rainwater during the rainy season or to reach fresh water below the water table. Future excavations will be needed to provide evidence in support of these two theories. One thing is clear, however. The water channel, which was discovered during the last two seasons, did not serve to supply rainwater to the reservoir, but rather to lead the water out.

If the water reservoir served only as a collecting place for rainwater, then it is possible that rain was so extensive that it overcame the capacity of the reservoir and a channel was constructed to direct surplus water outside the city limits. However, if this reservoir was a deep well, then it is also possible that when the water table rose during heavy rains, the level of water in the well would also rise, threatening to flood the streets and homes of inhabitants who lived in the lower city. Either way, it seems that surplus water was not wasted, but rather collected in large pools outside the city walls for further use in irrigation systems and/or providing water for the animals. The site may have been so well known for its excess of water that it might have been used in poetry by biblical authors as early as the tenth century B.C.E. (Song 7:4, Eng.; 7:5, Heb.). As already suggested, this water system might help in the identification of this site.¹⁷

¹⁷Randall Younker, et al., "Another Look at Solomon's Pools at Heshbon," *Adventist Review*, 26 November 2009, 14-16.

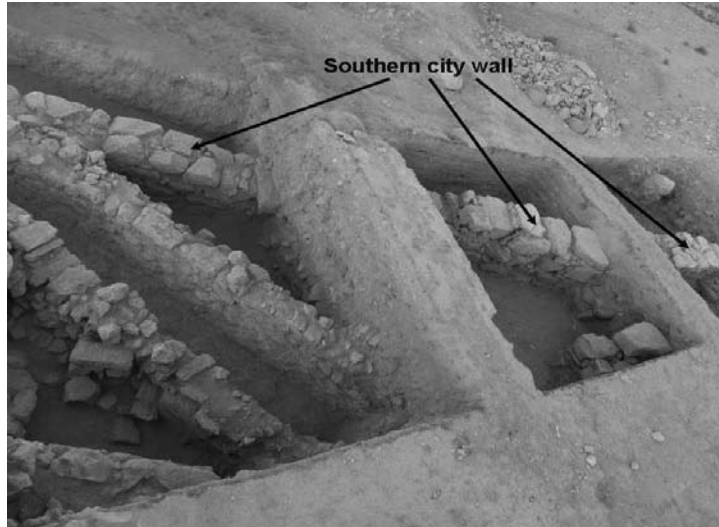


Figure 20. The southern part of the city wall in Field G.

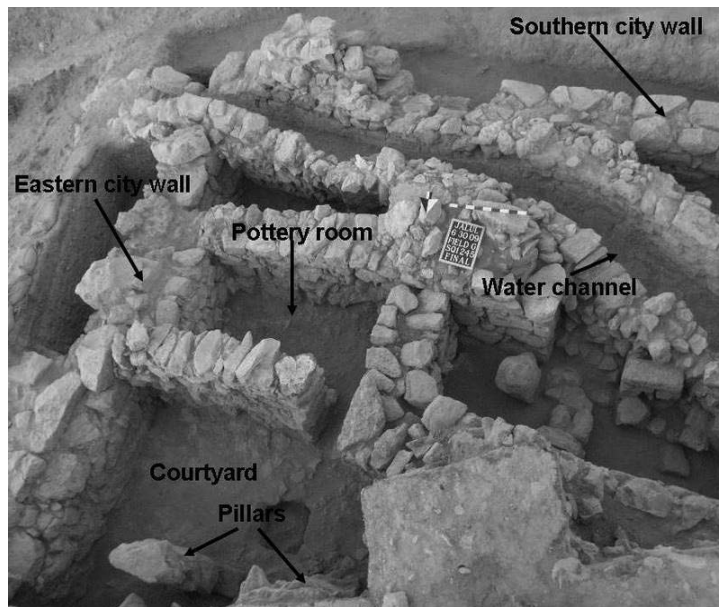


Figure 21. Structures in the southeastern corner of Field G.



