TAYINAT ARCHAEOLOGICAL PROJECT
2014 SEASONAL REPORT

[Not for Publication]

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INTRODUCTION

The Tayinat Archaeological Project (TAP) completed its tenth season of field research at Tell Tayinat in 2014, conducted between June 6 and August 4. The field excavations were followed by two months of laboratory analysis and research, conducted between September 15 and November 14, 2014, in preparation of reports and conference presentations on the results of the 2014 season.

The 2014 TAP senior staff consisted of Dr. Timothy Harrison (Project Director), Dr. Elif Denel (Assistant Director and Field 7 Operations), Dr. Stephen Batiuk (Senior Field Archaeologist), Dr. Lynn Welton (Field 1 Operations), Dr. Jack P. Dessel (Field 5 Operations), Dr. James Osborne (Lower Town Survey), Dr. Mark Weeden (Epigrapher), Doğa Karakaya (Paleoethnobotanical Specialist), Dr. Fiona Haughey (Artifact Illustrator and Registrar), Julie Unruh (Artifact Conservator), and Jennifer Jackson (Photographer). The project was assisted by seven graduate students from Johns Hopkins University, Koç University, and the University of Toronto. Mr. Ömer Çelik served as government representative on behalf of the Directorate of Cultural Heritage and Museums.

The primary objectives of the 2014 TAP field season were as follows: (1) conduct an intensive systematic surface survey of the lower town settlement; (2) implement the 'soft capping' conservation program for the monumental mudbrick architecture on the Neo-Hittite citadel, in particular Temple XVI in Field 2; (3) create pathways and install signage as part of the planned archaeological park; (4) complete analyses of the artifact assemblages recovered from previous field seasons in Fields 1, 5, and 7; and (5) complete the stabilization and conservation of the extensive artifact assemblages accumulated from recent field seasons, most notably the artifacts and cache of cuneiform tablets recovered from Temple XVI in Field 2.

LOWER TOWN SURFACE SURVEY (J. OSBORNE)

A primary objective of the 2014 TAP field season was to conduct an intensive systematic surface survey of the extensive lower town settlement at Tayinat. An initial surface survey was carried out in this area under the Tayinat Survey permit in 1999, and in subsequent seasons a series of remote sensing surveys (primarily Geomagnetometry) and a coring program have also been conducted in this area. These preliminary investigations have indicated a rich and extensive lower settlement, consisting primarily of residential and industrial activity areas, extending to the north, east and south of the Neo-Hittite citadel. In preparation for future research in this sector of the site, the 2014 investigations sought to document the area to the fullest extent possible from the artifacts present on the surface of the ground. The survey had the following objectives: (1) map the precise *areal extent* of the lower settlement, determined by the presence of surface artifacts, (2) measure the *density of settlement* in the area, determined by the frequency of surface artifacts as measured in pottery counts and weights; and (3) identify differences in *uses of space* across the lower town, or neighborhoods, determined by the types of ceramics and other objects found in different areas.

To understand the distribution of artifacts on the lower town's surface, this sector of the site was divided into 10 x 10 m units distributed 20 m apart, or 25 units per hectare. At roughly 16 ha in size, as estimated from satellite imagery, the lower town settlement area was divided into approximately 400 units. The 2014 survey completed the investigation of 239 of these 400 units, including several dozen that appear to be just outside the edge of the ancient settlement (**Resim 1**). These investigations took place over ten days of field work. The units explored were predominantly located in the fields north and south of the citadel mound. The quantity of ceramics located in these units will be used to determine the size and density of the various sectors, possibly neighborhoods, which made up the lower town (**Resim 2**). Of the total number of sherds identified, 4710 were diagnostic pieces that can be dated to sub-phases of the Iron Age

and used to map out the settlement history of the lower town. This material will also be helpful in identifying the different uses of space in the lower town. In addition to the pottery, 92 objects were identified, including a wealth of basalt grinding stones and quern stones, and ceramic loom weights, confirming the domestic character of the lower settlement. Nine pieces of unworked ivory suggest the possible existence of ivory workshops in this sector as well.

MUDBRICK ARCHITECTURAL CONSERVATION PROGRAM (S. BATIUK)

An assessment of the monumental mud brick architecture in the temple precinct on the citadel conducted in 2012 by Molly Lambert, the project architectural conservator, produced a treatment strategy and the development of a comprehensive conservation program. Following preliminary cleaning and preparations in 2012 and 2013, conservation treatment and consolidation of the Tayinat Temples (Buildings II and XVI) commenced in 2014 (see Fields 1 and 2, in **Resim 3**). A method called "Soft Capping" was employed, based on the results of analyses conducted as part of the 2012 assessment. This method does not involve reconstruction of a building's architecture, but rather the creation of a reversible mud brick "shell" around the excavated remains, which are then in-filled with earth. The soft capping approach preserves the shape of the original structure for visitors to see, while also protecting the existing architectural remains by essentially backfilling them, with a layer of geotextile separating—and thus preserving—the archaeological remains from the encompassing earth and mud brick shell. The 2014 season saw completion of this procedure for Temple XVI (**Resim 4-8**), and preparation of the structural remains of Building II for similar treatment in 2015.

