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PRELIMINARY RESULTS OF THE RURAL LANDSCAPES OF IRON AGE IMPERIAL MESOPOTAMIA PROJECT'S 2022–2023 SEASONS AT QACH RRESH (KURDISTAN REGION OF IRAQ)

By Petra M. Creamer, Kyra Kaercher, Glynnis Maynard, Nader Babakr, Ahmad Jodat, Elise J. Laugier, Laurel Poolman, Lucas Proctor, Jennifer Swerida, Parker Zane and Sophie Vo

Abstract

This article presents the preliminary results of investigations at the site of Qach Rresh on the Erbil Plain of the Kurdistan Region of Iraq, conducted by the Rural Landscapes of Iron Age Imperial Mesopotamia project (RLIIM). The site of Qach Rresh is estimated to have been founded in the mid–eighth century B.C.E., at the height of the Assyrian Empire, and continued to be utilised in varying capacity until the onset of the Hellenistic period (*c.* 320 B.C.E.). Magnetic gradiometry survey and excavations currently suggest that Qach Rresh served as a rural administrative/storage center during the Assyrian Empire, which fell into disrepair following the empire's collapse. The following post-Assyrian/Iron Age III period then saw several of its large buildings repurposed as refuse areas containing debris from largely domestic contexts. Qach Rresh is the first rural settlement investigated within the Assyrian imperial heartland. The results from this project seem to indicate a high degree of Assyrian state or elite involvement in the countryside, serving as a critical first foray into assessing the relationship between urban governing centers and their "hinterlands".

Keywords: Qach Rresh; Kurdistan Region of Iraq; Assyria; Iron Age; Mesopotamia; post-Assyrian

Introduction

The Erbil Plain of the Kurdistan Region of Iraq, surrounding the modern-day capital of Erbil, has been the subject of much archaeological attention in the last decade (Creamer *et al.* 2024; MacGinnis and Shepperson 2015; Masetti-Rouault 2022, 2017; Molist *et al.* 2019; Peyronel *et al.* 2019; Schwartz *et al.* 2022; Stein *et al.* 2023; Ur *et al.* 2021). Many of these investigations have taken place in the well-watered southeastern quadrant of the plain, which benefits from its proximity to the Upper Zab River and its tributaries. To those working in the Late Bronze and Iron Ages, this area holds particular interest as the easternmost extent of the Assyrian Heartland – the triangle of land between Aššur (Qalat Sherqat), Nineveh (Mosul), and Arbela (Erbil) (Fig. 1).

The Rural Landscapes of Iron Age Imperial Mesopotamia project (RLIIM)[1] of Emory University seeks to understand how imperial polities of ancient Mesopotamia interacted with the landscape via policies of resource extraction, population resettlement, and centralized

[1] The RLIIM team wishes to express our gratitude for the continued support of our colleagues in the Antiquities Directorates of the KRG. We would especially like to acknowledge Kak Kaify Mustafa Ali, the director of the General Directorate of Antiquities, and Dr. Nader Babakr, director of the Erbil Directorate of Antiquities. We also extend our thanks to Jason Ur, director of the Erbil Plain Archaeological Survey, for facilitating early inquiries into the site. We especially acknowledge EPAS team members Rocco Palermo, Mohammed "Ako" Lashkri, Khalil Barzinjy, Pshtiwan Ahmed, and Aram Amin for their support and knowledge. Jesse Casana and the members of the SPARC Lab at Dartmouth were critical in supporting the 2021 magnetic gradiometry investigations at Qach Rresh. Nathalie Brusgaard offered her valuable time and knowledge to analyze select specimens of zooarchaeological material from the 2022 season. Jordan Brown allowed RLIIM use of a soil corer for testing areas of Qach Rresh for anthropogenic material in 2023. Khazan Latif, Zhyan Lashkri, Ahmad Jodat, and Pshtiwan Ahmed served as magnetometry assistants in 2021. The 2022 RLIIM team consisted of Petra Creamer (director and remote sensing specialist), Ahmad Jodat (project representative), Kyra Kaercher (assistant director and ceramicist), Glynnis Maynard (excavator), Elise Laugier (microbotanical specialist), Rashid "Bapir" Rowanduzi (project facilitator and transportation specialist), and workmen Hallo Juma Anwar, Mulud Azad, Nawzad Said, Muhammed Dler, and Ali Nawzad Said. The 2023 team consisted of Petra Creamer (director and remote sensing specialist), Ahmad Jodat (project representative), Kyra Kaercher (associate director and ceramicist), Glynnis Maynard (registrar and excavator), Elise Laugier (microbotanical specialist), Lucas Proctor (macrobotanical specialist and excavator), Jennifer Swerida (excavator), Laurel Poolman (zooarchaeologist), Parker Zane (excavator), Sophie Vo (excavator), Rashid "Bapir" Rowanduzi (project facilitator and transportation specialist), and workmen Hallo Juma Anwar, Tayib Khalid Muhammed, Malik Sadradin, Sabir Ebrahim, Fryad Said Taha, and Ali Nawzad Said. Funding

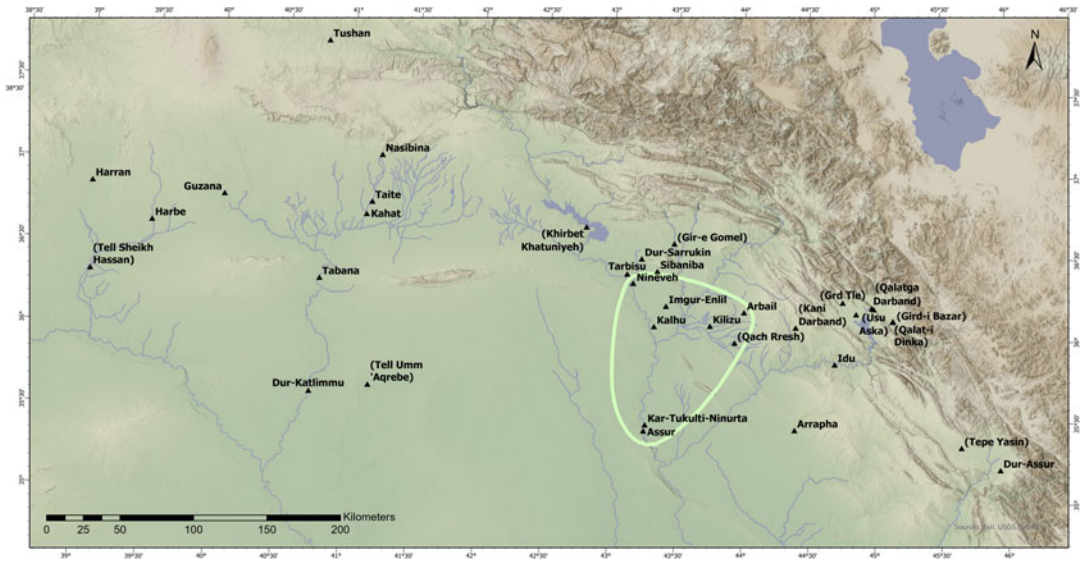

Fig. 1. Map showing Qach Rresh and the surrounding region, including other sites mentioned in text. Assyrian Heartland highlighted

infrastructure. Investigating the tension between bottom-up resistance and top-down control outside of more often investigated urban contexts is a gateway to understanding the fraught relationships of power and resilience throughout spaces under imperial hegemony. To this end, we began our initial investigations into the site of Qach Rresh (see Fig. 1). Qach Rresh is located 14 km south of Erbil's city limits and 2 km north of the modern town of Trpa Spiyan. The site lies on an elevated, well-drained plain between two tributaries of the Chai Kurdara, itself a tributary of the Upper Zab River. The site's area receives between 500–400 mm of precipitation per year with high interannual variability (Guest and al-Rawi 1966; Zohary 1973). Today, much of the surrounding Erbil Plain is cultivated and has been for millennia. Herds of sheep and goats are grazed on fallow fields, along canals, and on distant hillsides with grassland vegetation (Ghazanfar and McDaniel 2016).

Occupation at the site is estimated to date between the eighth–fourth centuries B.C.E. (Iron Age II and III). This spans the height of the Assyrian Empire and its later collapse, including periods on the Erbil Plain under Neo-Babylonian or Median control in the sixth century B.C.E. and subsequent Achaemenid Persian control.

Qach Rresh was first identified and surveyed by the Erbil Plain Archaeological Survey (EPAS) in 2017. Surface collections indicated the site was first occupied during the Neo-Assyrian period, linking it to the many new village-sized sites established during this timeframe in agriculturally marginal areas across northern Mesopotamia (Altaweel 2006, 2007; Morandi Bonacossi 2000; Ur and Osborne 2016; Ur *et al.* 2021). Interest in the nature of these newly established sites drove the introduction of exploratory magnetic gradiometry investigations to Qach Rresh in 2021. Over four days, the site was surveyed, revealing a wealth of unexpected monumental-scale architecture with other apparent anthropogenic features surrounding it, which contradicted its initial assessment as a mere village site (see Remote Sensing and Topography section below). To further explore the nature of Qach Rresh and its surrounding environs, RLIIM conducted its first field season in 2022, when it was revealed that the site's occupation extended beyond the Neo-Assyrian period into the following post-Assyrian and Achaemenid periods. Additionally, re-collection by EPAS in 2022, coinciding with excavations, revealed that the site's occupied area extended further than was initially thought (Jason Ur. *pers. comm.*).

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RLIIM's ongoing investigations at Qach Rresh ultimately aim to:

- Identify the exact dates of construction and occupation of Qach Rresh
- Understand the function of the large buildings discovered in the initial magnetometry investigations of 2021 and later investigations of 2023
- Continue the coverage of geophysical investigations within and beyond the site
- Implement a robust sampling strategy for archaeobotanical remains, isotopic analysis, and sedimentology to understand how Qach Rresh was involved in the local (or supra-local) agropastoral economy
- Refine the "post-Assyrian" and Achaemenid (Iron Age III) ceramic chronologies, which are currently poorly understood in this region

This preliminary report covering our results from the first two seasons of excavation at Qach Rresh presents our initial forays into the above goals of the project.

Remote Sensing and Site Topography

Qach Rresh is remarkably well-suited for geophysical remote sensing investigation. Magnetic gradiometry survey was led by Creamer at Qach Rresh during 2021 and 2023, resulting in 8.1 hectares of land covered in total at the site. The east-west extent of the survey in these years was limited by harvesting schedules in adjacent fields, while the southern extent was limited by the seasonal drainage area which still held water during our fieldwork in 2023 (Fig. 2). Of the 203 20 x 20m squares surveyed in total at the site, 142 revealed architectural or otherwise anthropogenic features (a return rate of 70%).[2]

Building A, identified in the magnetogram, is an apparently symmetrical structure measuring an estimated 41 x 38m built around a central courtyard with a possible single-axis entry in the southern end of the structure (Fig. 3). This entry opens into a subdivided chamber estimated to measure 19 x 12.5m, which then leads north into the courtyard (15 x 18m; see examples of similar architecture at Ziyaret Tepe [Matney *et al.* 2011]). Sixteen small rooms surround the courtyard area, possibly used for storage. To the northwest, another set of rooms is seen as part of a similar structure, Building B, where at least six rooms with estimated dimensions similar to those in Building A can be identified. While only a single arcade of these rooms (once again, possibly for storage) is observed in the magnetogram, it is possible that they formed part of a larger building complex, similar to that of Building A. The higher magnetic signature of Building B's room fill is due to over a meter of refuse fill in these rooms, discussed further in the Excavation Results section below. Additional identified structures located between these two monumental buildings appear to be built on the same orientation as Buildings A and B, possibly indicating a coherent complex. Fainter signatures of walls alongside the east and west areas of Building A could indicate secondary sets of rooms which are more poorly preserved than those bordering the courtyard. Longer linear features running alongside building walls may be streets.

We have detected a large complex of rooms further south, consisting of at least 12 rooms in a roughly linear arrangement, with additional architectural features present around them. The rooms making up this structure (which we are calling "Building C") appear brightly in the magnetometry, which indicates that they are likely filled with the same dumping debris that Building B contains (Fig. 4). At least ten rooms have similarly high magnetic signatures, suggesting that they are filled with ashy debris and ceramics. Other similar highly magnetic anomalies in the south likely indicate more rooms filled with debris, although this is more difficult to tell from magnetometry alone.

Of importance to our investigations is the presence of at least two large structures (Features 1 and 2, measuring 120 x 50m and 60 x 30m, respectively) just north of Building C and south of Building A.

[2] Magnetic gradiometry data was collected with Bartington Grad 601-2 instruments (owned by SPARC at Dartmouth in 2021 and owned by Emory University in 2023). Data were collected by hand-carrying the instrument in a zig-zag pattern at a resolution of 0.25 x 0.125m oriented along N-S transects. Archaeofusion software was used for data processing.