Figure 22. A possible tower in Field G, Square 8.

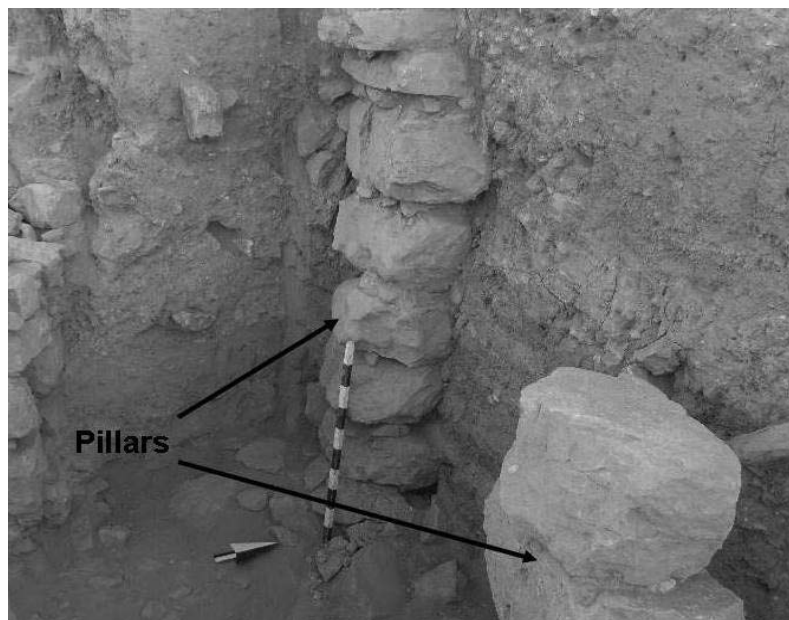


Figure 23. Pillars in Field G.

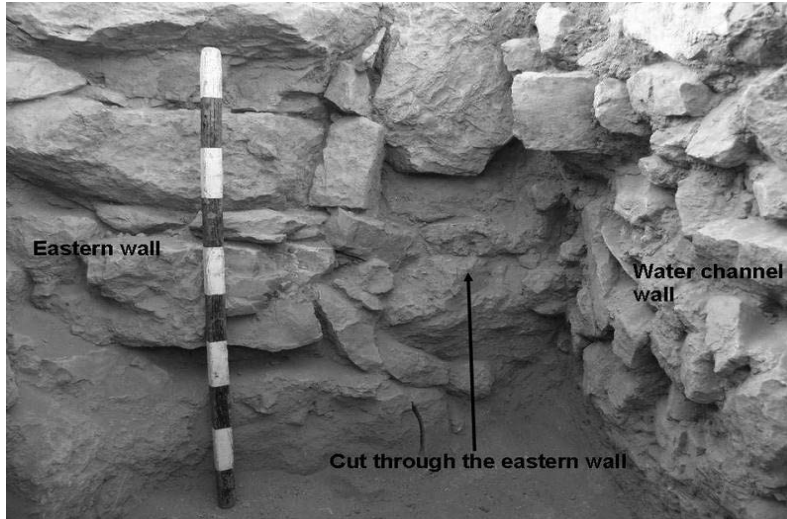


Figure 24. A cut through the eastern wall of Field G.

Jalul Islamic Village: JIV Field A

REEM AL SHQOUR
Ghent University, Belgium

As noted in the 2008 report, the goal of the excavations in the Jalul Islamic Village (JIV)¹⁸ was to determine whether the large building complex immediately east of the oldest freestanding square building in the center of the east quadrant of the site was a *khan*. In the 2008 season, parts of two rooms (Rooms A.1 and A.2)—possible cells of a *khan*—were excavated on the southeast side of the building complex. Bedrock was reached in both of these rooms and the ceramic evidence indicates that there was activity in the area of these rooms during the Early Islamic period (Umayyad, ca. seventh century), but the rooms as they now appear were constructed during the Mamluk period, ca. fourteenth century.