The conservation of mudbrick is a difficult and delicate task given the fragile nature of the material involved, which is susceptible numerous and difficult to control environmental factors, such as rainfall, humidity, wind erosion, and salt efflorescence. If the bricks are not fired, or are over-fired during destruction, these factors become all the more acute, and exposed

mudbricks can degenerate at an accelerated rate. The best way to preserve excavated mudbrick generally is to rebury it. Of course, doing so, denies the public the opportunity to see the buildings and monuments they represent. Reconstructing mudbrick structures is even more difficult than conservation, due to the changes in shape walls can undergo as a result of peri-depositional events (i.e., fires), or post-depositional environmental factors (i.e., water table and salt induced chemical reactions, vegetation and root growth). Additionally, finding a bonding agent that will enable new material to adhere to old is also difficult, and can lead to further destruction by accelerating erosional processes.

We began by preparing two thousand mudbricks in three different sizes: 40 x 30 x 15 cm (1000), 30 x 15 x 15 cm (800), and 40 x 40 x 10 cm (200). The mudbricks were made of soil collected from the excavation sift piles. The soil was combined with water, with chaff introduced as temper; the mix was then poured into a metal mold. After drying for several days, the bricks were then transported to the site and laid out to dry further.

The first step in the procedure involved creating the soft cap 'shell' using the narrow (30 x 15 x 15 cm) mudbricks, which were laid down flanking both sides of each wall in the building (creating the smallest footprint possible) (**Resim 4**-**5**). At the north end of the east wall, the larger 30 x 40 cm bricks were laid against the exterior face of the wall for stability. The encompassing shell was built up around the ancient remains, using multiple courses of bricks and a chaff tempered mud mortar until they were completely encased. The enclosed remains were then covered with geotextile, followed by a layer of earth to help stabilize the humidity within the capping, and absorb any excess water that might penetrate the shell (**Resim 5**). The geotextile also ensures that the preserved remains are able to 'breath', and any trapped moisture will evaporate into the overburden, or drain off to the side.

The larger mudbricks (30 x 40 x 15 cm) were then used to cap the top of the structure, creating a solid mudbrick construction outlining the shape of the original building. The top layer of bricks was given a slight rise in the center to facilitate the drainage of rainwater. All of the walls were then covered with a layer of mud plaster to provide an extra layer of protection, and leave a finer finish to the surface of the walls (**Resim 6**).

Once the building's walls were soft capped, a number of features were added, including a wooden threshold between the portico and the main cella, and white plastering on the exterior of the building, to replicate the construction techniques originally used in the construction of the building. The podium and entry porch were also capped in the same manner, using the 40 x 40 x 10 cm bricks, which matched the dimensions of the original bricks. Both the podium and the portico were also given a slight rise in the center to prevent rainwater from pooling. The platform was covered with a whitewashed plaster, based on what was identified during the excavations. In an effort to preserve and replicate the fine white plaster of the interior surface of the building, as identified during the 2009 excavations, we covered the original surface with geotextile, leveled the area with earth and then covered it with fine white gravel to facilitate drainage (**Resim 7-8**).

PATHWAYS AND SIGNAGE

In conjunction with the soft capping procedure, a pathway and small viewing platform was constructed overlooking Temple XVI from the west, as part of the planned Tayinat Archaeological Park. A single pathway, 1.2 m wide and 240 m in length, was laid out, extending north from the southern entrance to the site, encircling Fields 1 and 2, and ending at the viewing platform, 5 x 5 m in size (**Resim 9-11**). The pathway surface was first prepared and leveled, and then approximately 1200 decorated pavers were laid down in two parallel rows. The space between the two rows was then filled with coarse white gravel. A fence was also installed at the entrance to the site, with a gate providing access to the pathway, and three signs were erected at

key points along the pathway (**Resim 12-15**), including a marble sign outside the main gate, constructed according to Kültür Bakanlığı specifications.

LUWIAN MONUMENTS AND SCULPTURE CONSERVATION AND RESTORATION

The 2014 season also saw commencement of a project to restore the Hieroglyphic Luwian stelae and sculptures that flanked the monumental citadel gate complex and stood in the temple precinct at Tayinat. The primary goal of the 2014 season was to document systematically the thousands of basalt fragments recovered to date (inventorying, registration and digital imaging) in preparation for a comprehensive restoration program. More than 2000 basalt fragments were documented, and we anticipate beginning restoration in 2015. In conjunction with this restoration effort, we plan to produce life-size replicas of these monuments with the aim of installing them *in situ* on site as part of the planned Archaeological Park. Permission to create these replicas was secured from the Ministry during the 2014 season, and we plan to begin producing replicas of the intact sculptures in 2015.