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Fig. 2. The results of magnetic gradiometry survey, 2021-2023. Data processed with destagger, Zero Mean Traverse, and despike transformations and reclassified to 0.125 x 0.125m resolution by nearest neighbor interpolation (basemap courtesy of ESRI)

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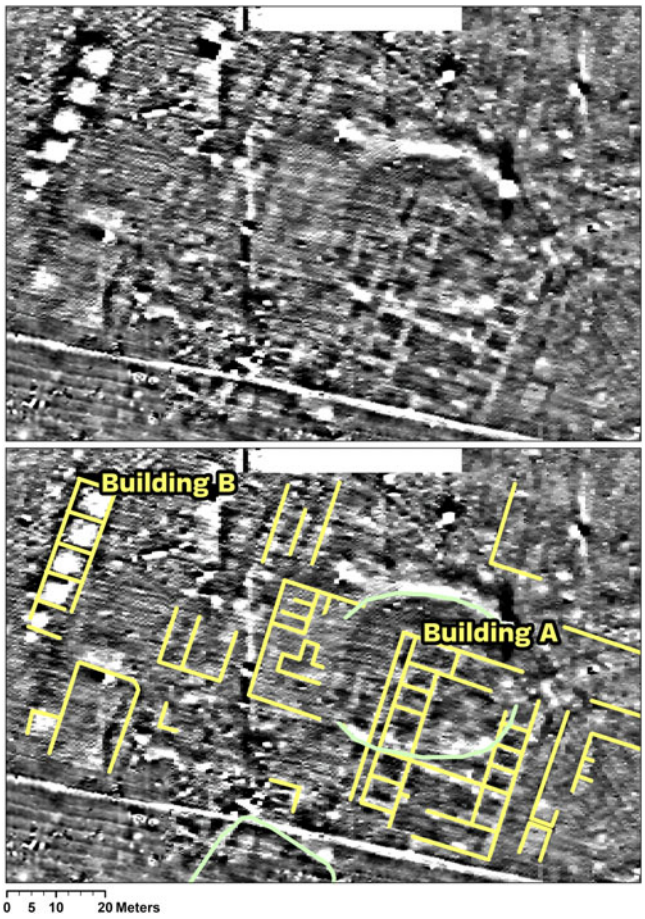

Fig. 3. Buildings A and B, with possible other architectural features marked. Yellow denotes potential architecture; light green denotes possible later circular enclosure features superimposed over earlier structures

These are the magnetic signatures of anthropogenic enclosures, possibly large animal pens or open-air walled areas where iron-rich dung accumulated along the fence line and created a higher magnetic signature than the surrounding soil. Another possible enclosure is located directly east of these two, but the magnetic signature is faint. Additionally, between Building C and Feature 1, there is a possible gate or entrance measuring roughly four meters wide. Thus, this complex is evidently associated with the features. The assumed association is further observed by the presence of a faint architectural structure directly to the west of Feature 1 and to the south of Feature 2.

Other non-architectural features were noted roughly 70m to the north of Building B. A cluster of these structures, each measuring roughly 20–40 m across, can be seen in Fig 5.[3] When compared to CORONA imagery of the area (Fig. 5c), it becomes evident that these are almost certainly the remains of *qanat*/*karez* construction. This identification aligns with the ceramics collected from the surface by RLIIM in this part of the site during seasons 2022–2023, which are largely Islamic in date.

The site of Qach Rresh is largely flat, with the only notable topography occurring in relation to the area of Building A. This area contains a shallow sloping mound of roughly 1.5 m above the surrounding flat landscape. Any notable features which may have once been prominent in the area (such as the *qanats*) have likely been plowed under by the modern agricultural industry pervading in the region (Fig. 6).

[3] An extreme magnetic signature at the northern extent of the magnetogram (seen in Fig. 5) is probably the result of modern metal debris from agricultural industry, which may have broken or fallen off machinery and was plowed under the surface.

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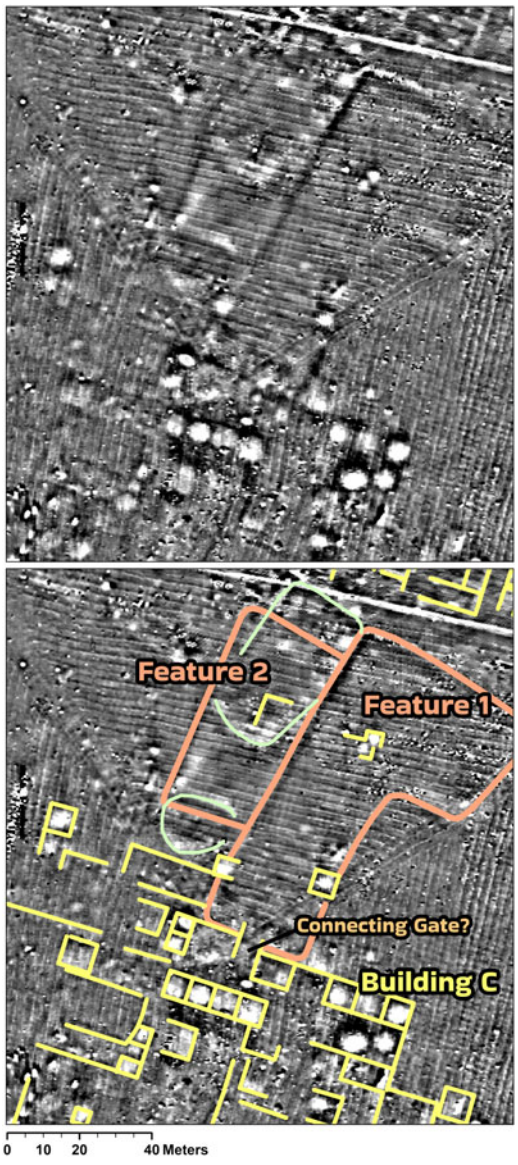

Fig. 4. Building C and associated structures, along with Features 1 and 2 marked. Yellow denotes potential architecture, red denotes enclosure features, and light green denotes possible later enclosure features superimposed over earlier structures

Excavation Results

Excavations at Qach Rresh began in September 2022, with Operations A and B targeting Buildings A and B, respectively, to test their relationship to the magnetometry data and their preservation. In the second season, beginning in May 2023, Operation C was added, to investigate Building C following its identification in the extended magnetometry coverage of that season (see Fig. 7 for trench placement).

Operation A

In 2022, Operation A was opened over the northwestern corner of Building A, to investigate the potential storerooms and courtyard in relation to the slight topographic mounding in this area. Excavations were carried out in both 2022 and 2023, with Op. A. measuring 10 x 6m by the end of

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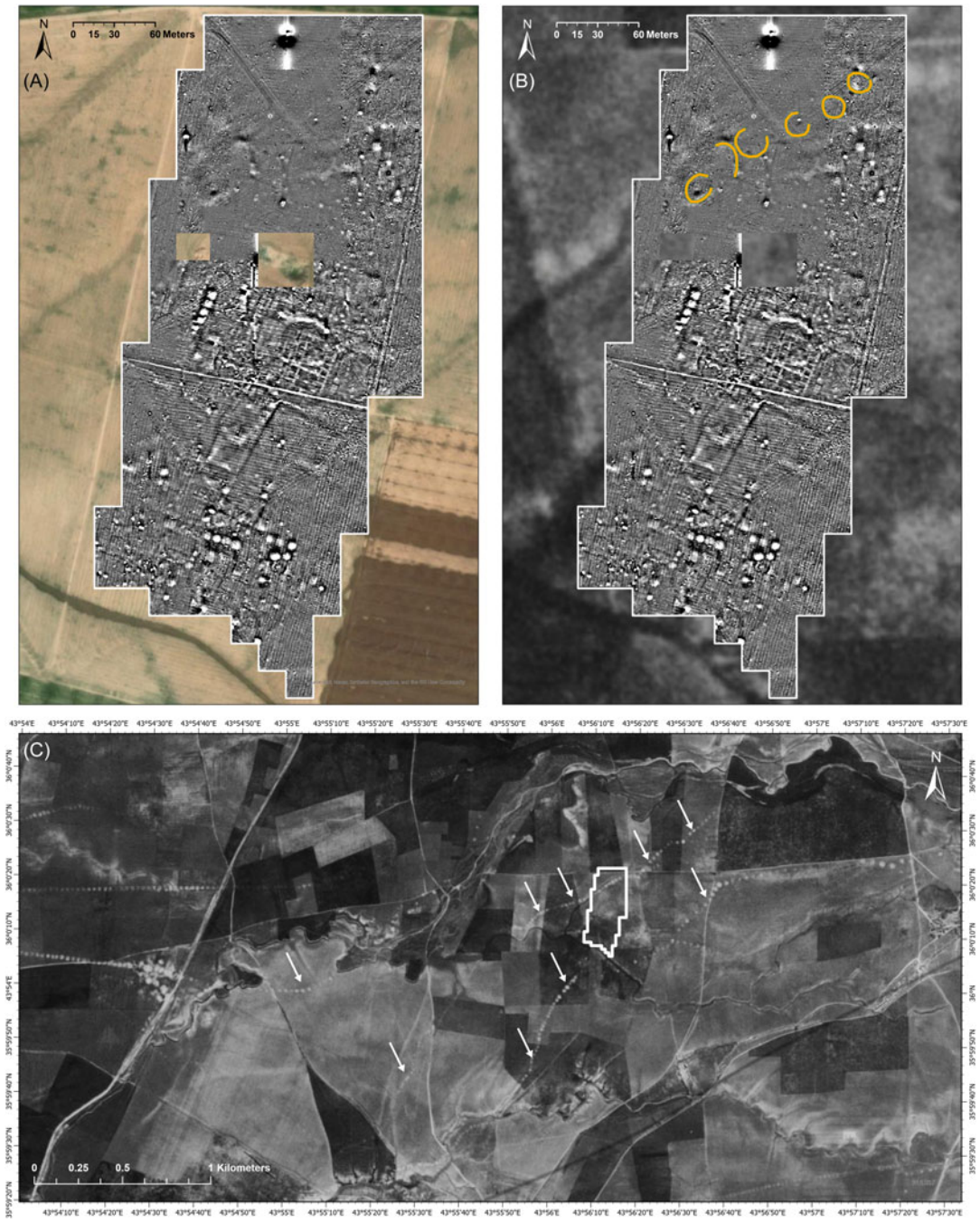

Fig. 5. Identifiable collapsed *qanat* features in the northern portion of the magnetogram (B, in orange), with CORONA satellite imagery underlaid showing the relict path of this system (Mission 1039; Feb 1967). C shows regional *qanat* systems surrounding Qach Rresh, with intersecting systems identified with arrows

the 2023 season. Topsoil removal showed heavy modern plow scars affecting the remaining features directly below ground, to a depth of at least 30 cm. Two distinct occupation phases have been identified in Operation A: the building's construction and operation during the late Neo-Assyrian/ Iron Age II period (Phase 2) and a later occupation uncovered in the courtyard, possibly dating to

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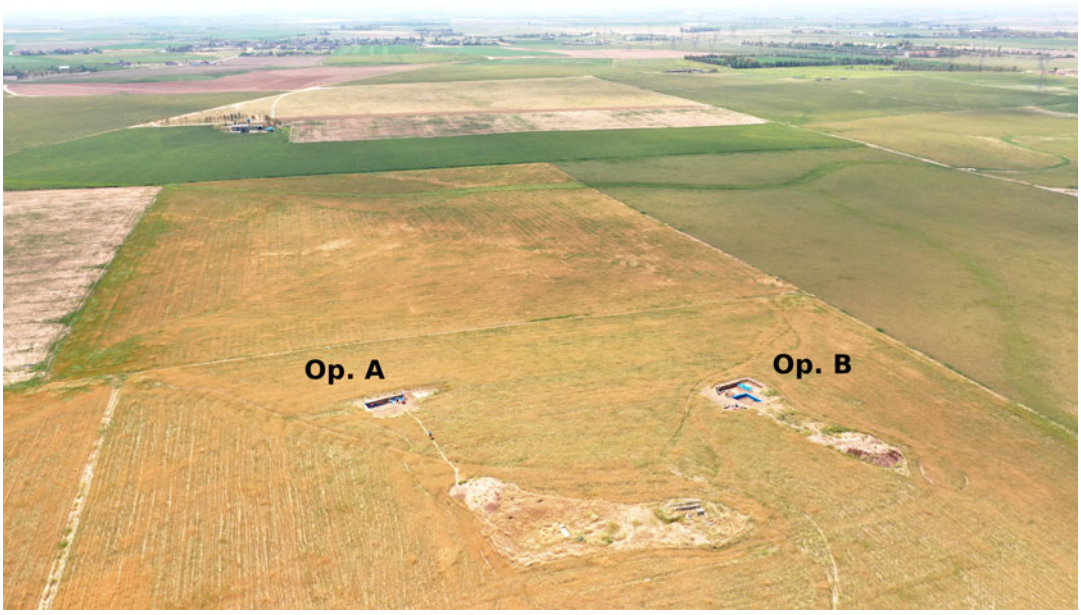

Fig. 6. UAV oblique image of Qach Rresh during the 2023 season, looking south. (Op. C was not yet opened at the time of photograph)

the post-Assyrian/ Iron Age III period and following an apparent abandonment of Building A (Phase 1).