Rooms 1 and 2

This season, excavation was continued in the same two rooms (Rooms A.1 and A.2; primarily in Squares A.1 and A.2 respectively). The remaining unexcavated areas in both rooms were completely cleared to bedrock this season. Again, the ceramics from the earliest phase of construction confirmed that the rooms were originally constructed in the Early Islamic period (Umayyad) and reconstructed during the Mamluk period.

Field A. Squares 1 and 2

Room A.1: Northern Room

A basalt stone mill for grinding flour was found on the floor in the northern room. The Mamluk floor (the only clean Mamluk occupation layer found in the excavations) was made of nari with pieces of broken flint—ash was added, giving a grey color to the nari.¹⁹ Part of this room was a food preparation area. Later, the south part of the room was remodeled during the Ottoman period. Finds such as a grain silo and stone bins for grain suggest that the south part of the room was used for grain storage and animal-keeping in the Ottoman period (**Fig. 25**).

Room A.2 East: Exterior

To the east of the southernmost room (Room A.2) excavation continued. At the bottom of the excavation area a nari floor (A.2:88, 89) was found that was apparently constructed in the Late Byzantine/Early Umayyad period (late sixth century or early seventh century). Above this, a small stretch of wall constructed of ashlar was found that also appears to date from the Byzantine/Umayyad period. After a period of abandonment following the Byzantine/Early Islamic period, the Mamluks constructed an exterior wall in the north

¹⁸See n. 2 for the names of Jalul.

¹⁹Nari is a soil that is mineralogically an impure limestone. It is often used to create a hard-packed floor surface.

cell of Room A.1 in the fourteenth century. The Mamluk phase probably lasted from the fourteenth to the early sixteenth centuries. This was followed by another period of abandonment (late sixteenth to nineteenth centuries). During the nineteenth century, the Ottomans initiated new construction (the exterior portion of the southern room) by creating a fill (A.2:12) and adding walls and a silo. The Ottoman phase of this room went out of use sometime during the nineteenth century and the site was abandoned during the latter part of the nineteenth and throughout the twentieth centuries.

Room A.1: Western Section, Exterior of Northern Room

Excavations were also conducted outside of Room A.1 in a courtyard to the west. The earliest phase in this area was an early Mamluk (fourteenth century) surface consisting of a nari floor (A.1:112) with flint fragments. During the Mamluk period, a wall (A.1:103) was constructed in the northern part of this area that contained a niche. This wall was the south wall of a two-story room in Squares A.1 and 3 (see below). The wall dated to the fourteenth century and likely continued in use until the sixteenth century. The area was abandoned from the sixteenth to nineteenth centuries. Then in the early nineteenth century an Ottoman wall (A.1:1010) was constructed, along with a terrace and a pavement (A.1:107). The Ottoman terrace and a wall abutting up against the exterior side of the west wall of the northern room (of Square 1) were also found. The exact purpose of this wall will require further investigation. In the early twentieth century, a grave was dug into this Ottoman room. Surprisingly, in the grave, a well-preserved ceramic figurine (Object 717; **Fig. 40**) from the Iron Age II (ca. seventh century B.C.E.) era was found. The figurine was of a bearded male wearing an Egyptian-style *atef* crown (a high crown with an ostrich feather on each side). Such crowns are common on Ammonite statues and figurines of this period. They depict either Ammonite kings or deities. A similar figurine was found at nearby Tall Jawa a few years ago.

Field A. Square 3

Two-story Building

To the north of the Ottoman addition, another two-story building with cells or rooms was partly uncovered this season in Square A.3. The upper floor exhibited at least two use phases, one including a *tabun* (earthen oven). A large stone, carved with a Christian cross indicating secondary use, was also found in the upper story of the Mamluk building. A stone-lined opening (Arabic—*khwerah*) could be discerned in the floor of the upper room (**Figs. 26 and 27**). It led down to a lower story. The opening permitted grain to be dumped into the lower room, which was used for grain storage. By dropping a camera down the stone-lined opening, it could be seen that an opening into the lower grain storage room was located on the north side of the lower story.