ARTIFACT CONSERVATION (J. UNRUH)

Artifact conservation was performed as part of the 2014 TAP field season, between July 1 and July14. The conservation effort included treatment of artifacts recovered during the lower town survey, continued analysis of the small finds from Temple XVI, further cleaning of cuneiform tablets, and assistance with the ongoing installation of gallery displays in the new Hatay Archaeology Museum.

Temple XVI Objects

Work to identify the objects excavated in Squares 28 and 38 of Building XVI has progressed slowly but steadily. In 2012, Square 28 and 39 metal sample lots were described and organized in a spreadsheet that would allow easy recognition of repeated features, unusual features, and grouping by features such as sheet thicknesses, associated wood, or nail shank

diameters. Though the sheer number of metal fragments precluded detailed descriptions of every fragment, consistent features could now be confirmed and quantified. That work provided a basis for study in 2014.

It has been observed since its recovery that the material includes features that are visually similar to elements of furniture depicted on stone reliefs. Those fragments, plus the clear association with worked wood, textile and possible bone or ivory inlay, continue to suggest furniture or small furnishings such as boxes, and that is now the working hypothesis. The goal of the work onsite was to compile information to produce an updated summary report that could be sent to furniture specialists for comment. With limited time, Square 38 material was targeted. Many Square 38 lots were re-photographed and several sample lots were re-examined in more detail. Three fragments were x-rayed along with the shield fragments (see below). A document outlining construction observations and parallels with furniture is forthcoming.

Iron Shield TT 1926

Three shield fragments (Registration # 1926) were successfully x-rayed at Mozaik Hastanesi in Hatay (**Resim 16-17**). The three fragments were chosen to answer specific questions regarding:

- the spacing and dimensions of the bosses around the shield perimeter,
- existence and spacing of a second ring of bosses near the center,
- the existence and construction details of an omphalos,
- the configuration of what we have been calling "straps", and specifically whether they continue across the entire face of the shield, and
- whether small metal pieces at the edges, purpose unknown, are part of the shield or part of a different object.

At first viewing, it appears the x-rays will answer these questions, and it appears additional information may be present.

Cuneiform Tablet Cleaning

Jacob Lauinger, project epigrapher, requested further cleaning of the following five tablet fragments: TT Reg. # 1927 (AM Env. # 18826), TT Reg. # 1899 (AM Env. # 18828), TT Reg. # 1921 (AM Env. # 18827), TT Reg. # 1930 (AM Env. # 18829), and TT Reg. # 1701 (AM Env. # unknown). The work was performed in an office space in the old museum. One hour of a first day plus two full additional days were spent mechanically cleaning the five tablet fragments overall, after which the tablets were needed for installation in the new museum. Overall, it is believed that most areas of these tablets cannot be cleaned much further. Depending on the tablet and the area, it may be possible to target specific lines or characters for further focused cleaning if the epigrapher believes that is necessary.

In 2012, Lauinger realized that TT Reg. # 1701 joined TT Reg. # 1923. The fragments were adhered in 2013. The pieces were found detached in 2014. They were reattached at the new museum prior to installation.

Hatay Archaeological Museum Display Installation

At the beginning of the season, installation of the Tayinat exhibit at the new Hatay Archaeology Museum was stalled. Because the Tayinat installation was delayed, other exhibits were assessed as an indication of the conditions and mounts that might be used in the Tayinat displays.

In 2013, after extensive consultations with multiple members of the contract company responsible for the museum installation, a mount, deck and vitrine for the Esarhaddon treaty tablet (Registration #1801) were designed. A tablet mount was constructed according to that

plan, and secured with the tablet at a 30-degree angle to a base with four bolts, and installed in the vitrin.

The Tayinat basalt statues, column bases, and stone reliefs had already been installed in the new museum prior to the start of the Tayinat field season. The inlaid eyes of Suppiluliuma (Registration #2500) were examined for any deterioration due to transport, drilling and mounting. The eyes were examined in person, and photos taken at the new museum were compared to photos taken in July, 2013, at the old museum. Very little, if any, discernable damage could be detected. During the related cleaning of the statue, possible red pigment was discovered behind the proper left ear, and under the overhanging ledge of the hair on the proper left side.

CONCLUDING OBSERVATIONS

The Tayinat Archaeological Project's 2014 investigations continued to document the rich archaeological remains of the succession of Early Bronze and Iron Age settlements that occupied the site. The 2014 season saw the successful initiation of research in the lower town settlement, which promises to provide critically important knowledge about the residential and industrial activity areas of the ancient settlement, and the ongoing analyses of the wealth of artifactual remains recovered during previous excavation seasons.

The 2014 season also saw implementation of the conservation program to preserve the monumental mudbrick architecture that formed the royal palaces and temples of Tayinat's Neo-Hittite citadel. Together with the installation of a pathway, viewing platform, and signage, this effort represented the first phase in the development of the planned Tayinat Archaeological Park, with further expansion anticipated in future field seasons. The restoration of the Hieroglyphic Luwian stelae and sculptures that flanked the monumental citadel gate complex and stood in the

temple precinct will be an important component of this ongoing effort, with replicas planned for installation onsite once restoration is complete.

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