Phase 1:
Phase 1 consists of an ephemeral occupation phase roughly 90 cm below the surface within Building A, within the northwest corner of the courtyard and postdating the building's main use. This phase of use followed the abandonment of the building, apparently leveling and then settling upon the mudbrick collapse from the end of the previous phase, which formed 20–35 cm of rubble above the floor of Phase 2 and below the living surface of Phase 1. While the walls of Building A were difficult to identify due to mudbrick degradation,[4] we were able to trace the northern wall of the courtyard (A-020) running roughly NW-SE, based on a pit belonging to Phase 1 that had been cut into the mudbrick collapse fill of the courtyard's northwestern corner (Fig. 8). The pit itself (A-006) was filled with ash, charcoal and animal bone. The northern edge of the pit ran parallel to Wall A-020's south face, confirming the wall's southern extent.

Phase 2:
Phase 2 is the main use phase of Building A, which has been dated to the later Neo-Assyrian period (Iron Age II), immediately following the building's construction. Op. A extends over the northwestern corner of the courtyard (Room A1) and at least one adjacent storage room (A2), with

[4] Geochemical processes on the Erbil Plain make it difficult to distinguish mudbrick architecture from the surrounding soil matrix due to the homogenizing effect of soil chemistry in this region. The neighboring project at Kurd Qaburstan, roughly 7km SW of Qach Rresh, has noticed this process up to 3m deep in some areas of the site (Schwartz *et al.* 2022: 12). While we struggle with the same difficulties in identifying mudbrick architecture from this effect, we have had some success in using the presence of calcium carbonate crystals ($CaCO_3$) forming on the surface of excavated soils as a proxy for locating walls. These crystals appear most distinctively on the surface of mudbrick mortar layers, and we have been able to trace the outline of mudbrick walls and, in profile, mortar lines, by their presence.

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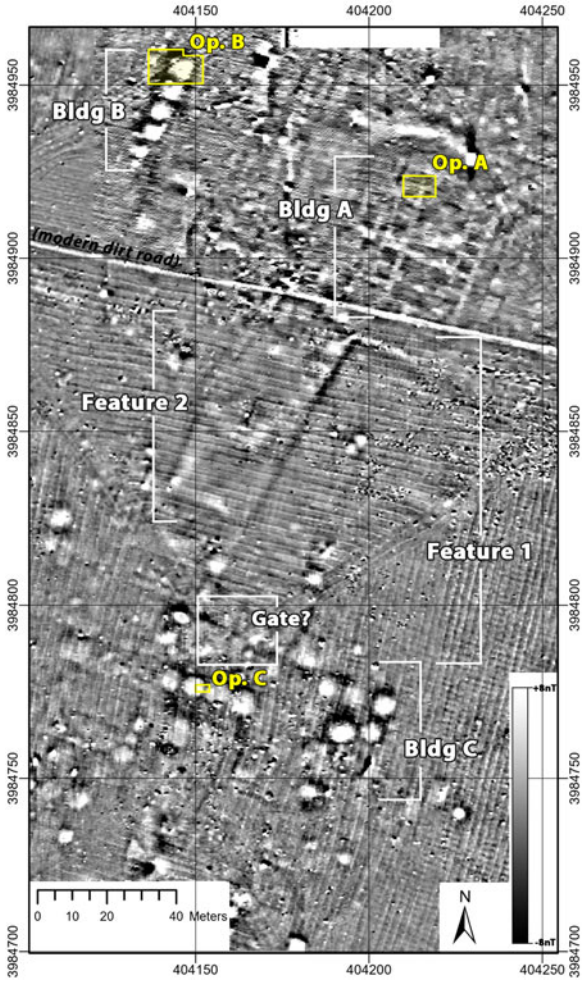

Fig. 7. Location of excavation trenches at Qach Rresh, 2022-2023

another two possible storage rooms identified in the northeastern corner of the trench (Fig. 9). The floor level of this phase (A-024) was identified and traced in Room A2 at a depth of 114–118 cm below the surface. The floor itself was smooth but irregular, marked by a bluish-white smoothed mud plaster layer roughly 2 cm thick. A similar type of irregular clay flooring was noted by the excavators in multiple phases within the northwest corner (Area S6) of the external fortified enclosure surrounding Fort Shalmaneser at Nimrud (ancient Kalḫu; Lombardi 2015). Sediment samples were collected from this context (A-024) and from the fill of Room A2 (A-022) for both macro and micro-botanical analysis (see Preliminary Botanical Analysis section below).

Although the mudbricks of wall A-020 were uniformly between 33 x 33 x 15cm to 35 x 35 x 15cm, the original builders of this wall did not neatly align each wall course. Between the three exposed courses of brick at various points of wall A-020, each course was oriented at a slightly different angle. Moreover, the makers of these mudbricks included a range of additional materials, such as small pebbles and medium-sized rocks, ceramic sherds, fragments of baked brick, and faunal remains, to create individual mud bricks. From the generally poor structural integrity of the bricks, we theorize that the walls in both buildings were constructed from mudbricks that had not yet fully dried. Furthermore, the many large inclusions (some measuring over 10 x 10cm) in the bricks made them of poor structural quality.

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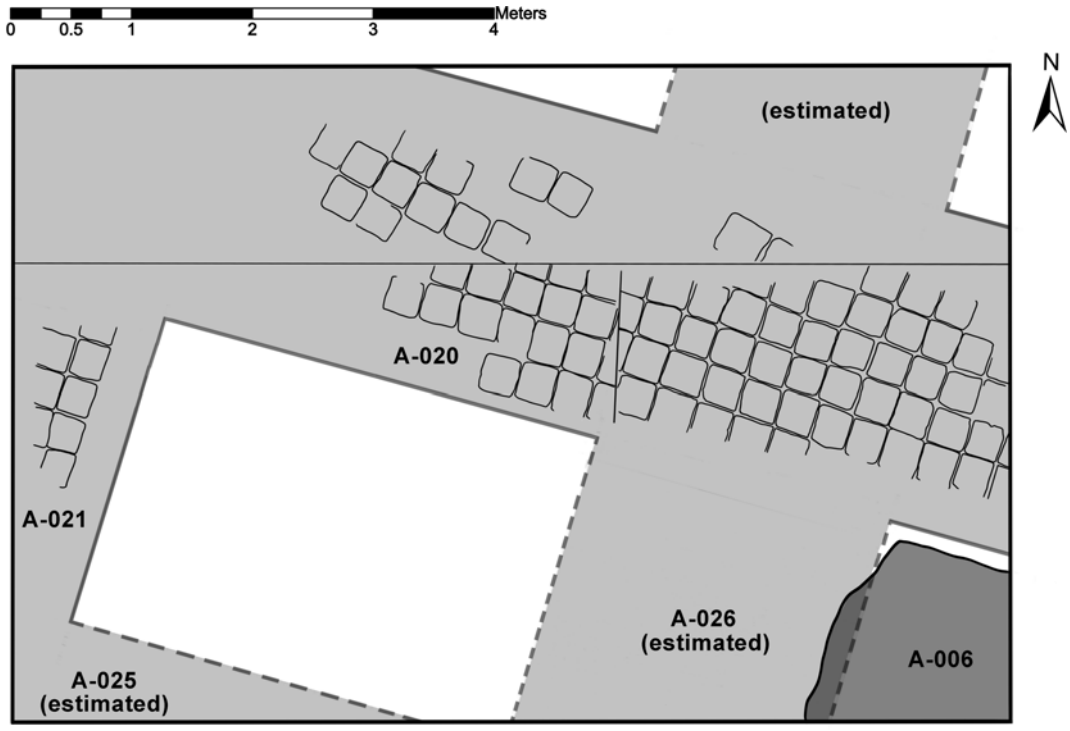

Fig. 8. Phase 1 (A-006) in Operation A. Walls A-020, 021, 025, and 026 (estimated extents) were constructed during Phase 2 but were still standing in some state of preservation during the ephemeral occupation during Phase 1

As preserved, wall A-020 is roughly seven rows wide (roughly 2.7m) and four courses high. The thickness of this wall (and the assumed comparable thickness of other walls when compared in the magnetogram) leads us to believe that they supported a second level. At about 80 cm below the surface, we were able to confidently identify wall A-021 running SW-NE, bonded at its northern end with wall A-020. This wall, although only currently preserved about 1.5 courses high, was visible in the W baulk of the trench to a height of six courses.

In general, the southern baulk of the trench was heavily disturbed by root activity. At a depth of about 45 cm, we identified the upper preserved extent of both the southern wall (A-025) and the eastern wall (A-026) of storeroom A2.[5]

Compared to the diversity of room fill in neighboring Building B (see below), storeroom A2 largely contained a mix of animal bones, pottery sherds, and ceramic slag. However, in the upper layer of this fill we found what appears to be a clay administrative token akin to those found at other provincial Neo-Assyrian sites, e.g., Ziyaret Tepe (ancient Tušhan; Matney *et al.* 2011) and Tell Ta'yinat (Snow & Batiuk *forthcoming*). Measuring 27 x 20mm, this token resembles the 'conical' type found at Ziyaret Tepe (Fig. 10). Tokens may have functioned as computing aids to tally large sums and keep track of evolving amounts of commodities such as grain or livestock, acting as an informal 'accounting ledger' for local administration (MacGinnis *et al.* 2014; Monroe 2016). Although this object remains a single find, it is hoped that further excavation in neighboring storerooms will clarify its relationship to Building A.

In the NE corner of Op. A, we found the beginning of two other rooms north of wall A-020 that are possibly bounded on their eastern/western sides by a wall abutting A-020 and running SW-NE.

[5] Due to time constraints, we could not determine the complete extent of wall A-026, and this will be a priority of the following field seasons.

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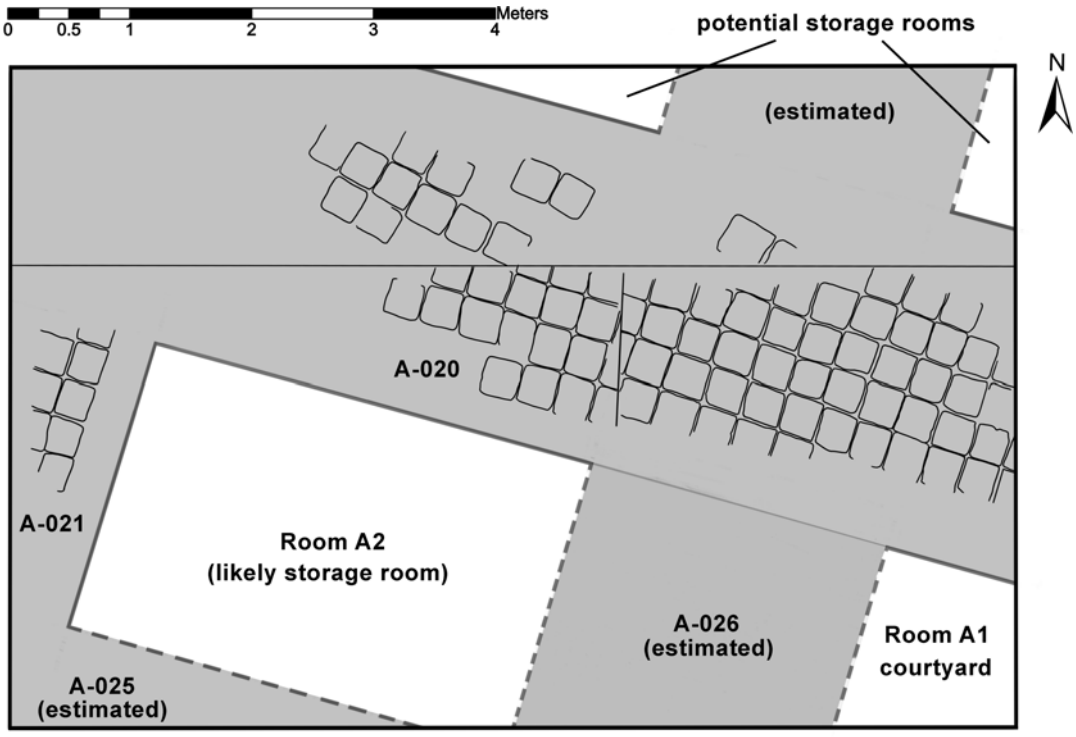

Fig. 9. Phase 2 in Building A

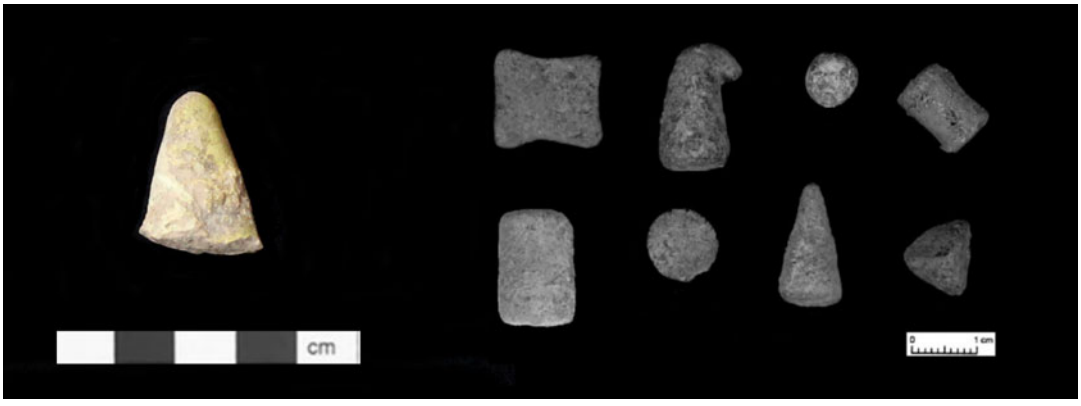

Fig. 10. On left, possible conical token A016.157. On right, the range of token types found at Ziyaret Tepe, after Matney *et al.* 2011: fig. 13c

We were not able to establish the extent of these rooms, and this area will be a priority for the following field seasons.