Subsequently, this section was excavated 4.7 m, down to the level of the opening into the lower story. As the team excavated down to the entrance 3 m below, they discovered a huge cavity (cave or cistern?) to the east and another cave to the north. These were at different levels. The cave was entered and a gate was seen to the west, but we did not excavate the cave this season. The eastern opening was not entered this season, but it was examined superficially through stone openings.

An arched opening was discovered that led into a small entrance room that, in turn, led into the larger, lower-story room. Even though there were considerable Mamluk ceramics, the date of this arched doorway is still uncertain. This is the earliest opening into the lower story from the north side. Later, during the Mamluk period, the entrance room was reduced in size into a small stone-lined cubical entrance room (approximately 1.5 m). Access to the lower story was now through a rectangular doorway, framed by stone doorjams, a large stone lintel, and a stone threshold with a water-drainage channel (**Fig. 28**). This rectangular door was constructed in the Mamluk period and served as an access to the granary. Still later, the rectangular doorway was reduced to a small square doorway, also dating to the Mamluk period. Grain could be shoveled out of the room from this small square access door. (It should not be forgotten that an earlier door from the original construction of the lower story [Late Byzantine/Early Umayyad period] was constructed to the west, although we have not excavated this area yet. This is evident from the presence of a blocked archway on the west side of the lower story.)

The large (4 x 4 m) lower-story room (**Pl. 9**) was built with stone walls and contained more than 1 m of fill that had accumulated by water running into the room over the centuries after the room went out of use. The ceiling consisted of five stone arches (north to south), with corbelling between the arches. The western-most arch is clearly of a different construction. It could belong to another phase of construction in the southwest corner of the room. It appears to be connected to four ashlar in the corner of the room. However, more excavation is needed for a more complete analysis. At least two architectural phases can be seen in the room, which was probably initially constructed in the late Byzantine/early Umayyad period. It was expanded on the west in the early Mamluk period, with the main entrance at that time also to the west. In the late Mamluk period, that entrance was blocked and the western side of the room was divided into two pens (A.3:13/17) for grain. Tethering holes could be seen in the stones to the south, suggesting that animals were kept in the room at one point. During the last use phase, the only access to the room was through the small northern entrance room, of which at least three phases can be detected. Additionally, at least two Mamluk floors were found in the west side of the large room: the later, upper one was made of hard-packed earth (A.3:13/10 and 13/11), and the lower, earlier floor made of small flagstone (A.3:13/18).

Square A.3: North Room

To the north of the two-story building (in the western part of Square A.3) was another room, which was at the same level as the upper story of the two-

story building. Its floor consisted of large flagstones (A.3:7). In a later period, probably during the twentieth century, a robber's trench was dug to the level of the arched entrance to the lower story and most of the flagstones of the upper northern room were removed.

Square A.3: East Room

Excavations were begun in the east part of Square A.3. This excavation exposed a room located immediately north of the room in Square A.1. Excavations were discontinued after a few days so that personnel could be committed to excavating the two-story building in Square A.3. Nevertheless, ceramics indicate that this room may have been constructed initially in the Umayyad period (as seen elsewhere) and reconstructed during the Mamluk period.

Summary

The structures excavated thus far in JIV appear to support the hypothesis that they are a part of a much larger *khan* or *caravanserai*, which would have served caravans en route across the region. The two-story building and associated complex of rooms date primarily to the Mamluk period (fourteenth century), with signs of much earlier Late Byzantine/Early Islamic (sixth-seventh centuries), as well as later Ottoman (nineteenth century), occupational activity.



Figure 25. Southern part of the Northern Room A.1 in the JIV.

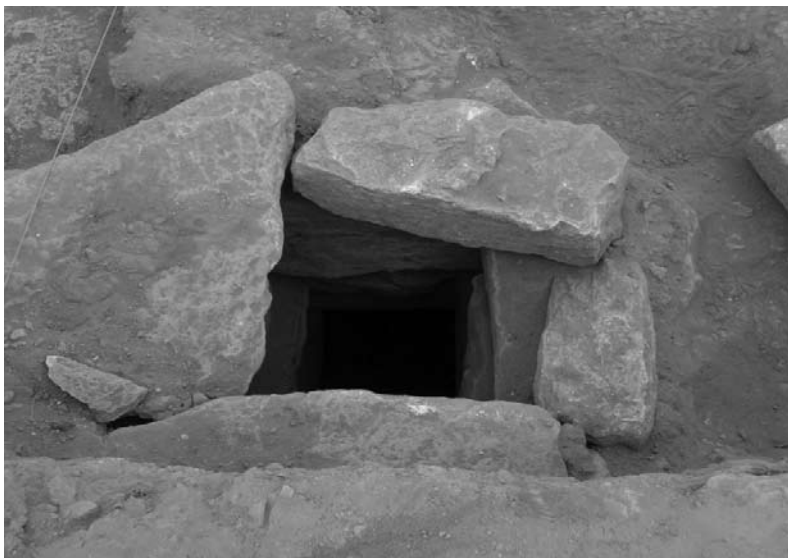


Figure 26. A stone-lined opening in the upper level of a two-story building in the JIV Square.



Figure 27. A close-up of the stone-lined opening in upper level of two-story building in JIV Square.



Figure 28. Door to the granary in lower-level of the two-story building in JIV Square.

GPS Mapping Studies

KAREN BORSTAD
Seattle, Washington

THEODORE BURGH
University of North Carolina
Wilmington, North Carolina

Mapping of Cisterns and Water Catchments

The water-systems study was prompted by the discovery of five ground-level cistern openings along the ancient built road, found in 2007, that passes from northwest to southeast along the western side of Tall Jalul.²⁰ In addition, two cisterns on the north foot of the tell were known, as was a large unexcavated cistern on top of the tell. Pottery sherds, collected from the ancient road site in 2007, indicated use of the road from Iron Age to Byzantine times, and possibly into the Islamic period.

The current Mapping Project, under the direction of Borstad and Burgh, led to a discovery of twenty-five cisterns within 500 m of the tell, located predominantly on the north and south sides. Due to time constraints only half of the north side, which is devoid of houses or agricultural plots, was surveyed thoroughly. An olive grove and a private home occupies the area east of the tell, and new homes of the modern Jalul village occupy the immediate west side of the tell. The team conducted a cursory look in both areas. Following are brief descriptions of the types of cisterns found during the survey:

- Thirteen are a constructed hole in the ground, often difficult to see from more than 5-10 m away (**Fig. 29**).
- Five are capped. The cap is a cement square structure, less than 1 m high, often with a metal cover over the opening. Three of these had one or more external basins (**Fig. 30**).
- Seven are collapsed (**Fig. 31**).

During the mapping of the cisterns, it became apparent that the topography southeast and north of the tell formed natural basins and terraces. The appearances of these areas are striking in terms of their distinct shapes, the depth of the basins, and the vegetation variety and color, especially on the south side of the tell. Sheep herds have been observed in the spring season drinking the standing water on the south terraces. At the north of the tell, a striking feature is the high concentration of evenly spaced and uniform-sized rock concentrated at the lowest point of the basins. Borstad and Burgh estimated at least four of these natural basins on the north side of the tell and two prominent terraces and three basins on the south side. Due to time and equipment constraints, these areas were noted, but further detailed terrain mapping will be conducted next season.

²⁰Cf. "Tall Jalul," *Munjaqat* 8 (2007): 74-75.