Operation B

Operation B was opened in 2022 as a trench of 10 x 10m, then expanded in 2023 to 16 x 11m. Like Op. A, the area was affected by plow scars up to 30 cm deep underneath the topsoil and mudbrick architecture was difficult to distinguish from the surrounding soil matrix. Immediately, we noticed a proliferation of broken baked bricks within the topsoil, intermixed with river cobbles and sherds. To preserve stratigraphic levels in the baulk for reference and sediment sampling, we maintained a

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Fig. 11. The layout of Operation B in 2022-2023

modified Wheeler's Box Grid trench organization, splitting Op. B into four separate quadrants (the SE and SW quadrants were eventually combined; see Fig. 11).

Late wall remains

Roughly ten cm below the surface we discovered two single-course linear arrangements of river cobbles, both arranged in right-angles and adjacent to one another, covering an area of nearly 1.5 x 1.7m (B-004, Fig. 12). The cobbles measured roughly 10–30cm each in length.[6] We theorize that these may be the remnants of agropastoral activity in a later period, such as pens for livestock or field boundaries. Surface ceramic scatters, along with the evidence for a relict qanat system through this area (see Remote Sensing and Topography section above), indicates that an Islamic date of construction and use may be likely.

Post-Assyrian/ Iron Age III refuse deposits within Building B

Building B, while evidently built at the same time as Building A according to its orientation and construction, exhibited unexpected differences in use. In the eastern half of the SW quadrant during 2022, we encountered large amounts of sherds and animal bones beginning at a depth of 35 cm in what we identify (consulting the magnetic gradiometry data) as room fill of Room B1 (Fig. 13). Based on soil color and texture, we were able to estimate the orientation and thickness of the mudbrick wall (B-080) bounding the room on its western side. We identified the extent of this wall before continuing to excavate the room's fill in a deep sounding in the northeastern corner of the SW quadrant, where we reached what we believe to be Building B's original floor at a depth of 1.6m. Below the floor may be a possible foundation trench filled with mudbrick constructed to add further

[6] A single stone among the cobbles was larger (35–40cm) and squared off. Since further architectural stones of this type were found below this feature as part of Building B's fill (see below), we believe this may have ended up here as a result of disturbance from modern field plowing.

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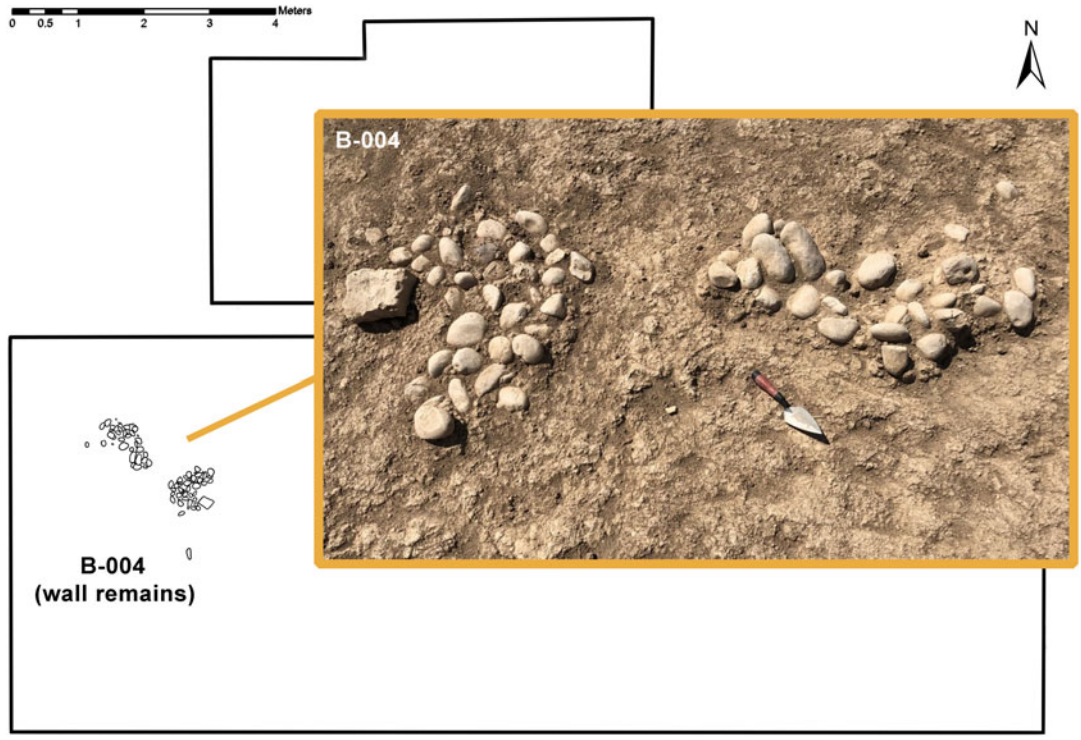

Fig. 12. The remains of feature B-004 in Operation B – likely Islamic period walls. North indicated by trowel in inset photograph

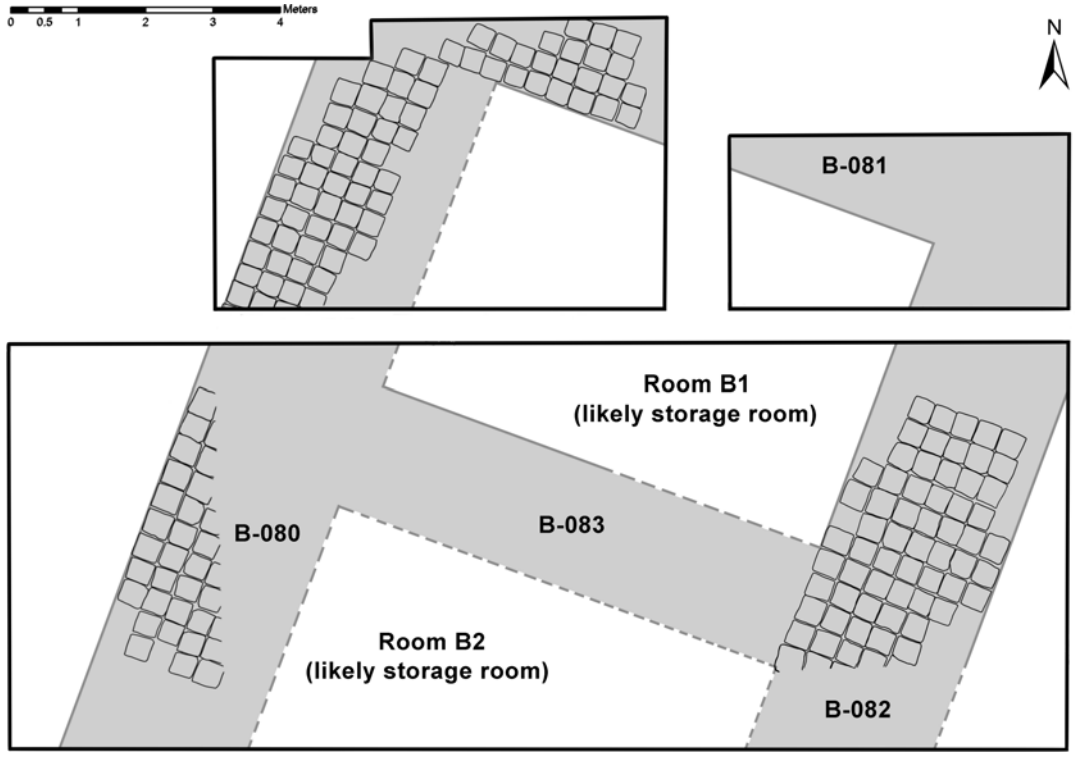

Fig. 13. The extent of Room B1 in Operation B, with partial Room B2 shown

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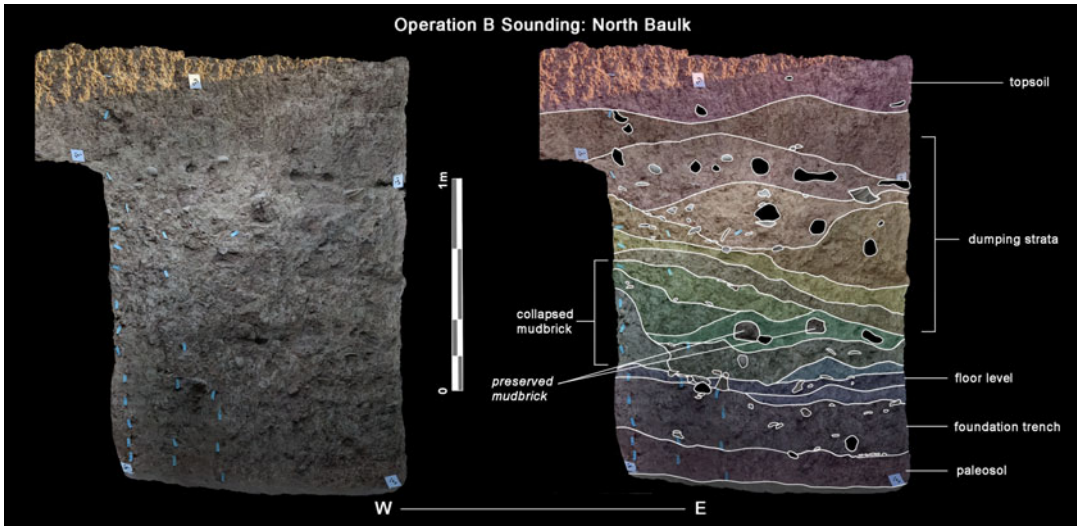

Fig. 14. The northern baulk of Op. B's deep sounding, giving the most comprehensive stratigraphy of deposits in Room B1

support to the building, though this identification remains tentative (Fig. 14). The eastern (B-082) and northern (B-081) walls of Room B1 were then identified and traced in the extensions of the trench in the 2023 season (see Fig. 13). The southern wall (B-083) was more difficult to discern, which we later realized was due to the wall's poorer preservation; while walls B-080, B-081, and B-082 were all preserved up to a height of 1.3 meters or more, southern wall B-083 was only preserved to a height of 80cm and was obscured under fill. It is unclear at this time why there is such a difference in preservation. Once these walls were identified, we were able to measure the width of the walls as between 2.5–2.7m thick, comparable to the walls in Op. A. Likewise, mudbrick size varied between 32–35cm in width and length. The final size of Room B1 measures roughly 5.5 x 4.8m. We expect that Building B, for the same reasons as Building A, likely had at least two stories.

While we initially suspected that the rooms of Building B may have experienced burning in antiquity due to their higher relative magnetism expressed in the magnetic gradiometry data, it became clear during the excavation of Room B1 that this signature was instead caused by the deposition within the rooms of multiple strata of refuse consisting of ceramics, faunal remains, baked brick and mud brick, miscellaneous artifacts, and ash. This was further clarified during the excavation of the deep sounding in the northeastern corner of Op B.'s SW quadrant, in which we were able to identify several discrete deposition events of such refuse (Fig. 14).

Sediment samples from each stratigraphic unit of the fill of Room B1 were collected for flotation. Sediment samples were taken from the northern baulk of the sounding to further analyze the refuse layers. In total, a maximum depth of 1.1 m of refuse was deposited in Room B1. This trash was apparently dumped there after the collapse of Building B's upper floor and roof, as indicated by the 55 cm of mudbrick collapse (at its thickest point) below the refuse strata and above the floor. The makeup of the refuse deposits varied, with some comprised of an ashy matrix with few artifacts, while others were composed nearly entirely of sherds, faunal remains, and broken household implements (such as various spindle whorls, bronze and iron pins, a bronze bracelet, part of a figurine, and possibly implements used for textile manufacture, discussed below in Small Finds). Preliminary analysis of ceramics recovered from these trash deposit strata indicates a clear post-Assyrian/ Iron Age III date (c. 600–350 B.C.E.; see Preliminary Ceramic Analysis section below). The general types of artifacts present in the refuse strata seem to indicate a domestic source, rather than industrial production.

While it is difficult to date Building B's abandonment relative to its secondary use as a dumping ground, we propose that the preservation of Room B1's walls up to a height of 1.3m might indicate

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Fig. 15. From left to right: decorated spindle whorls B072.337 and B003.427, and ceramic disk B062.324

that it became a dump shortly after the collapse of its upper floor and roof. If Building B's abandonment was concurrent with Building A's, which seems likely, then some of the refuse deposited in Building B could be related to Building A's Phase 1 occupation in the post-Assyrian (Iron Age III) period. It is unlikely, however, that the massive amount of refuse which fills Room B1, along with the refuse which we now know to be present in the other rooms of Building B, would be associated with the ephemeral occupation of Op. A's Phase 1 alone, and instead likely spans beyond.