Cisterns with Water Management Features

Four cisterns on the north side of the tell and one on the south side displayed what appeared to be human-made raised earth structures, reinforced with rock, which form a steep drain-like area with the cistern opening at the lowest point. They appear to be for the purpose of funneling flowing surface or rain water into the cistern. Borstad and Burgh mapped these raised structures for future hydrographical analysis and three-dimensional visualization.

The 2009 Mapping Project revealed what appears to be a significant concentration of cisterns and other water management systems around the tell and JIV. The high proportion of cisterns constructed at ground level is a unique feature that suggests the long-term collection of rainwater or possibly more plentiful surface water flow. These cisterns are difficult to date. However, the capped cisterns suggest current use; at least one ground-level cistern contained deep water in June. Preliminary comparative research suggests that the sites with similar concentrations of cisterns are in remote areas and *caravanserais* close to the desert fringe. Cisterns ring the JIV ruins and residents today buy water from three wells in the immediate area. In spite of the fact that Jalul has no visible surface spring, the extensive water collection/storage system documented in this preliminary survey shows intensive use of Jalul's natural landscape and geology from ancient occupation of the tell and the JIV to the present day.

Mapping of the Jalul Islamic Village

The primary goal of the 2009 season of the Tall Jalul Mapping Project was to devise and test a method for measuring, recording, and presenting the architectural features within the JIV at the southern foot of the tell. The JIV is defined as all structures south of the tell of ancient Jalul and is thought to have been occupied from Early Islamic through Ottoman times (**Plate 2**). This area is called "old Jalul" by inhabitants of the modern Jalul village, which lies mainly to the west of the tell. The Mapping Project is in conjunction with ongoing excavations of ruins at the northeastern corner of the JIV. The mapping team used an aerial photo to locate the outlines of subterranean structures and took GPS points at the outer corners of all structures with an identifiable "footprint." Special architectural features within the structures such as arches and lintels were mapped separately (**Fig. 32**). An analysis of occupation and use patterning through time in the JIV, plus three-dimensional visualization, is the eventual goal of the Mapping Project. This report will briefly discuss the structures measured in 2009 as a preliminary test of the mapping methodology.

Using a rover unit of the ProMark 3 GPS system (cf. **Pl. 4**), twenty-two structures were located and their locations recorded. Four of the measured buildings are complete to their roof lines and appear to be the most recently built, as exemplified by Building 1 (**Fig. 33**). Building 1 is intact, but the amount of debris deposited inside the building's only room and the lack of window coverings and doors indicates that the structure has not been occupied for some time. In addition to the window and door openings on the east and

west sides, the south wall connects via a door to a small, enclosed courtyard. Embedded stones around the perimeter of the rectangular-shaped space delineate the area. Building 3 (**Fig. 34**), another of the four recent structures, is located west of Building 1. It appears that this structure is currently used in some capacity (e.g., storage), as the metal door in the front of the building is padlocked. A keystone arch frames the metal door. An outer staircase runs to a second set of stairs that was built into the east wall. The seven stairs in the wall lead to the flat roof. The east and west walls have window openings that have been filled in with stones and mortar. Another structure, Building 5 (**Fig. 35**), located west of Buildings 1 and 3, is also rectangular, but is not as tall as Building 3. It has more of a broad-room shape. Currently, the building does not have a roof, but the walls are for the most part intact. The east and west walls have three doors and three windows. Inside the structure, walls divide the activity space into individual rooms, but because of deterioration, precise measurements are uncertain at this time. There had been recent human activity around the outside of Building 3, but no evidence of occupation within. The construction of these buildings appears to be contemporary with several complete structures within the JIV that were occupied in 2009. Interviews with Jalul inhabitants are likely to help date their historical phase within the JIV.

One unusual feature of the JIV was a wall running from a ruined structure to a cave entrance located at the northwestern corner. It appears that this cave is partly natural and partly enhanced for habitation; it continues under the modern road in the direction of the tell. A second cave entrance was found just east of the excavation squares (**Fig. 36**). The remaining structure measured in 2009 had arches and courtyards that appear to be typical of the partially buried structures visible at the west end of the JIV (**Fig. 37**). The locations of their outer wall corners were occasionally made from estimated assessments of the logical continuation line of visible walls. Accurate measurements will be possible only through excavation.

It is apparent that mapping the complete JIV, following the methods used in 2009, will provide at least a rough outline of its occupational history. In addition to maps that highlight characteristic architectural features such as arches, interviews with local inhabitants should help to identify buildings that have been removed. Such maps could certainly be used to guide the choice of further excavation areas. Presentation of the JIV's occupational history through three-dimensional visualization would require excavation in order to locate and measure accurately the foundations of the structures, plus their estimated height when in use.



Figure 29. Constructed cistern along south end of ancient road.



Figure 30. Capped cistern with external basin south of the tell.



Figure 31. A collapsed cistern south of the tell.



Figure 32. An arch in a building in the JIV.



Figure 33. Building 1 in the JIV.



Figure 34. Building 3 in the JIV.



Figure 35. Building 5 in the JIV.



Figure 36. A cave entrance in the JIV.



Figure 37. An arch of Building 9 in the JIV.

Tall Jalul Epigraphic Finds, 2009: Preliminary Report

ROY E. GANE
Andrews University

During the 2009 excavation season at Tall Jalul, Jordan, three small inscribed objects were discovered: a fragment of an ostrakon, half of a stamp seal, and a complete ceramic bulla. Preliminary descriptions of these objects are included here, pending presentation and analysis of their texts in a forthcoming article.

Ceramic Bulla

Registration number: JO745 (=Object 745)

Discovery location: Field D, Square 10; balk removal

Discovery date: 10 June 2009

Material: clay

Size of inscribed area: approximate width 1.9 cm, height 1.6 cm

Location and nature of inscription: raised letters on one side of a roughly round piece of clay, produced by a stamped seal impression

State of preservation: complete

Language of inscription: probably Ammonite

Half of a Stamp Seal

Registration number: JO647 (Object 647)

Discovery location: Field D, Square 1; balk removal

Discovery date: 27 May 2009

Material: quartz

Size of inscribed area: approximate width 1.9 cm, height 1.8 cm

Location and nature of inscription: etched into flat surface of a stamp seal, with letters backward to produce correct impression when stamped onto clay

State of preservation: incomplete, with the top half of the seal broken away at the string hole through the object

Language of inscription: probably Ammonite

Fragment of Ostrakon

Registration number: JO659 (=Object 659)

Discovery location: Field D, Square 2; balk removal

Discovery date: 29 May, 2009

Size of inscribed area: approximate width 1.8 cm, height 1.6 cm

Location and nature of inscription: inside of a sherd, lightly scratched into its surface, with letters lighter in color, perhaps because ink that is now gone has preserved under it the original color of the ceramic

State of preservation: incomplete

Language of inscription: probably Ammonite

Small Finds

PAUL RAY
Andrews University

The 2009 excavation season at Jalul yielded 150 museum-quality objects that were registered with the Department of Antiquities of Jordan (**Pl. 10**). Numerous variously sized fragments of other artifacts that are very common such as ballistics (sling stones) and domestic stone tools were recorded in terms of such identifiers as their find spots and a photo was taken of each so that a careful record of every object that was actually found is taken into account and can be used in reconstructing the history of ancient activity of the tell and the village at its base.

Since, for the most part, objects found on the tell were used during the Iron Age II and Persian periods, while those found at the village were from later periods (Byzantine through Ottoman), we will present them separately.

Tall Jalul

On the tell, 128 objects were found. These objects fall within nine categories of artifacts. These categories may be subdivided into two major groupings: those connected with the local, extended families living at the site, and those connected with wider, more community-related activities.