Small finds in Op. B

The small finds excavated thus far in Room B1 attest to domestic lifeways at Qach Rresh, including the local manufacture of textiles as well as human-animal interactions. Found within multiple levels of dumping strata were a series of clay spindle whorls (one complete, three partial; Fig. 15) and clay loom weights (two complete, three partial). Two of these spindle whorls were decorated along their outer edges with a series of incised lines. One (B067.351) with an internal perforation of 2.5 mm and weight of 8 g was likely used to spin finer threads (*cf.* Sauvage 2014). However, the heavier weights of the remaining spindle whorls (16–38g) and loom weights (≥40 g) suggest that thicker threads were more typical of textiles produced at the site. The loom weights are of the 'doughnut'-shaped type widely characteristic of Iron Age sites in Southwest Asia. Leather-working may have also been practiced at Qach Rresh. A ceramic disk (B062.324; Fig. 15, right) with edges that have been fashioned into ten points may have been used to mark holes in animal hide to guide the path of the awl, similar to modern methods of shoe and saddle-making using wheel prickers (Salaman 1986). The surfaces of the disk had been smoothed, perhaps by manual use over time.[7]

The diversity and types of faunal remains (see below in Preliminary Faunal Analysis) indicate that the inhabitants of Qach Rresh were closely engaged in livestock maintenance. In particular, the presence of equid bones in post-Assyrian contexts may relate to the use of horses in animal husbandry and managing livestock, a practice continued on the Erbil Plain to this day. Ephemeral remains of iron rings and rods may have once constituted parts of horse trappings, albeit less complex in design than those found in elite buildings of the Neo-Assyrian period (Curtis 2013: pls. LXXX–LXXXI). Two fragmentary clay animal figurines found in Room B1, possibly of horses, resemble those found in domestic contexts and throughout at Assur (Klengel-Brandt and

[7] We would like to thank Katy Blanchard for the insightful suggestion of B062.324's purpose.

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Fig. 16. Ceramic pipe-lamp B060.279

Onasch 2020). Conversely, the presence of iron arrowheads in both Room B1 and in Building C (see below) may attest to opportunistic hunting events; trace evidence of wild game was also found at the site.

Two finds bear further mention: one, a glass bead, (H: 8mm; Dm: 11mm) was likely originally translucent (B062.416). Its surface is heavily weathered and displays evidence of severe pitting, and the corrosion from the surrounding soils have given the bead an iridescent appearance (Schmidt 2019:13). The second is an almost-complete ceramic pipe-lamp (B060.279; Fig. 16), its fragmentary spout stained black by sustained use. Its closed, globular form would have increased the overall burn time of a single fueling, as opposed to open form, 'saucer' types (Kelsall 2018). Although it resembles closed-form types dated to the seventh century B.C.E. from Fort Shalmaneser (BM 1992,0302.181) and palaces on the Nimrud citadel (BM 92973), it does not have the rolled rim typical of these examples (Oates 1959). Its flared rim instead may relate to Neo-Elamite examples, of which a double-spouted example is known from Susa (SB 5329; Louvre).

Operation C

Operation C was opened during the 2023 season with the intention to investigate a small area of one of the rooms of the structure designated as Building C to the south of Operations A and B. A test trench of 2 x 4m was excavated to identify the contents and preservation of one of the rooms identified in the magnetometry (see Fig. 4). A depth of 1.5 m was reached before the excavations of 2023 were closed at the end of the season.

The room into which Operation C extends, as its magnetic signature indicated, was used as a trash deposition area after its main use, like Building B. While we have not yet reached below the trash deposits, we predict that Building C, like Building A, was constructed during the height of the Neo-Assyrian imperial period. Operation C extends into the center of the room while uncovering part of a single wall that runs NNE-SSW and protrudes roughly one meter into the trench's eastern side; several of its mudbricks were able to be defined (Fig. 17). This is likely a dividing wall between

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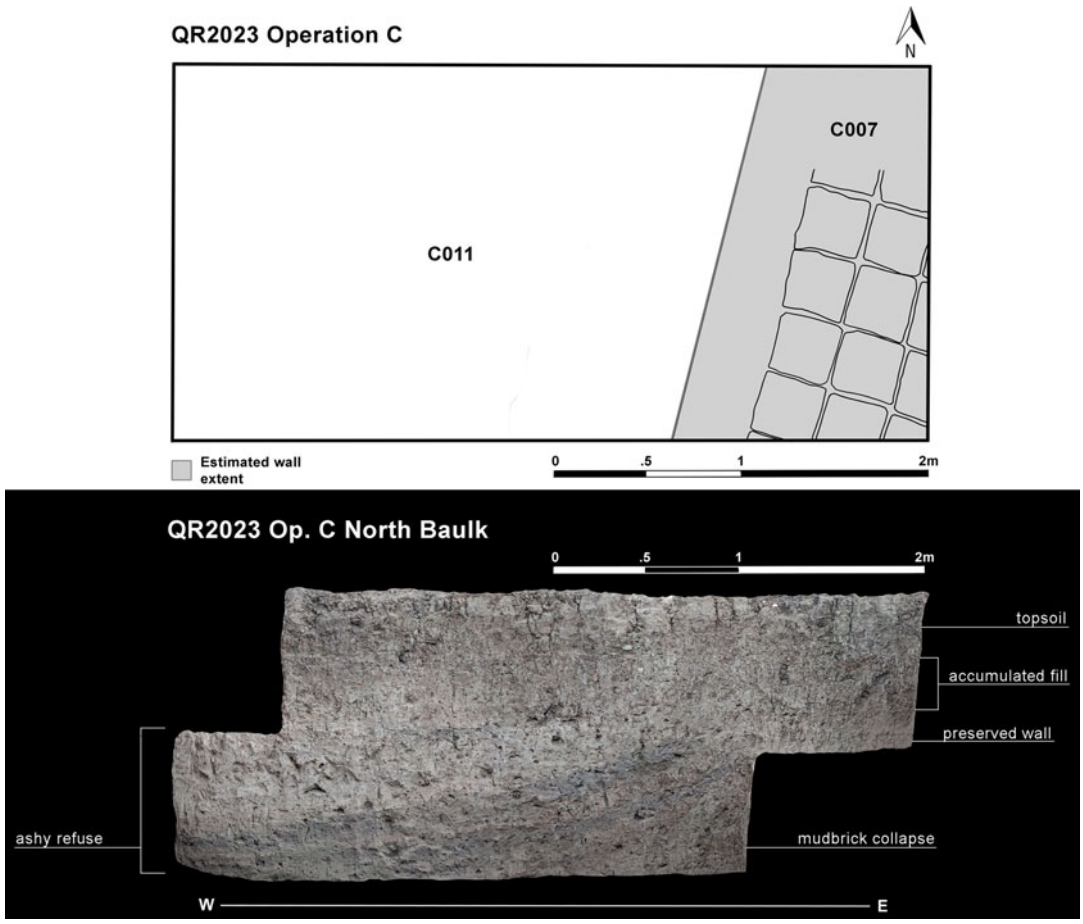

Fig. 17. Operation C at the end of season 2023. Note the sloping ashy strata in north baulk, which contains the majority of refuse room fill. (Cut in top left of baulk for trench entry steps)

rooms, as can be seen in Fig 4. The bricks measured roughly 34 x 34 cm, which is equivalent to those of Buildings A and B.

There were several layers of ash deposit and mudbrick collapse, followed by refuse deposition, which yielded a high number of sherds and faunal remains. Although the excavations only reached the upper limits of fill within this room, small finds suggest a general correlation with those present in the upper fill of Room B1 in Building B. Two spindle whorls (one complete, one fragmentary), one loom weight, a metal arrowhead (Fig. 18) and the spout of a metal vessel were found in the accumulated fill about 40 cm above the top of the preserved wall.

Unlike the trash deposition strata in Operation B, which can be quite thin (possibly indicating individual household trash deposits), the ashy strata and refuse strata in Op. C were thicker (roughly 10–20cm thick on average) and might indicate that larger amounts of refuse were deposited in the rooms of Building C at one time. All refuse strata slope down from the preserved wall, beginning at 68 cm below the surface, which may indicate that this wall had already deteriorated to that height by the time the rooms were used as dumping sites. Preliminary ceramic analysis of the sherds recovered from Building C's fill indicate a potentially later post-Assyrian date (*c.* 600–350 B.C.E.; see Preliminary Ceramic Analysis section below).

Preliminary Ceramic Analysis

During seasons 2022 and 2023, the RLIIM project excavated 25,473 sherds, with analysis led by Kaercher. In Operation A we recovered 2,245 sherds, Operation B had 18,473 sherds (almost

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Fig. 18. Metal Arrowhead from Op. C fill contexts (C001.342)

entirely from refuse contexts), and Operation C had 1,719 sherds. The forms of the ceramics do not vary much between the operations, with most being classified as large jars. Below is a preliminary presentation of our results and associated dating.

In terms of surface color, buff wares range from white (5Y 8/1 white), to yellow (10YR 7/6 yellow), to brown (7.5YR 5/4 brown). Red wares range from pink (5YR 7/4 pink) to red (2.5YR 6/6 light red). Gray wares are usually gley 1 2/2 light greenish gray to 10YR 3/1 very dark gray. Green wares are from 2.5Y 7/2 pale yellow to 5Y 8/4 pale yellow. Vegetal inclusions could be chaff, straw, or other grasses and are visible as elongated pseudomorphs. Mineral inclusions are sand to grit sized particles in black and white, and in Op. C, rarely red. Most ceramics seem to be wheel made, some with wheel markings, especially visible on the bases. Interestingly, in Ops. B and C, blocky coils start to appear. These are relatively low fired and tend to crumble in the field, but some small square-shaped coil fragments remain. When discovered *in situ*, the blocky coil sherds are very large, possibly indicating pithoi for storing large quantities of materials.

In terms of forms, generally the divisions are as follows: shallow bowls (open vessels with a rim angle of less than 30°); deep bowls (open vessels with a rim angle of between 30° and 90°); cups/goblets (usually carinated with a flaring rim, 8–15 cm in diameter, typically palace or very fine ware); jars (rim diameter less than the shoulder diameter, with short or tall necks); holemouth jars (closed vessels).

The ceramics from Op. A (Fig. 19) range in surface color through buff (1,234; 56%), red (427; 17%), gray (460; 20%), and green (114; 8%). They mainly have vegetal inclusions (1,713; 76%) followed by mineral inclusions (256; 11%), vegetal/mineral (146; 7%), and no inclusions (131; 6%)[8]. Surface treatments range from smoothed (2,097; 93%) to slipped (white or buff slipped on red ware; 95; 4%), incised (28; 2%), and appliqué (5; 1%). Most were body sherds (2018; 90%), followed by rims (171; 8%), bases (51; 1%), handles (4), one spout, and one full profile of a bowl. The rims that were able to be drawn (51) were categorized as shallow bowls (1; 2%), deep bowls (20; 34%), jars (33; 56%), and holemouth jars (5; 8%). For this preliminary study, very few comparanda were identified for this operation, and these were dated to the Iron II–III period, as established by S. Anastasio (2010). Figure 19 no. 12 matches a vessel from Nimrud (Oates 1959: XXXV:3). Figure 19 no. 21 matches vessels from Tell Rimah (Postgate et al. 1997: pl. 56:493) and Tell Shalgiyah (Green 1999: fig. 6:9).

The ceramics from Op. B (Fig. 20) range in surface color between buff (11,944; 64%), red (4,821; 26%), green (955; 6%), and gray (755; 4%). They mainly have mineral inclusions (7,774; 43%), vegetal inclusions (3,988; 23%), no inclusions (3,524; 20%), and vegetal/mineral (2,443; 14%). The surface treatments are mainly smoothed (16,490; 89%), slipped (1,599; 9%), burnished (223; 1%),

[8] Sherds marked as no inclusions have no inclusions visible to the eye.