The largest category of family-related objects consisted of items connected with domestic activities. These include eight grinders, seven pestles, six flint blades, three stone and one ceramic bowl, a mortar, a pounder, two stone weights, and a bone tool. Twenty-eight objects are connected with cottage-industry craft specialization, specifically textile production. They include twelve spindle whorls, three loom weights, five weaving-pattern spatula fragments, five bone awls, three fibula, and a needle fragment. Eleven beads and five pendants make a total of sixteen jewelry-related items. Only one cosmetic-related artifact was found this season, consisting of a fragment of a limestone palette. Recreational artifacts consisted of a gaming piece and two buzz toys.

In terms of artifacts related to the community, the largest category was cultic or religiously oriented artifacts. They include twenty-one figurines and fragments of figurines including Objects 680, 681, 724, and 884 (**Figs. 38 and 39**), three *kernos* fragments, part of an incense stand, a vessel fragment with a snake in relief, and a basalt vessel with a foot in the shape of a lion's paw (Object 716; **Pl. 11**). Administrative-related artifacts consisted of five seals, one ostrakon, and a bulla. Mercantile activities are perhaps represented by two

weights, but these have yet to be connected with known values. Finally, there were thirteen objects connected with warfare, including seven ballistics (sling stones), three arrowheads (two made of bronze and one of iron), two iron spear-point fragments, and a piece of bronze scale armor. In addition, there is a bone handle and another toy that, at the present time, are unidentified in terms of their specific use.

Jalul Islamic Village

Twenty-two artifacts were found at JIV. As on the tell, the largest number of artifacts were connected with domestic activity. These included an upper and lower millstone, a roof roller, a glass-bowl fragment, a small pestle and grinding platform, two whetstones, an iron spike, a roof tile, and an ornate furniture leg, possibly made of marble. The next largest category is jewelry artifacts including four bangle (bracelet and anklet) fragments, two rings, a bead, and half of a glass medallion. Objects related to textile production include an awl, a spindle whorl, and a spindle rest. Finally, there was one cultic or religiously related artifact that consisted of the head of an Iron Age II male Ammonite figurine with an *atef* crown on its head (**Fig. 40**), that had, no doubt, found its way down from the tell.



Figure 38. Ceramic female figurine fragment (Object 681).



Figure 39. Ceramic figurine fragment (Object 724).



Figure 40. Ceramic male figurine head with *atef* crown (Object 717).

Conclusion

Upon returning to Andrews University, research continues on the finds of this year's excavation of Tall Jalul. Each object brought from Tall Jalul to the Institute of Archaeology on a one-year loan from the Department of Antiquities, Jordan, has been drawn by an artist (**Fig. 41**) and photographed. These small finds are on display in the Horn Archaeological Museum for the enjoyment of the public and will soon be returned to Jordan. Pottery is in the process of being drawn and recorded. We are using a new system, a three-dimensional scanner (**Pl. 12**), for recording the diagnostic pot sherds found in the field. So far nearly all of the sherds from the JIV have been recorded and those from Fields C, D, and G are next on the agenda.

The rewarding results of the 2009 archaeological season have made this one of our best seasons in the field. Both Fields C and D further confirmed the growing evidence supporting a vigorous Late Iron II/Persian-period settlement, complete with residential and administrative complexes. This further confirms the emerging picture of a substantial occupation during the Persian period in Transjordan. The articulation of the eighth-century B.C.E. southern city wall and the magnificently preserved water channel of the seventh century B.C.E. are among the most important finds to date. These findings, along with the large unexcavated depression, probably a water system, on the tell, as well as numerous smaller cisterns and pools, delineated by the GPS Mapping Project, are indicative of a sophisticated water reservoir complex unique to the region. Excavations conducted in the JIV continue to support the possibility of a *khan* or roadside inn during the later phases of occupation at the site.



Figure 41. Art student, Zech Ray, drawing small finds from 2009 season.