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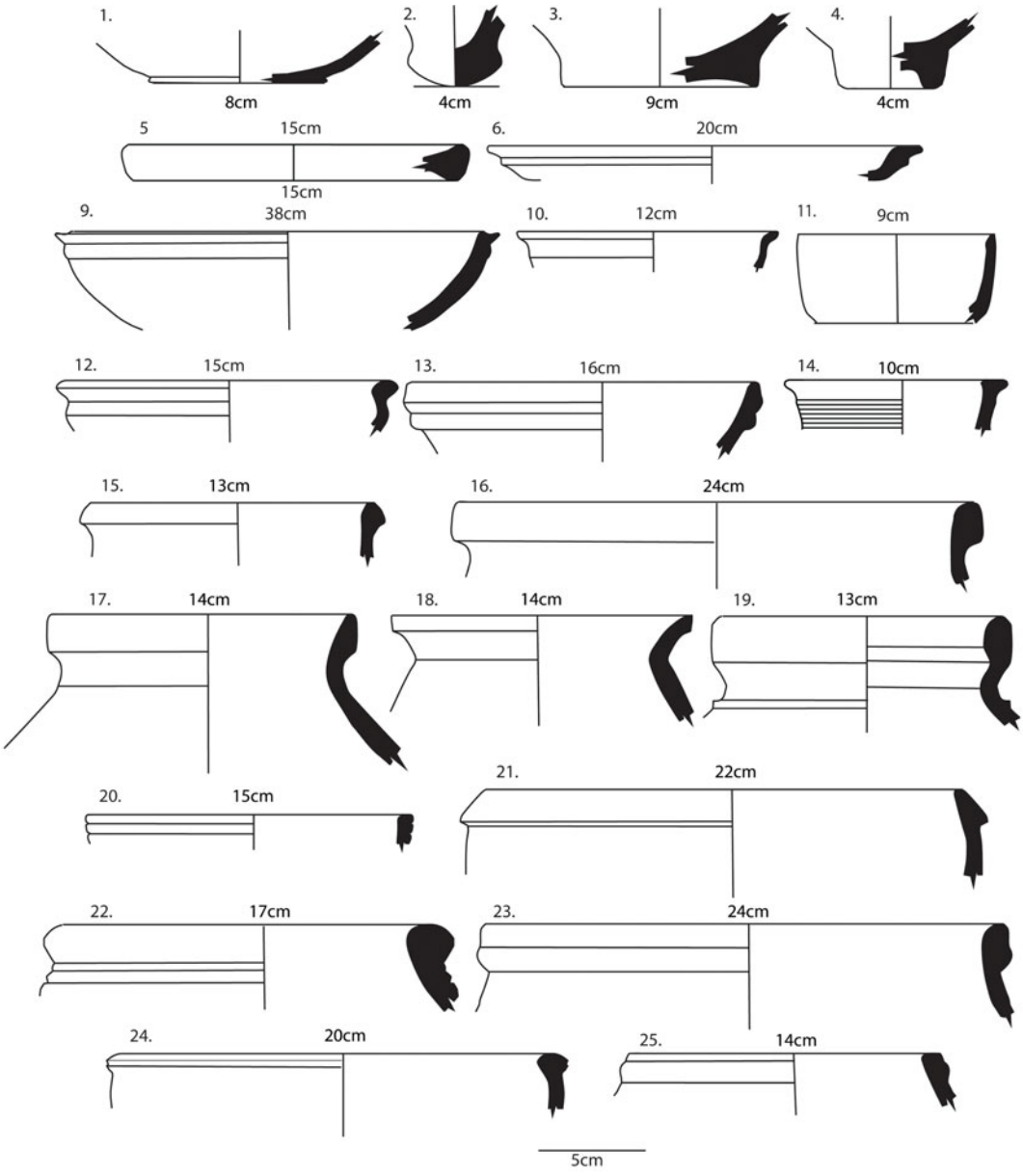

Fig. 19. A selection of ceramics from Op. A

incised (95), appliqué (65), and one painted sherd dating to the Halaf period (possibly from inclusion in mud bricks). Most sherds were body sherds (14,143; 77%), followed by coils (2,609; 14%), rims (1,292; 7%), bases (360; 2%), handles (42), spouts (9), lamps (5), worked sherds (4), full vessels (3), and a jar stopper. The forms that were recorded so far (as we are still processing some sherds) are divided into shallow bowls (5; 1%), deep bowls (69; 15%), carinated cups/goblets (31; 6%), jars (312; 63%), holemouth jars (68; 14%), and mini-jars (7; 1%). For this preliminary study, few comparanda have thus far been identified for this operation also. The few that were date to the Iron II–III chronology as established by Anastasio (2010), and into the fifth–fourth century B.C.E. (Rocco Palermo *pers. comm.*). Figure 20 no. 1 matches vessels from Nimrud (Oates 1959: pl. XXXVI: 28) and Tall Knedig (Kulerman-Ossen and Martin 2005: Taf. 113c). Figure 20 no. 3 matches a vessel from Sharqat (Miglus 2000: Abb. 29b). Figure 20 no. 4 matches vessels from Tall Sheikh Hamad

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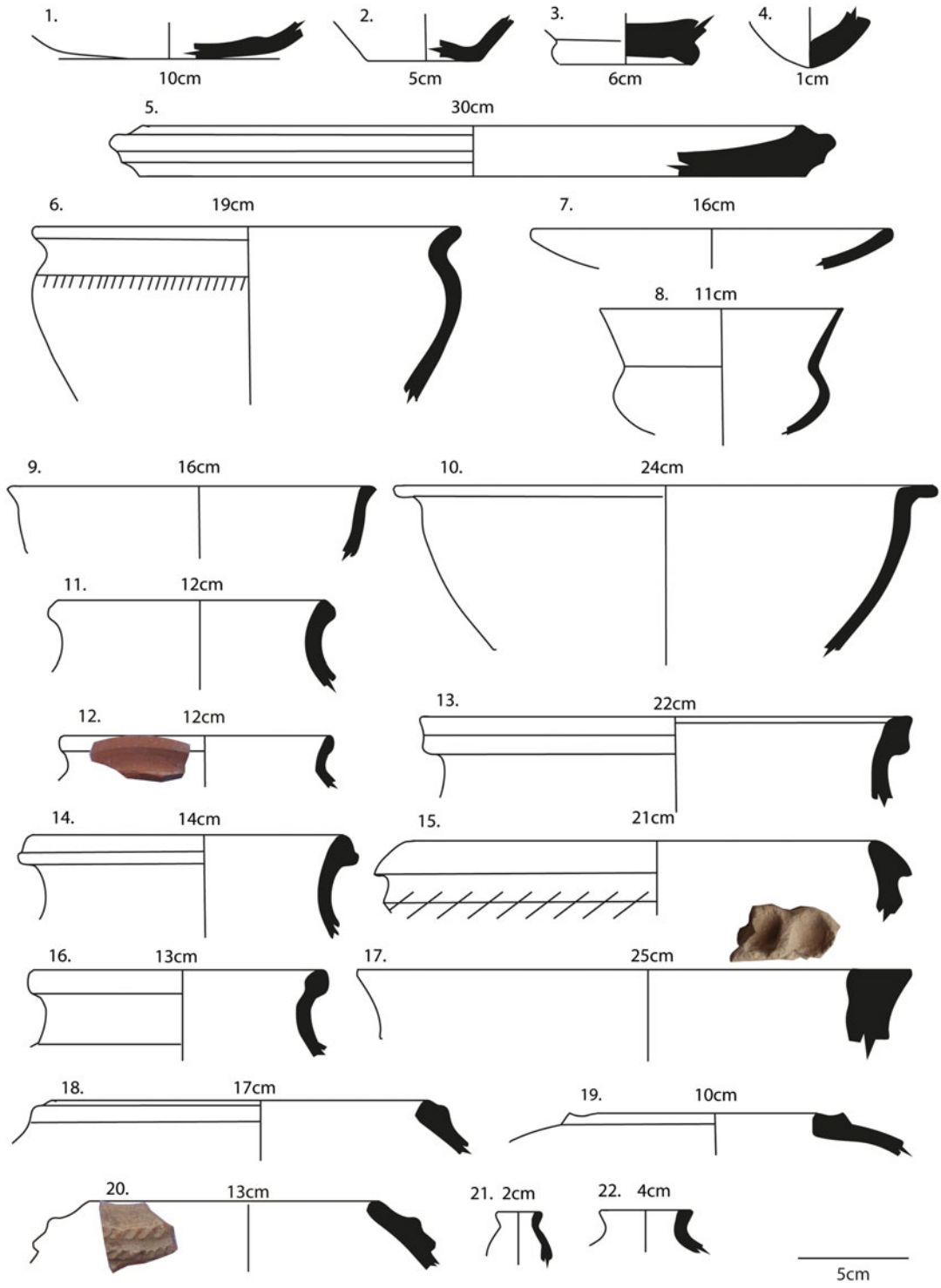

Fig. 20. A selection of ceramics from Op. B

(Kreppner 2006: Taf. 11, 4) and the LoNAP project (Gavagnin *et al.* 2016: fig. 18: 12-13). Figure 20 nos. 7 and 10 match vessels from Khirbet Khatuniyeh (Curtis and Green 1997: fig. 35: 109 and fig. 37: 156). Figure 20 no. 8 matches a vessel from Khirbet Qasrij (Curtis 1989: fig. 31:140). Lastly, Figure 20 nos. 12 and 20 are identified as fifth–fourth century B.C.E. by R. Palermo (*pers. comm.*).

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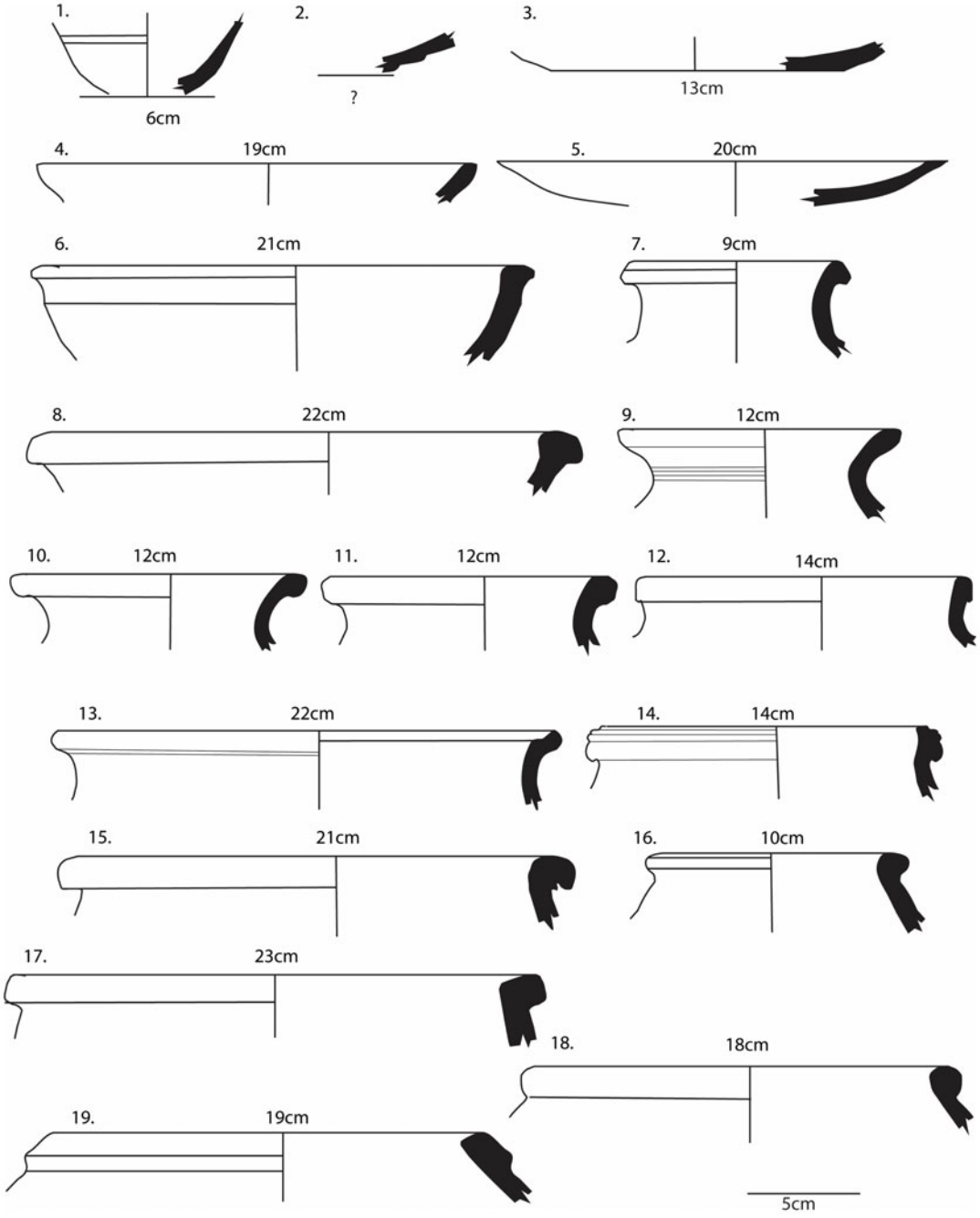

Fig. 21. A selection of ceramics from Op. C

The ceramics from Op. C (Fig. 21) range in surface color between buff (1,138; 63%), red (468; 28%), gray (86; 5%), and green (69; 4%). They mainly have mineral inclusions (945; 55%), followed by no inclusions (354; 18%), vegetal/mineral inclusions (336; 20%), and vegetal (126; 7%). Surface treatments range between smoothed (1,610; 90%), slipped (125; 8%), incised (12; 1%) burnished (8; 1%), appliqué (3), and painted (3). Most sherds were body sherds (1,359; 77%), followed by coiled sherds (269; 15%), rims (95; 6%), bases (29; 2%), handles (7), and one spout. The rims that were drawn are divided into deep bowls (3; 5%), carinated cups/goblets (4; 6%), jars (52; 79%), and holemouth jars (7; 10%). For this preliminary study, few comparanda have been identified for this

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operation either; these date to the Iron II–III chronology as established by Anastasio (2010). Figure 21 nos. 3, 6, 10, and 12 match those from Khirbet Qasrij (Curtis 1989: fig. 43: 327, fig. 25: 50, fig. 32: 162, fig. 37: 228, respectively). Figure 21 nos. 14 and 19 match Khirbet Khatuniyeh (Curtis and Green 1997: fig. 57: 379 and fig. 64: 409, respectively).

The ceramics from Op. A match the Iron II to Iron II–III chronology (800–500 B.C.E.) or Neo-Assyrian to post-Assyrian periods. The ceramics from Op. B and Op. C fall mainly into the Iron III chronology (60–400 B.C.E.) with limited Neo-Assyrian forms. In 2023, further diagnostic ceramics dating from the fifth–fourth century B.C.E. were recovered. With the brief analysis conducted in the field, there are confirmed differences in the occupation of Op. A and Ops. B/C. This could be due to different activities occurring in these operations, a slight difference in dating (the majority of Op. A's contexts being earlier than B, hence the different tempers), or just variations in the rural nature of this site. Ops. B and C have been confirmed as refuse dumps for later period habitation.

Preliminary Faunal Analysis

The 2023 RLIIM expedition at Qach Rresh included a zooarchaeological program overseen by Poolman, which included the identification and analysis of animal bones from archaeological contexts excavated in both 2022 and 2023. The analysis was carried out with the intention of understanding consumption and economic practices and the ways these shaped the communal lives of humans and animals during the site's post-Assyrian period.[9] A total of 1,707 specimens were identified to any level of taxonomic specificity, with a further 896 unidentified specimens counted and weighed, from 31 unique contexts of 2022 and 2023's excavations of Operations A, B, and C. The vast majority of remains identified (1,592 NSP) came from Op. B, followed by Op. A (37 NSP), and Op. C (77 NSP). This analysis will only concern those remains from contexts with secure chronological assignments. Because the sample sizes of faunal specimens from chronologically secure contexts in Op A. (n=20) and Op. C (n=4) were very small, they are excluded from the present analyses and will be explored in future reports.

The taxonomic composition of identified faunal materials from post-Assyrian fill levels in Operation B can be found in Table 1 and Figure 22. Livestock taxa predominate our sample with caprine (*Ovis*/*Capra*) specimens most numerous (38% NISP, n=123), followed by pigs (*Sus scrofa domesticus,* 32% NISP, n=104) and then cattle (*Bos taurus,* 15% NISP, n=50). These animals formed most of the dietary meat sources at post-Assyrian Qach Rresh. The relatively robust representation of pig remains is notable, as cattle (our third most numerous taxon) often follow caprine in number in the faunal collections of many Iron Age Southwest Asian contexts (Poolman *et al.* forthcoming).

Post-mortem utilization of Qach Rresh's three major livestock taxa can be assessed from the relative representation of different skeletal elements, presented in Figure 23. Caprine and cattle specimen pools are similar in that they are dominated by head elements (primarily horncores and mandibles), with a relative dearth of post-cranial remains that are most often associated with consumption waste. This suggests that the meatiest cuts of caprine and cattle remains were not consumed and disposed of in Op. B, but elsewhere, either on- or off-site. In contrast, pig remains show a relatively more even representation of body parts; while head elements also predominate, they are followed closely by axial and upper limb elements that bear the most meat of the animal's body, as well as the lower-limb butchery byproducts of these animals. This suggests that pigs were likely kept alive, butchered, and consumed near Op. B's premises before being disposed of in the fill layers of this building.

Other domestic/commensal taxa identified include equids (*Equus* spp., n=31, 10% NISP), canids (*Canis* spp., n=2, <1% NISP), snails (Mollusca spp., n=2, <1% NISP) and rats (*Rattus* spp., n=2, <1% NISP). Equids, which include donkeys *(Equus asinus),* mules *(Equus mulus),* horses *(Equus caballus),* and wild onagers (*Equus hemionus*), were most likely kept on-site for labour, travel, and animal management purposes in the case of domestic taxa, while onagers, widespread across steppe

[9] Further analysis of Neo-Assyrian human-animal relations will be carried out in future seasons based on recovery of faunal material from relevant contexts.

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TABLE 1: Taxonomic composition of identified faunal materials from post-Assyrian fill levels in Operation B

Taxon	*Common Name*	*Op. B Total*
Ovis/Capra	Sheep/Goat	100
Ovis aries	Sheep	16
Capra hircus	Goat	7
Bos taurus	Cattle	50
Sus scrofa	Pig	104
Equus spp.	Equid	31
Canis spp.	Canids	2
Cervid spp.	Deer	2
Cervus elaphus	Red Deer	2
Gazella gazella	Gazelle	3
Aves spp.	Bird	2
Mollusca spp.	Snail	2
Rattus spp.	Rat	2
Homo sapiens	Human	1
	Small mammal	3
	Medium mammal	259
	Large Mammal	109
GRAND TOTAL		695

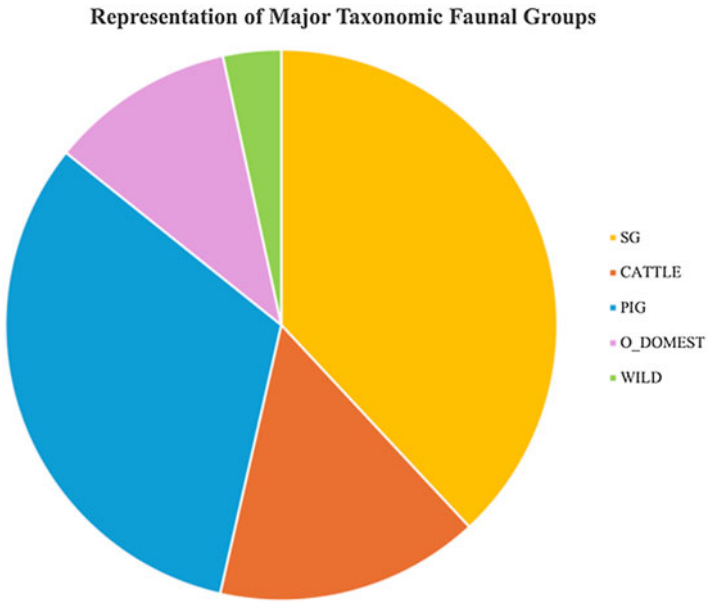

Fig. 22. Relative frequency of major species from post-Assyrian fill-levels in Operation B (SG = Sheep/Goats; O_Domest = Other Domesticated animals)

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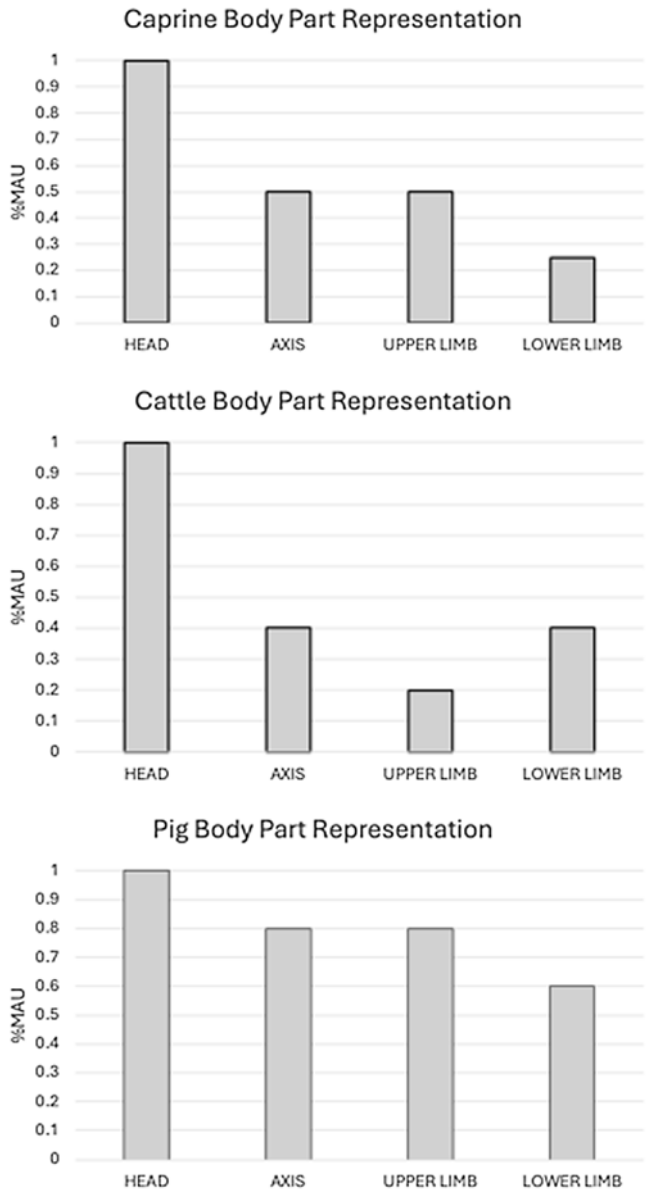

Fig. 23. Relative representation of different skeletal elements

and valley lands of Iron Age Upper Mesopotamia, would have constituted a wild prey animal. Domesticated canids perhaps aided in the herding of livestock alongside humans and their equids. Two equid limb elements bore cutmarks, suggesting that these animals were butchered for their hide or meat following their deaths. The presence of rats and snails, meanwhile, are common agents of decomposition for anthropogenic rubbish containing large amounts of moist, organic debris.

Only a small number of faunal specimens could be reliably assigned to wild taxa (n=11, 3% NISP), primarily consisting of deer (Cervid spp.), gazelle (*Gazella gazella*), and avian specimens. Curiously, two elements were assigned to red deer (*Cervus elaphus*), including the distal portion of a tibia and a section of mandible (Lister 1996). Red deer are typically relegated to high-altitude and heavily wooded environments of Southwest Asia (Geist 1998; Straus 1981), so the appearance of this large-bodied game taxon at a relatively small site on the Erbil Plain is admittedly unexpected and may reflect seasonal migratory patterns of ancient red deer populations and opportunistic hunting on the part of Qach Rresh's Iron Age inhabitants (Zhang *et al.* 2013).

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Overall, Op. B's fill layers provide the following impressions of the faunal landscape at post-Assyrian Qach Rresh. Caprines and pigs were most often consumed on site, with caprine meaty elements often transferred elsewhere for consumption, while pigs were kept, consumed, and disposed whole by Qach Rresh's inhabitants. Cattle appear less frequently and are also primarily represented by head and lower limb elements, suggesting that their consumption was incidental among ancient occupants. The residents of post-Assyrian Qach Rresh likely lived alongside a handful of equids and dogs who helped with some of the agropastoral duties of this rural site, while also occasionally hunting itinerant groups of artiodactyl game like gazelle, red deer, and/or onager that would seasonally make their way through the Erbil Plain. Our assemblage paints the picture of a relatively self-sustaining faunal community, with humans, equids, and dogs participating in the production of caprine and cattle meat for off-site provisioning (e.g., market exchange, institutional provisioning, etc.), as well as more localized human consumption of caprine byproducts, occasional game meat, and pork before disposal of material by local biotic agents (i.e., dogs, rats, and snails).

Preliminary Botanical Analysis

A combined programme of micro- and macro-botanical analysis was initiated at Qach Rresh during the 2022–2023 field campaigns by Laugier and Proctor. This programme has the twin goals of reconstructing the local paleoecology of the Erbil Plain and local agricultural decision-making strategies during the first millennium B.C.E. Analyses of macro-botanical remains of crops, processing debris, and wild/weedy seeds can be used to examine a wide range of questions regarding agropastoralism, including agricultural decision-making, labour organization, social (in)equality, fuel use, and grazing/foddering strategies, among others (Marston and Castellano 2021; Miller 1997; Spengler 2019). To that end, flotation samples were collected from primary and secondary occupational deposits, including floors and ash lenses, in Op. A and from secondary refuse deposits in Op. B. Flotation samples were processed via bucket flotation for the initial campaigns, while a water-recycling flotation system will be implemented in future seasons. Macro-botanical analysis is currently in progress, and the results will be presented in a future report.

Preliminary Micro-botanical Analysis

Sediment sample collection at Qach Rresh is driven by two goals: (1) to assess the micro-remain preservation conditions and site formation processes at a rural (post-)Assyrian site and (2), in tandem with the macro-botanical analysis, to examine change and continuity in plant use, agropastoral practice, and local environmental conditions throughout the use of the settlement.

During the 2022 and 2023 excavations, we collected 77 loose sediment samples (0.5–5 g each) from a variety of contexts in Operations A and B, including primary occupational deposits, building materials, and stratigraphic sections. We also collected control samples from the site surface and surrounding landscape. Sediment samples are in the process of undergoing combined micro-remain (phytolith and dung spherulite), geochemical (FTIR spectroscopy), and bulk content analysis.[10] The detailed methods and full results will be presented in the final report.

Here, we report preliminary results from a rapid analysis of the upper, ashy layers in Op. B (Room B1, Contexts B-008, B-010, B-014, & B-015) (Fig. 14; QR22_6C, 1.24 m depth). Sediment from Op. B's upper ashy layer (Room B1, B-015; post-Assyrian discard) has heat-altered clays and contains high concentrations of both phytoliths and dung spherulites in the range of tens of millions per gram of sediment. Dung spherulites are an unequivocal indicator of the presence of ruminant animal dung, and burning indicates that dung may have been used for fuel (Gur-Arieh and

[10] Preliminary laboratory analyses were conducted in the ALMA Micoarchaeology Lab at Rutgers University, using the same laboratory procedures and interpretive framework outlined in Laugier *et al.* 2021. Phytoliths were extracted from sediments, counted, and their morphologies recorded following Katz *et al.* 2010. Phytolith morphological identifications (small capitals) follow the International Code for Phytolith Nomenclature 2.0 (Neumann *et al.* 2019). Dung spherulites were quantified using the protocol developed by Gur-Arieh *et al.* 2013. FTIR analyses were performed using a Thermo Scientific Nicolet iS5 FT-IR spectrometer and interpreted based on the standards developed by Weiner 2010 and Berna *et al.* 2007.

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Shahack-Gross 2020; Shahack-Gross 2011). Dung-rich deposits are regionally common and have been important sources for reconstructing local agropastoral lifeways and paleoecology (e.g., Elliot *et al.* 2020; Laugier *et al.* 2021; Proctor *et al.* 2022). High concentrations, especially of soluble dung spherulites, tentatively indicate good preservation conditions for micro-remains at Qach Rresh beginning roughly 1–1.2 m below the surface. Given the depth of preservation at Qach Rresh, we are optimistic about the contributions of micro-botanical remains to the site's research questions.

So far, phytolith morphological analysis indicates that assemblages from ashy dumping strata (Room B1, B-015) are dominated by monocotyledonous plants, such as wild and domesticated grasses (ELONGATE DENTATE, ELONGATE DENDRITIC), and contain a small percentage of sedge morphotypes (< 3% *Cyperaceae*-type PAPILLATE). Dicotyledonous morphotypes (e.g., woody and leafy plants) are also present but in very small percentages (1%). Notably, the B-015 phytolith assemblage was dominated by Chloridoid (C_4) grasses (>65% of short cells; SADDLE), which are indicative of warm, arid environments. Further analysis is needed to determine whether these preliminary results, suggesting an aridity signature in post-Assyrian B-015, reflect seasonal agropastoral strategies isolated to this context or longer-term environmental conditions.

Although the lab-based analyses are still in progress, preliminary results show the potential for future micro-botanical research at Qach Rresh. In future seasons, we will continue to collect samples from stratigraphic sections, especially in Op. C, and expand our sampling of occupational, disposal, and architectural contexts across the site.

Discussion: Assyrian Administration and Post-Collapse Practice

With the data from the 2022-2023 seasons, the site of Qach Rresh has already contributed significantly to the discussion surrounding Assyrian presence in the imperial heartland beyond its urban and mega-urban centers. Current debates revolve around the nature of Assyrian urbanism and its sudden expansion of settlement into the interfluvial countryside – notable, as it is the first time such areas were occupied to any significant degree. Yet, little archaeological evidence for this phenomenon exists from current excavations, with the only studies of rural communities in the Assyrian heartland stemming from large-scale surveys (Morandi Bonacossi 2018; Ur *et al.* 2021).[11] These survey projects show an explosion in the number of small-scale sites first appearing during the early Iron Age. In addition to settlements of the Bronze Age remaining largely occupied on the Erbil Plain, there is the new appearance of evenly spaced small villages characterizing the Neo-Assyrian landscape, with the overall number of sites increasing by 36% from the Late Bronze Age to the Iron Age, representing an increase greater than any other period transition yet seen (Ur *et al.* 2021).

What remains to be answered is the degree to which this settlement system of the Assyrian Empire was planned – that is, imposed by top-down administration efforts. In the first millennium B.C.E., the average size of previously-occupied Neo-Assyrian sites remained relatively stable between regions, while the number of settlements expanded but the total settled area did not. This indicates a growing rural population overall, without an accompanying depopulation of urban centers (Altaweel 2006, 2007; Ur *et al.* 2021; Ur and Osborne 2016; Wilkinson *et al.* 2005). If increased agricultural production was the end goal of this new settlement system, then this can be convincingly aligned with Assyrian efforts to organize the landscape both on a physical and an ideological level, where a king's control over the "four corners" or, the known world, depended on producing civilization from wilderness, order from chaos, or developing non-Assyrian areas into Assyrian-governed ones (Liverani 2017: 41-54).

Qach Rresh's place within this shifting settlement system remains only preliminarily understood. While we had known initially that this site was home to what were apparently large administrative buildings, from the magnetic gradiometry investigations conducted in 2021, the results of the 2022

[11] The Sebittu Project, established by Timothy Matney of the University of Akron in 2023, has also begun investigations into rural Neo-Assyrian villages within the Assyrian heartland, and we eagerly await their results. Also note the salvage excavations conducted by Iraqi archaeologists in the 1980s and 1990s in the Jazira, where at least ten small sites were excavated which contained Neo-Assyrian material (Altaweel 2006, 2007), and salvage excavations in the Tigris Valley north of Mosul (Bieliński 1987; Curtis 1989; Curtis and Green 1997).

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and 2023 seasons have revealed that Qach Rresh was far more expansive than initially thought, with the discovery of Building C and Features 1 and 2 revealing a higher capacity for storage and production than Buildings A and B alone could provide. Potentially, noting its adjacency to the larger Assyrian center of Trpa Spiyan 2 km to the south (under the modern-day village)[12] and the relatively short distance to Erbil, it is not a stretch to imagine that Qach Rresh could have operated as a strategic depot for agricultural and animal products, possibly as a site for staging such products ultimately destined to be consumed by Erbil's institutions and inhabitants. Resource extraction formed the core of Assyrian imperial concerns; perpetual expansion and maintenance of the empire fostered an ever-increasing reliance upon both resources for sustenance (agriculture and pastoralism) and resources for exchange (precious goods and specialized services) (Parker 2003; Rosenzweig 2018; Rosenzweig and Marston 2018; Thareani 2016). This was true as well for Assyria's imperial core, where growing cities far outstripped the resources available nearby to sustain their rising populations and thus relied upon importing goods and labour (Oded 1979; Postgate 1992; Radner 1999). In addition to Erbil, the Assyrian center Kilizu (modern Qasr Shemamok) might have also been a local destination for goods, though it is located further from Qach Rresh (20km on the most direct path) (Masetti-Rouault *et al.* 2022). Based on the proximity of the site to Trpa Spiyan, it is almost certain that a road connected the larger site and Erbil (running nearly directly north-south) and as such may have served Qach Rresh as well. Between Kilizu and Trpa Spiyan in the southwestern part of the Erbil Plain lies the site of Aliawa, which was also occupied in the Neo-Assyrian period (Peyronel *et al.* 2019). This might imply a road which linked these sites, and by extension Qach Rresh, as well.

The location of these larger sites within a day's walk of Qach Rresh possibly situates the site within the wider framework of purposeful settlement planning mentioned above. It is possible that the sudden increase in newly established settlements may have related to the Assyrian practice of deportation. Begun under Assur-dan II in the tenth century B.C.E., deportation was one of the empire's main tactics of administration and oppression (Oded 1979). Deportations and resettlements of conquered populations drastically altered the makeup of the empire's core. It reached its peak in the eighth and seventh centuries B.C.E. under the Sargonid dynasty, with the highest estimates from Oded's foundational study of deportation concluding that as many as four and a half million people were relocated over a 250-year period, with 85% of them settled in the core of the Assyrian Empire (Oded 1979). Deportation strategies not only destabilized the new territories brought under Assyrian hegemony, to prevent uprisings, but also provided a new source of direly needed labour for the Assyrians to exploit. While most written records describe the resettlement of these uprooted peoples within cities ("'[I add]ed (them) in great numbers to the massive fo[rc]es of the god Aššur… I filled Assyria in its entirety like a quiver. I distributed the re[st of them] like sheep and goats among my palaces, my nobles, the entourage of my palace, and [the citizens of Ninev]eh, Calah, Kalzu, (and) Arbela," [Leichty 2011: Esarhaddon 033 *RINAP*, rii 18-22]), many were settled outside of these urban spaces as well (Oded 1979: 47, 67–74). This is some evidence for this phenomenon seen in the Jazira, where the stele of Adad-nirari III from Tell al-Rimah recounts the purposeful foundation of over three hundred villages, settled by the 'subjugated peoples' from Hatti, Amurru, Damascus, and Na'iri which Adad-nirari III boasts of conquering (Morandi Bonacossi 1996: 164–165; Page 1968: 143). It is unclear how Qach Rresh was situated within Assyria's increasing demand for labour and sustenance and how these demands affected its residents. However, its existence as a newly established site with facilities for the production/storage of goods, paired with the monumental scale of those facilities, almost certainly points to centralized governmental or elite involvement in its construction and operation.

Just as interesting is Qach Rresh's apparent abandonment upon (or just before) the collapse of the Assyrian Empire. The site's use in the post-Assyrian/ Iron Age III period thus far remains based on the deposits of refuse within Buildings B and C, which have yielded more ceramic data from the sixth–fourth centuries B.C.E. than any other site on or around the Erbil Plain. Archaeological

[12] Trpa Spiyan is the largest Iron Age site near Qach Rresh, and it is likely that the two interacted closely while occupied, potentially both during the empire's height and after its collapse.

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knowledge of post-Assyrian and Achaemenid occupation within and surrounding the Assyrian heartland is largely limited to urban contexts, where discussions of 'squatter's settlements' dominate (Curtis 2003; Kuhrt 1995). It has largely been assumed, from short contemporary descriptions of the Assyrian heartland (such as that preserved in Xenophon's *Anabasis*) and the dearth of archaeological evidence (Hauser 2017; Palermo 2019a), that the countryside depopulated rapidly upon the collapse of the Assyrian Empire and largely remained that way until an upswing of settlement numbers in the Hellenistic and Parthian periods (Palermo 2019b). Recent discussions have framed the weakening of the Assyrian Empire and the following abandonment of the landscape within discussions of environmental and climatic fluctuation (Schneider and Adalı 2014; Sinha *et al.* 2019). The general presence of a community at or near Qach Rresh apparently engaging in robust agropastoral lifeways and maintaining community production of textiles, along with other products, may complicate this picture as RLIIM continues.

Conclusions

The combination of magnetic gradiometry and excavation conducted at Qach Rresh has shown that the site is far larger and more complicated than was initially thought from survey results. While initially the site was theorised to have been an Assyrian village, we now believe it may have been a site of imperial administration, possibly for collecting animal products and/or agricultural products for taxation or other purposes, facilitated by the state. Our discoveries thus far have led us to propose that Qach Rresh may have been a site that was important to imperial taxation/resource accumulation/redistribution in the rural countryside, the first such site excavated in what is referred to as the 'Assyrian Heartland'. Thus, there is a possible higher degree of centralised or elite imperial involvement at Qach Rresh than expected.

With the continued excavations of Building A and Building B, we now have a better understanding of how these buildings were constructed during the Neo-Assyrian (potentially Sargonid) period. Our knowledge of the post-Assyrian/ Iron Age III use remains limited, despite the wealth of data produced from the ceramics and faunal remains. While Building B (and now Building C) were clearly used as dumps in the post-Assyrian/ Iron Age III period, we still do not know where the people dumping their trash may have lived. It is possible that the associated domestic buildings may be located in the more western part of the site, which has not yet been investigated. The potential of Qach Rresh to clarify our understanding of both the Iron Age II and Iron Age III periods is promising.

Our plans for future seasons involve continuation of excavation. We also plan to expand magnetic gradiometry survey coverage to the entire estimated extent of the site and into the surrounding landscape between Qach Rresh and Trpa Spiyan. Understanding the landscape features between both sites will allow us to better understand the relationship between larger imperial settlements and administrative settlements such as Qach Rresh. Furthermore, we plan to continue expanding our sampling regime and laboratory analyses, to be discussed in subsequent reports.

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النتائج الأولية لموسمي 2022-2023 لمشروع المناظر الطبيعية الريفية في العصر الحديدي في بلاد ما بين النهرين الإمبراطورية في منطقة قاش ريش (كردستان العراق)

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تقدم هذه المقالة النتائج الأولية للتحقيقات في موقع قاش ريش على سهل أربيل في كردستان العراق، والتي أجراها مشروع المناظر الطبيعية الريفية في بلاد ما بين النهرين الإمبراطوري في العصر الحديدي (RLIIM). يُقدّر موقع قاش ريش بأنه قد تأسس في منتصف القرن الثامن قبل الميلاد في ذروة عصر الإمبراطورية الآشورية واستمر استخدامه بقدرات متفاوتة حتى بداية الفترة الهلنستية (حوالي 320 قبل الميلاد). تشير مسوحات التدرج المغناطيسي والحفريات حاليًا إلى أن قاش ريش كانت بمثابة مركز إداري/تخزين ريفي خلال عصر الإمبراطورية الآشورية ولكنها تدهورت وأصبحت في حالة سيئة بعد انهيار الإمبراطورية. شهدت الفترة التالية لما بعد العصر الآشوري/الحديدي الثالث إعادة استخدام العديد من مبانيها الكبيرة كمناطق نفايات تحتوي على حطام من مناطق سكنية إلى حد كبير. قاش ريش هي أول مستوطنة ريفية يتم التحقيق فيها داخل قلب الإمبراطورية الآشورية. تشير نتائج هذا المشروع إلى درجة عالية من مشاركة الدولة الآشورية أو نخبة عالية في الريف، مما يشكل خطوة أولى مهمة لتقييم العلاقة بين مراكز الحكم الحضرية و"المناطق الداخلية".

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